GETTING THE BALANCE RIGHT

FOREWORD

I am pleased to introduce "Getting the Balance Right". This is a practical 'Obesity Toolkit', and has been prepared by Carmarthenshire Local Public Health Team, to take account of the local situation in Carmarthenshire. It has been developed with the help of many different health care professionals.

I hope you find the 'Obesity Toolkit' useful. It is not a static document, but is meant to evolve over time as new information becomes available. It has been provided in this loose-leaf format to enable you to insert and remove things as required, to provide a comprehensive obesity manual for practice use. It can also be used in conjunction with the PCET audit pack.

There are a lot of people who are there to help you with aspects of obesity management and complications. A list of contacts is given in the appendix. Please do contact any of them if you need to.

We would welcome any suggestions you may have regarding the 'Obesity Toolkit', so please let me or the Carmarthenshire Local Public Health Team know of any comments.

This toolkit will be reviewed, but review of individual sections may occur earlier, especially if new evidence is discovered.

Gobeithio cewch hŵyl wrth ddefnyddio'r fframwaith hwn.

Dr Terry Davies, Medical Director
Carmarthenshire Local Health Board

Executive Summary

Obesity is set to become one of the major health challenges to be addressed by health professionals over the next decade. The link between obesity and the development of coronary heart disease, Type 2 diabetes and other chronic conditions is now firmly established.

The *Health Status Wales Report (2003-4)* identified that 54% of adults were classified as overweight, including 18% classified obese. The survey indicated that Carmarthenshire is in line with the national average and that 54% of the population of Carmarthenshire can be considered to be overweight or obese. This represents a significant challenge for Primary Care services in the area and a huge pent-up demand for the treatment of the secondary symptoms of obesity.

Obesity is now represented for the first time in the Quality and Outcomes Framework of the revised GMS contract and the focus is likely to increase in the future. This should help drive the development of existing resources in tackling the treatment and prevention of obesity in primary care.

The Carmarthenshire Adult Obesity Toolkit was developed by a multidisciplinary team comprising the Local NPHS Public Health Team, Carmarthenshire LHB, secondary care, voluntary services, Community Pharmacy Wales and the pharmaceutical industry as a means of bringing together existing services and collecting best practice. This will provide a more focused and co-ordinated approach to supporting patients in the community with their weight management, and to ensure a commitment to a permanent change of lifestyle. It is a resource which not only gives a comprehensive overview of all of the key aspects of obesity but also serves as a 'toolkit', providing practical advice for those healthcare professionals that wish to develop their own obesity management service.

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Introduction and Rationale

Introduction[1]

Obesity has grown by almost 400% in the last 25 years, and on present trends will soon overtake smoking as the greatest cause of premature loss of life. Figures for the UK as a whole show that 42% of men and 32% of women are overweight; 25% of men and 20% of women are obese (BNF, 2004). In Wales, 55.2% of the population are overweight and obese (Welsh Health Survey, 1998) and locally in Carmarthenshire 58.1% of the population are overweight and obese, higher than the Welsh average (Welsh Health Survey, 1998).

Obesity has a substantial human cost by contributing to the onset of disease and premature mortality. The health problems caused by excess weight lead to a wide range of debilitating and life threatening conditions, including cardiovascular disease, type 2 diabetes, stroke, cancers and osteoarthritis. Obese people are also more likely to suffer psychological problems such as binge eating, low self-esteem, social isolation, social stigma, psychological morbidity and poor quality of life (WHO, 1998).

As well as having an impact on individual health and well being, the economic burden of obesity and overweight in the UK has serious financial consequences for the National Health Service and the economy. Obesity treatment costs to the NHS are at least £1/2 billion a year (NAO, 2001). The economic costs of obesity per year are estimated to be £3.3 – £3.7 billion, and obesity plus overweight to be £6.6 – £7.4 billion (House of Commons Health Committee, 2004). Obesity is responsible for 18 million sick days a year; 30,000 deaths a year, resulting in 40,000 lost years in working life; and deaths linked to obesity shorten life by 9 years on average (NAO, 2001). Clearly overweight and obesity have major public health implications.

The Chief Medical Officer's Report 'Health Status Wales' (WAG, 2004-2005) sets revised targets based on the Welsh Government Strategy for Health 'Better Health, Better Wales' (Welsh Office, 1998) to improve CHD mortality in all groups and at the same time aim for a more rapid improvement in the most deprived groups. Intervention strategies to tackle obesity are fundamental for achieving this target. The CMO Report provides the focus and launches a high profile campaign to raise awareness of 'Health Challenge Wales' the national action to improve health and build a healthier Wales. Obesity features a one of the key target areas for action.

The National Service Frameworks for Coronary Heart Disease (NAfW, 2001); Diabetes (WAG, 2003) and Children, Young People and Maternity Services (WAG, 2004) reinforce the importance of action to prevent and reduce the incidence of overweight and obesity. Carmarthenshire's Health, Social Care and Well Being Strategy (2005) also highlight obesity as being a key area for local action.

RATIONALE FOR DEVELOPING THE OBESITY TOOLKIT AND WEIGHT MANAGEMENT GUIDELINES FOR ADULTS IN PRIMARY CARE

The World Health Organisation has classified obesity as a chronic disease, such as other chronic diseases e.g. Diabetes and CHD. It is also now recognised as a serious clinical condition. Primary Care has a key role in the management of overweight and obese patients. Evidence suggests that within general practice, practitioners use a variety of methods for managing such patients, but many were uncertain about which interventions were most effective (National Audit Office, 2001). The National Audit Office (2001) reported that there was an absence of central guidance on how obesity should be managed. In a survey of medical practitioners, 63% of GPs and 85% of Practice nurses reported that they believed clinical guidelines or protocols on managing overweight or obese patients would be useful.

This Obesity Toolkit has been developed in response to the growing public health problem of overweight and obesity in the general population. Primary care is at the front line of this modern day public health care concern, and now more than ever we need to consider how to best improve our understanding of both the causes and treatment of this serious condition. This toolkit therefore aims to aid primary care professionals in their day-to-day management of overweight and obese patients in primary care, and to ensure a consistent and standardised treatment approach for all patients. The document is evidence based, incorporating current clinical guidelines, good practice and standards.

HOW TO USE THIS TOOLKIT

The toolkit is divided into the following sections:

INTRODUCTION
This provides local and national obesity statistics and the rationale for developing the obesity toolkit and weight management guidelines for adults in Primary Care.

BACKGROUND INFORMATION
This section looks at the following areas –
- Defining obesity and overweight
- Abdominal Obesity
- Health risks associated with obesity
- Factors that influence the development of overweight and obesity
- Benefits of weight loss

PAEDIATRIC OBESITY
This section provides information, resources and guidance when dealing with childhood obesity.

CLINIC INFORMATION
- GP practice based guidance
- Community pharmacy based guidance

PSYCHOLOGICAL FACTORS
This section looks at the psychological factors underlying obesity and psychological approaches to the management of obesity.

BEHAVIOUR CHANGE
This section looks at the process, readiness and motivation of behaviour change.

LIFESTYLE
This section provides information and guidance on the following lifestyle areas:
- Diet and nutrition
- Physical Activity
- Smoking
- Alcohol

MEDICATION
This section includes some information regarding use and monitoring of medication used in the management of Obesity.

COMPLICATIONS ASSOCIATED WITH OBESITY
This section looks at the definition, symptoms, association with obesity, diagnosis and treatment management of the relevant associated complications.

WEIGHTLOSS SURGERY
This section provides information and guidance on the main types of surgical intervention.

APPENDICES

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Background Information

Defining Obesity and Overweight [2]

The World Health Organisation describes obesity and overweight as conditions in which excess body fat has accumulated to such an extent that health may be adversely affected (WHO, 2000).

The internationally accepted definitions of overweight and obesity in adults (aged 16 years and over) are based on Body Mass Index (BMI), which is closely correlated with the amount of body fat a person has. BMI is calculated by dividing a person's weight in kilograms (kg) by their height in metres squared (m^2) i.e.

$$BMI = \frac{\text{Weight (kg)}}{\text{Height } (m^2)}$$

Table 1 shows the classification of Body Mass Index

Classification	Body Mass Index (BMI) kg/m^2
Underweight	Below 20
Healthy Weight	20 – 24.9
Overweight	25.0 – 29.9
Obese	Above 30.0
Obese (Class 1)	30.0 – 34.9
Obese (Class 2)	35.0 – 39.9
Obese (Class 3 severe (or Morbid Obesity/Super Obesity)	Above 40.0

Table 1: Classification of Body Mass Index (International Obesity Task Force, cited House of Commons Health Committee, 2004)

Problems with BMI measures

BMI is a simple, practical tool but does not take into account variations in stature, frame or body composition, and cannot distinguish between the weight of lean and fat tissue. Individuals may be classified as overweight according to BMI where they have more muscle bulk than average e.g. athletes, weight lifters; conversely individuals may be classified as being a healthy weight according to BMI yet have high levels of visceral abdominal obesity.

In the older adult, the use of height measurement for BMI calculation does not take into account for any height loss with increasing age or osteoporosis. Likewise the equation takes no account of loss of fat free mass associated with ageing (Guildford and Waverley Primary

Care Trust, 2004). For the elderly population therefore it may be misleading to use the normal parameters of BMI.

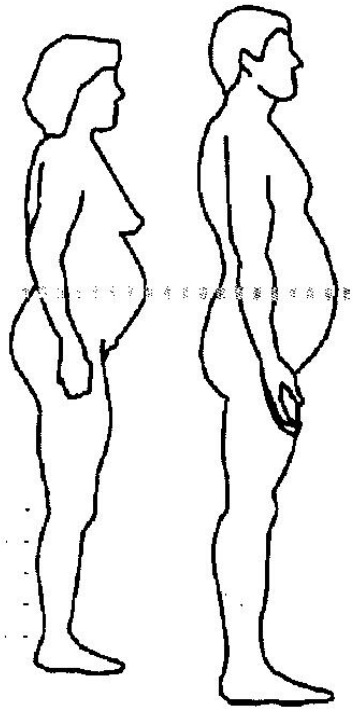
Waist Circumference

Waist: Hip ratio was previously used as a measure of risk associated with abdominal fatness or central obesity. Central obesity is where the fat is mainly distributed around the abdominal area, and is now acknowledged to be a major cause of insulin resistance and metabolic syndrome. Measurement of waist circumference is now recognised to be a more reliable indicator and may be clinically more useful in combination with measurement of BMI to assess an individual's health risk (see Table 2 for risk associated with central obesity)

Gender	Increased Health Risk	Health Risk Substantially increased
Men	> 94 cm (37 inches)	> 102 cm (40 inches)
Women	> 80 cm (32 inches)	> 88 cm (35 inches)

Table 2 - Health Risks Associated with Waist Measurement (WHO, 2000)

Measurement of Waist Circumference



- The waist circumference should be measured with the patient in a standing position and at the end of normal expiration
- Ensure the tape is snug and does not compress the skin
- Ensure the tape is parallel to the floor
- The measurement should be taken at a level midway between the lowest rib and the iliac crest (for most people this will be the belly button)

Health Risks Associated With Adult Obesity (WHO, 1998)

Complications Table

Greatly Increased	Moderately increased	Slightly increased
Type 2 diabetes Gall bladder diseases Dyslipidaemia Metabolic Syndrome Breathlessness Sleep Apnoea	Coronary Heart Disease Hypertension Osteoarthritis (knees and hips) Hyperuricaemia and gout	Cancer - Breast cancer in post menopausal women Endometrial cancer Colon cancer Reproductive hormone abnormalities Polycystic ovary syndrome Impaired fertility Low back pain Fetal defects associated with maternal obesity

Factors that influence the development of Overweight and Obesity [3]

A wide range of psychological, physiological, medical and genetic factors can have a great bearing on an individual's capacity to gain, or lose weight. Likewise a range of economic, environmental, behavioural, social and cultural factors influences an individual's lifestyle in relation to dietary and physical activity habits. Age, education, social class and income have been shown to be influencing factors on the risk of being obese (Joint Health Surveys Unit, 2002)

Intake versus output

- The main cause of obesity and overweight in an individual is an excess of energy intake over energy expenditure (WHO, 1998).
- Only a small (e.g. 2%) persistent discrepancy between daily intake and energy output is required to induce progressive and substantial weight gain (SIGN, 1996).
- A modest but persistent accumulation of only 50-200 kcal daily leads, over a 4-10 year period, to a slow but progressive weight increase of 2-20kg.
- The body's natural metabolic rate will finally adjust to the extra intake, and weight will stabilize at the higher level

Childhood and Adolescence

- Childhood is a time when eating habits and food preferences are formed
- Children of obese parents are at a greater risk of developing obesity (Reilly and Dorosty 1999; Danielzik et al, 2002; Whitaker et al, 1997)
- Childhood obesity substantially increases the risk of adult obesity (Reilly and Dorosty 1999; Danielzik et al, 2002; Whitaker et al, 1997)

Middle Age

- As we age our weight tends to increase
- Excess weight gain in adults usually starts in the 20-40 year old period, with maximum body weight being reached in middle age
- Weight gain with aging is most probably due to environmental factors rather than metabolic ones

Retirement

- Retirement can be a vulnerable time, with many individuals experiencing a loss of structure to their normal eating and activity patterns

Women

- Women gain excess weight more rapidly than men, possibly due to metabolic reasons related to their lean body mass
- Hormonal changes through the menopause can bring changes in fat distribution

Metabolic rates

- There are suggestions that people who develop obesity might have an imbalance in their autonomic nervous system, with the parasympathetic system dominating the sympathetic
- The sympathetic system tends to accelerate the physiological functioning of the body, increasing heart rate, respiratory rate and blood supply to muscles. If the parasympathetic system is dominant it causes a general 'slowing down' of the body, resulting in reduced expenditure of energy and greater accumulation of body fat (HEBS, 2004)
- When food intake is reduced, the metabolic rate reduces, and an unconscious desire to eat increases. This explains why many dieters do not do as well as they hope, even when well motivated; their ambitions are hindered by their body's physiological processes
- Giving up smoking induces a fall in metabolic rate and an increase in food intake

Pregnancy

- In pregnancy, physiological mechanisms promote maternal weight gain and fat storage amounting to approximately 70,000 kcal. This provides some of the energy needed for breast feeding approximately 700 kcal/day (SIGN, 1996)
- Losing this weight after pregnancy for some women proves difficult, especially if they choose not to breast feed
- Slimming during pregnancy for overweight or obese individuals is not advised, but limiting weight gain in pregnant obese women is advisable in order to reduce the incidence of high blood pressure, pre-eclampsia and gestational diabetes (SIGN, 1996)
- A new baby brings extra demands on the mother which may affect her ability to follow a regular eating pattern or engage in physical activity.

Fetal Nutrition

- Under nutrition of the fetus during intrauterine development may influence an individuals predisposition to obesity and other related conditions such as hypertension and type 2 diabetes
- A poor nutritional environment in utero may cause developmental defects that increases susceptibility to weight gain in later life

Infants and toddlers

- There is some evidence that breastfeeding helps prevent obesity in later life (Armstrong and Reilly 2002; von Kries et al, 1999; Gillman et al 2001)

Familial predisposition and Genetic influence

- Susceptibility to obesity and controlling body weight can have an underlying genetic basis
- There is increasing evidence from adoption, twin and family studies that genetic factors relating to metabolism, control of appetite and behaviour (e.g. family lack of physical activity) are involved in weight gain
- The genetic contribution to weight gain in susceptible families range from 25-70% (SIGN, 1996)
- Children of obese parents are at a greater risk of developing obesity (Reilly and Dorosty 1999; Danielzik et al, 2002; Whitaker et al, 1997)
- The rapid increase in obesity over the past few years cannot be explained by changes in the gene pool and is most likely due to changes in environmental and social change (WHO, 2000)

Some rare genetic causes of Obesity include:

- **Bardet-Biedi Syndrome**
    - Characterized by mental retardation, pigmentary retinopathy, polydactyl and hypogonadism.
    - Weight gain does not usually begin until children are 1-2 years old and occasionally does not present until puberty
    - A slowed metabolism and hyperphagia are thought to account for the increased incidence of obesity
- **Prader-Willi Syndrome**
    - Individuals generally feed poorly until the age of 2 years, after which time there is a severe risk of obesity as a result of extreme hyperphagia
    - Learning difficulties are a key feature
    - Adults tend to be small stature with small hands and feet
    - Obesity related complications e.g. type 2 diabetes are a threat to the health of Prader-Willi syndrome sufferers

- **Leptin Deficiency**
    - Leptin is a hormone involved in appetite regulation
    - Leptin deficiency is a rare genetic disorder, manifesting in childhood
    - Treatment is with leptin injections

Medical / Endocrine Causes -

There are a small number of medical/endocrine conditions that can both cause weight gain and/or make it more difficult to treat obesity. Although the prevalence of these disorders is low, they should be taken into account as part of the preliminary investigations prior to embarking on a treatment programme.

- ## Hypothyroidism

Definition

Hypothyroidism is a deficiency in the amount of thyroid hormone at the tissue level. It is most commonly caused by primary thyroid gland failure which occurs by an autoimmune mechanism.. It is more common in women than men and is sometimes associated with other autoimmune diseases of the endocrine system including type 1 diabetes. Hypothyroidism may also occur following radioiodine treatment of thyrotoxicosis. A family history of thyroid disorder is frequent.

Symptoms

The symptoms are extremely varied and reflect the effects of thyroid hormones on virtually every organ system. However, they may be so insidious that the diagnosis may be overlooked for months or years. Weakness, physical and mental fatigue, daytime sleepiness and loss of energy are usually prominent. Weight gain is almost always present. Other symptoms are cold intolerance, dry skin, loss of scalp hair and constipation. The voice is often hoarse and the facial expression is dull, with drooping of the eyelids and puffiness around the eyes. Thyroid function tests should be performed on all patients with weight gain and suggestive symptoms of hypothyroidism.

Tests

The laboratory diagnosis of hypothyroidism is fairly straightforward. Serum thyroxine (T4) is near the lower end of or below the normal range (10-22 nmol/l) and TSH is near the upper end of or above the normal range (0.3-4 mu/l). Thyroid antibodies are often but not always positive.

Who to refer to

If a diagnosis of hypothyroidism is confirmed, the patient can usually be managed in primary care. Lifelong thyroxine replacement is required. The daily dose required is that which returns the serum TSH to the low normal range, and is usually in the range 100-150 mcg/day.

- ## Cushings Disease
    - A hormonal disorder resulting from an excessive production of corticosteroids in the adrenal glands

Symptoms –

- Upper body obesity
- Muscle wasting on arms and legs
- Moon shaped face
- Thin skin with striae visible on abdomen, thighs, buttocks, arms and breasts

Hormonal changes can affect

- Mood
- Levels of fatigue
- Fertility
- Blood glucose levels
- Blood pressure

Diagnostic tests

- 24 hour urinary cortisol level – levels higher than 100 micrograms per day for an adult suggest Cushings syndrome
- Chest x ray
- MRI or CAT scan

If Cushings Syndrome is suspected, refer to endocrinologist

Learning Disabilities

- There is a higher incidence of overweight and obesity amongst individuals with learning disabilities e.g. Down's Syndrome

Side effect of Medication

Table 3 shows some prescription medications that have been associated with weight gain. Further information on medications can be found in the 'Medication' section

Table 3: Drugs that may cause weight gain

Drug	Most Common Side Effect
Anticonvulsant Drugs	Weight gain has been documented with some agents
Antidepressant Drugs	All drugs used to treat depression have a tendency to cause weight gain
Antihistamines	Weight gain has been shown with some agents
Antipsychotic and Anti-manic Drugs	Typical and Atypical Antipsychotics and Lithium
Beta-adrenoceptor Blockers	These may cause weight gain and restrict physical activity due to fatigue
Corticosteroids	All corticosteroids may promote weight gain by fat redistribution and fluid retention
Oral hypoglycaemic Drugs and Insulin	Most sulphonylureas and Glitazones cause weight gain and Insulin particularly when used in combination
Progestogens	Including HRT, Oral Contraceptives (Combined and Progesterone only)

Ethnicity

- There is a higher prevalence of obesity amongst certain ethnic groups, particularly Black Caribbean and Asian

Psychological causes

- **Bulimia**
- **Depression**
- **Abuse**

For more information please see Psychological Section

Behavioural and Environmental Causes

Behavioural and Environmental factors – predominantly low levels of physical activity and high calorie intake are the primary cause of the current global obesity epidemic (WHO, 2000)

Physical Activity Trends

- **Declining physical activity**
  - Over the last 10 years, the average adult energy expenditure has been estimated to have decreased by 30%
  - In Wales 75 % of the population do not meet the current recommended levels of physical activity (Welsh Health Survey,)
  - Decline in activity rates are due to many factors including changes in travel patterns, modes of transport, increasing automation (electric equipment and appliances), wider access to home entertainment (TV, video, computer games), home shopping, home deliveries, escalators, lifts etc
  - Car ownership and usage has increased. The overall number of journeys made on foot has fallen form 34% to 28% and by Bicycles from 2.4% to 1.6% (DETR, 2001)
  - Occupational energy expenditure has decreased, as jobs have become more sedentary
  - People participate in more sedentary leisure activities (TV watching rather than walking)
- **Progressive physical inactivity with age**
  - People tend to get less active as they become older
  - A combination of biological and social changes may occur-
  - Mineral loss in bone contributes to osteoporosis, causing fractures and potential immobility
  - A reduction in the number of muscle cells. Elastic fibres are replaced with less pliable collagen, making muscular contraction and movement more difficult

- Changes in the lungs reduce surface area available for gaseous exchange, and lung tissue loses elasticity. This contributes to reduced lung capacity and reduced tolerance for exercise
- Coronary heart disease causing angina, becomes increasingly common with age

Dietary Trends

- **Snacking and the loss of a formalized meal pattern**
  - Snacking reduces the conscious recognition of foods eaten
  - The types of foods which people snack are often high in calories, fat and sugar

- **Frequent consumption of high energy dense foods and drinks**
  - High fat, high calorie foods often eaten to give quick burst of energy

- **High fat diets**
  - High fat diets increase the amount of energy consumed, which increases weight gain particularly in the inactive
  - Fats consumed in excess of body energy requirements are stored as body fat

- **Alcohol consumption**
  - Promotes weight gain, as it provides substantial calories
  - Limits individuals conscious control of their intake
  - Heavy drinking bouts can induce strong hungers with binge eating
  - Heavy drinking may lead to underweight with gastritis, alcoholic hepatitis, poor appetite and other nutritional and metabolic disorders

Poverty and Social Deprivation

- Obesity is linked with poverty (James et al, 1997)
- Obesity is increasing in all social classes however the prevalence of obesity is higher in lower socio-economic groups
- Many factors account for the association between deprivation and obesity –
- Lack of money – one of the main difficulties faced by people in social groups 4 and 5. Dietary surveys show that lower income families have less variety in their diet, eat fewer essential nutrients but eat more fat and sugar
- Processed foods higher in salt, fat and sugar are cheaper per unit of energy than healthier foods such as fruit and vegetables
- Accessibility of shops- being able to purchase healthier foods may be difficult, some communities may not have a greengrocer where they can purchase fresh fruit and

vegetables. If local shops do stock such items it may be of poor quality. Families who do not own cars may be unable to access large out of town supermarkets

- Availability – healthier foods may not be readily available in poorer areas
- Participation in sports, exercise and walking is strongly related to household income – those on lower incomes less likely to participate (Health Survey for England, 2002)
- Obesity is linked with poor levels of education, levels of education tend to be poorer in lower socioeconomic classes (NHS Centre for Reviews and Dissemination, 1997)

The benefits of weight loss [4]

There is now considerable evidence to suggest that even a moderate weight loss of 5-10% of body weight will have a major impact on the physical, metabolic, endrocrinological and psychological complications of overweight and obesity (Jung, 1997). Weight reductions of 5-10 kg have been shown to improve back and joint pain, symptoms of breathlessness and sleep apnoea (Goldstein, 1992). Marked improvements in blood pressure and other risk factors for coronary heart disease have also been observed in individuals successful at losing weight (Vidal, 2002)Recent studies have demonstrated that a substantial number of cases of diabetes could be prevented through modest weight loss (i.e. <5kg) (Diabetes Prevention Program Research Group, 2002; Tuomilehto et al, 2001).

The degree of weight loss necessary to achieve health benefits may vary among patients. To the obese patient, benefits may be measured by a non-medical set of criteria, such as being able to fit into their clothes, feeling positive about themselves etc.

Table - The benefits of a 10% weight loss (National Obesity Forum, 2004)

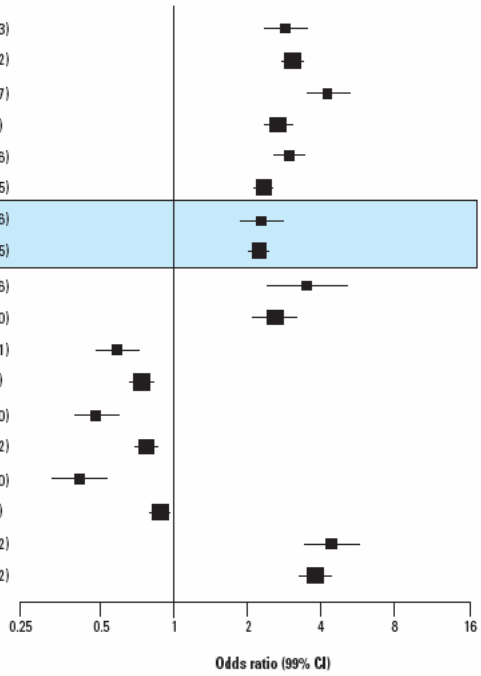
Mortality	>20% ↓ in total mortality >30% ↓ in diabetes related deaths >40% ↓ in obesity related cancers
Blood Pressure	↓ 10 mmHg systolic ↓ 20 mmHg diastolic
Diabetes	30-50% ↓ in fasting glucose 50% ↓ in risk of developing diabetes 15% ↓ in HbA1c
Lipids	10% ↓ total cholesterol 15% ↓ LDL cholesterol 30% ↓ triglycerides 8% ↑ HDL cholesterol

Abdominal obesity

Abdominal obesity and cardiometabolic risk

INTERHEART: abdominal obesity more than doubles the odds of AMI

Risk factor	Sex	Control (%)	Case (%)	Odds ratio (99% CI)	PAR (99% CI)
Current smoking	F	9.3	20.1	2.86 (2.36–3.48)	15.8% (12.9–19.3)
	M	33.0	53.1	3.05 (2.78–3.33)	44.0% (40.9–47.2)
Diabetes	F	7.9	25.5	4.26 (3.51–5.18)	19.1% (16.8–21.7)
	M	7.4	16.2	2.67 (2.36–3.02)	10.1% (8.9–11.4)
Hypertension	F	28.3	53.0	2.95 (2.57–3.39)	35.8% (32.1–39.6)
	M	19.7	34.6	2.32 (2.12–2.53)	19.5% (17.7–21.5)
Abdominal obesity	F	33.3	45.6	2.26 (1.90–2.68)	35.9% (28.9–43.6)
	M	33.3	46.5	2.24 (2.03–2.47)	32.1% (28.0–36.5)
Psychosocial index	F	–	–	3.49 (2.41–5.04)	40.0% (28.6–52.6)
	M	–	–	2.58 (2.11–3.14)	25.3% (18.2–34.0)
Fruits/veg	F	50.3	39.4	0.58 (0.48–0.71)	17.8% (12.9–24.1)
	M	39.6	34.7	0.74 (0.66–0.83)	10.3% (6.9–15.2)
Exercise	F	16.5	9.3	0.48 (0.39–0.59)	37.3% (26.1–50.0)
	M	20.3	15.8	0.77 (0.69–0.85)	22.9% (16.9–30.2)
Alcohol	F	11.2	6.3	0.41 (0.32–0.53)	46.9% (34.3–60.0)
	M	29.1	29.6	0.88 (0.81–0.96)	10.5% (6.1–17.5)
ApoB/ApoA1 ratio	F	14.1	27.0	4.42 (3.43–5.70)	52.1% (44.0–60.2)
	M	21.9	35.5	3.76 (3.23–4.38)	53.8% (48.3–59.2)



Yusuf S, *et al. Lancet* 2004; 364: 937–952

Cardiometabolic Risk

↑Triglycerides

↓HDL-cholesterol

Thrombosis

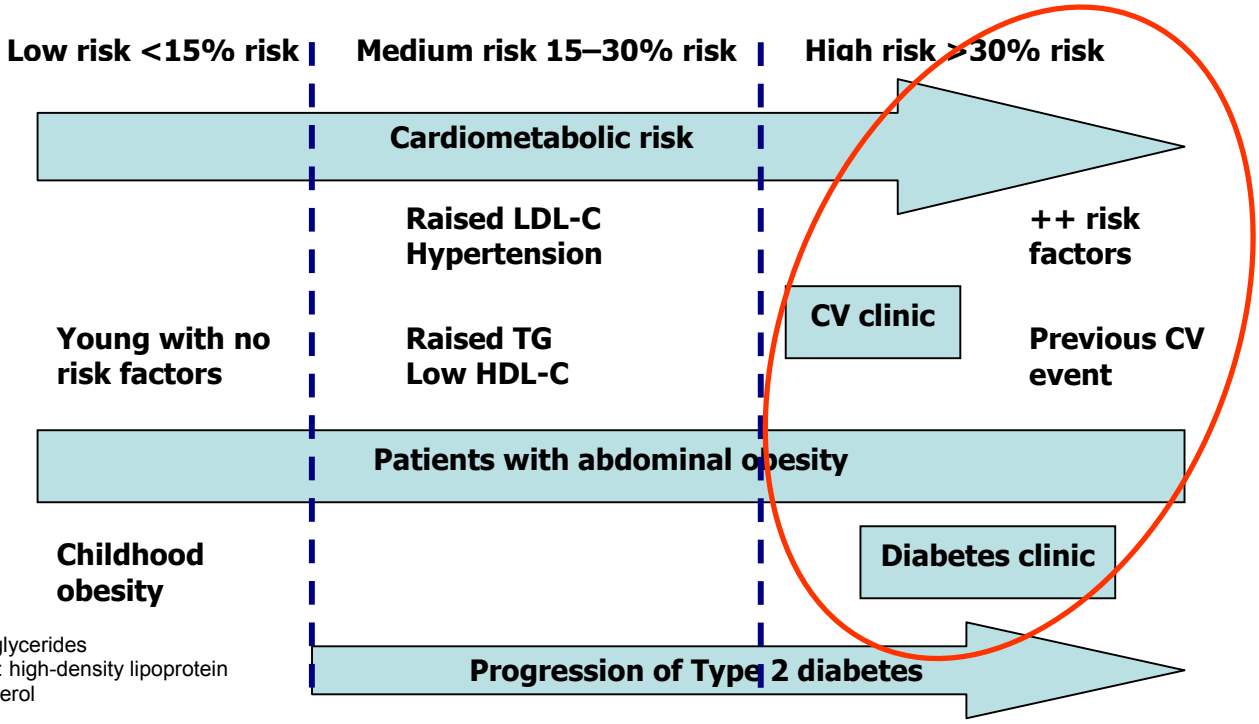
Hypertension

Inflammation

Glucose intolerance
Insulin resistance

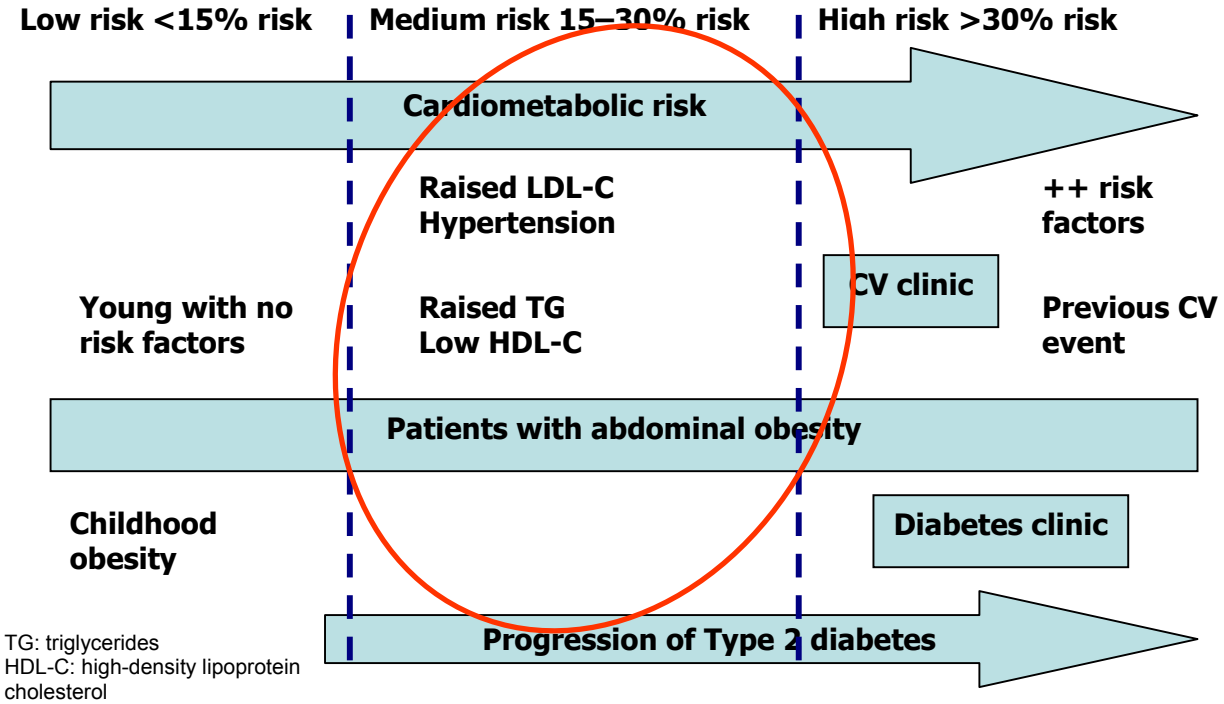
Abdominal obesity

The cardiometabolic risk spectrum: current focus on high-risk patients



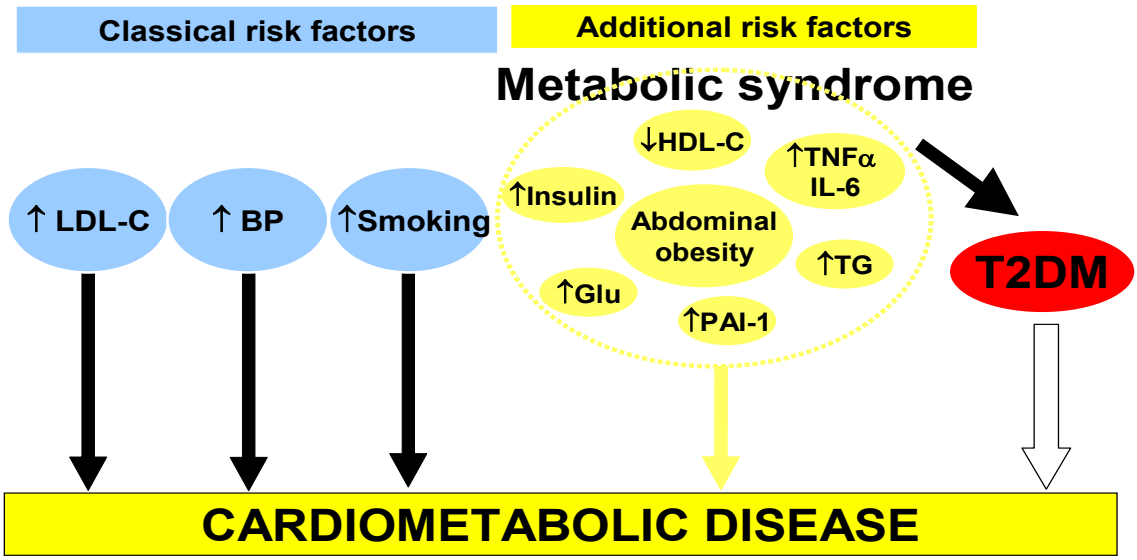
TG: triglycerides
HDL-C: high-density lipoprotein cholesterol

The cardiometabolic risk spectrum: should we treat earlier?



TG: triglycerides
HDL-C: high-density lipoprotein cholesterol
CV: cardiovascular

New agents need to target multiple cardiometabolic risk factors



LDL-C: low-density lipoprotein cholesterol; BP: blood pressure; HDL-C: high- density lipoprotein cholesterol; TNF α: tumour necrosis factor α; TG: triglycerides; PAI-1: plasminogen activator inhibitor-1; Glu: glucose; IL-6: interleukin 6; T2DM: Type 2 Diabetes Mellitus

National Service Frameworks focus on reducing cardiometabolic risk

- Key targets/standards for CHD:[1]
  - Reducing heart disease in the population
  - Preventing CHD in high-risk patients
- Key targets/standards for diabetes:[2]
  - Prevention of Type 2 diabetes
  - Identification of people with diabetes
  - Empowering people with diabetes

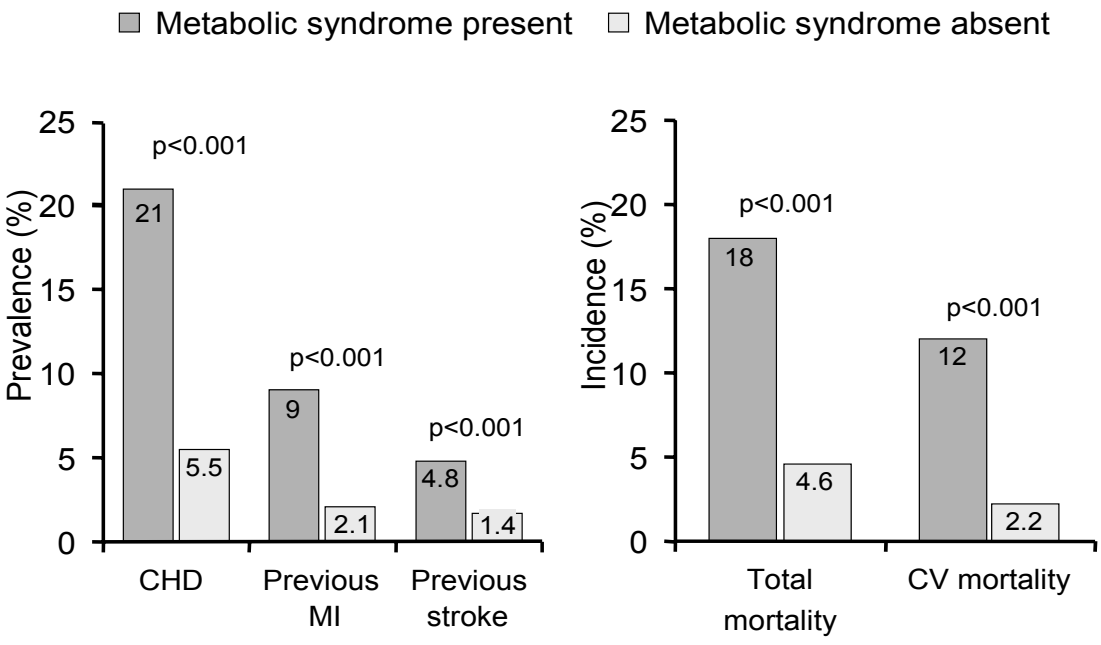
1. National Service Framework for coronary heart disease; Department of health.
2. National Service Framework for diabetes: standards; Department of health.

CHD: coronary heart disease

Metabolic Syndrome: definitions

Factor	ATP III NCEP	IDF criteria
Visceral Obesity	**Waist circumference** **M: >102cm** **F: >88cm**	**Europids:** **M: >94 F: >80cm** **South Asians:** **M: >90 F: >80cm** **Chinese:** **M: >94 F: >80cm** **Japanese:** **M: >85 F: >90cm**
Hypertension	**BP ≥ 130/85mm Hg** **or treated**	**BP Systolic ≥ 130mm Hg** **or Diastolic ≥85mm Hg** **or treated**
Dyslipidaemia	**TG ≥ 1.7mmol/l** **or** **HDL M: <0.9mmol/l** **F: <1.1mmol/l**	**TG ≥ 1.7mM (150mg/dL)** **or treated** **HDL M: < 1.04mmol/L** **F: <1.29mM/L** **or specific therapy**
Impaired glucose metabolism	**FBG ≥ 6.1 mmol/l**	**FBG ≥5.6mM (100mgd/L)** **or pre-existing DM**
Criteria for diagnosis	**Any 3 of the above**	**Waist circumference + any 2 of the above**

Metabolic syndrome increases CV morbidity and mortality



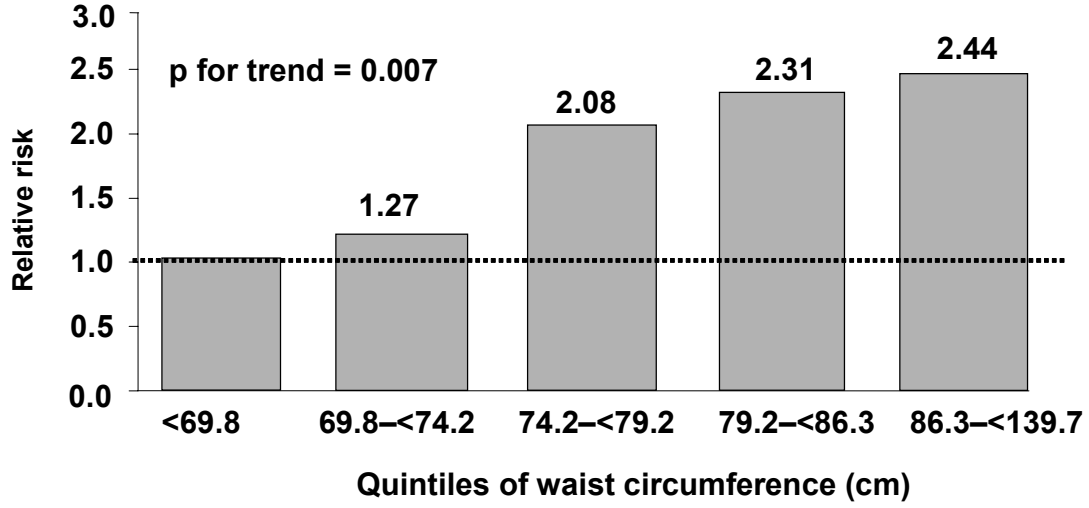
Isomaa B, *et al. Diabetes Care* 2001; 24: 683–689.

Waist circumference is an accurate marker of cardiometabolic risk

'The body's distribution of fat is also important. Excess fat stored around the waist… is also a risk factor for diabetes, whatever the body mass index'
National Service Framework for Diabetes: Standard. Department of Health, UK.

'Abdominal obesity [is] easily assessed using waist circumference and independently associated with each of the other metabolic syndrome components including insulin resistance'
IDF Guidelines, 2004.

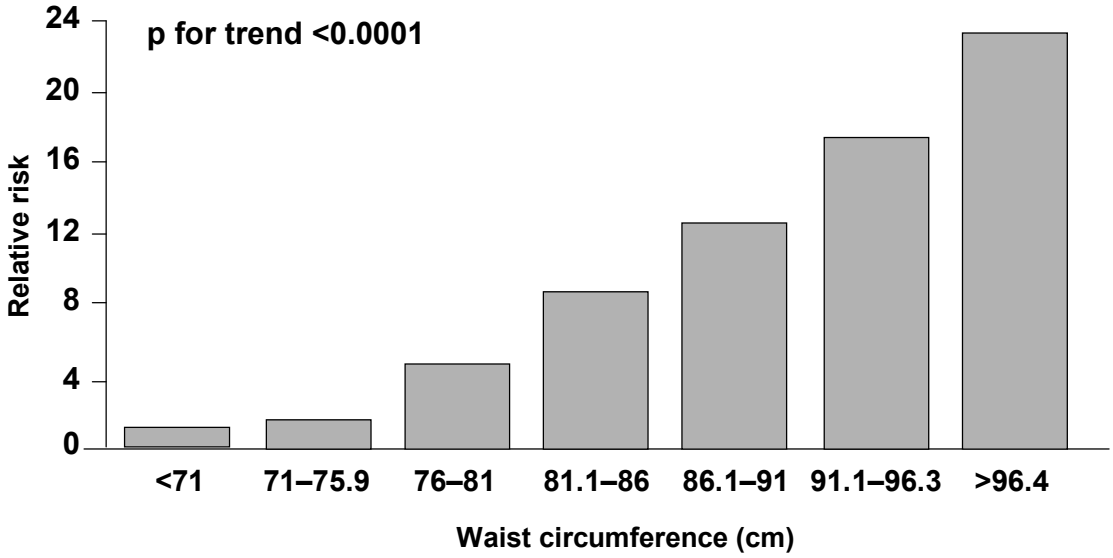
Waist circumference correlates with risk of coronary heart disease in women



- Waist circumference was independently associated with increased age-adjusted risk of CHD, even after adjusting for BMI and other CV risk factors

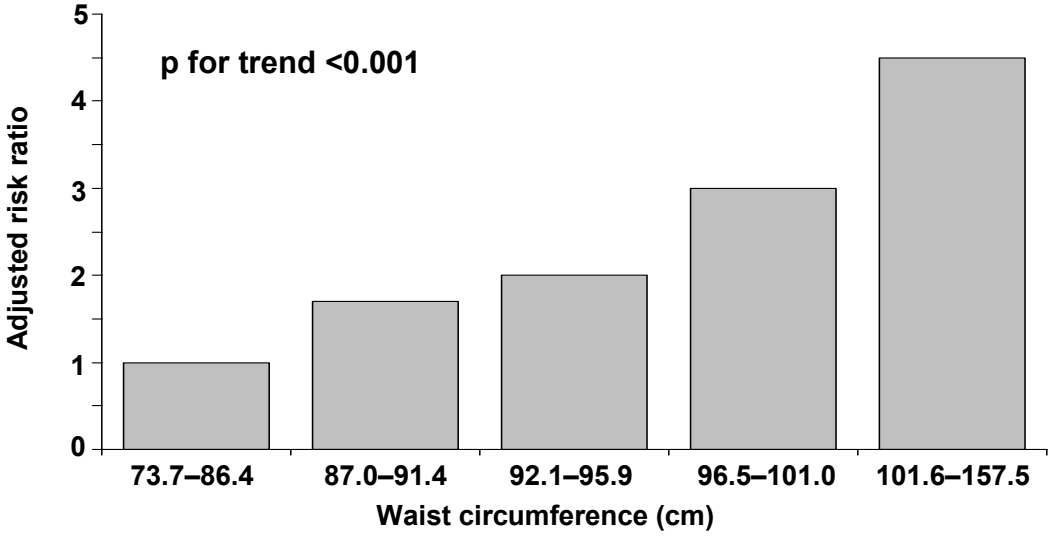
Rexrode KM, *et al. JAMA* 1998; 280: 1843–1848.

Waist circumference correlates with risk of Type 2 diabetes in women



Carey VJ, *et al. Am J Epidemiol* 1997; 145: 614–619.

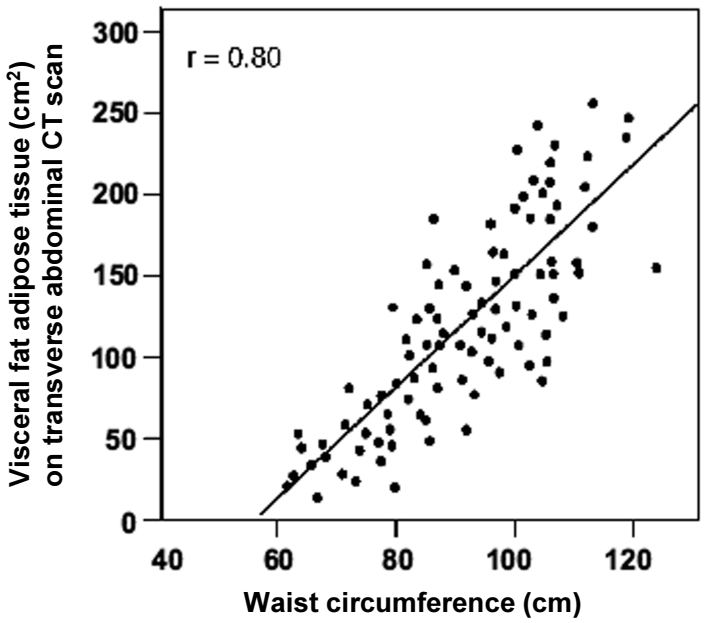
Waist circumference correlates with risk of Type 2 diabetes in men



- Waist circumference was independently associated with increased age-adjusted risk of diabetes, even after adjusting for BMI

Wang Y, *et al. Am J Clin Nutr* 2005; 81: 555–563.

Waist circumference is a good measure of visceral fat accumulation



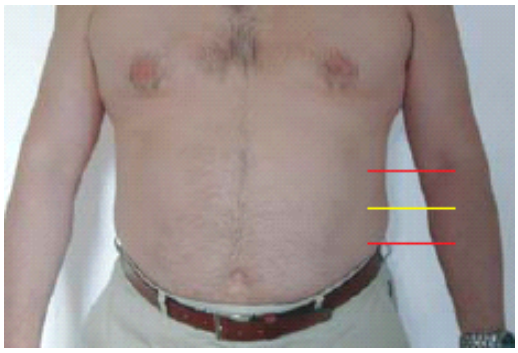
Després JP, *et al. BMJ* 2001; 322: 716–720.

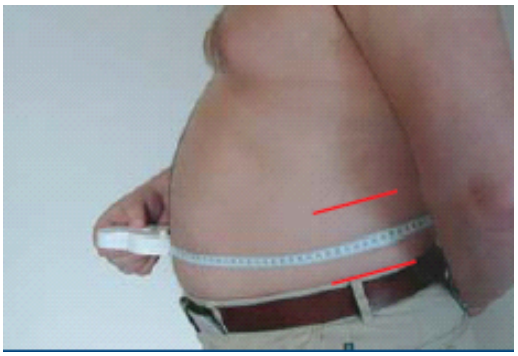
Waist circumference (WC) is a better measure of an individual's risk than BMI

'It is hoped that physicians will be encouraged to treat the cause of the metabolic complications by focusing on WC as another therapeutic target. Waist girth should be considered as a 'vital sign' and recorded in the medical chart of every patient'.

Despres JP, *et al. BMJ* 2001; 322: 716–720.

Standardizing waist circumference measurement





Després JP, Lemieux I, Prud'homme D. BMJ 2001; 322: 716-72

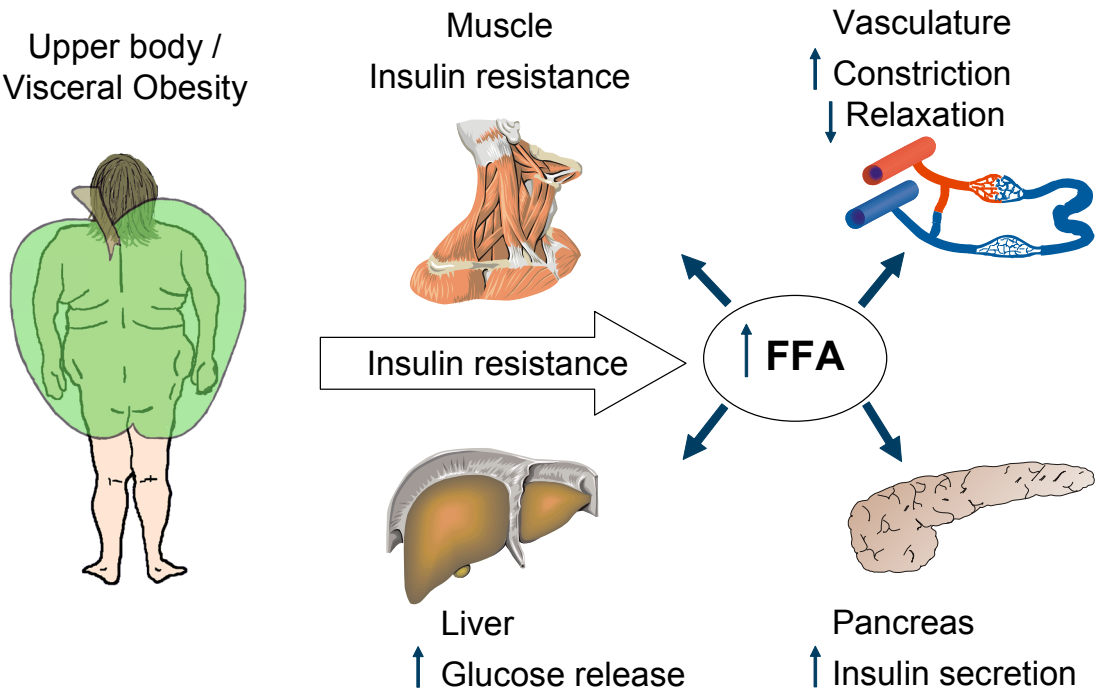
- Place a tape measure around the bare abdomen, just above the hip bone
- Be sure the tape is snug, but does not compress the skin
- The tape should be parallel to the floor, midway between the top of the iliac crest and the lower rib margin on each side
- The patient should relax and exhale while the measurement is made

IDF waist circumference cut-offs recognise ethnic variation

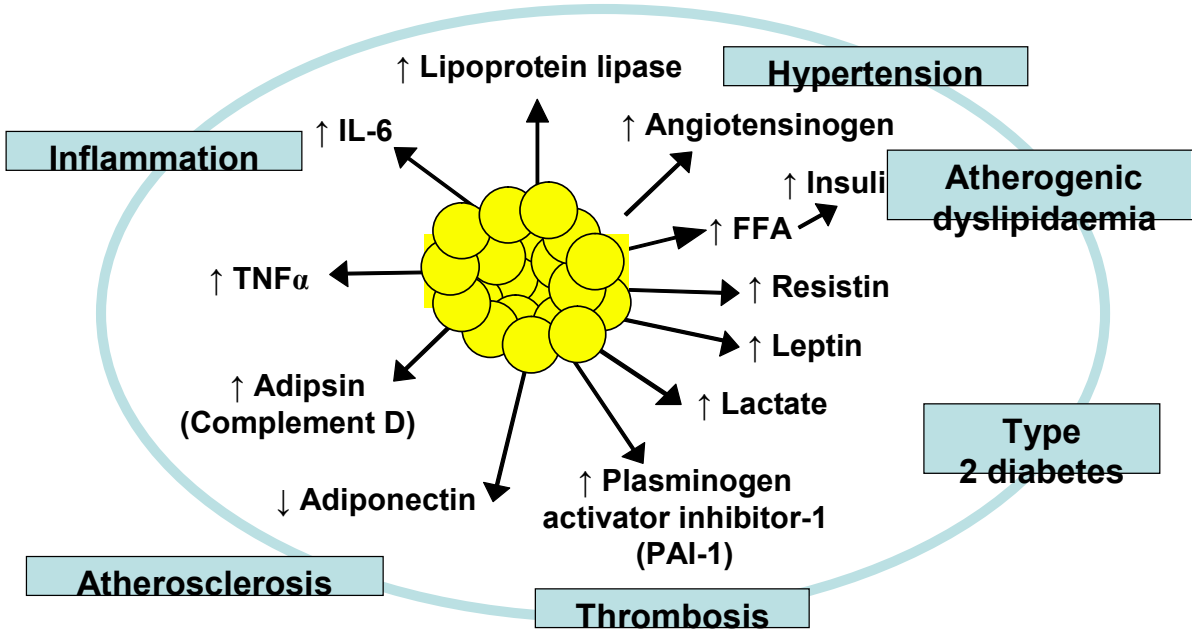
	Men	Women
Europid	≥94 cm (37.0 in)	≥80 cm (31.5 in)
South Asian	≥90 cm (35.4 in)	≥80 cm (31.5 in)
Chinese	≥90 cm (35.4 in)	≥80 cm (31.5 in)
Japanese	≥85 cm (33.5 in)	≥90 cm (35.4 in)

IDF Guidelines, 2004.

FFA and Visceral Obesity



Visceral fat is an active endocrine organ



Lyon CJ, *et al. Endocrinology* 2003; 144: 2195–2200.
Trayhurn P, *et al. Br J Nutr* 2004; 92: 347–355.
Eckel RH, *et al. Lancet* 2005; 365: 1415–1428.

Weight loss and visceral fat reduction

'Aim for 10% weight loss in 3 months to achieve significant health benefits. 5–10% has also been shown to produce measurable health outcomes'
National Obesity Forum Guidelines on Management of Adult Obesity and Overweight in Primary Care – www.nationalobesityforum.org.uk

- A weight loss of ~10% leads to visceral fat reduction of ~30%[1]

1. Després JP, *et al. BMJ* 2001; 322: 716–720.

Summary

- Cardiometabolic risk comprises traditional cardiovascular risk factors and metabolic conditions that increase the risk of cardiovascualr events and the development of type 2 diabetes
- A large number of patients are at elevated cardiometabolic risk
- A number of important cardiometabolic risk factors have been identified, many of which are inter-related
- Waist circumference is a useful surrogate marker for a number of cardiometabolic risk factors
- Visceral fat is a potential therapeutic target to reduce cardiometabolic risk

Summary

- A large number of patients in GP surgeries are at elevated cardiometabolic risk
- Current management focuses on late intervention in high-risk patients
- Current interventions focus on individual risk factors
- Early management focusing on the underlying causes of cardiometabolic risk may help achieve government and GMS targets

Goals for Treatment

- Metabolic health NOT ideal Body Weight
- 5-10% Weight Loss
- Reduce Risk or Delay onset of 43 co-morbidities associated with obesity
- Particularly type II diabetes & CVD
- Improve longevity & Quality of Life

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Paediatric Obesity

Paediatric Obesity

Background

Paediatric obesity has become an epidemic of the current time.[10]
Research suggests as many as 30% of British children are overweight or obese[5] with the levels of obesity in 6 years olds having doubled in the last 10 years and trebled for 15 year olds.[6]
The most likely explanation for this increasing trend is reduced levels of activity alongside an increase in sedentary behaviour and the availability and consumption of more energy dense foods and drinks.
There is evidence that childhood obesity tracks into adulthood, contrary to popular belief among parents that children will grow out of it. [7]

The consequences of obesity in childhood[8] include increased risk of:

- Dyslipidaemia
- Hypertension
- Hyperinsuliniamia and Type 2 Diabetes
- Asthma
- Abnormalities of foot structure
- Sleep apnoea
- Psychological problems including low self esteem, peer problems, depression and target of bullying

Adult management programmes for obesity are not appropriate for children due to issues of growth, development and family dynamics. Children need different approaches at different ages therefore management can be potentially more complex.

Prevention of Obesity

Preventing childhood obesity should be a public health priority. Work would need to be far reaching and supported on a multi-agency level with parents being central partners in change.
It will necessitate dramatic change in policy at both national[10] and local level.
e.g. a ban on advertising to children on TV as raised in the Children's Food Bill.
In Carmarthenshire changes have already been implemented through the Carmarthenshire School's Nutrition Strategy **(www.sirgar.gov.uk).**

Definitions

Obesity in children and young people is defined using the 1990 Reference Data for Childhood Obesity:

Overweight	BMI > 91st centile
Obesity	BMI > 98th centile

The use of adult BMI Charts and definitions are not appropriate in Paediatrics.
Current evidence suggests an Obesity Register could be beneficial, however there is currently no central register of childhood obesity locally.

Resources

There is a lack of good quality evidence supporting effectiveness of interventions for weight management with children and young people on which to base strategies and clinical work. Guidelines are based largely on best practice and best available evidence.

- ***Primary Care Guidelines: An Approach to Weight Management in Children and Adolescents (2-18 years) in Primary Care.***
  Produced by The Royal College of Paediatrics & Child Health, and National Obesity Forum
- ***The Scottish Intercollegiate Guidelines Network (SIGN) Clinical guideline 69: Management of Obesity in Children and Young People.***
  This summarises current best practice.
  Evidence does suggest that 'traditional' clinic appointments with health care professionals (including Dieticians), for obese and overweight children and young people, is ineffective.

Paediatric Dietetics - Referral Criteria

In Carmarthenshire, only **clinically obese** children and young people can be referred to Paediatric Dietetics.

Referral to Paediatric Dietetics can only be made via a Paediatrician who has assessed the following:

- ***Child or Young person meets the 'Definitions of Obesity' i.e. above 98th centile on Paediatric BMI Chart (see appendix)***
- ***The family and child or young person are assessed as ready and willing to undertake change***

The programme used by the Dieticians is based on current best practice.
A six month programme of advice on 'Lifestyle Changes' is offered during 4 appointments.
Failure to attend appointments indicates lack of motivation to change and leads to discharge.
Limitations, including staff time and the limited referral route should be noted.

The results of these interventions are due to be audited by the end of 2005, which may lead to a change in practice.

For children and young people requiring advice, but do not meet the referral criteria, written information on Diet and lifestyle is available (see appendix).

Recommendations for the Future

Family based *Behaviour Modification Programmes* may help children and young people manage their weight[9]. This approach should be integrated into existing interventions to optimise effectiveness.
There is a multi-agency group, ***Carmarthenshire Paediatric Obesity Interest Group,*** established 2005, looking into the future management of obesity in children and young people. A toolkit of current work being undertaken by public and voluntary sector is enclosed (see appendix).
Contact this group via Paediatric Dietetics (see below).

Drug & Surgical Treatment

The use of drugs and surgical intervention is not appropriate for children and young people to resolve/manage obesity at this time[8, 9].

Department of Nutrition & Dietetics – Contact Information

Dietician	**Address/ Tel No**	**E-mail**
Karen Thomas Paediatric Dietician (Team Lead)	Department of Nutrition & Dietetics West Wales General Hospital Carmarthen Tel: 01267 227067	karen.thomas@carmarthen.wales.nhs.co.uk
Sheila Lloyd Paediatric Dietician		sheila.lloyd@carmarthen.wales.nhs.co.uk
Eleri Gibbon Paediatric Dietician		e.gibbon@carmarthen.wales.nhs.co.uk

THE PROMOTION OF HEALTHY LIVING TO SUPPORT THE MANAGEMENT OF OVERWEIGHT AND OBESE CHILDREN, YOUNG PEOPLE AND THEIR FAMILIES

A RESOURCE AND CONTACT LIST OF INITIATIVES IN CARMARTHENSHIRE

Developed By: *CARMARTHENSHIRE PAEDIATRIC OBESITY INTEREST GROUP*

December 2005

INTRODUCTION

Current evidence suggests up to **22% of children and young people in Wales are overweight or obese**. Trends indicate that this figure will continue to increase. **Childhood Obesity is an epidemic with a major impact on health** – increasing the risk of type 2 diabetes, heart disease, joint problems, sleep apnoea and can be detrimental to mental health with increased risk of low self esteem, poor body image and greater likelihood of being a target for bullying. Evidence for the management of obesity is poor and the best strategy has to be avoiding excessive weight gain initially.
There are many initiatives and examples of good practice in the promotion of healthy living to children, young people and their families across Carmarthenshire and these form the basis of this resource list. These can impact on health by encouraging a healthy lifestyle and potentially reducing the risk of overweight and obesity. They will also provide consistently healthy environments at school, at leisure and in social group settings for overweight and obese children and young people.

There is a gap in weight management services for obese children, young people and their families. Evidence suggests traditional weight management clinics and Dietetic referral are not effective and potentially detrimental by increasing the sense of failure. Current focus is on behaviour change and group work and this may prove to be the way forward for obesity management locally.

As a multi-agency group the Carmarthenshire Paediatric Obesity Interest Group can encourage and effect change in the way childhood obesity is managed and our aim is to explore and pursue a more effective weight management strategy. We also need to continue gaining support from all sectors for consistent healthy living messages that may help to reduce the prevalence of overweight and obesity in the future.

USING THE TOOLKIT

The Toolkit is intended to inform and direct professionals working with children, young people and their families, allowing them to suggest and provide contacts for initiatives/ groups/ support networks that promote good health and therefore provide a positive health promoting environment for children and young people with weight problems.
Not all initiatives are available throughout the county or with all groups – use contacts for further detail.

Initiatives with a role in health promotion (potential for prevention of overweight /obesity): HP
Initiatives with a role in the management of overweight and obesity: M

RESOURCE	CONTACT	ACCESS/AIMED AT	HEALTHY LIVING FOCUS Potential impact on health
HEALTH VISITORS Individual Feeding & Weaning Advice	Named Health Visitor via Community Health 01267 227415	All children aged 0-4 years and their family	Good nutrition established at weaning plays a vital role in future health HP/M
• Antenatal groups • Post Natal /Parenting groups • Mother & Baby /Toddler groups	List via Community Health 01267 227415 or named Midwife/ Health Visitor	Self referral or via Health Visitor/ Health Care Professional	Breastfeeding is positively promoted throughout the Trust Feeding advice offered as part of education programmes HP
CARMARTHENSHIRE N.H.S. TRUST BREAST FEEDING POLICY	Named Midwife/Health Visitor	Provides a Trust Wide lead on Breastfeeding initiatives Can provide advice and support contacts for health professionals and breastfeeding mothers	Breastfeeding is the healthiest way to feed babies and plays an important role in promoting future health Breastfed babies are less likely to be overweight/ obese in childhood HP
• SURE START • HOME START	Lesley Hill O1554 744400/744427 Wendy Henderson 01554 744400/744427 Carmarthen 01267 224225 Ammanford 01269 593853	Via Health Visitor & Drop in sessions For Families needing additional support	Promotes good nutrition as part of routine advice and support HP

FAMILY CENTRES throughout the County • TY NI • PARK HALL • LLANYBYDDER • TRIMSARAN • TUMBLE • GARNANT • BETWS • CEFNCAEAU • BIGYN PARK TERRACE • PENCADER	01267222443Carmarthen 01267223020Carmarthen 01570 480500 01554 810532 01269 844562 01269 825941 01269 595378 01554 749396 01554 775338 01559 384490	Any Family living in the area can attend the Family Centre	Family Centres promote healthy living through a variety of initiatives which *may* include: healthy snacking, healthy lunch clubs, healthy cookery schemes, healthy lifestyle programmes Family centres *may* also be the base for a number of groups in the community e.g. Parent and Toddler and Youth groups HP
MUDIAD YSGOLION MEITHRIN (M.Y.M.)	Locality Development Officers 01267 222199 01267 222720	Welsh medium groups Cylch Ti a Fi: Parent – toddler Cylch Meithrin: Pre–school children	Written Healthy Snacking policy – promoting healthy snacking from early years Groups undertake healthy living activities HP
WELSH P.P.A. Wales Pre-school Playgroups Association	Alli Maskell 01554890156 Christine Miller 01554 811038	Pre school and nursery provision	Groups are encouraged to work within food and diet policies which promote healthy nutrition and positive food experiences Promotes healthy snacking and attitude to food from early years HP

CARMARTHENSHIRE NUTRITION STRATEGY FOR SCHOOL MEALS	Elin Cullen Carmarthenshire County Council	Children and young people in school throughout the County	The Strategy was developed by a multi-agency group: Whole school approach to improving the nutrition of school age children in Carmarthenshire Healthy Primary School meals established Secondary School meals – at pilot stage 09/05 HP/M
EDUCATION CURRICULUM OVERVIEW FOR HEALTHY LIVING	Lynn Edwards Healthy Schools Advisor County Council/NPHS 01554 744400	All children in school	Supports whole school approach (above)by incorporating healthy living into the school curriculum at all levels (not yet implemented)
SCHOOL HEALTH NURSES	Named nurse for every School, contact via: Community Health 01267 227415	Health checks at 4 ½ years old (Yr 1) and 11 years old (Yr 7) *and* at other times at the request of parent/school	Via Health checks/ referral School Health Nurses can identify and support children and young people with a weight problem Offer healthy living advice as routine HP/ M
HEALTHY SCHOOLS SCHEME	Lynn Edwards-Healthy Schools Advisor LHB 01554 744400	All children in schools that are part of the scheme	Pivotal role in developing healthy living approach to school life with children/ young people leading the change HP
SCHOOL BREAKFAST CLUBS	Carmarthenshire Council (or Privately run)	Potentially all children attending a school offering Breakfast	A 'Healthy Breakfast' menu is offered in schools on 'Healthy Schools' scheme (voluntary) Welsh Assembly initiative to offer free school breakfasts from January 2006 HP

FRUIT TUCK SHOPS	Lynn Edwards 01554 744400 & individual schools	All children in schools that offer a fruit tuck shop	Encourages increased uptake of fruit Reduces consumption of high fat/sugar snacks in school HP
HEALTHY 'AFTER SCHOOL' CLUBS *CLBYIAU PLANT CYMRU*	Clybiau Plant Cymru 07779 705881 Lynn Edwards 01554 744400	All children that attend 'After School Clubs' on the scheme	Continues the healthy living theme to out of school activities HP
<u>DRAGON SPORTS</u>	Carmarthenshire Co-ordinator: Carl Daniels 01554 747513	Extra curricular activities for children 7 to 11 years, in participating schools Sports development officers train adult volunteers/ parents to lead the activity groups	Promotes increased physical activity HP
'GET COOKING' SCHEMES	Caroline Nichols Local Public Health Team 01554 744400	Facilitates practical cooking sessions for groups e.g. youth groups	Healthy nutrition focus Offers training on basic healthy eating messages HP
CARMARTHENSHIRE YOUTH SERVICE	Health Issues Youth Worker: Lisa Hadley 01994 231866 / 07769883827	Facilitates Healthy Living initiatives for youth groups across voluntary and public sectors	Promotes healthy living, nutrition and activity, to a wide range of Youth Groups HP
<u>DR. MZ'</u> CARMARTHEN YOUTH PROJECT	Gayle Harris Project Co-ordinator 01267 222786	Young people in Carmarthen and the surrounding areas	Developing a project 'Young, Healthy & Positive' which encompasses all aspects of healthy living HP

CARMARTHENSHIRE LEISURE CENTRES	Via County Council at **www.carmarthenshire.gov.uk** OR Carmarthen 01267 230874 Ammanford 01269 594517 Llanelli 01554 774757 Newcastle Emlyn 01239 711025 Llandovery Swimming Pool 01550 721649	All users of the facilities	Promote health through physical activity Removal of unhealthy vending from Leisure centre premises promotes the link with activity and healthy eating HP
FREE SWIMMING FOR CHILDREN	As Above	Available to all children in the County Register at the Leisure Centre/ Pool to book sessions	Promotes physical activity HP/ M
SCHOOL HOLIDAY LEISURE SCHEMES	Co-ordinator David James 01239 711025 Or www.sirgar.gov.uk	Programme of events and activities during the School Holidays based in Leisure centres For children from 8 to 14 years Access via local Leisure Centre	Promotes physical activity HP
EXERCISE ON PRESCRIPTION	Berian Allcock 07776 178441	Currently only available to 16 year olds and over Referral via G.P.	M
PAEDIATRIC DIETETICS	Nutrition & Dietetics West Wales General Hospital 01267 227067	Via Consultant referral only	Offer an obesity management programme for children & families meeting referral criteria M

PAEDIATRIC PHYSIOTHERAPY	Physiotherapy West Wales General Hospital 01267 227470	<u>Via Consultant referral only</u>	M
COMMUNITY <u>DENTAL SERVICE</u> ORAL HEALTH PROMOTION	Mairwen Smith Pond St Clinic 01267 242957	Access for all children up to the age of 17 Aimed at: children, young people, parents, carers, pre-school organisations, health visitors, midwives and school nurses	Offers educational and promotional advice on oral health through healthy eating Encourages and supports good eating and drinking habits, particularly in relation to snacking HP
Contact: Nutrition and Dietetics on 01267 227067			

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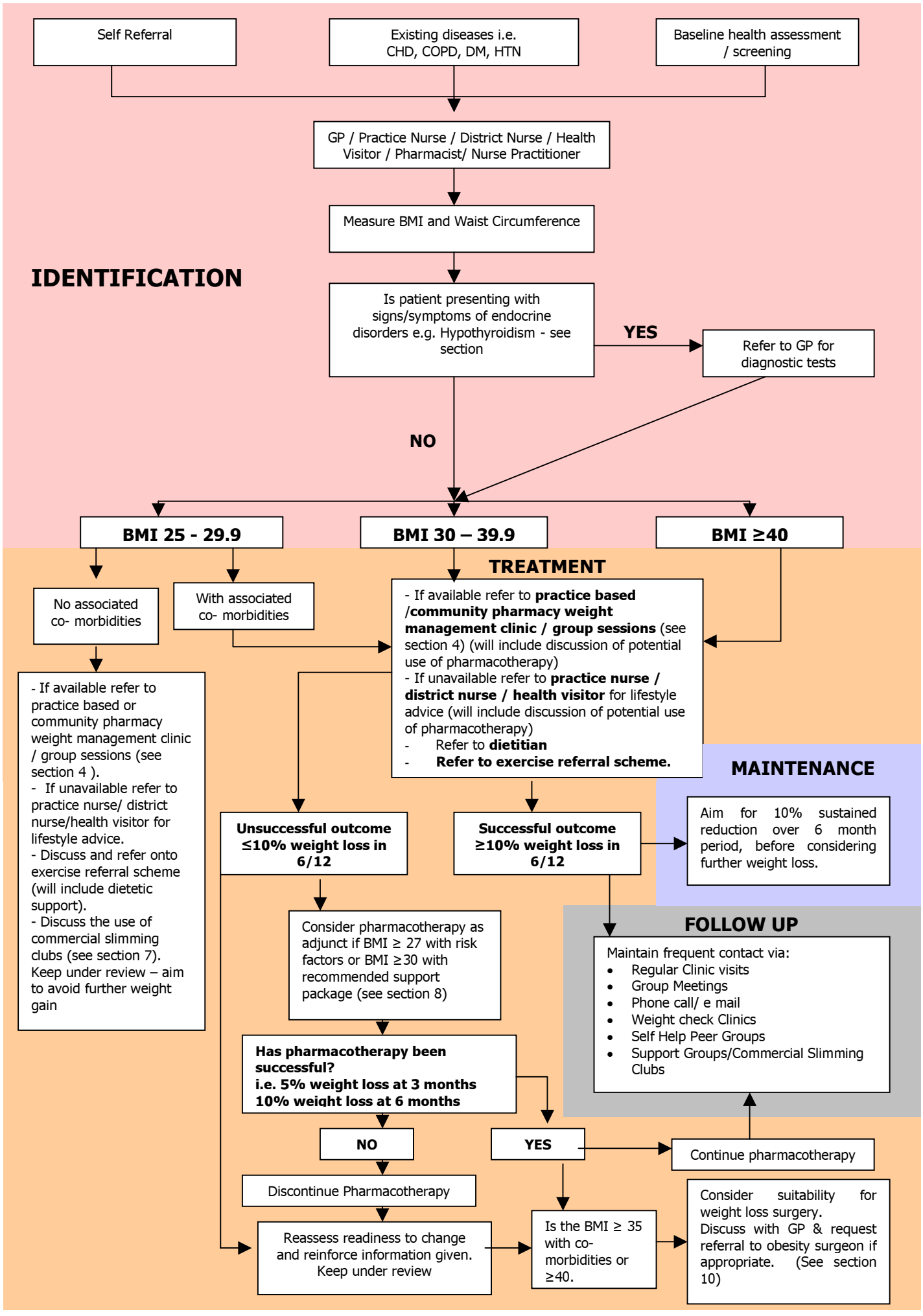
Clinic Information

CARE PATHWAY FOR OVERWEIGHT AND OBESE ADULTS IN CARMARTHENSHIRE



SETTING UP AND RUNNING A WEIGHT MANAGEMENT CLINIC

A robust, weight management service should:

- Be based on best evidence, where ever possible
- Deliver a desired outcome for the user that will improve health
- Be cost effective to the PCT or user
- Be supported by primary care staff, particularly GP's.

The service should offer options that meet the majority of people's needs and one that they feel is appropriate, accessible and relevant to them. However, there will be specific target groups, such as learning or physical disabilities, black and ethnic minorities, low socio-economic groups, that will need additional services/planning.

It is essential that services be developed in consultation with the users and people who will be delivering them, working together as a multi-disciplinary group.

Training on weight management control, healthy eating and increasing physical activity to health professionals is necessary to ensure consistent, accurate and up to date messages are given to patients at all times.

(National Obesity Forum, 2005)

Resources needed to run a Weight Management Clinic

1 Staff

- Professional qualifications
- Recommend additional skills-Motivational Interviewing/Behavioural Change Training.
- Administrative support - Arrange appointments, collect patient notes, ordering of supplies/leaflets, maintenance of equipment
- Update refresher study days.

2 Established Overweight and Obesity Register

- Please refer to new GMS guidelines.

3 Recall system

- The Overweight/Obesity register should be used to recall patients at specific intervals and for annual review.

4 Facilities & Equipment

- Area/ room to hold your clinic
- Computer / record cards
- Facilities for recall of patients
- Height measure
- Weighing scales (scales which weigh up to 200kg)
- Tape measure for waist measurement
- BMI calculation chart
- Blood pressure monitoring equipment (including obese blood pressure cuff)
- Blood sugar monitoring equipment
- Referral forms/flyer advertising clinic
- Patient information leaflets/ booklets
- Information and contact addresses
- Appointments cards
- Blood test request forms
- Assessment Sheet (for non computerised practices, this sheet can be incorporated into the patients notes, see "Weight Management Form" section)

Remember to maintain supplies of everything needed. You may find it useful for one person to have responsibility for this. Refer to the "Useful Contacts" and "Resources" sections in the appendix for addresses and contacts from whom to order supplies of leaflets etc.

Maintenance of equipment

- (All equipment should be regularly maintained and calibrated in accordance with the manufacturer's instructions)

Running the Clinic – Checklist for setting up a weight management service in primary care

1. Identify patients who should be seen in clinic (National Obesity Forum, 2004):

- Patients with BMI ≥30 kg/m²

- Patients with BMI ≥ 28kg/m² with co-morbidities e.g. COAD, CHD, Diabetes
- Patients with any degree of overweight coinciding with diabetes, other risk factors or serious disease
- Patients who self refer i.e.: BMI≥ 25
- Patients of families with more than one obese or overweight member
- High risk individuals e.g. those with family history of obesity, smokers, people with learning difficulties, low income groups
- Referral by other health care professional
- Annual review

2. Set day and time of clinic

- Agree type of service desired e.g. 1 to 1 clinics, groups, opportunistic patients or during existing clinics e.g. CHD/Diabetes
- Decide on length of appointments, e.g. 30-45 minutes for first assessment/annual review appointment, 30 minutes for follow up appointments
- GP support for the clinic
- Agree structured plan for patient follow up and monitoring (see protocol)

3. Baseline Tests required (See below for more detail)

- Height
- Weight
- BMI
- Waist circumference
- Blood pressure
- Urinalysis
- Full blood count
- Thyroid function
- Liver function
- Lipid profile
- Fasting blood sugar

4. Patient access to clinic

- Develop referral form/flyer for use by GP's/other health professionals to refer to the clinic (see appendix). The patient can then be contacted by letter or phone to arrange an appointment.

5. Record keeping

- Agree where progress is documented so the healthcare team is aware of monitoring and outcome

6. Develop treatment guidelines

- Non pharmacological & Pharmacological (see treatment algorithm)
- Agree as a practice if patients with specific risk factors are to be prioritised for pharmacotherapy

7. Patient Education

- Introduce an educational programme to facilitate the development of patients' knowledge, empowering the patient, enabling them to make informed choices about their health (see protocol)
- Agree on a range of literature to be used for weight management in the practice (see Resources section)

8. Treatment Plan

- Negotiate an individual treatment plan with the patient
- First line treatment should focus on
    - Diet
    - Physical Activity
    - Behaviour modification

9. Referral to other services

- Refer the patient as required to the appropriate services (see individual sections, or "Appendices" for contact details):
    - Dietitian
    - Exercise referral scheme (where available)
    - Smoking cessation (where available)
    - PRISM/ Alcohol support services
    - Local weight management/slimming groups (see 'Diet and Nutrition Section' for list of approved groups)
    - Psychologist/Counselling (see Psychological section)

- GP e.g. if there are:
  - Abnormal test results indicating Cushings etc
  - Symptoms suggestive of obesity related complications (see complications section)
  - Poor control of glucose, BP or lipids. See CHD and Diabetes Toolkits.
  - Any side effects from medication and/or difficulty in adhering to medication.
- Weight Loss Surgery (via the GP) if patient has been managed according to treatment algorithm and is suitable for referral (see 'Surgery Section')

10. Patient Hand Held Record

- Utilise a patient hand held record to relay information and maintain communication links between Primary, Secondary and Tertiary Care.
- All professionals caring for the patient should keep the record up to date, encouraging the patient also to enter relevant information.

11. Non–Attendees (DNA)

- A decision should be made within the practice team to agree the process for follow-up, e.g. send total of 3 appointment dates, and if still no attendance, document and flag up on repeat prescription

12. Suggested Audit

- As well as having to complete the new GMS audits, you may find it useful to audit how well your clinic is doing, e.g. clinic attendance, weight loss etc

Baseline Data

Critical essential measurements and investigations needed to assess a patients risk

- BMI (weight & height)
- Waist circumference
- Blood pressure
- Fasting blood glucose
- Fasting lipid profile
- Thyroid function

Useful baseline information

History

- Medical history including all other co-morbidities
- Ethnicity
- Family history of diabetes, CHD, stroke, endocrine disorder
- History of gestational diabetes
- History of infertility, Polycystic ovaries, hirsutism, dysfunctional uterine bleeding
- Contraceptive history
- Dietary history

Direct Questioning for symptoms of co-morbidities

- Polyuria, Polydipsia
- Breathlessness on exertion
- Chest pain, palpitations
- Abnormal fatigue or daytime somnolence: snoring
- Intermittent claudication, peripheral vascular disease or symptoms of other circulatory disorders
- Menstrual disorders
- Erectile dysfunction
- Depression
- Hip & knee joint problems

Assess Readiness to Change, consider:

- Motivation to change behaviour
- Confidence to make the changes
- Barriers to change

Social History

- Fitness rating
- Alcoholism/smoking status
- Mental history-depression, low self esteem, psychosis, suicide ideation, anorexia, bulimia
- Drug use, especially 'slimming drugs/amphetamines, metformin, anti-inflammatory medication, diuretics (See section 2 for full list of drugs that can cause weight gain)

Blood / urine tests

- FBC
- LFT for NASH
- HbA1c/glucose tolerance test if appropriate

- Microalbuminuria if indicated
- Hormone profile if indicated
- Sleep studies, CXR, ecg or other tests as indicated.

(National Obesity Forum, 2005)

Aims for patients in the Weight Management Clinic

- Dietary advice
- Physical activity advice
- Behaviour modification
- Risk factor management
- Modification of lifestyle factors
- Detection and control of complications
- Appropriate drug therapy
- Referral to other services, e.g., exercise on referral, dietitian, psychologist, counsellor, support groups and commercial slimming groups.

Weight Management Consultation (see protocol)

Assessment

A careful and detailed assessment forms the basis of a good weight management programme

Listening

- Listen to the patient's experience of being overweight, and how important losing weight is to them at this point in time
- Acknowledge any previous attempts to lose weight
- Patents need to feel supported and understood

Establish Understanding

- Encourage patients to talk about their weight, to express their views and feelings -will aid the health professional's understanding of the patients experience
- Encourage patient to discuss what they feel has led to their weight increase
- Discuss with patient any previous weight loss attempts (success/failure)

Identify potential barriers to change

- Ensure patient has considered the implications of change
- Identify what potential difficulties may be
- Discuss any issues or concerns and how to overcome any difficulties or barriers

Weight management programme

- The aim of treatment is to achieve and maintain weight loss by promoting sustainable changes in lifestyle
- The first step in weight management is to ensure patients do not put on any more weight
- The next step is to help them lose weight
- The next step is to then help them maintain their weight
- Long term changes in food choice, eating behaviour, physical activity and lifestyle are required
- Lifestyle changes can be difficult to achieve - patients will need ongoing support in their efforts to manage their weight

Setting realistic weight loss targets

- Patients may have unrealistic expectations about what weight loss they can achieve
- Many people fail in trying to lose weight because they set unrealistic targets, wanting to lose too much too quickly
- Weight loss of 10% is associated with significant health benefits and reduced morbidity and mortality
- For some patients who have gained a lot of weight, just keeping their weight steady and preventing further increase in weight should be seen as success
- Try not to place unrealistic demands on patients
- Realistic goals will aid achievement in weight loss and enhance a patients motivation to continue
- Encourage patients to set SMART goals, as these have been shown to increase the ability to make long term changes to eating and activity habits e.g. weight loss goal- aim for 3kg (6.6lbs) weight loss in 2 months; to achieve this the lifestyle goal may be to cut down on eating a chocolate bar daily to having 2-3 snack size bars per week, and increasing walking by five minutes each day
- For realistic weight loss goals help patients to aim for weight loss of 5-10% of their initial weight over six months at a rate of 1-2 pounds in weight loss per week
- Mutually agree realistic goals and weight loss targets
- Weight loss strategies should be a combination of healthier eating, increased physical activity and behaviour therapy

Follow up

- When patients achieve a 5-10% weight loss, remind them they have been successful from a medical point of view in reducing their health risks
- Discuss longer term weight maintenance with them

- If patients want to continue losing weight, discuss short term goals, rather than Ideal Body Weight.
- Ongoing monitoring is key for weight maintenance success, offer follow up appointments e.g. every 3 months to review progress and help keep patient focused
- Positive reinforcement of their weight loss will help them to view their efforts as successful, and maintain their ongoing commitment and motivation to further lose/maintain weight

Running a successful weight management clinic

A Few key tips on what differentiates a successful weight management clinic:

- Protected time for all involved to run the clinic.
- GP and HCP understanding of and commitment to the care pathway, how pharmacotherapy is to be used.
- Agreed strategy for who intervenes with the patient and how support is maintained.
- Screening and patient selection.
- GP's pivotal role in motivating and influencing patients.
- Goals set for patient recruitment, with targets to reach.
- Specific criteria set for how recruitment will occur.
- Do not limit service only to those with long term, malignant obesity, recruit mixture of patients – the success of the clinic is significantly increased with progressive patient weight loss.
- Weight management seen as a priority to the whole practice.
- Regular review of the progress, check if targets are being met.
- Audit cycle – what could be improved or built upon? What could be done differently?
- Sharing best practice with other health care professionals.
- Engaging the PCT and patient focus groups.

(National Obesity Forum 2005)

Protocol for Weight Management Clinics

Session	Measurements	Intervention	Recommended Take Home Leaflets
Screening &assessment of suitability to attend the weight management clinic **(Prior to first appointment)** **(20-30 mins)**	• TFT, LFT, U&E, FBC, fasting glucose, lipids. • Weight • Height • BMI • Waist circumference • BP • Readiness to change/motivational questionnaire	• Discuss motivation to lose weight, i.e., try to establish whether or not the patient is ready to make lifestyle changes and embark on a weight loss programme. **(Motivational questionnaire)** • Offer the opportunity to attend the weight management clinic, if appropriate, and explain the procedure involved, i.e., number of sessions/time of sessions/clinical measures/follow-up arrangements etc. • Ask patient to complete contract to agree to commitment to the clinic. **(Patient contract)**	• *DOM-UK Resource A: (A time to lose weight) • Flyer advertising weight management clinic
Session 1 (30-45 mins)	• Weight • BMI • Waist circumference • BP • Assessment of current scenario. • Dietary intake & physical activity levels.	**<u>EXPLORE:</u>** • Expectations of visit. • Weight history & weight loss history (including dieting history, physical activity history, any previous use of weight loss medication, any other interventions, i.e., slimming clubs/alternative therapies). • Reasons for wanting to lose weight/importance of losing weight. • Weight loss expectations. • Potential barriers/difficulties **<u>ASSESS:</u>** • Current eating patterns and physical activity levels. • Set SMART goals, (i.e., Specific, Measurable, Achievable, Relevant, Time-specific) **<u>DISCUSS:</u>** • Benefits of 10% weight loss and set realistic weight loss goals. • Discuss benefits of self monitoring and provide food & activity diary. • **<u>Discuss and refer onto exercise referral scheme.</u>** • ***Check understanding, clarify what happens next & convey optimism!***	*DOM-UK:- • Resource C: (Thinking about losing weight) • Resource E: (A personal plan for change) • Resource F: (My action plan) LUTU:- • Making lifestyle changes • Why do I want to lose weight • Food and activity diary • Learning from your food diary • Lose weight with healthy eating Benefits of 10% weight loss leaflet (NOF 2004) (see resources section)

Session 2 (30 mins) 4 weeks	• Weight • BMI • Waist circumference • BP.	• Discuss progress made and review previous goals set. • Discuss any problems encountered and probable solutions. **TOPIC 1** • Discuss the balance of good health-principles of healthy eating and portion control • Encourage healthy choices. • ***Check understanding, clarify what happens next & convey optimism!***	*DOM-UK:- • Resource I: (Eating healthy & being more active) LUTU:- • Food portion guide • Top tips for making the most of
Session 3 (30 mins) 4 weeks	• Weight • BMI • Waist circumference • Percentage weight loss • BP.	• Discuss progress made and review previous goals set. • Discuss any problems encountered and probable solutions **REVIEW:** • Percentage weight loss achieved (Ideally aiming for minimum of 5% weight loss at this stage) • Reiterate associated health benefits. • Set new weight loss goal, i.e. 10% at 6 months. **TOPIC 2** • Discuss food labelling and nutritional claims • ***Check understanding, clarify what happens next & convey optimism!***	LUTU:- • Looking at food labels • Food labels: what do they really tell us.
Session 4 (30 mins) 4 weeks	• Weight • BMI • Waist circumference BP.	• Discuss progress made and review previous goals set • Discuss any problems encountered and probable solutions **TOPIC 3** • Discuss benefits of physical activity & how it contributes to weight loss • Discuss physical activity checklist • ***Check understanding, clarify what happens next & convey optimism!***	LUTU:- • The importance of physical activity • Physical activity checklist Health Challenge Wales Action Pack. (see also Physical Activity Resources in Appendix)
Session 5 (30 mins) 4 weeks	• Weight • BMI • Waist circumference BP.	• Discuss progress made and review previous goals set • Discuss any problems encountered and probable solutions **TOPIC 4** • Discuss healthy meal & snack ideas • Discuss healthy choices when eating out & how to modify recipes • ***Check understanding, clarify what happens next & convey optimism!***	*DOM-UK:- • Resource L: (Takeaways & eating out) LUTU:- • Healthy meal ideas • Alcohol • Snappy snacks • Eating out • Making changes to recipes

Session 6 (30 mins) 4 weeks	• Weight • BMI • Waist circumference • Percentage weight loss • BP.	• Discuss progress made and review previous goals set • Discuss any problems encountered and probable solutions **<u>REVIEW:-</u>** • Percentage weight loss achieved. (Ideally aiming for 10% weight loss at this stage) • If 10% weight loss achieved, reiterate associated health benefits and congratulate on success. • Discuss & encourage a period of weight maintenance prior to further weight loss attempts (ideally for 6 months). ***Remember, the longer the weight maintenance phase can be sustained, the better the prospects for long term success in weight loss!*** • If 5-10% weight loss has not been achieved at this stage, encourage & re-assess motivation/readiness to change. • Reinforce information given and keep under review. **Reiterate the benefits of self monitoring and encourage to continue with new behaviours indefinitely to sustain weight loss long term.** **<u>FOLLOW-UP ARRANGEMENTS:</u>** ***Long term follow-up has been shown to improve the chances of maintaining weight loss!*** Discuss and agree the most appropriate form of follow-up. **Examples of ways to maintain frequent contact include:-** • Regular clinic visits (possibly 3 monthly) • Phone call/E-mail • Weight check clinics/drop-in sessions (possibly monthly) • Self help peer groups/buddy system (with or without input from health professional) • Group meetings • Support groups, e.g., TOAST • Commercial slimming clubs	LUTU:- • Coping with eating emotions & feelings • Weight maintenance • 9 steps to successful weight control.

*DOM-UK (Dietitians Working in Obesity Management)**

These resources have to be purchased and are recommended for use only by professionals who have received training in behavioural change.
They follow an evidence-based approach to lifestyle change for weight management. They are intended to be used in a flexible way in response to the individual needs of each patient and they assume the use of a behavioural approach.
Orders can be placed by e mail fax or phone or post. To place your order contact **dietitians@cambertown.com** Tel: 01709 889900 Fax: 01709 881673

LUTU (Lighten Up and Tighten UP) Training Resource

The take home leaflets listed above are all available to download from the resource section of the toolkit.
This is a lifestyle change training resource that was developed by a Dietitian. It is available on CD-ROM to purchase from the Department of Nutrition & Dietetics, North East Wales NHS Trust, Wrexham.

Action Pack available to order or download from **http://www.healthchallenge.wales.gov.uk .**

Other leaflets listed in the protocol are available from the resource section.

THE MOST APPROPRIATE SELECTION OF TAKE HOME LEAFLETS WILL DEPEND ON EACH INDIVIDUAL CONSULTATION.
IT IS INTENDED THAT YOU CHOOSE WHICH ONES WOULD BE MOST APPROPRIATE FOR EACH INDIVIDUAL CONSULTATION.

Patient Motivational Questionnaire- Are they ready?

It is preferable to use a qualitative tool to assess if the patient is ready to lose weight. The following tool is based on the work of Prochaska and Diclemente and has been used by the CounterWeight Programme.

Questions to ask the patient (can be given in the form of a questionnaire before calling patients into the clinics)

1. In the past month, have you been actively trying to lose weight?
Y/N

2. In the past month, have you been actively trying to keep from gaining weight?
Y/N

3. Are you seriously considering trying to lose weight to reach your goal in the next 6 months?
Y/N

4. Have you maintained your desired weight for more than 6 months?
Y/N

Stage	Q1	Q2	Q3	Q4	
Pre-contemplation	N	N	N		These patients are not considering losing weight in the next 6 months. Discuss benefits of weight loss & risks of not changing. Reassess readiness to change at future appointments.
Contemplation	N	N	Y		This group includes those patients who are seriously considering losing weight. Refer to treatment algorithm.
Action	Y on Q1 or Q2			N	Patients who are actively trying to lose weight or who have been successful but for less than 6 months. Reinforce all changes & encourage. Give additional support as required.
Maintenance	Y on Q1 or Q2			Y	Patients who have successfully maintained their weight loss for at least 6 months. Reinforce all changes & encourage.

If the patient is at contemplation, action or maintenance position on the cycle of change he or she is appropriate for a weight management intervention.

Example of Patient Contract/Agreement to Attendance at Practice Weight Management Clinic

Prior to entering a weight loss programme, it is essential that you are ready to make the necessary lifestyle changes to achieve and sustain weight loss.
This takes determination and commitment.

Just think for a minute and answer the questions below (Weight Loss Questionnaire) to assess how ready you are for that change.

The surgery is offering a weight loss programme. In this programme you will be seen on a monthly basis for six months in the surgery. In these sessions you will be monitored and given advice on how to achieve weight loss. Following completion of the programme, long-term follow-up arrangements will be discussed and agreed.

Weight loss targets of 5-10% will be required at 3 and 6 months to remain on the programme. This amount of weight loss is associated with a number of health improvements and is recommended as a realistic initial goal.

If you wish to monitor your weight more regularly the pharmacy has scales where you can do this.

As places on the programme are limited, we need to know you are ready and willing to attend the clinic monthly.

As a sign of your determination and commitment, please sign below.

I wish to enter the weight management clinic at the surgery. I am determined to show commitment and be monitored monthly for six months (except in circumstances beyond my control). I have completed the Weight Loss Questionnaire below.

Signature.....
Date.....

Weight Loss Questionnaire (To be completed by patient as part of above contract)

1. How do you feel about being overweight?

2. How does being overweight affect your life?

3. Do you know the health risks of being overweight?

4. What is your main reason for wanting to lose weight?

5. What has been the main thing stopping you from losing weight?

6. Have you tried losing weight in the past? If so, what method have you used?

7. How important is losing weight to you?

8. Do you feel confident that you will succeed?

Example of Flyer for Practice Weight Management Clinic

You have been given the opportunity to attend the Practice Weight Management Clinic. The aims of the clinic are to:

- Provide dietary advice
- Provide physical activity advice
- Assist in behaviour modification
- Help in the management of risk factors, e.g., diabetes, high blood pressure/Detect and control complications
- Help modify lifestyle factors
- Ensure appropriate use of weight loss medication
- Refer to other services where appropriate, e.g., exercise on referral, dietitian, counsellor, support groups and commercial slimming groups.

Weight Management Programme

- The aim of treatment is to achieve and maintain weight loss by promoting sustainable changes in lifestyle
- A modest amount of weight loss, e.g., 5-10% can bring about significant improvements to your health and well being
- Once this level of weight loss has been achieved, a period of weight maintenance should then follow, prior to initiating further weight loss
- Long term changes in food choice, eating behaviour, physical activity and lifestyle are required
- Lifestyle changes can be difficult to achieve and maintain, thus you will be provided with ongoing support following completion of the programme to support your progress.

It is recommended that you read and sign the clinic agreement/contract prior to attending the clinic, to ensure that you are aware of what is expected from you and that you are fully prepared to undergo a weight loss programme.

COMMUNITY PHARMACIES

Community Pharmacy Obesity Management Clinics

Obesity is set to become one of the major health challenges to be addressed by health professionals over the next decade. The link between obesity and the development of coronary heart disease, Type II diabetes and other chronic conditions is now firmly established.

The ***Health Status Wales Report (2003-4)*** identified that:

- 54% of adults were classified as overweight, including 18% classified obese.
- 29% of adults met the guidelines for physical activity in the last week.

The survey indicated that Carmarthenshire is in line with the national average and that 54%% of the population of Carmarthenshire can be considered to be overweight or obese. This represents a significant challenge for Primary Care services in the area and a huge pent-up demand for the treatment of the secondary symptoms of obesity. It is estimated that incidents of obesity related type II diabetes will increase by 54% by the year 2023.

It is evident from the scale of the problem that we need a co-ordinated response to obesity with the full engagement of all healthcare providers.

Supporting patients to lose weight is only part of the battle; the objective is to ensure that patients commit to a permanent change of lifestyle that improves their overall health and well-being.

The new community pharmacy contract provides a vehicle for community pharmacy to undertake opportunistic lifestyle interventions, to counsel patients on the potential problems associated with being overweight and to signpost patients to more formal support services.

In addition to health promotion interventions what are clearly needed are easily accessible support services for those in need of weight reduction and lifestyle change. This toolkit recognises the need for obesity management support that is easily accessed by patients in Carmarthenshire. The community pharmacy network in Carmarthenshire provides convenient access to a health professional and is well placed to contribute to the management of obesity in the community.

In response to this need a Community Pharmacy Obesity Management Service has been designed to provide an integrated response to the management of obesity in the community and to compliment existing services being provided through primary care practices.

The aims of weight management clinics in general have been covered in the previous section, together with details of measurements, messages and interventions.

The Community Pharmacy Obesity Clinic service is a screening, support and information service that works alongside existing medical services and more traditional obesity management clinics. It focuses on patients in danger of developing secondary symptoms of obesity and struggling to make lifestyle changes without support. Successful weight reduction and lifestyle change in this group of patients will greatly improve their physical and emotional well-being and will result in significant future cost savings in both primary and secondary care.

The structure of the clinic is such that there is a high degree of patient education and support. It is through a combination of regular support, monitoring and education that patients will be empowered to make life-style changes that will reap benefits far beyond the life of the clinic.

In line with the principles of the Carmarthenshire Obesity Toolkit the information provided and the processes adopted in the community pharmacy clinics mirror the provision from other primary care settings. Community pharmacy weight management clinics form part of the obesity pathway and provide alternative outlets for obesity support.

Patients registering for the clinic will receive six one-to-one structured sessions with a trained member of the pharmacy team over a six-month period. The pharmacist is available for support and intervention as appropriate.

The service is accessed through GP referral and will provide support for patients with a BMI in excess of 30 (28 with co-morbidities). All patients have their BMI calculated; their cholesterol measured and blood glucose levels checked at the beginning and at the end of the clinic as part of the screening and audit service

Details of community pharmacy obesity management support services can be obtained from Kath Haines Head of Pharmacy and Medicines Management at the LHB or from Community Pharmacy Wales (029 2044 2076).

NHS Wales: Community Pharmacy Local Enhanced Service Framework – Obesity Management Support Service

Service Description

- The Obesity Management Support Service is one in which pharmacies will provide one to one support and advice to people who want to reduce their weight and commit to a more healthy lifestyle.
- The service is designed to compliment existing obesity support services and to be commissioned as part of an integrated approach to obesity management in the locality.
- When commissioned, the service will help to increase choice and improve access to obesity support services in a non threatening environment where patients will be receptive to healthy lifestyle messages and will find convenient to access.
- Community Pharmacy Obesity Management Support Services can be accessed through direct referral from GPs and other health professionals, through self referral or a combination of the above
- Self referral services offer the advantage that the pharmacy's location in the heart of the community can result in the recruitment of obese persons who may not otherwise be accessing traditional primary care services.
- This Enhanced service is to be provided in addition to the Essential service 'Promotion of healthy lifestyles (Public Health).

Aims and intended service outcomes

- To improve access to and choice of obesity management services.
- To assist in the delivery of the NHS strategy 'Designed for Life' and to meet the requirements of the Diabetes and Coronary Heart Disease NSFs.
- To reduce obesity related illnesses and deaths by helping people to manage their weight and to make appropriate lifestyle changes.
- To help service users access additional treatment by offering referral to specialist services where appropriate.

Service outline

- The part of the pharmacy used for provision of the service should provide a sufficient level of privacy and safety.
- The pharmacy contractor has a duty to ensure that pharmacists and staff involved in the provision of the service are appropriately trained in the principles of weight management and lifestyle intervention and are aware and act in accordance with local protocols and guidance.
- Access routes to this service will be determined locally, however they could include:
    - pharmacy referral as a result of the 'Promotion of healthy lifestyles (Public Health)' or 'Signposting' Essential services.
    - direct referral by the individual
    - referral by another health or social care worker
    - or, a combination of the above

The pharmacy would have to confirm the eligibility of the person to access the service, based on local guidelines.

The ***assessment*** should include

- an assessment of the person's readiness to lose weight and to make lifestyle changes; and
- a measurement of BMI, blood glucose, blood pressure and HDL/LDL cholesterol or other starting parameters as deemed appropriate.

The ***consultations*** should:

- Assess the motivation of the patient to use the support service.
- Include an assessment of the patient's starting BMI and other agreed parameters.
- Include a description of the effects of obesity on adults.
- Include an explanation of the benefits of losing weight and pursuing a healthier lifestyle.
- Include a description of the main features of the service and the common barriers to losing weight.
- Outline the treatment programme, its aims, length, how it works and its benefits.
- Maximise commitment to the weight loss targets
- Apply appropriate behavioural support strategies to help the person lose weight and make lifestyle changes.
- Provide information on healthy eating in a structured and appropriate manner supported by patient information leaflets and handouts.

- Provide advice on appropriate exercise and promote an increase in exercise levels.
- Ensure the person understands the ongoing support and monitoring arrangements.

- If considered appropriate, the pharmacist may supply treatment from a locally agreed formulary under a Patient Group Direction and provide advice on its use.
- People not qualifying for support under the service protocols will be offered appropriate health literature or referral to an alternative obesity management service.
- A completed record of measurements and patient weight loss data will be retained at the pharmacy for audit and monitoring purposes.
- The materials and equipment required, including cholesterol/blood glucose monitors, lancet devices and weighing scales are supplied to the pharmacy by the LHB.
- The LHB reimburses the pharmacy for the cost of diagnostic testing performed as part of the service.
- The LHB pays the pharmacy a professional fee for the delivery of the service.
- The LHB will need to provide a framework for the recording of relevant service information for the purposes of audit and the claiming of payment.
- The LHB should provide health promotion material relevant to the service users.
- The LHB should arrange at least one contractor meeting per year to promote service development and update the knowledge of pharmacy staff

.Quality Indicators

- The pharmacy has appropriate health promotion material available for the user group and promotes its uptake.
- The pharmacy reviews its standard operating procedures and the referral pathways for the service on an annual basis.
- The pharmacy can demonstrate that pharmacists and staff involved in the provision of the service have undertaken CPD relevant to this service.
- Clinic outputs in terms of weight loss and changes in health parameters.
- Patient feedback as part of the service audit process.

Background information *– not part of the service specification*

Enhanced service 10 – Patient Group Directions may be used in association with this service, for example for the supply of orlistat or sibutramine. A Practical Guide and Framework of Competencies for all Professionals using Patient Group Directions (March 2004) is available on the National Prescribing Centre Website.

http://www.npc.co.uk/publications/pgd/pgd.pdf

Guidance on specific Product PGDs will be available from the relevant drug company.

RPSGB Practice Guidance on Obesity is available at:

http://www.rpsgb.org/pdfs/obesityguid.pdf

The first authoritative estimates of the costs and consequences of obesity in England, reports that obesity accounted for 18 million days of sickness absence and 30,000 premature deaths in 1998. Treating obesity costs the NHS at least £½ billion a year. The wider costs to the economy in lower productivity and lost output could be a further £2 billion each year.

The *'Health Status Wales Report (2003-4)'* identified that:

- 54% of adults were classified as overweight, including 18% classified obese.
- 29% of adults met the guidelines for physical activity in the last week.

WCPPE training which may support this service:

WCPPE regularly provide training evenings on the pharmacist's role in the management of obesity. Contact WCPPE for further details.

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Psychological

Psychological Factors Underlying Obesity

It is a common assumption that obesity is associated with psychological and emotional complications. Despite this widely held belief, research has shown that obesity, by itself, does not appear to be systematically associated with psychopathological outcomes. However, certain obese individuals are at greater risk of psychiatric disorder, especially depression.

Studies of the psychosocial status of obese individuals in the general population have yielded inconsistent results, [13] whereas some studies have found obesity to be related to greater emotional distress, others have reported obese individuals as displaying less psychological disturbance. These studies have consistently failed to find clinically significant results.

The relationship between obesity and depression varied by sex, where men with a BMI of more than 30 were significantly less likely to report a history of major depression, suicidal ideation and suicidal attempts in the past year than average weight men. In contrast, underweight men experienced a 25% increased risk for depression, 81% increased risk for suicidal ideation and 77% increased risk for suicide attempts compared with average weight men. For women, the 1-year prevalence of major depression was 37% higher among obese individuals than in their average weight peers. Women with a BMI over 30 were 20% more likely to report suicidal ideation and 23% more likely to have made a suicide attempt in the past year. There was no association with depression or suicide for underweight women.[11]

If the prevalence of depression among women in the general population is approximately 10%, then the studies above suggest that nearly 14% of obese women in the population are depressed. Prevalence estimates of psychopathology are generally higher in treatment seeking samples of obese people than in the population at large. Uncontrolled studies of individuals seeking weight reduction estimate the lifetime prevalence of depressive disorders at 9.2% to 47.5% and the lifetime prevalence of other clinical syndromes at 2.5% to 31%. [17]

Obese women in the general population are 37% and 38% more likely, respectively to be depressed than are their average weight peers.[11] However, there was no relationship, or a negative relationship, between BMI and depression for men. The explanation for the gender difference in the obesity-depression relationship is not known, although different societal explanations about thinness may be partly responsible.

Individuals who meet criteria for BED is less than 5% in community samples, and 7-30% in samples of obese people seeking weight loss treatment. BED appears to be a reliable marker for psychopathology among obese treatment seekers. Numerous studies have found that binge eaters

report more symptoms of depression compared with non-binge eaters and lower self esteem, more symptoms of borderline personality disorder and greater lifetime prevalence of any Axis I mental disorder, including substance abuse or dependence. [16]

Extremely obese people may be at greater risk of psychological distress than moderately obese individuals[17].The mechanisms accounting for higher rates of psychopathology among those with a BMI over 40 are unknown, but may include an increased risk of medical complications, a greater likelihood of experiencing prejudice and discrimination, and more significant impairments in health related quality of life. Results from longitudinal studies,[14] collectively suggest that depression precedes obesity in adolescent girls but not boys, and that obesity precedes depression in older adults.

Obesity therefore appears to be related to a slight increase in the risk of mood disturbance, but only among women, and depression appears to precede obesity in adolescence but to follow the onset of obesity in later adulthood. Contrary to common stereotypes and assumptions, obesity is not strongly associated with depression or any abnormal personality characteristics. Psychological traits are more widely varied within the population of obese persons than between obese and non-obese individuals.

Psychological Approaches to the Management of Obesity

Obesity is a complex, multifactoral disease that develops as a result of the interaction of genetic, metabolic, social, behavioural and cultural factors.[35] It is a major public health issue, which has a significant impact on the psychological well being, longevity, health and quality of life of those affected. The prevalence of obesity worldwide is rising alarmingly, perhaps at epidemic proportions. It is estimated that around 7% of the adult world population are obese [47]

Treating Obesity

Although there is an extensive body of research on treatment for obesity, existing data has important methodological shortcomings[29]. The main evidence-based approaches to treatment are:

- ***Surgical Treatment***
- ***Pharmacotherapy***
- ***Behavioural Treatment***

The treatment of obesity is a puzzling challenge because long-term maintenance of weight loss – the goal being 5-10% of initial weight loss (UK Royal College of Physicians, 1998), is rarely maintained. Therefore, the main challenge is to prevent or minimise the weight regain that follows treatment interventions. Despite advancing progress in research in obesity, more successful treatment interventions for obese individuals have not yet been achieved. There are probably many reasons for this general inefficiency, which has led to the pessimistic attitude of judging obesity as an almost intractable disease.

Problems with the Treatment of Obesity

Dealing with obesity is possibly one of the biggest problems facing individuals, health professionals and society as a whole. Obesity is a serious clinical issue, with its acceptance as a disease being pivotal to the development of treatment regimens.

Due to the genetic and environmental underpinnings, the social significance of the disease and its psychological determinants, obesity is an extremely complex problem requiring multi-professional interventions.

According to Stunkard (1958) *"Most obese persons will not stay in treatment for obesity. Of those who stay in treatment, most will not lose weight, and of those who do lose weight, most will regain it".* Furthermore, according to Logue (1991), *"No weight loss programme has proven consistent, safe and successful for all obese people. The statistics on methods for decreasing obesity are depressing".*

In approaching treatment, there are a number of hurdles which initially need to be overcome. Firstly, the laying down of excess calories as fat is perfectly natural (and evolutionary advantageous), metabolic adjustment in response to reduced caloric intake is also perfectly natural (and evolutionary advantageous), physiological systems regulating eating behaviour are extremely complex and replete with redundancies, and there is the danger of the development of inappropriate and potentially dangerous eating behaviours.

However, tackling obesity is extremely important, not least because amongst the clinically obese, there is often clear evidence of medical problems which increase slightly when BMI is 31, and rapidly when BMI is more than 35.[31] The quite demonstrable health problems which exist include hypertension, CHD, stroke, diabetes, joint disorders, and some cancers (breast, prostate, and colon). Furthermore, obesity is associated with poorer functional status such as capacity to walk[38], elevated levels of anxiety and depression [39], greatest impact on vitality and bodily pain issues [26], and such issues are a function of the degree of obesity [27].Morbidly obese individuals express body image

dissatisfaction across a wide range of variables, and after weight loss (BMI < 30), body image returns to normal [18].Obese individuals with binge eating have greater health dissatisfaction and greater incidence of major medical disorders, higher levels of affective disorders and alcohol dependence [23]. Through this, the complexity of the disease and the challenges facing treatment are extremely evident.

Role of Psychology

Many psychological and social factors may be associated with obesity, including low self-esteem, body image dissatisfaction, depression and anxiety. Although, little consensus exists regarding whether these problems are characteristics of obese individuals, or whether they are the result of widespread societal pressure to adhere to a thinness ideal. Obese individuals who are attempting to lose weight will be more than likely to be in a psychologically fragile state. Therefore, psychological support and assistance is of paramount importance.

Psychological theories of obesity reflect upon the notion that eating is a complex behaviour, serving varied physiological, aesthetic, social and psychological needs. Psychological management of obesity considers food as a substance, required to meet a diverse range of needs. It is vital to consider the individuals' eating behaviours in relation to their lifestyle, and the role that food plays.

Psychologists can assist with the treatment of obese individuals in the following way:

- Psychotherapeutic intervention to induce weight loss (e.g. behaviour therapy)
- Psychological screening for morbidities that may be contributing to obesity (e.g. BED)
- Psychological contribution to treatments that are not primarily psychologically-based (e.g. bariatric surgery)
- Psychological input to public health campaigns
- Issues of body image (including reassurance of deluded non-obese)
- Teaching other health professionals

Psychological interventions are often advantageous, as they have the benefit of being non-invasive, in comparison to other treatment approaches, such as bariatric surgery. However, availability of psychological interventions for obesity is poor (and virtually non-existent in the UK), often because obesity treatment is not seen as 'glamorous'. Ultimately, the process of weight loss involves behavioural change and the correction of body image disturbance involves psychological change. Therefore, the main psychological interventions for the treatment of obesity include:

Cognitive - Behavioural Techniques *(CBT)*

Elements of CBT include self-monitoring (e.g. eating diaries) which provides the data for a functional analysis to identify factors cueing or reinforcing eating. Also, setting behavioural goals for weight loss can act as motivators, as well as behavioural rehearsal, contributing directly to a positive treatment outcome. Stimulus control involves identifying the chain of events leading up to problem eating, and developing strategies to modify exposure early in the chain have been shown to be effective. Learned self-control, such as exposure and response prevention has also been applied successfully in treating obese persons. Modifying self-defeating cognitions may also be useful, as well as improving body image, modifying disordered eating patterns and stress management.

A stepped care model may be applied, related to the degree of overweight, when employing these measures. CBT may contribute to the well-being of obese persons, by effects not dependent on weight loss. Thus, improvement in body image and self-esteem, control over disordered eating patterns and management of stress are themselves valuable outcomes. The comprehensive nature of a cognitive-behavioural weight management program is of value in modifying behaviours that are linked to adverse health effects and psychological distresses, without necessarily causing a drastic weight loss in obese individuals.

Behavioural Therapy *(BT)*

This approach involves individualised modification of behaviour, and is based on theories and research within learning, cognitive and social psychology, where the interaction between the individuals and the persons around them is stressed. A model for the treatment of obesity encompasses three main domains:

1) Modification of weight/obesity status, providing skills for personal weight reduction and maintenance on the individual level. Restructuring the environment to promote behaviours that are antithetical to obesity development on a group/society level.
2) Modification of other health-related variables, providing skills to modify diet and/or promotion of physical activity, restructuring the environment to promote changes in diet and physical activity on a societal level.
3) To change attitudes among and towards obese persons, providing these individuals with cognitive and behavioural skills to cope with discrimination against obesity, restructuring the environment and social interaction to reduce prejudice towards and discrimination against, and enhancing attitudes toward the obese. Those working with the obese must clearly conceptualise the behaviours being targeted for intervention and develop the most powerful interventions possible to modify the goal behaviours.

Many of the behavioural interventions designed to promote dietary change in individuals include medical assessment, initial assessment of diet history, assessing readiness, establishing dietary goals, self-monitoring, stimulus control training, training in problem solving, relapse prevention training, enlisting social support, nutrition education, dietary therapy, and ongoing contact to maintain progress. The behavioural treatments for overweight and obesity directly modify behaviours that bear on health and illness, such as improving dietary choices, decreasing sedentary behaviours, and increasing habitual physical activity and exercises.

Clinical Management of Obesity

The clinical management of obese individuals must be viewed as a general strategy tailored to each individual. There are at least three psychological and behavioural areas which may provide useful distinctions among obese persons when attempting to individualise treatment: psychological disturbance (e.g. psychopathology); binge eating and cognitive functioning (e.g. cognitive content and processing, self-efficacy and expectations)[28]. Such differences may be helpful in identifying subtypes of obesity to which individualised treatments could be matched.

Prospective studies into the psychological variables that may be involved in weight loss and maintenance have also identified four factors as potentially important:
Self-efficacy; Adverse life events and coping skills; Weight goals and Dietary restraint and subjective hunger.

Issues such as severity, family history, age at onset, duration, eating pattern and its psychological significance, previous failures, and realistic goals are also of importance.

When applying psychological interventions, it is important to adopt a person-centred approach to ensure that the client has the authority to make key decisions and to dictate the pace of progress, being an active part of the process. Motivation to change is important in the outcome of management for obesity, and realistic targets must be set in order to ensure that motivation is maintained, and also to help prevent relapse. If relapse does occur, it is important to consider it an anticipated part of the learning process. Any therapeutic success is related to the assigned goal primarily, and this can be more or less ambitious or realistic.

Restricting the goal to the achievement of a short-term weight loss appears irrelevant for improving health or for answering the subjective demands of the individual. Long-term maintenance of weight lost at the start is a true challenge, and the permanent change in eating patterns can be a goal. It is

uncertain whether large weight losses are necessary or possible in all individuals, and small losses are easier to achieve or maintain and may be more beneficial.

Empirical Evidence

Substantial evidence suggests that behavioural treatment for obesity can produce modest weight loss in the region of 5-10% of initial body weight[46].This amount of weight loss is associated with significant physical and psychosocial benefits for obese people as long as it is maintained [19]; however, the weight lost is almost always regained over time[40]. Attempts to improve the maintenance of a new lower weight, by incorporating specific maintenance strategies into standard behaviour therapy programmes have at best, delayed weight regain[22]. However, such strategies have been largely atheoretical and pragmatic in nature and have not been based on a systematic analysis of the range of processes involved in weight maintenance and regain (as opposed to weight loss) in obesity. Relapse in obesity appears to be attributable to individuals' failure to adhere to the weight-control behaviours that they adopted to lose weight, although little information has been obtained regarding the psychological mechanisms that drive these behaviours, although cognitive factors to weight regain may be implicated. It is unclear how or why some formerly obese individuals (about 15-20% of successful weight losers are able to persevere with these forms of behaviour) when the majority fail to do so.

Treatment for obesity therefore needs to be life-long, and behaviour treatment can be valuable in modifying behaviours linked to adverse health effects and psychological distress, even without necessarily causing weight loss in obese persons. It can also modify behaviour, which has a direct effect on health, such as increasing physical activity. Behaviour treatment can help obese persons become more assertive in coping with the adverse social consequences of being overweight, in enhancing their self esteem and reducing body image dissatisfaction [44].

The National Institute of Health (1998)[34], based on 19 randomised controlled trials (RCT's) of the effectiveness of behavioural therapy found 'no one behavioural therapy to be superior to be superior to any other in its effect on weight loss; rather multi-modal strategies appeared to work best (10% weight loss over 12 months) and those interventions with the greatest intensity (number of contacts and duration) appeared to be associated with greatest weight loss'. Also, 'long-term follow up of patients undergoing behavioural therapy showed a return to baseline weight in the great majority of participants in the absence of continued intervention'. Behavioural therapy was therefore shown to be a useful adjunct when incorporated into treatment of weight loss and maintenance'. It was also found that 'behavioural therapy used in combination with other weight loss approaches was found to provide additional benefits in assisting participants to lose weight after one year.

Evidence also suggests that extending the length of behavioural therapy is more effective when compared to an intervention of shorter duration, group behavioural therapy may be of some use if followed by a successful maintenance programme [20], and participation in courses delivering lessons and homework is a promising approach requiring further research [36].

Many reviews have confirmed the efficacy of CBT compared to no treatment or minimal interventions[43], although weight loss in the long term is usually modest, (5-10% of initial weight) and rarely persists once the active treatment phase is ended. Longer treatment programmes produce more weight loss, and combining very low calorie diets (VLCD) with CBT have been found to produce more initial weight loss[41]. Eating diaries have also been shown to be associated with better weight maintenance in the long term [21].

However, combining CBT with advice on nutrition and exercise offers the most consistently effective results apart from surgical treatments, and probably represents the state of the art in obesity treatment [37].

The Way Forward: A new cognitive-behavioural model

As cognitive-behavioural interventions have been shown to be effective in treating obesity, Cooper and Fairburn (2001)[25] have proposed a novel cognitive-behavioural approach. Such a programme may minimise the problem of weight regain by addressing psychological obstacles to the acquisition of, and long-term adherence to, effective weight control behaviour. The treatment can help clients accept and value the weight loss they have achieved, encourage the adoption of weight stability as opposed to weight loss as a goal, and help with the acquisition of and use of behavioural skills and cognitive responses required for successful weight control.

This model, which is currently being evaluated, takes eleven months and has two phases: a weight loss phase and a weight maintenance phase. The objective of the first phase is weight loss and the addressing of potential obstacles to subsequent weight maintenance. By the end of this phase, clients should no longer be trying to lose further weight but should have accepted weight stability as their objective. The second phase focuses on helping clients acquire the frame of mind and behaviours needed for successful long-term weight maintenance. This treatment is administered on a one-to-one basis, and resembles cognitive-behavioural approaches to the treatment of eating disorders [45]. The strategies are organised in a series of treatment modules, introduced sequentially and used in a flexible way, according to the needs of each client:

Phase one *(first 24-30 weeks)*

Module 1: 'Starting Treatment' (assessment and description of treatment, emphasising the distinction between weight loss and weight maintenance).

Module 2: 'Establishing and Maintaining Weight Loss' (helping restrict energy intake to 1500 kcal daily, encouragement to devise dietary regime accounting for circumstances and food preferences).

Module 3: 'Addressing Barriers to Weight Loss' (runs parallel to Module 2, focusing on identifying and addressing problems which may interfere with adherence to energy-restricted diet, e.g. motivational issues, poor food choice or frequent snacking).

Module 4: 'Eating Well' (nutritional issues, introduced in parallel with Module 3, and re-introduced in Phase Two, when its focus is on healthy eating as part of long-term weight control).

Module 5: 'Increasing Activity' (establishment of a more active lifestyle in the context of weight maintenance, of most relevance in Phase Two, but introduced earlier in treatment to encourage clients who would like to include activity and exercise in their weight loss efforts. Emphasis is on increasing activity level in general as opposed to increasing formal exercising.

Three more modules are employed flexibly with respect to timing and degree of emphasis, particularly focusing on identifying and addressing clients' reasons for wanting to lose weight).

Module 6: 'Body Image' (assessment of concerns about shape, using CBT strategies to help those who avoid body exposure, engage in frequent body checking or have recurrent derogatory thoughts about their appearance, the goal being to promote greater self-acceptance.)

Module 7: 'Weight Goals' (helping consider the origins, significance and possible arbitrariness of weight goals, distinguishing them from their primary goals while helping to value any changes in weight that are occurring.) This dovetails with:

Module 8: 'Primary Goals' (helping address primary goals directly).

Modules 6, 7 and 8 are used in Phase One and often throughout the rest of treatment.

Phase Two *(14 weeks, introduced any time between weeks 24 and 30, according to progress, the goal being to establish weight stability for the rest of treatment and for the future).*

By this stage, most clients will have experienced a slowing down in their rate of weight loss or it may have stopped completely, but the majority will not have achieved their initial weight goal. At this point, clients are generally willing to accept weight stability rather than weight loss as their objective, although this issue may need to be re-addressed. The main emphasis is on helping clients acquire the strategies and skills needed for long-term weight control.

Module 9: 'Weight Maintenance' (regular monitoring of weight, use of appropriate cognitive responses to evaluate the significance of any changes in weight and to take action when needed, and practicing behavioural skills to minimise significant weight fluctuations and to correct any significant changes which occur.)

Promising initial trials have led to this treatment being evaluated in an ongoing RCT. Possible adaptations include its use in combination with other methods of weight control such as pharmacotherapy and long-term support.

Lack of resources and the lengthy time period required to implement such an intervention, will mean that it may not be possible to use this approach. However, this model provides a useful outline of some of the concepts used for the treatment of obesity, and may be modified to suit individual clients, i.e. to use specific modules.

Further Developments

The National Institute for Clinical Excellence is currently developing a draft guideline on the prevention, identification, assessment, treatment, and weight maintenance of obesity and overweight in adults and children for use on the NHS in England and Wales. The guidance is set to provide recommendations for good practice based on the best available evidence for effectiveness, including in terms of cost. The guidance will be developed in recognition of clinical needs, as obesity is a condition in which weight gain has reached the point of engendering health. For further information, see **www.nice.org.uk.**

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Behaviour Change

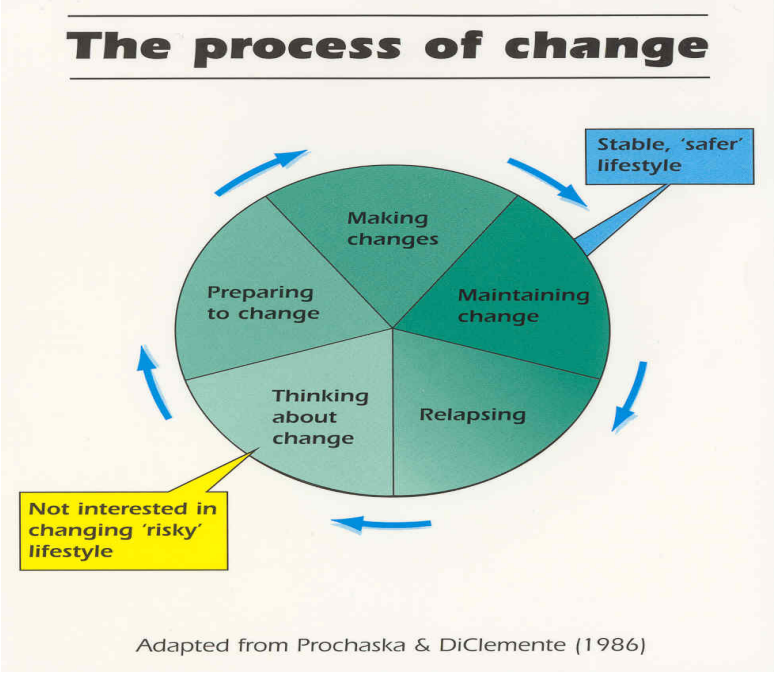
BEHAVIOUR CHANGE

Providing information is a valuable move towards increasing a person's knowledge about a healthy lifestyle. **However, using this strategy alone is unlikely to be effective in supporting behaviour change.** The role that you should be aiming to provide when working with patients or clients in primary care is that of an interface between them and the information which may be of help. In this client centred approach, you will support the individual through the process of changing behaviour, whether that be giving up smoking, making dietary changes, increasing their levels of physical activity, or modifying their alcohol consumption. In some cases, the individual may not yet be ready, willing or able to make changes; this should not be seen as a failure of either health professional or patient. Change is a PROCESS, and involves people going through the stages shown below

The Stages of Change Model

The behaviour change section of this toolkit uses the Prochaska and DiClemente "Stages of Change Model" as a framework[3]. The framework will probably be familiar to you as it is commonly used to assess where an individual person is with regard to their readiness to change life-style behaviour. It will help you to adapt the information, advice and support you provide to patients according to their individual needs.

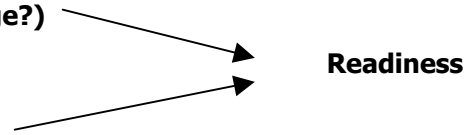
Whilst this is a very useful tool for targeting brief health promotion interventions in primary care, it is worth remembering that people's lifestyle choices are dependent on many factors including economic circumstances, gender, level of knowledge, education, social and family circumstances, available choices, time etc. When doing an assessment these broader determinants of health need to be taken into account.



WORKING WITH PATIENTS AT VARIOUS STAGES OF CHANGE

Successful weight loss and long term maintenance is dependent on sustained behaviour change and compliance with changes in food choice, eating behaviours and physical activity. An assessment of someone's readiness to undertake lifestyle change and the early identification of barriers to change is important before recommending a suitable weight management programme.

Readiness to change will depend largely on the importance the individual places on that change and the confidence they have in their ability to achieve it:



The approach, information and support that you provide to patients will depend upon the stage of change of each individual. Below is a guide to working with patients at various stages of the change cycle:

STAGE OF CHANGE	CHARACTERISICS	AIMS	ACTION
Not thinking of change (pre-contemplation)	• The person may not have considered change or be aware of the risks their current behaviour carries • Others may understand risk but are not interested in changing behaviour at this time • Trying to coerce someone who is clearly not ready to attempt change is often counter-productive and may result in resistance or hostility	• To help the patient explore their ambivalence in relation to their behaviour and their need to lose weight • To minimise resistance to change	• Help the patient to identify the discrepancy between their current eating behaviour, and the minimisation of risk to health • Be empathic • DO NOT argue for change, as this will be unlikely to help. The patient will only change when THEY are ready • Maintain an open door policy • Provide information on risks & benefits in a neutral way ('Exchange of Information')
Thinking about change (contemplation)	• People sometimes feel ready to think about change but are not yet able to make a decision or commitment to change- perhaps because they are unsure of their ability to succeed, or they need more information to help them to decide.	• To explore ambivalence • To tip the balance in favour of change	• Strengthen patients belief in reasons for change and the risk of not changing • Help them to consider the pros and cons of changing or not changing • Exchange of Information – ask permission/ as requested by the patient • Encourage individuals to explore feelings about change- acknowledging problems and difficulties they perceive • Help them to overcome perceived barriers • Offer support for those people who decide that they are unable to attempt change at this time- they may want to try in the future

STAGE OF CHANGE	CHARACTERISICS	AIMS	ACTION
Preparing to change (preparation)	• An individual may make a commitment to attempt change when they believe the benefits of change outweigh the costs, that change is worthwhile and that they are likely to succeed	• To help the patient determine a suitable plan of action	• Explore different options for change • Explore barriers to successful change • Explore difficulties and how they may be avoided • Explore skills and support needed for success • Exchange Information as appropriate • Negotiate and agree an action plan • Set small achievable goals • Identify coping strategies and sources of support • Discuss rewards • Discuss monitoring • Plan for dealing with possible lapse/relapse
Making changes (Action)	• People are actively changing chosen aspects of their behaviour	• To encourage the patient into action to bring about agreed changes	• Offer support and encouragement • Provide information and practical suggestions on how change can be achieved • Set SMART GOALS (through effective Change Plan)
Maintaining change (maintenance)	• People are adapting to their new behaviour • For some this remains a struggle for some time	• To encourage the patient to adopt changes for life	• Offer support and encouragement to maintain change • Draw attention to progress and improvements in health and well being since becoming more active and eating more healthily • Use positive affirmations to remind them of their success • Offer support to cope with relapse • In Wt Management, this needs to be lifelong as it is a chronic disease – more intensive just after wt loss phase
Relapse	• The new behaviour becomes too difficult to maintain • The person reverts back to previous behaviour	• To help renew commitment and confidence in the patient to change	• Do not judge the patient – relapse is a natural part of the change process • Remind them of their reasons for wanting to change and how much they have achieved • Re-examine strategies –did they help or hinder change? Do they need adapting? • Provide support and encouragement to try again • See as opportunity for a fresh start

For further information, resources or training on lifestyle issues/ behaviour change, please contact the Local Public Health Team or individual Health Promotion Officers directly for advice and support. For contact details see the Health Promotion Support Section in appendix. For further information on Motivational Interviewing and Brief negotiation also see the appendix.

Readiness and Motivation to Change - Assessment

It is possible to assess an individual's readiness and motivation to change using the example screening questionnaire below (see also Patient Motivation Questionnaire in the Clinic Info Section 4)

Needs to be introduced in a patient friendly way – ask permission

- On a scale of 1 to 10 (1 being not at all important, 10 being very important), how important would it be for you to lose weight at the moment?
- Why do you say (number) and not (lower number)?
- What would it take to help you move from (number) to (next number up)?
- On a scale of 1 to 10 (1 being not at all confident, 10 being very confident), how confident are you that you could lose weight?
- Why do you say (number) and not (lower number)?
- What would it take to help you move from (number) to (next number up)?

If the numbers given are both high then you have someone who appears to be willing and able. Be aware though that ambivalence about change will usually be present to some degree or other throughout the process and that the numbers stated may be different on any given day.

If confidence is low and importance is high, you have a person who realises the need for change, but who does not believe that they can change. Obviously in this case the health professional needs to work on self-efficacy with the person. However care should be taken that the Health Professional is not the one making a judgement. Readiness needs to be explored in a collaborative manner with the patient.

If confidence is high, yet importance is low you have a person who believes they can do it, but it's just not important enough to them at this point. Here the health professional should be helping the person to look at what may change this.

Stage of Change	Action
Pre-contemplation: These patients are not currently considering losing weight	○ Encourage person to discuss the benefits of weight loss and risks of not changing ○ Refer to care pathway for overweight and obese adults, see pathway route for those not ready to implement change ○ Explore readiness to change in future appointments
Contemplation: Patients considering weight loss	○ Weigh up pros and cons of changing behaviour ○ Elicit change talk – DARNC (see acronym below) ○ Refer to care pathway for overweight and obese adults, see pathway route for those ready to implement change
Action Stage: Patients who are actively trying to lose weight or who have successfully done so but for less than 6 months	○ Affirm positive changes ○ Refer to care pathway for overweight and obese adults, see pathway route for those ready to implement change
Maintenance Stage: Patients who have successfully maintained their weight loss for at least 6 months	○ Reaffirm changes made and encourage ○ Offer annual follow up

The acronym DARNC may be useful -

If the health professional hears the person express;

- **DESIRE** to change
- A belief in their **ABILITY** to change
- **REASONS** for change
- Recognises the **NEED** for change
- Uses words that imply a **COMMITMENT** to change

Then they have a person who may be ready to change.

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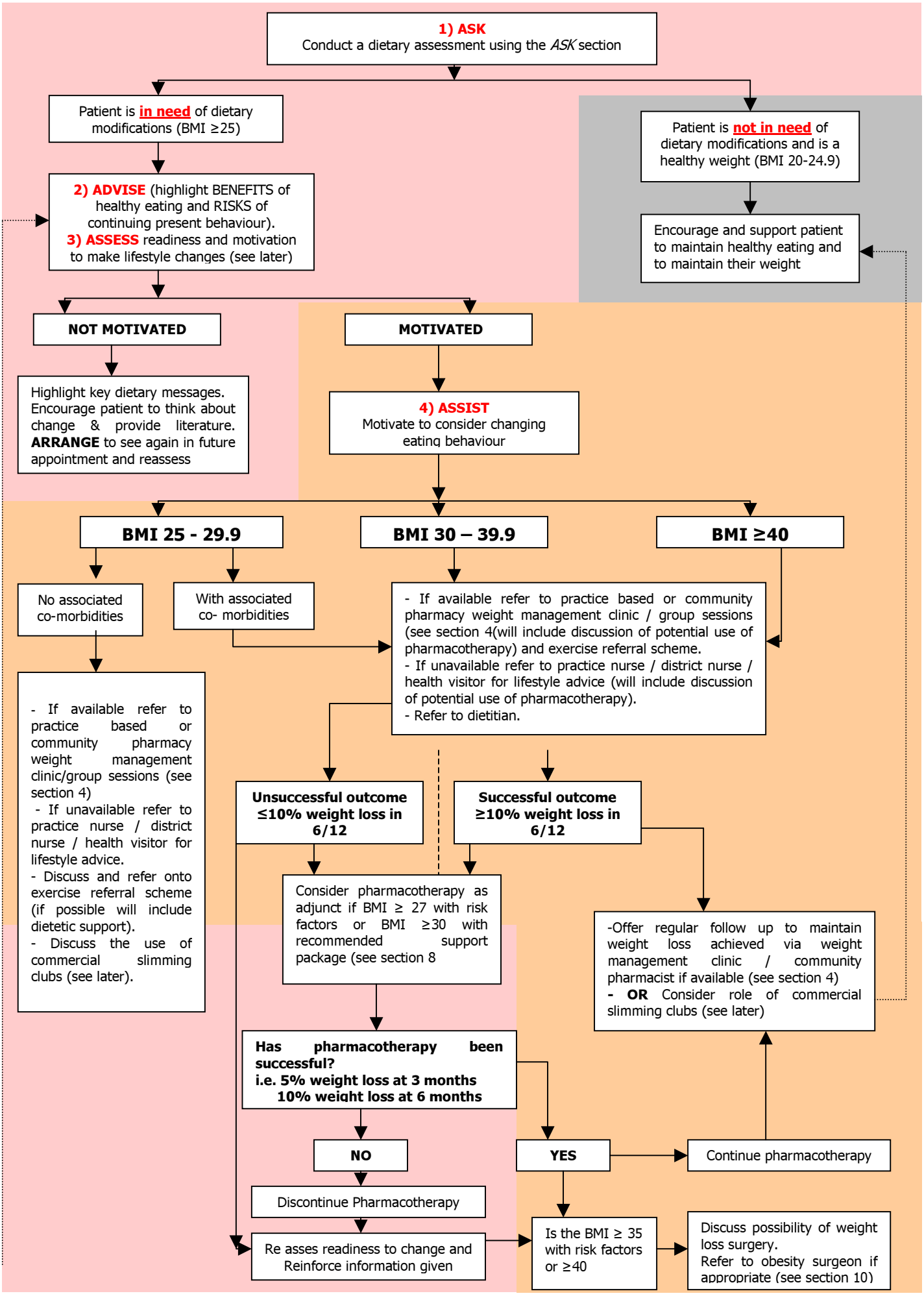
Lifestyles

DIET AND NUTRITION

Protocol For Healthy Eating Interventions



DIETARY THERAPY FOR OBESITY

A healthy balanced diet is fundamental to weight reduction and dietary therapy should be included in conjunction with all other treatment options.

There is a large quantity of evidence on the effectiveness of dietary interventions for the treatment of obesity and overweight. A National Institute of Health review of 48 Randomised Controlled Trials found strong and consistent evidence that weight loss can be achieved with a **low calorie diet** and that this weight loss affects a decrease in abdominal fat (NIH, 1998)

Calorie intake should be reduced by 500-1000 calories per day in order to achieve a weight loss of **1 to 2lb/week**. (A registered dietitian can individually determine estimated energy requirements for weight loss). Evidence suggests that weight loss at this rate can be sustained for up to six months (NIH, 1998). It may be possible to reduce the calorie intake further to achieve a greater weight loss, however, this may require medical supervision and should not be used routinely, especially not by providers untrained in their use. (See section on 'Other Dietary Options')

Long-term changes in food choices are more likely to be successful when the patient's preferences are taken into account and when the patient is educated about food composition, labelling, preparation, and portion size. Although dietary fat is a rich source of calories, reducing dietary fat without reducing total calorie intake will not produce weight loss.

Small, permanent weight loss can reduce health risks and will be more beneficial than yo-yo dieting with its associated risks. An overall weight loss goal of **5-10%** is therefore recommended as a starting point as this is associated with a number of health benefits. The amount of weight to be lost and the time-scale for this to happen must be discussed and agreed with the patient and should be reviewed regularly.

Research shows that if individuals set themselves goals that are unrealistic and unachievable it sets them up for failure from the beginning and does not promote a sensible approach to weight loss. By setting a realistic weight loss goal of 5-10% there is a much greater chance of maintaining the weight lost which is the desired outcome.

The Role of the Health Professional in Promoting Healthy Eating With Patients - Raising the Issue

1) ASK

Opportunities to ASK about healthy eating and ASSESS interests and motivation to eat more healthily may arise when:

- A patient presents with illnesses/diseases for which lifestyle management plays an important role i.e. obesity/overweight, high cholesterol, high BP etc
- As part of a new patient health check
- During CHD, diabetes, hypertension, ante natal, asthma clinics
- Opportunistically during routine appointments
- Repeat prescription appointments i.e. anti-hypertensives or statins

Healthy Eating History and Assessment

Assess the patients' current diet by looking at the **F**requency, **A**mount and **T**ypes of food, from each of the five food groups (see "Balance of Good Health"):

Assess	**"portions per day"**	of each food group
	"portion size"	of each food group
	"portion type"	for each food group:-

Key issues to discuss:	**Bread** -	white/wholemeal/grained?
	Cereal -	sugary/wholegrain/wholewheat?
	Fruit/vegetables-	boil/steam/roasted/with butter?
		tinned/fresh/in juice/in syrup?
	Milk/Dairy -	full fat/semi skimmed/skimmed?
		full fat/reduced fat cheese?
		full fat/reduced fat/low sugar yoghurt?
	Meat/Fish -	fatty/lean meat / fish?
		oily fish?
	Fats /Sugary-	cakes/biscuits/ sweets?
		crisps/fried foods/take away food?
	Sodium-	tinned products i.e. soups, cup a soups?
		tinned savoury snacks
		tinned smoked, processed meats
		stock cubes?
		salted savoury snacks - nuts and crisps?
		added salt at the table yes/no?

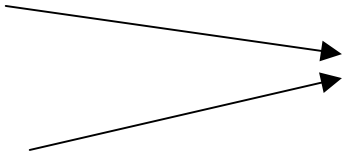
After discussing a patient's diet, you can establish a patient's motivation and stage of change in relation to healthy eating.

2) ASSESS

Assess the individual's interest and motivation to change eating behaviour (See behaviour change section)

Readiness to change eating behaviour will very much depend on the importance the individual places on such change and their confidence in the ability to achieve dietary change.

IMPORTANCE (Why should I change what I eat?)



READINESS

CONFIDENCE (How will I change what I eat?)

ASK some of the following questions: -

- In what ways do you think what you eat affects your health?
- Have you thought about changing what you eat?
- How important is it for you to change your eating behaviour/habits?
- What good things might you find if you did change?
- What might you lose if you decided to change?
- What help/information might you need to achieve changes?

3) ADVISE

- For those individuals that are eating healthily, encourage them to continue and review at next appointment.

- For those who are interested and are thinking of eating more healthily, clear advice should be provided on:

1. the benefits of a healthy balanced diet
2. the risks associated with an unhealthy diet
3. changes in **proportion**
4. changes in **type**
5. changes in **amounts**
6. changes in **frequency**
7. helping to identify potential barriers
8. benefits of physical activity

Re-address at the next appointment

- For those not interested in making changes, ensure they have all the facts i.e. what obesity is etc. Explain the role of healthy eating and weight management in delaying progression and development of complications etc. Ask what would make it more important to them (it may be they have not yet come to terms with the diagnosis yet). Explore confidence in them being able to make changes; it

may be they have tried but failed in the past. Revisit at next appointment, they may have moved on to the ready to make changes stage.

4) ASSIST

For individuals who have decided and are ready to make changes to their eating behaviour, advice and information needs to be provided. See detailed information on dietary management of overweight and obesity

Key issues will include:

- **Self Monitoring**
- **Benefits of healthy eating/weight reduction**
- **Healthy food choices**
- **Reviewing past experiences,** what helped, what hindered? Consider issues such as: cost, access, availability, likes/dislikes, lifestyle etc
- **Identifying potential barriers** and making a plan to deal with them.
- **Emphasising the importance of partner, family and friend support.**
- **Identifying other areas/sources of support, help and information**
- **Benefits of physical activity**

5) ARRANGE follow up

Regular follow-up and support is an important factor in maintaining successful change. Check the individuals' progress with their change in eating behaviour at follow-up and review appointments:

Are they succeeding to make changes for the better?
Do they feel a difference in themselves?

If not -

- Relapse is common; habits of a lifetime are not changeable overnight.
- Support and encourage the patient in making sense of their relapse and reassure them a relapse is **not** a collapse, and encourage them to get back on track **as soon as possible**.
- It is also important that they understand that they can allow themselves a treat. If they deprive themselves and over restrict their diet they will be less likely to achieve long-term changes.

Discuss with patient triggers and solutions, which might have caused a relapse, such as: -

- availability of food
- cost
- knowledge
- convenience
- time
- environment
- peer pressure
- other priorities

- lack of support from family
- boredom
- temptations
- emotional state
- food likes/dislikes of self and family

Encourage self-monitoring i.e. keeping a food diary, as this can aid future planning and promotes awareness.

If Yes: -

- Continue to encourage and support the patient
- Amend action plan changes if necessary
- Re do measurements i.e. BMI, BP, Lipid Profile, Blood Sugar, Weight etc.

DIETARY MANAGEMENT OF OVERWEIGHT AND OBESITY – ADVICE

The British Dietetic Association recommends the following process for the dietary management of overweight and obesity:

- Understand the position at the beginning of treatment
- Stabilise eating behaviour
- Improve the nutritional quality of the diet
- Establish negative energy balance

1) ASSESSMENT OF CURRENT DIETARY INTAKE

Advise the patient to keep a food diary (please find sample food diary in this section). Self-monitoring in this way can help to identify problems with eating behaviour and can also act as positive reinforcement of maintained dietary change. Reassure the patient that using a food diary is something that has been found to be beneficial and that the time and effort in completing them can help with realistic and effective goal setting.

Encourage the patient to:

- Write all food and drink down as soon as it is eaten to avoid memory lapse
- Record as much detail as possible about the types of food eaten, the amounts and the cooking methods
- Include all drinks, including alcohol
- Note down the time, place and any influences on eating i.e. feeling emotional, peer pressure etc

If food diaries are used it is worth remembering that:

- A food diary is primarily a tool **for the patient**, which should help them to become more aware of their current eating behaviour.

- Diary keeping can be a difficult skill and some people may need coaching and practice to get the best from this.
- The review of food diaries can form the basis of a helpful and collaborative discussion between the patient and the helper. The patient may request to discuss their food diary with you. It is important not to criticise but instead allow the patient to lead the discussion and set and their own goals
- Keeping a diary is one of the indicators of success.

2) STABILISING EATING BEHAVIOUR

It is important to only tackle one or two problems at a time identified by the food diary and agree action to overcome them. Ensure to offer praise for the positive goals achieved as patients who are overweight or obese often have low self-esteem. The frequency and timing of meals is important as many obese patients describe very erratic or poorly structured diets.

A common practice is to skip meals or restrain eating in the earlier part of the day, making it difficult to avoid overeating in the latter part of the day. **Patients should be assured that having a regular pattern of eating is one of the key strategies people use to help them gain more control over their body weight.**

What is regular eating?

- Having breakfast, lunch and an evening meal, with 1-2 snacks (ideally fruit or vegetables) in between meals every day
- Avoiding long periods of time between each meal, i.e., avoid gaps of more than 3-4 hours between planned meals or snacks
- Keeping the same pattern of meals from day to day

Why eat regularly?

- You will find it easier to stop eating at the end of a meal
- You will find that you are ready to eat at mealtimes
- You will be less likely to think about foods in between meals
- You will not need to snack on fatty /sugary foods because of missed meals

What makes eating regularly difficult?

- Work patterns
- Family/home environment
- Stress
- Temptations
- Social Life

Overcoming barriers to eating regularly

- Making time at work for lunch
- Take snacks (preferably fruit) to work with you
- If you do not have time for breakfast, take some fruit to work with you
- If you do not usually have breakfast start small with pieces of fruit or half a slice of toast
- Plan your meals in advance
- Try not to leave long gaps between meals

3) IMPROVING THE NUTRITIONAL QUALITY OF THE DIET

The diet must be nutritionally sound and provide all the essential nutrients to maintain health and minimise loss of lean body tissue. Eating healthily is about: -

- eating more of some foods
- eating less of others
- knowing more about food
- making small gradual changes
- altering food shopping patterns
- modifying cooking and preparation methods
- enjoying food

Any advice or information provided should be in line with current healthy eating recommendations as represented by the Balance of Good Health.

The Balance of Good Health (see diagram below) is a national tool used to promote a healthy balanced diet. This model categorises food into five groups according to the main nutrients they contain. The sections on the plate represent the proportions in which the five food groups should be eaten in the diet. It allows individuals to eat a varied diet that provides the essential nutrients, without excessive calories.

Patients should be encouraged to eat three regular meals per day and aim to achieve the balance of foods according to the Balance of Good Health each day.

The Balance of Good Health can be adapted to suit all types of diet (vegetarian, gluten free, diabetes etc) food preferences and budgets. It is important that this adaptation is explained so that patients understand the flexibility of the tool. The importance of including a variety of foods should also be stressed.

The Balance of Good Health (Reproduced with kind permission from the Food Standards Agency)

Fruit and vegetables – 5 PORTIONS A DAY (7-8 PORTIONS EVEN BETTER)

This includes fresh, frozen, canned or dried fruit, vegetables and salad. Aim to eat at least 5 servings a day. Limit fruit juice and dried fruit to once daily as they are concentrated in natural sugar.

ONE PORTION =

Fruits

- 1 whole medium sized fruit, e.g. apple, pear, banana, orange, peach
- Half a grapefruit/one slice melon or pineapple
- Small fruits: 2 plums/Satsumas/kiwi fruits. 7 strawberries, handful of grapes
- 3 dried apricots/prunes/figs
- Dried fruits, e.g., raisins, sultanas: 1 large tablespoon
- Canned (in juice) or stewed fruits: 3 large tablespoons
- Fruit juice (limit to one glass daily): 1 medium glass or carton of pure/100% fruit or vegetable juice

Vegetables

- 3 heaped tablespoons of raw, cooked, frozen or canned vegetables e.g. peas, carrots, broccoli
- 1 small corn on the cob
- 3 heaped tablespoons of beans or pulses

Salads

- 1 side salad, e.g., lettuce, cucumber, onion, pepper (the size of a cereal bowl)
- 1 medium tomato or 7 cherry tomatoes

You can only count fruit juice and beans and pluses as one portion, however much you drink or eat. This is because fruit juice has very little fibre. Beans and pulses do contain fibre, but they do not give the same mixture of vitamins, minerals and other nutrients as fruit and vegetables.

A glass of squash, potatoes, a fruit yoghurt, fruit and nut chocolate or jam do not count either – there is just not enough fruit in them to make a portion

Starchy foods (bread, potatoes, rice pasta and cereals) - 7-8 PORTIONS A DAY

They provide carbohydrates, vitamins, minerals and fibre and they help control appetite. These foods, particularly the high fibre variety should be included at each meal.

ONE PORTION=

- 1 medium baked potato/2 egg sized boiled potatoes/2 tablespoons of mashed potato
- 2 large tablespoons of boiled rice
- 2 large tablespoons of boiled pasta/egg noodles/cous cous
- 3 tablespoons of breakfast cereal (High fibre) or porridge oats. 1 shredded wheat/weetabix
- 1 medium slice of bread/toast
- Half a large bread roll/bagel
- 2 crispbreads/small oatcakes/rice cakes/ryevita/3 small crackers
- 1 mini pitta bread/half a standard pitta bread/half a tortilla wrap.
-1 small chapatti/plain naan bread
- 8 oven chips
- 1 crumpet/half a muffin/half a scone
- 1 scotch pancake/plain biscuit/small slice Malt Loaf

Meat, fish and alternatives – 2-3 PORTIONS A DAY

(eggs, pulses, nuts, soya, quorn)

They provide protein and minerals, especially iron, which are essential to health. Animal protein sources also contain fat so advice should be given to reduce portion sizes, choose lean varieties and avoid adding fat during cooking. Pulses, soya and quorn products tend to be more filling and are very low in fat.

Oily fish (sardines, pilchards, herring, salmon, trout, mackerel and fresh tuna) are good sources of omega 3 and have been shown to have great health benefits and should be included in the diet at least once per week.

ONE PORTION =

- 100g (4 oz)/3 slices Lean meat, e.g., chicken, turkey, ham, beef, lamb (without skin) or white/oily fish
- 2 eggs (limit to 6 eggs a week)
- 4-5 large tablespoons (half a large tin) baked beans/other beans/chick peas/lentils/dahl/red kidney beans
- 2 tablespoons of nuts/peanut butter/seeds/tahini
- 100g (4oz) of tofu/soya

Dairy foods (milk, cheese, yoghurt, fromage frais) - 2-3 PORTIONS A DAY

They provide protein and minerals, especially calcium. As they contain saturated fat, lower fat varieties should be recommended.

ONE PORTION =

- $^1/_3$ pint (200ml) of semi-skimmed milk/skimmed milk
- 1 small pot (125g) of low fat yoghurt/fromage frais
- 25g/1oz (small matchbox size) of hard/semi soft cheese (Preferably reduced fat) e.g., cheddar, camembert, Edam, Brie
- 1 medium sized pot (200g) of cottage cheese or quark
- 50g/2oz reduced fat soft cheese

Foods containing fat and foods containing sugar –

NO MORE THAN TWO PORTIONS A DAY FROM THE FATS

NO MORE THAN ONE PORTION A DAY FROM THE SUGARS & OCCASSIONAL FOODS

These foods are very high in calories but contain few other nutrients so are not necessary for health. They can still be included in the diet but should be reduced in quantity and frequency, look for low-fat and sugar-free versions.

TRY TO LIMIT – butter, hard margarine, fatty meat, fried food, full fat milk and its products, cakes, biscuits, pastries, pies, pasties, crisps, chips, mayonnaise, oil or cream based dips, sauces, dressings and sugary drinks.

FATS

ONE PORTION =

- 1 teaspoon of butter/margarine/2 teaspoons of reduced fat or low fat spread
- 1 teaspoon of oil (any type) or ghee
- 1 teaspoon of mayonnaise/salad cream
- 2 teaspoons low calorie mayonnaise/salad cream/French dressing or any oil based salad dressings
- 1 teaspoon double cream/crème fraiche/2 teaspoons single cream/soured cream/half fat crème fraiche
- 1 tablespoon thickened gravy/sauce based on meat stock or roux/4 tablespoons gravy/sauce (made with cornflour)

SUGARS/OCCASSIONAL FOODS

ONE PORTION=

- 3 teaspoons sugar
- 1 heaped teaspoon jam/honey
- 1 small scoop ice cream/1 choc ice
- Half a slice of cake/doughnut/danish pastry
- 1 fun size/small chocolate bar, e.g., 2 finger Kit Kat, chocolate mini roll
- 1 plain biscuit, e.g., rich tea, digestive, hobnob, ginger nut, garibaldi
- 1 chocolate covered biscuit, e.g., digestive, jaffa cake
- 1 small tube/bag of sweets
- 1 small packet crisps (preferably reduced fat)

Alcohol (For more information please see 'ALCOHOL' in Lifestyle Management Section)

Alcohol itself is calorific but depending on the type, alcoholic drinks will also contain sugar (alco pops, sweet wine, or if mixed with lemonade or cola) or fat (liqueurs). Alcoholic drinks have little nutritional value and essentially provide 'empty calories'. Alcohol intake should be assessed and advice given to reduce intake to recommended safe levels if necessary.

Current guidelines are:

WOMEN (2-3 units maximum/day)
MEN (3-4 units maximum/day)

Salt (sodium)

Individuals should be encouraged to reduce their intake of salty foods, such as:

- processed meat products
- ready meals
- stock cubes
- soy sauce/Ketchup
- tinned or packet soup
- salty savoury snacks, e.g., salted nuts and crisps

Salt added at the table and in cooking should also be limited, especially for patients with hypertension. Encourage individuals to use herbs, pepper and spices in their cooking instead. Salt substitutes are not recommended.

Food Labelling

Many people find interpreting food labels a minefield. The information below is designed to help people make the best choices to help manage their weight.

Example food label – What does it all mean?

NUTRITION INFORMATION		
Typical Values (cooked as per instructions)		
	per SERVING	**per 100g**
ENERGY	1462 **kJ.**	975 **kJ.**
	351 **k cal**	234 **k cal**
PROTEIN	9.0g	6.0g
CARBOHYDRATE	28.2g	18.8g
Of which sugars	3.0g	2.0g
Of which starch	5.2g	6.8g
FATS	23.3g	14.9g
Of which saturates	7.6g	5.1g
Of which monounsaturates	0.9g	7.3g
Of which polyunsaturates	2.7g	1.8g
FIBRE	1.6g	1.1g
SODIUM	0.6g	0.4g
PER SERVING	**351KCAL**	**23.3g FAT**
GUIDELINE DAILY AMOUNTS		
EACH DAY	WOMEN	MEN
CALORIES	2000	2500
FAT	70g	95g
OFFICIAL UK GOVERNMENT FIGURES FOR AVERGAE ADULTS		

ENERGY kJ (kilojoules)/kcals (kilocalories) – Both are abbreviations, they are just different units to measure the energy in food (a bit like pounds or kilos to measure weight). In the UK most of us are more familiar with kcal.

CARBOHYDRATE – this includes both sugars and starches. The amount of sugar in a product includes both natural sugars (e.g. fruit sugar) and added sugars in the food. Limit foods containing large amounts of sugar, e.g., sweets, cakes, biscuits, chocolate etc.

FAT – The label will show the total amount of fat in the food and may provide information, such as the amounts, or the different types of fat, i.e., saturates, monounsaturates & polyunsaturates. Overall it is best to reduce your **total** fat intake and choose foods containing **unsaturated** rather than saturated fat.

FIBRE – Information about fibre is not always offered, but it is useful to know that a food containing around 3g of fibre or more per 100g is a high fibre food.

SODIUM (SALT) - Information about sodium (salt) is not always offered, but foods with less than 0.2g of sodium per 100g are lower salt choices. Foods containing large amounts of salt are likely to be processed foods.

N.B-It is useful to know that all 'ingredients lists' place the contents of a food in order of weight, with the main ingredient first, e.g., if sugar was first on the list of a food that means it is mostly made up of that ingredient.

GUIDELINE DAILY AMOUNTS (GDAs) – Are a guide to the amount of calories and fat adults of a **healthy weight** should be eating each day. Most men will lose weight on 1800 calories a day and most women on 1500 calories, although these figures should be used as a guide only. Individual needs will depend on age, size and activity level. Some labels will now carry GDAs for salt.

The daily guideline amounts for the most important nutrients listed on food labels are set out below (use these figures only as a guide):

	MEN	**WOMEN**
Fat (total)	95.0g	70.0g
Saturated Fat	30.0g	20.0g
Salt	7.0g	5.0g
Sugar	70.0g	50.0g
Fibre	20.0g	16.0g

GDAs for weight loss	**MEN**	**WOMEN**
Calories	**1800**	**1500**
Fat	**60-70g**	**50-60g**

How much is a lot?

Judging whether a food is a healthy choice or not will depend not only on how you eat it but also on the amount of nutrients it contains.

Look at a label and see how much is: -

1) the total amount of fat
2) the total amount of saturated fat
3) the total amount of salt
4) the total amount of sugar

So how do we work out whether a food product has a lot or a little amount of these nutrients?

The table below gives guidelines on what constitutes "a lot" or "a little" of nutrient contents of food. When looking at a whole meal it is the amount per serving that is important. For snacks and individual foods look at the amount per 100g.

	A Lot (per 100g) (These amounts or more)	**Little (per 100g) (These amounts or less)**
Fat	**20.0g**	**3.0g**
Saturated Fat	**5.0g**	**1.0g**
Fibre	**3.0g**	**0.5g**
Sugar	**10.0g**	**2.0g**
Salt	**1.5g**	**0.3g**

Nutritional claims

Along with food labels other nutritional claims on food packaging can help individuals make appropriate food choices, but these can be misleading. Below are some example claims and what they actually mean: -

CLAIM	**MEANING**	**BE AWARE!**
'Reduced calorie'	25% less calories than the normal average product	This does not necessarily mean that a product is low calorie – just it has fewer calories than the regular product.
'Low calorie'	<40Kcal per 100g or per serving	
'Reduced fat'	25% less fat than the regular product	Reduced fat does not necessarily mean low fat e.g. reduced fat sausages may contain less fat than regular sausages, but can still contain a lot of fat.
'Low fat'	Less than 3% fat (or less than 3g of fat per 100g/100ml of product)	Low fat does not necessarily mean low calorie. Some low fat biscuits/desserts have just as much calories as the standard product – check the calories!
'Fat Free'	<0.15g per 100g	

` No added sugar'	No sugars from any other source have been added, but may contain natural sugar e.g. fruit juice	Not necessarily low in calories but often a healthier option than one containing added sugar as well.
'Low sugar'	Less than 5% sugar (or less than 5g sugar per 100g/100ml)	Not necessarily low in calories but often a healthier option than one containing added sugar as well
'Reduced sugar'	25% less sugar than the regular product	Reduced sugar does not necessarily mean low in calories but often a healthier option than one containing added sugar as well

Healthier Cooking Methods

Use healthier methods such as, grilling, stewing, poaching, steaming, boiling, dry roasting, stir-frying, microwaving or baking in the oven.

Hints and Tips

- Grill meat on a rack so that the fat drips away
- Try using non-stick cookware to reduce the fat needed
- Brown meat and mince without adding fat or oil
- Use reduced fat and low fat dairy products whenever possible e.g. semi – skimmed/ skimmed milk
- Use a small amount of strong cheese for flavouring and grate it rather than slicing it (it looks like you have a lot more)
- Salad dressings, mayonnaise, cream and rich sauces are all high in fat so choose low fat versions
- Choose lean meat and mince, trim the visible fat off the meat and the skin off poultry before cooking
- Replace cream in recipes with low fat natural yoghurt, low fat fromage frais or reduced fat crème fraiche
- Choose tomato or vegetable based pasta sauces rather than cheesy or creamy ones
- Spices, herbs, lemon juice and vinegar are a low fat, tasty way of flavouring foods. Also try chillies, fresh ginger or garlic to add flavour

4) ESTABLISH A NEGATIVE ENERGY BALANCE

Weight management programmes should focus on achieving an energy deficit through a combination of dietary modification and increased physical activity. A 500 kcal deficit can be achieved by basing dietary advice on the Balance of Good Health.

WEIGHT LOSS= **ENERGY INTAKE (food and drink)** **ENERGY OUTPUT (metabolism and activity)**

The most energy dense foods tend to be high in fat and/or sugar and focusing attention on these aspects of diet will help to reduce overall energy intake.

- Alcohol is another consideration, with both its appetite-stimulating effects and considerable energy content.
- It is **essential** to look at the portion sizes of the foods consumed and many people need guidance on suitable portion sizes.

BARRIERS TO WEIGHT CONTROL

Most people are well aware of what is required to loose weight, but for various reasons i.e. barriers, find it difficult to follow them.

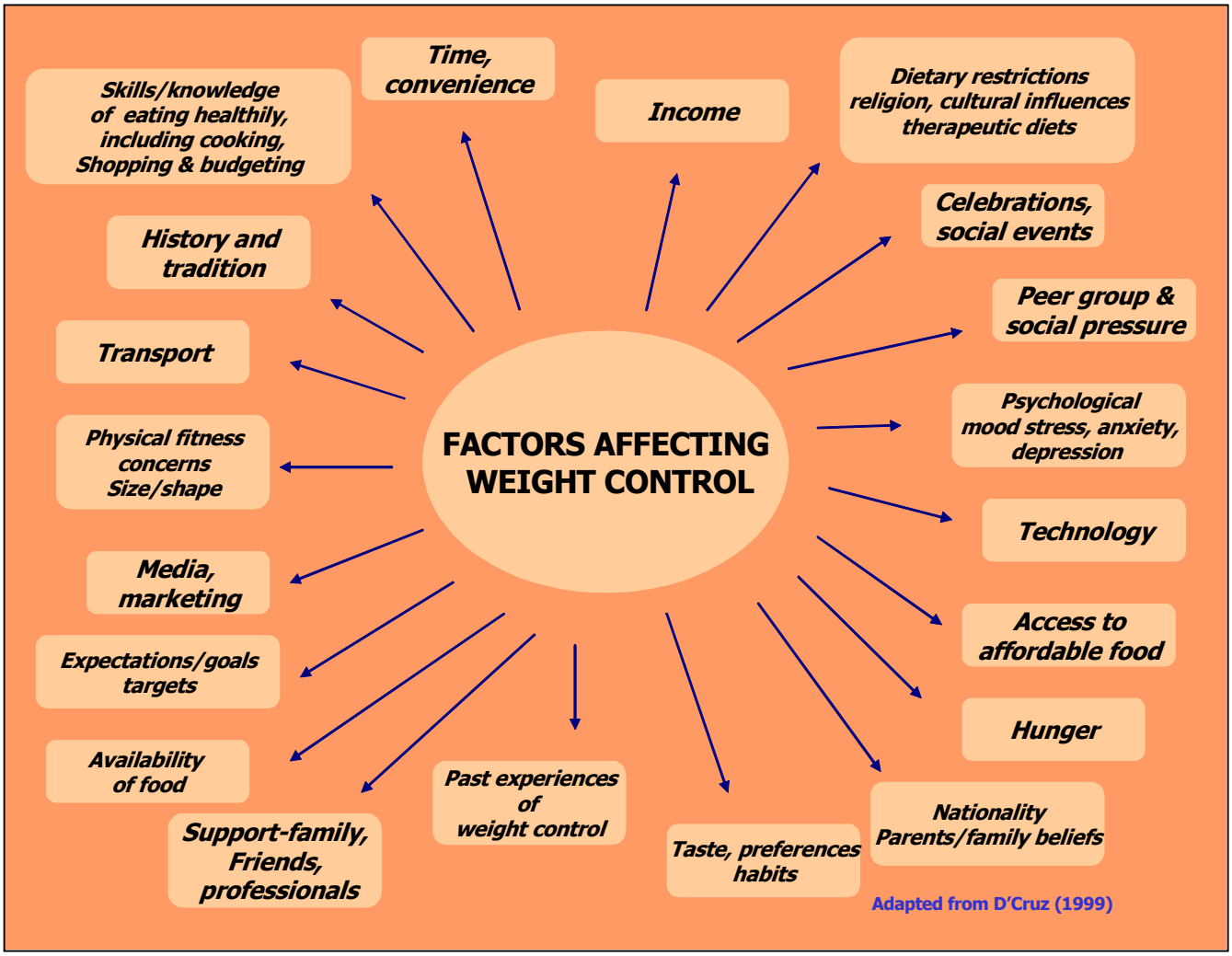
Barriers to weight control can be categorised into two broad groups: -

1) **External factors** – e.g. environment, family support, culture, societal pressures
2) **Internal factors** – e.g. motivation, psychological well being and attitudes

Personal issues of motivation and commitment are more complex and may be influenced themselves by a multitude of factors, such as – denial, fear of change, poor skills, mood, health status, previous attempts at weight loss etc.

It is important to identify any existing barriers and to deal with these appropriately before an individual begins any dietary changes for weight loss.

Factors Affecting Weight Control



CHANGING EATING BEHAVIOUR PATTERNS

A change in eating behaviour will need a lot of careful thought and effort. It is not all an uphill battle; there are things that will help make it easier. **Planning ahead** will help individuals to feel more in control of what they are trying to achieve.

Try to:

- Do nothing else while eating
  - Try not to watch TV
  - Try not to read
  - Taste and enjoy your food
  - Concentrate on the taste and texture
- Eat sitting down
- Eat at regular times. Eating on the move is bad for the digestion so always try and eat whilst sitting down.
- Pause during meals and put your knife and fork down between mouthfuls
- Try not to skip meals.
- Shop on a full stomach and have a shopping list to stick to.
- Try not to have in the house food that causes you to overeat.
- Keep healthy snacks to hand i.e. chopped fruit, salad and vegetables.
- Wait at least 30 minutes after finishing your meal before having seconds/desert-you may feel too full for a dessert.
- Plan your meals so you know exactly what you are having.
- Check that you are really hungry, and not just eating out of habit.
- Be aware of triggers, which might lead you to overeat i.e. feelings (upset, angry, anxious), being alone at home.
- Keep a food diary to look out for triggers, especially if you comfort eat.
- Changes are difficult but tastes do change and changes do become easier.

FAD DIETS

'Fad diets' are not recommended because they are often unbalanced, unrealistic and unpalatable. The only way to lose weight and maintain weight loss is with long-term dietary changes that can be incorporated into a person's lifestyle.

Individuals should be advised that the following usually indicates a 'fad diet':

- Recommends strange quantities of only one food e.g. grapefruit, meat, eggs, cabbage
- Recommends the avoidance of a whole food group e.g. carbohydrates

- Promotes magical foods to 'burn' fat e.g. grapefruit
- Suggests rigid menus, limiting food choice
- Recommends food should only be eaten in certain combinations
- Suggests rapid weight loss of more than 1kg (2lbs) per week
- Does not address barriers to losing weight
- Fails to recommend physical activity Does not advise those with medical conditions to seek medical advice before starting the diet

(Pearson, 2003)

The danger of 'fad diets' is that they are usually unsustainable and therefore can lead to 'yo-yo' dieting i.e. weight cycling. There is little evidence that short-term weight loss followed by regain is associated with any improvement in physical health.

Persistent weight cycling may contribute to low self-esteem in many overweight/obese individuals. This may subsequently impair their psychological well-being and result in barriers towards other weight loss strategies.

OTHER DIETARY OPTIONS

1) Meal Replacements

Meal replacements are foods of a fixed calorie and nutrient content, e.g. shakes, bars etc. The normal recommendation is to replace at least two main meals and to consume a carefully controlled evening meal. Meal replacement programmes are generally based on a daily intake of 1200-1500kcal/day.

There is emerging evidence that meal replacements are an effective option for some people. However they are not practical for long term weight loss and may be more appropriate for those people with a BMI>30 as a means of kick starting their weight loss.

Patients should carefully consider the pros and cons of a meal replacement plan and should be provided with support during and after a meal replacement programme.

Advantages of meal replacements

- Takes the guesswork out of portion control and estimating calories
- Easy for patients to grasp
- Nutritionally adequate
- Encourages a regular eating pattern
- Patient can still have 'normal' foods in their diet
- Widely available

Disadvantages of meal replacements

- Boredom and taste fatigue
- Do not fit in with family meals
- Can be expensive for some
- May only serve as a short term fix

2) Very Low Calorie Diets (VLCDs)

VLCDs are designed to completely replace usual food intake providing <800kcal/day. They are usually in the form of liquid supplements and should not be followed for periods >12-16 weeks due to the severe calorie restriction and potential side effects. Patients could expect to lose 1-2.5kg/week when strictly adhering to a VLCD.

The National Task Force on the Prevention and Treatment of Obesity, recommend that VLCDs are restricted to those:

- With a BMI of>30
- Who are well motivated
- Who have failed at more conservative approaches
- Have a medical condition that would be immediately improved with rapid weight loss e.g. severe obstructive sleep apnoea

Contraindications to VLCDs include:

- Unstable cardiac or cerebrovascular disease
- Acute and chronic renal failure
- Severe or end stage liver disease
- Psychiatric disorder that could interfere with compliance

The side effects of VLCDs include fatigue or weakness, dizziness, constipation, diarrhoea, dry skin, hair loss, menstrual changes and cold intolerance. More serious side effects include the development of gout, gallstones and cardiac disturbances. The risk of gallstones increases exponentially at rates of weight loss above 1.5Kg/week.

It is important that patients are medically assessed prior to undergoing a VLCD and that they are monitored closely throughout their treatment. A strong emphasis should be placed on weight maintenance strategies following the VLCD. **The National Obesity Forum recommends that VLCDs be used only under close medical and dietetic supervision.**

COMMERCIAL SLIMMING ORGANISATIONS

Many organisations and clubs now exist at local and national level to help people lose weight. They can be useful for many individuals as they provide a supportive environment and, as such, can enhance motivation.

To assist patients, it is important that healthcare professionals have a good knowledge about local options and to offer continuous support to those following commercial slimming clubs.

The British Dietetic Association endorses three organisations; Rosemary Conley Diet & Fitness Clubs (RCDFC), Slimming World and Weight Watchers. These three companies provide advice on healthy eating and physical activity. They are not qualified to give specialist dietary advice for other medical conditions, so patients do need to receive first line advice in the healthcare setting.

Rosemary Conley Diet and Fitness Club

The underlying philosophy of the Rosemary Conley Organisation is that diet and physical activity are inextricably linked, both in terms of weight loss and maintenance of good health. RCDFC promote a diet that is low in fat and in line with all current healthy eating recommendations. As well as incorporating exercise into each group session, they encourage group members to become more physically active in their daily lives. Small sustainable changes are recommended with an initial aim of 5% weight loss in the first three months.

Weight Watchers

Weight Watchers promote a diet based on current healthy eating recommendations. Their programme uses a points system to educate group members on a healthy, balanced diet. The number of points allocated is based on current weight with the aim of achieving an energy deficit of approximately 600kcal/day. The focus is primarily on the avoidance of high fat foods. Although exercise does not form part of the Weight Watchers group sessions there is focus on promoting increased physical activity in daily life.

Target weights are set to achieve an initial weight loss of 10%, with an ultimate target weight that is within the BMI range 20-25kg/m2

Slimming World

The Slimming World diet is referred to as the Food Optimising System. There are two choices within this system: the Original system, which is based on the proteins food group and the Green system, which encourages high carbohydrate foods. Both systems promote the consumption of a balanced and nutritious diet and encourage five portions of fruit and vegetables a day. Individuals are allowed to select their own target weight.

If dealing with a patient who attends this slimming group or who intends to join, please emphasise the importance of the inclusion of adequate carbohydrate intake (see Balance of Good Health model in this section) particularly for those patients who have diabetes.

A disadvantage of the commercial slimming groups is the membership and class fees, which may present a barrier to those on low incomes.

(SEE CONTACT DETAILS FOR EACH SLIMMING ORGANISATION IN USEFUL CONTACTS IN THE APPENDIX SECTION)

5) WEIGHT MAINTENANCE

Why is learning to maintain weight an essential tool for patients?

Maintenance of weight loss represents the Achilles" heel of most weight management programmes. The majority of patients regain all of their lost weight. For patients embarking on a weight loss programme, avoiding weight regain after a period of weight loss is the biggest challenge they face.

Successful weight maintenance requires balancing energy intake with energy expenditure indefinitely. This involves long-term vigilance for people who are predisposed to being overweight.

What is the difference between weight maintenance and weight loss?

- Weight maintenance is long term, weight loss usually only occurs for a number of weeks at any one time
- Weight maintenance is less reinforcing than weight loss – despite continuing to work at their recently adopted behaviours patients will not have any further weight loss to show for it
- Patients usually receive less support during weight maintenance, however ongoing support is essential.
- Patients may have to learn to accept a weight they previously thought of as undesirable

When should weight maintenance begin?

- When the 10%/10kg weight loss has been achieved (preferably by six months)
- When weight loss has slowed down or stopped (after a reasonable period of weight loss) and when the 'costs' of trying to lose further weight at this stage outweigh the benefits.
- When individuals do not wish to lose further weight

The weight plateaux should be accepted as a normal part of any attempt to lose weight. Patients need to be reassured that this is normal and if they continue with their healthier eating habits and remain more active they will not start to gain weight.

Sometimes weight 'plateaus' because patients have relaxed their eating too much, or reduced their activity level. If patients think this might have happened they could go back to keeping a food and activity diary for a week or two to check. Encouraging them to compare what they are doing now with what they were doing when the weight was coming off.

If patients have been losing weight for at least 3-4 months before their weight plateaus, then now is a good time to consolidate that weight loss with a period of weight maintenance.

It is usually recommended that **patients stabilise their weight for around 6 months before embarking on another attempt to lose weight**, however, this will need to be individually determined with each patient.

For recommended patient and health professional resources please refer to the **RESOURCES SECTION** in the appendix.

If further information, guidance or resources are required please contact: -

Your Local Health Promotion Service -

For further information, resources or training on lifestyles issues/behaviour change please contact: -

Liz Newbury-Davies, Senior Health Promotion Specialist

Caroline Nichols, Health Promotion Officer - Llanelli (Community Nutrition)

Address: Carmarthenshire Local Public Health Team
Carmarthenshire Local Health Board
Unit 5
Parc Dafen
Heol Cropin
Llanelli
SA14 8QW

Tel: 01554 744400

E-mail: **liz.newbury-davies@nphs.wales.nhs.uk**
caroline.nichols@nphs.wales.nhs.uk

Your Local Dietetic Department -

For further information or general queries regarding the management of obesity or specific dietary advice, please contact: -

Hayley Herbert, Senior Dietitian: Clinical Lead in Obesity. (Prince Philip Hospital)
hayley.herbert@carmarthen.wales.nhs.uk

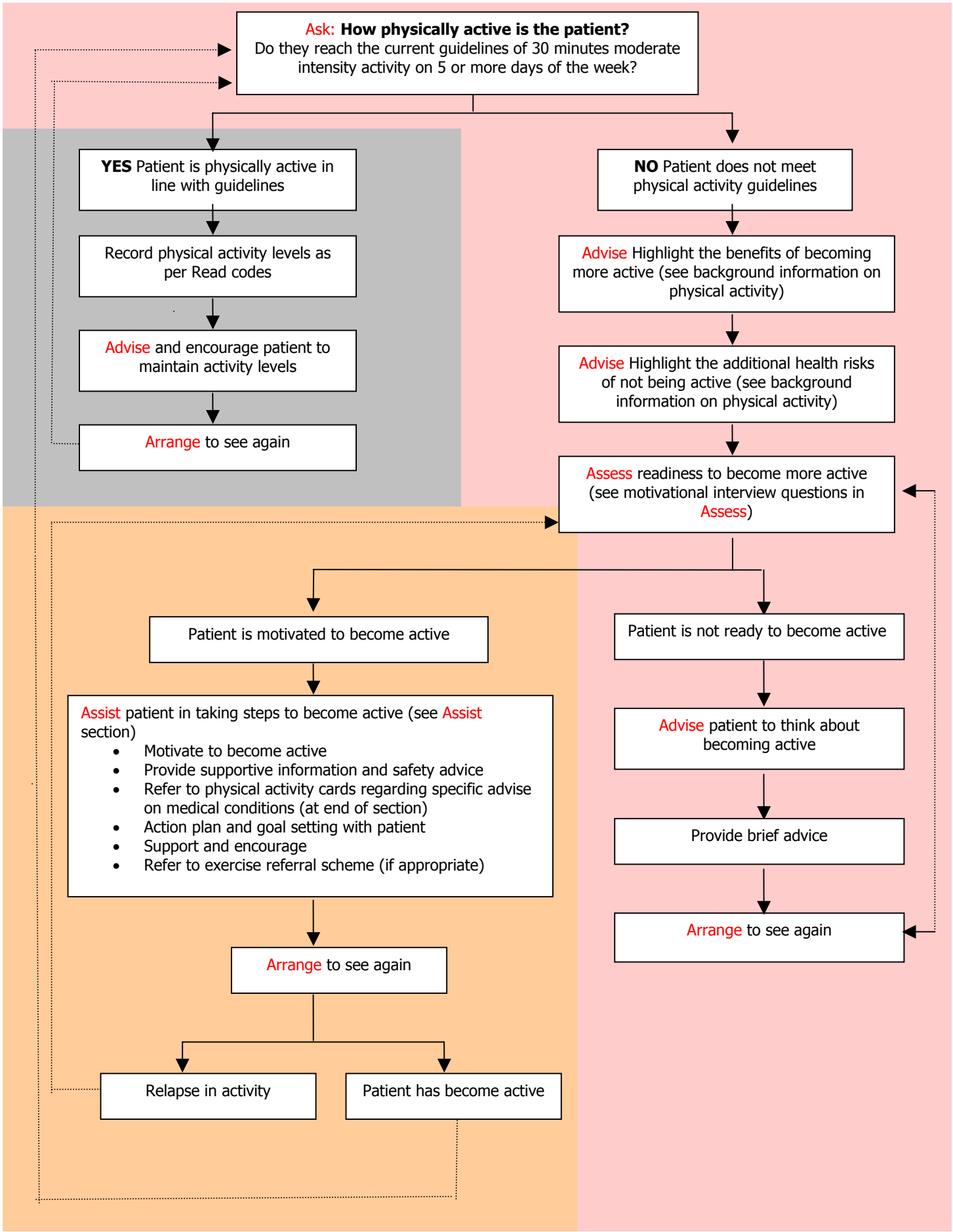
Prince Phillip Hospital - 01554 783061
Nutrition & Dietetics Department
Bryngwynmawr
Llanelli
SA14 8QF

West Wales General Hospital - 01267 227067
Nutrition & Dietetics Department
Carmarthen
SA31 2AF

See Referral Form in Referral Section

PHYSICAL ACTIVITY

PROTOCOL for PHYSICAL ACTIVITY INTERVENTIONS



PHYSICAL ACTIVITY – WHAT IS IT?

Physical activity has an important role to play in weight management, especially in the prevention of weight gain/regain. Regardless of its effect on weight, physical activity should be recommended because of its overall health benefits.

Physical activity refers to all forms of bodily movements which use energy and includes tasks such as housework, gardening and cleaning the car, as well as activities such as walking, cycling, running, aerobics and so on. [57]

Adults should try to build up gradually to accumulate 30 minutes of moderate intensity physical activity on five or more days of the week[58]

There is evidence to suggest that for prevention of weight gain, a higher level of activity is required (45-60 minutes/day)[52]

People who are overweight / obese may need to do 60-90 minutes of activity a day in order to achieve weight loss and avoid regaining weight [52]

Sustained activity is probably more effective health wise, so ideally patients/clients should aim for activity to last 15-30 minutes at a time. However every bit of activity is important, and it is important to build on this principle when encouraging individuals to be more active.

Key principles of this message based on the FITT principle

Frequency	Everyday (minimum of 5 days a week), incorporate into daily routine
Intensity	Moderate e.g. brisk walking. Moderate activity is one that should make the individual breathe harder than normal and become warmer. Start where the individual is at, activity should be built up gradually
Time	Accumulate 30 minutes (can be done in bouts of 10-15 minutes to achieve 30 minutes in one day)
Type	Anything from formal/structured activity e.g. organised sport/fitness classes, to informal lifestyle activities e.g. swimming, walking, gardening

MODE OF ACTION

Physical activity on its own results in modest weight loss of approximately 0.5kg-1kg per month [49]. Studies have shown that higher levels of physical activity produced greater weight loss than lower levels of activity. [48]

RAISING THE ISSUE OF PHYSICAL ACTIVITY

ASK

Recording whether patients are physically active in line with current guidelines is an important opportunity to raise the issue of being physically active with patients. Refer to Read codes for appropriate recording of this information.

- ASK patients about their physical activity levels - whether they take any forms of activity or don't do anything (see Physical Activity History and Assessment Questions below)
- If they are not active assess whether they're interested in becoming more active
- For those patients who are physically active, check that they meet current recommended activity levels (**30 minutes, moderate intensity activity** (makes you breathe harder and feel warmer), **on 5 or more days of the week**) Remember that activities such as walking and gardening all count

Opportunities to ASK about physical activity and ASSESS interests and motivation to become more active could include:

- History taking at new patient health check
- When patients request anti-obesity medication
- During Weight Management, Diabetes, CHD, Hypertension, clinics etc
- Opportunistically, during routine appointments (at appropriate time!)
- Post cardiac rehabilitation checks
- Patients who present with mobility problems
- Repeat prescribing appointments e.g. anti-hypertensives or statins

Physical Activity History and Assessment

You could use the following questions with patients for your physical activity assessment:

- What types of exercise or physical activities have you done in the past?
- What made you stop these activities?
- How ready are you to start taking more physical activity on a regular basis?

- Think about the last seven days. How many times on average did you accumulate 30 minutes of the following kinds of activity throughout the day?

- Do you think you would benefit from being more active?

- What is the family's attitude to taking exercise?

- Do the family engage in leisure activities together, such as walking or cycling, or is watching tv their preferred activity?

- What kinds of leisure facilities are available locally? – e.g. swimming pool, leisure centre, open fields or parks for walking

- What is the patients community environment like e.g. are streets busy or dimly lit, do they fear crime – barriers to potentially being able to get out and about

- Do they have social networks, family, friends who can act as motivators to engaging in activities, and provide company if patients are fearful of going to activities/walking alone

The overall aim of the physical activity history and assessment is to try and gain an understanding of present and past activity levels, and potential barriers to engaging in activity. From this you can go onto assess whether patients are motivated to change activity levels (see ASSESS section)

ACTIVITIES
Mild Activity Minimal effort e.g. yoga, easy walking, light housework/gardening
Moderate Activity Breathing harder than normal and feeling warmer e.g. brisk walking, tennis, badminton, swimming, line dancing, light aerobics, heavy gardening-digging, mowing; heavy housework-washing floors, windows
Vigorous Activity Heart beats rapidly, breathing hard e.g. running, jogging, squash, cycling, aerobics, football

ASSESS

After taking a patient history regarding their activity levels, you can establish a patient's motivation, and stage of change in relation to physical activity. Choose **one** statement that you feel most accurately describes them, from the following list. [59]

A They are not currently physically active, and do not intend to become more active in the next six months/ too busy at present (pre-contemplation)

B They are not currently very physically active, but are thinking about increasing the amount of activity they take (contemplation)

C The amount of activity they take varies, sometimes being active, other times not (preparation)

D They are currently physically active on most days, but have only begun to be so within the last six months (action/maintenance)

E They are currently physically active on most days, and have been so for longer than six months (maintenance)

F A year ago they were physically active, but in the last few months have been less active (relapse)

ADVISE

For those patients that meet the current physical activity guidelines encourage and review. All patients who are overweight and/or obese, and those with CHD, or risk factors, should be advised on the benefits of becoming more physically active. For those who are **interested** in becoming more physically active, (at contemplation and preparation stages on the cycle of change model) advice should be tailored to suit each individual patient according to their ability, age, mobility and taking into consideration their clinical conditions and / or risk factors. Other factors such as economic circumstances, community environment, leisure opportunities, social networks etc should also be considered.

For specific evidence based guidelines on discussing appropriate activities with conditions such as overweight and obesity, type 2 diabetes, angina, post MI, hypertension, please refer to the BHF evidence based reference sheets provided in this section.

ASSIST

For patients who would like to become more physically active, brief advice covering the **30 minutes of moderate intensity activity on 5 or more days of the week** can be given in 5-10 minutes. Key issues to be covered with the patient will include misconceptions about activity and required levels. Plan for change by discussing any perceived barriers to success.

Consider issues such as

- time
- cost – equipment, membership fees
- access to facilities, transport
- social surroundings, family, friends etc
- lifestyle / job
- likes / dislikes
- age
- health
- mobility

Goal Setting

Encourage the patient to develop an action plan and to set realistic goals. For any activity to be sustained by the patient, it needs to be one that is suitable for them and that they will enjoy. Fun, sociable and regular activities may increase commitment to activity.

The action plan should include:

- Start dates
- Types of activity
- Frequency
- Venue
- Aim for a week by week build up of activity levels

Physical activity considerations for Overweight/Obese Patients –Safety Recommendations

Provide patients with advice as appropriate

- Simple, low intensity activity such as increasing activities of daily living is recommended for severely obese patients. [49]
- Remember to assess the patient's starting point. They should aim to build up to recommended levels for activity gradually over a period of a few weeks
- Begin activity session slowly and build up gradually (warm up). At the end, slow down gradually (cool down)
- Take into consideration the existence of other medical problems (e.g. Diabetes, CHD, mobility problems etc)
- Provide education covering normal responses to activity, such as breathing quicker, muscle tightness etc. – in order to prevent people assuming that they are doing themselves harm. E.g. overweight individuals may experience breathlessness even with walking slowly. Encourage people to build up slowly within a comfortable range
- Obese patients may become uncomfortable when exercising (i.e. chaffing between legs, under arms) appropriate clothing/footwear is recommended (Mattsson et al 1997)
- Risk of injury to joints or the spine from certain types of exercise (high impact or jarring)
- Functional capacity – can the individual safely manage to get on and off certain types of exercise machines
- Self-esteem and confidence – walking into a leisure centre may be challenging, what are patients feelings in taking part in an exercise class, or wearing a swimsuit to go swimming?
- Are there specific exercise sessions in the community exclusive for overweight/obese people that you can inform patients about
- Take baseline measurements from which progress and weight loss can be gauged e.g. measuring waist, hips, thigh circumference to indicate inch loss
- Important to establish and agree realistic long term goals
- Look at options for being more active built into activities of daily living e.g. getting off bus a stop earlier, parking car further away, cut out short car journeys, do housework more vigorously
- Have regular reviews with patient to monitor progress, modify goals and sustain motivation and compliance

Also see specific advice sheets provided in this section on medical conditions regarding advice on safe practice.

ARRANGE Follow up

Regular follow up and support is an important factor in maintaining successful change. When patients attend for follow up or review appointments, check how they are progressing with their action plans. Provide encouragement and support. Ask about whether they are experiencing any problems, particularly with breathlessness, mobility etc. Different people may notice improvements in their fitness in different ways such as less short of breath after climbing stairs. Physical changes may include weight loss; physiological changes e.g. improvements in blood glucose and blood pressure readings; psychologically patients may have a sense of well being and feel better able to cope with stress; socially, patients may have joined activities and have made new friends – highlighting all these physical, physiological, psychological and social benefits will also increase the confidence of the patient and be a motivating factor to continue activity.

Referral to support services

GP Exercise on Referral

If an individual is motivated to become more physically active, they may benefit from referral to a specialist scheme. Patients who are overweight or obese and are motivated to become active can be referred to the "Vitality" GP Exercise Referral Scheme (see the "Appendix" for referral details). "Vitality" now operates throughout Carmarthenshire. Exercise Referral is a multidisciplinary intervention, which aims to provide safe and effective exercise for patients with medical conditions. Responsibility for the safety of the patient is divided between the GP, exercise specialist and the patient. The GP/Practice Nurse is responsible for ensuring that the relevant medical information about the patients given to the exercise specialist, this is via the exercise referral form. The Exercise Specialist has received specialist training in managing exercise for patients with medical conditions. They are responsible for designing and delivering a safe and effective exercise programme, which takes into account the individual health needs of the patient. The patient is responsible for adhering to the exercise programme, and to make necessary lifestyle changes. For further information, please contact the Referral Scheme Co-ordinator on 01554 747516

Other Support

The Health Promotion Service together with other partners, such as primary care teams, community groups and statutory organisations, are developing "Walking the Way to Health" schemes across Carmarthenshire. Details of developments within localities will be forwarded to your practice. For further information regarding Walking Schemes, please contact Marie Jones, Walking the Way to health Coordinator, 01554 747500, e mail MaAJones@carmarthenshire.gov.uk. For further information on Physical Activity issues please contact Liz Newbury- Davies Senior Health Promotion Specialist on 01554 7444470, e mail liz.newbury-davies@nphs.wales.nhs.uk.

Information Sources

- See appendix for useful website addresses
- Health Professional Physical Activity Resources and Patient Resource details can be found in the appendix
- For advice and information regarding a range of sporting or recreational activities within the county, (ranging from Bowls to Martial Arts and many more) please contact the Department of Recreation and Sport, Carmarthenshire County Council on 01554 747500 who can supply local contacts for patients interested in participating in such activities

PHYSICAL ACTIVITY AND OVERWEIGHT/OBESITY

The case for promoting physical activity

Obesity carries considerable human costs: it doubles the risk of all cause mortality, coronary heart disease, stroke and type 2 diabetes, and increases the risk of some cancers, musculoskeletal problems and loss of function, and carries negative psychological consequences. [52] A 10% reduction in body weight can significantly reduce hypertension, blood lipids and decrease the risk of developing type 2 diabetes[76].

Physical activity has an important role to play in weight management, especially in the prevention of weight gain/regain. Inactive people are more likely to be obese than active people. There is an association between energy expenditure and lower fat mass – those with higher levels of energy expenditure tend to have a lower fat mass [50,51]. Inactive people are more likely to have higher body mass index [52].

Physical inactivity is also an independent risk factor for cardiovascular disease, to which obese people are more at risk.

Regular physical activity has been shown to:

- Reduce visceral and total body fat [55,56,71]
- Reduce the risk of cardiovascular disease and improve cardiovascular risk factors:
- Lipid profile – reduces triglycerides and LDL, increases HDL[71]
- Prevents and delays the onset of hypertension, aids BP control [72]
- Reduces blood pressure – even in the absence of weight loss [74]
- Reduces fibrinogen levels [59]
- Helps in weight control / management[73]

Physical activity plays an important role in the prevention and management of Type 2 Diabetes[62]. Obese people have an increased risk of insulin resistance. Increased physical activity in conjunction with dietary changes can prevent people with impaired glucose tolerance from progressing to type 2 diabetes[64]. Physical activity may prevent or delay the development of type 2 diabetes, or help in type 1 or type 2 management by[60]:

- Aiding weight loss/Reducing central obesity- which contribute to lowering insulin resistance
- Decreasing insulin resistance/increasing insulin sensitivity
- Improving blood glucose levels (glucose tolerance)
- Decreasing HbA1c – after 10 weeks of activity HbA1c can be reduced by 20% [66]
- Producing desirable changes in muscle tissue [67]

Physical activity can reduce the risk of cancers of the colon and breast, especially in overweight and obese people (Hardman, 2001)[53].

Additional benefits of regular physical activity include:

- Reduces anxiety / stress and improves mood – which are more common in obese people [74]
- Reduces mild and clinical depression [74]
- Improves functional capacity in older people, which is low in those who are obese [74]
- Improves self esteem and general psychological well-being [74]
- Reduced risk of osteoporosis

For further benefits of physical activity and evidence relating to specific risk factors and medical conditions please see the BHF evidence based reference sheets provided in this section.

In addition to helping people loose weight and sustain weight loss, activity is critical to improving the overall health profile in obese people and should be considered an essential part of treatment.

The Practice Role

All practice staff have an important role in advising patients to participate in physical activity and supporting their efforts to change

Audit and records

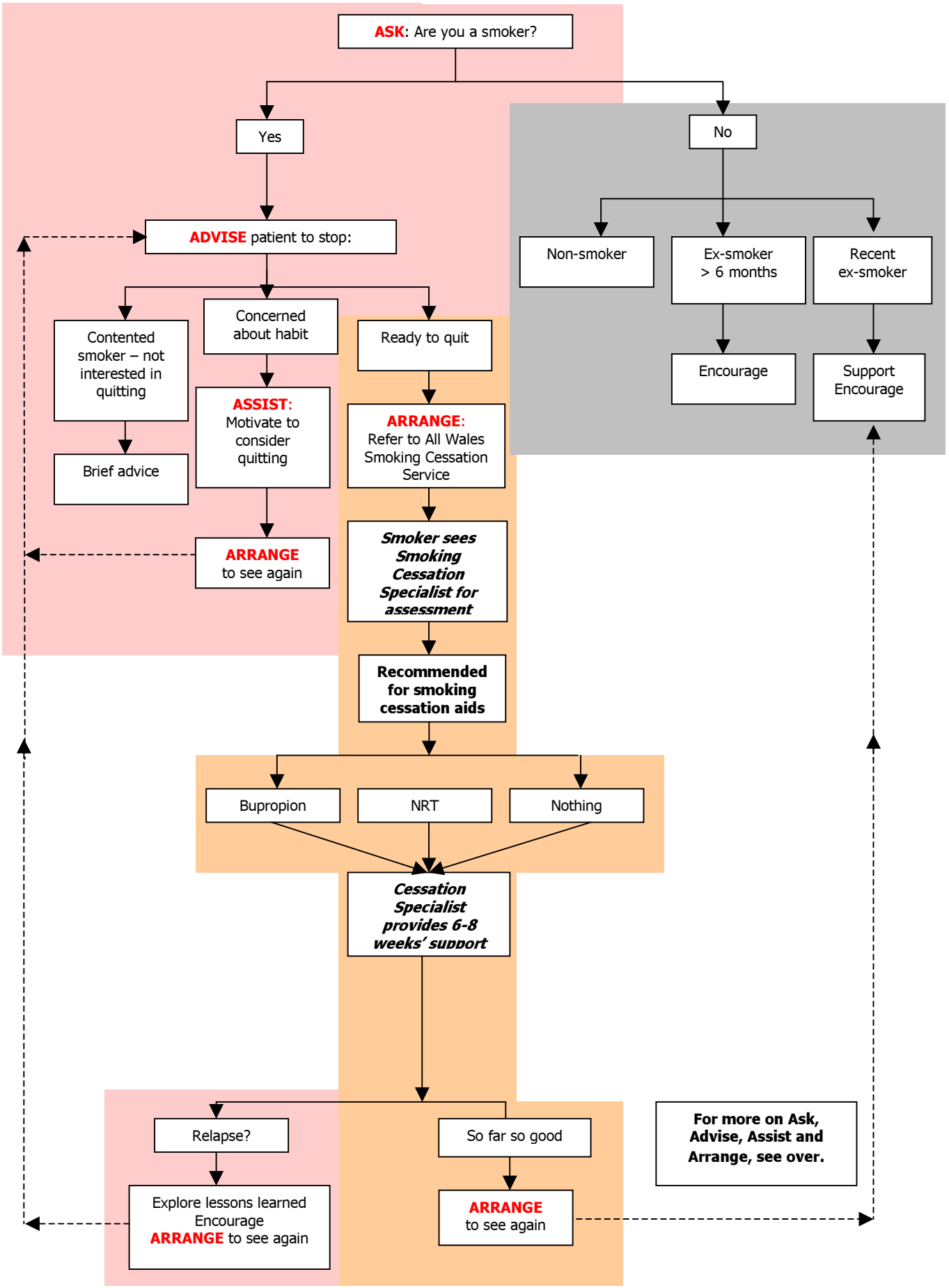
In order to be consistent all members of the Primary Care Team should have access to records that show physical activity status and comments on interventions given. Remember also to enter appropriate Read codes onto your system and information regarding activity onto patient hand held records

Do your patient records include details of:

- Frequency, amount and type of physical activity?
- Stage of change in relation to physical activity?
- Advice given on brief interventions?
- What kind of physical activity/information/counselling/support are you providing?
- Who provides the physical activity consultations in your practice? (It should be on the agenda of everyone involved in patient consultation)
- Does your Diabetes/CHD/risk factor protocol include a system for consultation about physical activity?
- Are patients receiving consistent information and support from all practice team members?

SMOKING

PROTOCOL for SMOKING INTERVENTIONS



RAISING THE ISSUE WITH ALL SMOKERS

ASK

Record the smoking status of all patients and, referring to patient notes, raise the issue at least once a year. Refer to Read Codes for appropriate recording of status (smoker, non-smoker, ex smoker, no. of cigarettes smoked daily, etc).

Opportunities to raise the issue include:

- When patients present with a smoking related illness
- When children present with an illness that may be caused or exacerbated by parents' or guardian smoking
- As part of a new patient health check
- During asthma, diabetes, hypertension, ante-natal and family planning clinics

For those who smoke – assess interest and motivation to quit. Try asking:

- Would you like to stop?
- How important is it for you to stop?
- Would you be prepared to try quitting in the next two weeks?

ADVISE

All patients who smoke should be given clear, firm, personalised advice on the value of stopping and the risks to health of continuing.

ASSIST

For patients who would like to stop, brief advice covering a few key points can be given in about 5 – 10 minutes. You would need to decide if you could do this at the time or at an additional appointment. Key issues will include:

- Setting a date to stop
- Reviewing past experiences, what helped, what hindered
- Planning – identifying likely problems and making a plan to deal with them
- Telling family and friends to get their support
- Thinking about alcohol – the effect drinking may have on the quit attempt
- Assessing suitability for NRT or Zyban, in line with NICE guidelines[31]

Refer the smoker to the specialist **All Wales Smoking Cessation Service**. The specialist would be able to spend time going through motivation and advice on products. The smoker would then refer back to you to assess product suitability and for prescription.

ARRANGE Follow up

Refer interested smokers to the **All Wales Smoking Cessation Service** (see below). 6/8 weeks support will be provided through group or one-to-one contact. Repeat prescriptions will be needed (for example, NRT needs to be sustained for about 12 weeks). This is an important opportunity to support the quit attempt and check compliance with and suitability of product.

Relapse is common – most smokers make several attempts to stop before they succeed. Support the patient in making sense of their relapse and encourage them to return for another attempt after an appropriate interval.

All Wales Smoking Cessation Service

Intensive support is currently provided through the All Wales Smoking Cessation Service. They offer a 6-8 week programme, either in a group or in individual sessions.

If you want free and friendly advice and support to help you quit please contact the All Wales Smoking Cessation Service on the number below for details of your local service:

0800 085 2219

How does the service work?

The programme will give people:

- A chance to think about giving up smoking and what this means for you
- Information about the products available to help you quit smoking
- Help to set a quit date – we encourage you to quit during the second week
- Ideas on preparing to quit
- Support and guidance to help you through the first few weeks of quitting
- Follow up at 4 weeks and 12 months

Who is the service for?

The service is for adults who are really serious about wanting to give up smoking and who need extra support and encouragement.

How much does it cost?

The National Public Health Service provides the service free of charge.

Smokers need help to quit

Without support, a smoker has a 3% chance of succeeding. With support (including NRT/Zyban and referral to cessation service) this increases to 20% (still quit 12 months after quit attempt)[39].

Other sources of support

Smokers Help Line Wales	0800 169 0169 (Free phone, 24 hours)
Quitting on the web	www.givingupsmoking.co.uk

The Practice role and Practice protocol

All Practice staff have an important role in advising all smokers to consider quitting and supporting their efforts with

- brief interventions,
- referral to support services, and
- appropriate prescribing of NRT/Zyban.

The practice is encouraged to formulate a protocol covering all aspects of smoking prevention and cessation, including the premises as a smoke free building, advice to adolescents and children.

Brief Interventions

All smokers should be advised to consider giving up. This may only involve an extra 1 – 3 minutes consultation, especially in the case of a smoker not interested in quitting. Further advice should be arranged according to the practice protocol, perhaps through an additional appointment with the GP or Practice Nurse/Nurse Practitioner. The intervention may be based on the recommended 4'A's approach: **Ask, Advise, Assist, Arrange** (see above).

Referral to support services

If a smoker is motivated to quit, the All Wales Smoking Cessation Service will provide 6 - 8 weeks of intensive support in preparing and sustaining a quit attempt. For a smoker considering quitting, the Practice should:

- Refer to Smoking Cessation Specialist for an assessment of motivation and advise on NRT/Zyban

Appropriate prescribing of NRT/Zyban

Nicotine replacement therapy (NRT) and bupropion are recommended for smokers who have expressed a desire to quit smoking[31]. Along with intensive support, this may lead to a 20% success rate for quitters (see above). Details for their appropriate use and recommendations for assessment for repeat prescribing is provided in the NICE guidelines available at www.nice.org.uk

Advising and helping smokers quit is cheap and cost effective

Motivating smokers to stop smoking is likely to reduce demand for treatment for acute illnesses and lessen requirements for cardiovascular and respiratory tract medication. Infants and children of parents who have stopped smoking will also suffer less wheezing, and less chest and ear infections resulting in less GP consultations[40, 41]

Obviously, spending more time talking to patients about smoking has a cost. This has been calculated at between £0.435 and £1.46 per minute to increase the times a GP raises the issue by 50%[42].

The NHS spends around ten times as much on statins as it does on smoking cessation programmes. In cost effectiveness terms, smoking cessation has been estimated to cost between £212 and £873 per quality adjusted life year (QALY) compared to a range of £4,000 to £8,000 per QALY for statins[39]. And non-smokers use less statins!

Why is Obesity and Smoking more prevalent among lower social classes and what are the common factors?

Lower educational attainment - Smoking, lack of physical leisure time activity and overweight are associated with lower educational attainment. Lower educational attainment in the mother is associated with a number of adverse determinants.

Poor living conditions - It is thought that people may smoke to compensate for poor living conditions and the same may be true of 'comfort eating'. Differences in coping skills between individuals may account for the tendency to react to stress by smoking or overeating in some individuals.

Poor material circumstances - People who are unable to afford 'treats' such as holidays and expensive clothes may compensate by overeating and smoking. Energy dense foods and cigarettes are affordable compared with luxury items. Material deprivation is an underlying factor in many other determinants. Adverse childhood circumstances are linked with high BMI.

Future orientation - Future orientation is associated with restraint and delayed gratification. Individuals who are obese or who smoke are likely to lack future orientation and are less likely to consider the longer-term effects

Locus of control - Those who find it difficult to control their smoking and dietary habits may share the tendency to external locus of control. This will result in failure to take responsibility for their own actions and may lead to reliance on 'quick fix' solutions rather than resolving to take long-term control.

Association between smoking cessation and weight gain

1. Substitution

If smoking is associated with one of the above causes, it seems logical that if smoking ceases, it will be replaced by another 'comfort' activity, such as eating energy dense foods. Weight gain following smoking cessation is associated with disinhibited eating and negative affect eating (i.e. eating during periods when negative emotions predominate).

2. Physiological

Leptin may have a role in controlling weight and leptin concentrates in smokers are lower than those of non-smokers, independent of BMI. It is hypothesised that smoking may modulate leptin synthesis and reduce body weight.

Why do some people put on weight when they give up smoking?

Smoking can reduce appetite; food may taste better, so you eat more; some people smoke at the end of a meal, so a cigarette is replaced by a second helping; some ex-smokers find that they want to eat more sweet things.
A further reason is due to physical changes in the body. Smoking causes the body to waste some of the energy in food. When you give up smoking the body returns to its normal state and needs less food energy.

There is an average gain of 8 – 10 lbs when giving up smoking but with some sensible eating habits and exercise, which can help reduce negative feelings, you can maintain your weight.

Tips to avoid weight gain

Food

The money you save on cigarettes can be used to buy better quality foods. Food will now probably taste better, this being a good opportunity to try new recipes and foods.

- Keep a stock of low calories snacks to munch on instead of sweets and biscuits i.e. sticks of fruit, and raw vegetables
- Eat small amounts and often throughout the day to keep your metabolism up
- Be aware of the fat, salt and sugar levels within food that you buy
- Use healthier cooking methods i.e. grilling, steaming, baking etc
- Avoid high calorie, sugary soft drinks
- Drink lots of water

Exercise

Most people would benefit by becoming more active. This could mean taking up a sport or it could just mean walking and cycling more. To benefit most from exercise you need to do it regularly. Chooses something that can be part of your routine, build up gradually, it is better to do a little exercise regularly than overdo it and give up. Here are some ideas:

- Walk everywhere
- Park the car a little way away and walk
- Use the stairs instead of the lift and escalators
- Use a bicycle
- Housework and gardening are be good forms of mild exercise

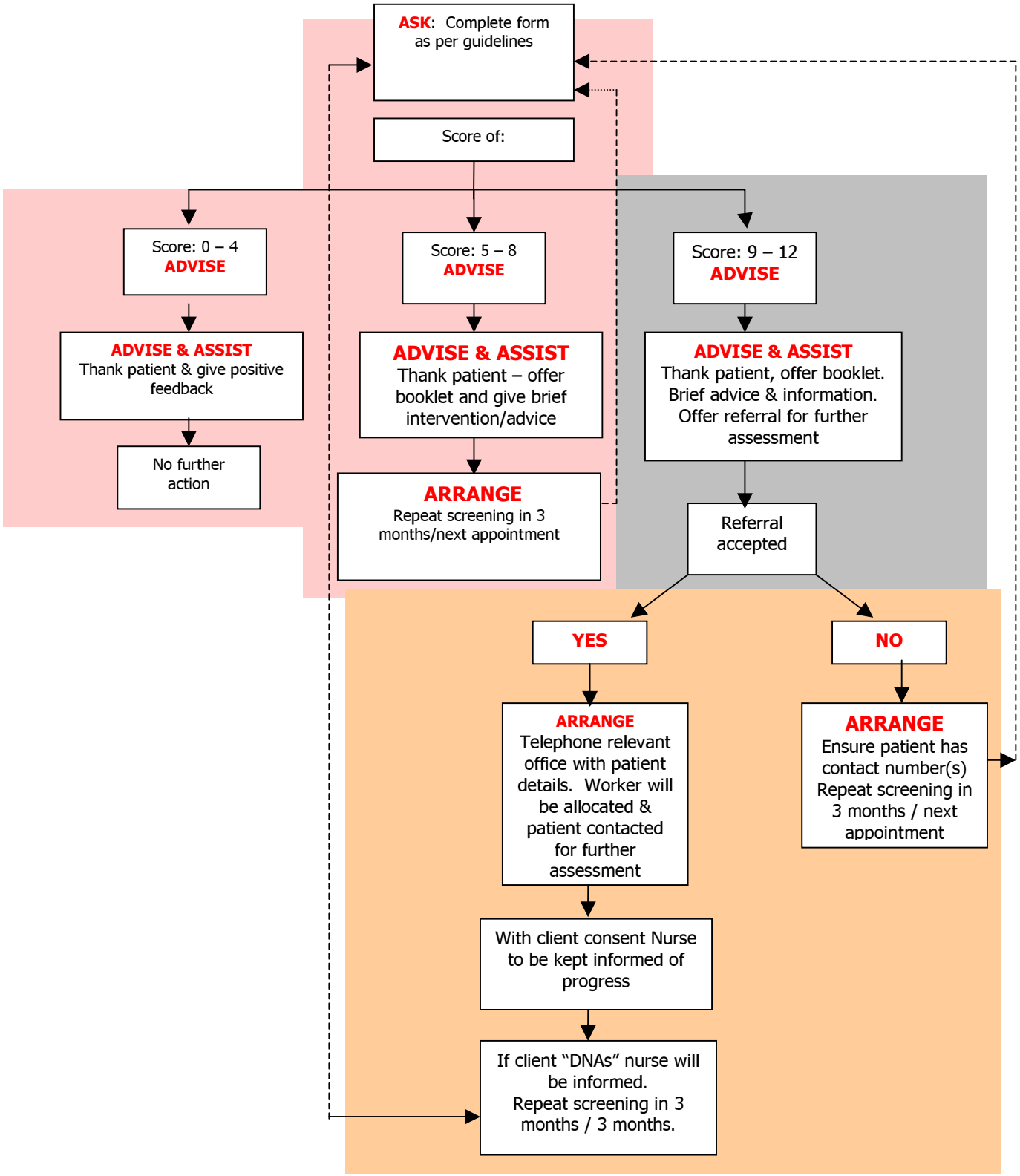
Sources:

All Wales Smoking Cessation Service Booklet – You want to be a quitter but……
Quit Booklet – Quit smoking without putting on weight

For further advice on nutrition and physical activity please see the relevant sections

ALCOHOL

PROTOCOL FOR ALCOHOL INTERVENTIONS



ALCOHOL SCREENING GUIDANCE

PRISM has developed a screening process, to enable individuals to assess their alcohol consumption, and identify those who should be offered further interventions in relation to their alcohol consumption.

PRISM is keeping a record of all the screening forms completed, to enable the screening tool to be evaluated fully, and to audit the work done. Data from the form therefore needs to be entered on their database. They DO NOT enter any names or addresses of individuals, only entering the age and gender for analysis purposes.

To enable **PRISM** to continue to monitor in this way, you MUST take a photocopy of the screening form below when completed, and keep in file/folder in surgery for collection:

The Screening Form

1. Please use this as a "quick-guide" to the basic process.

   The "must complete" bits

   The male/female section
   Age/date of birth
   Agency code (which will be an abbreviation of your surgery)
   Consent to referral (where appropriate)
   Date of screening
   The 4 questions and the scores
   The intervention made
   Reason for screening

   The "optional bit"

   The address of the person being screened
   The telephone number of the person being screened

Scoring the form

0-4 Anyone within this band can basically be told that his or her use of alcohol is non-problematic. However, should they find that the amount or frequency of use increases over a sustained period, they may wish to think about the reasons why, and reduce their consumption to a safer level. The occasional blip is not normally a worry – for

example most people may well see an increase in consumption over the Christmas period, with a return to usual levels post New Year.

5-8 Those scoring within this band should be offered the opportunity of a brief discussion of their drinking in conjunction with the self-help booklet (the booklet should be offered to all those within this band). In most cases there is still unlikely to be a problem, but research shows that a small amount of information passed on here will significantly reduce the likelihood of developing problems in the future. It should be noted though that some people may wish to have a more in-depth discussion, in this case it would be useful if the screener could provide this, or to refer on to Prism, or other appropriate agency, for further assessment.

9-12 Everyone within this band should be offered the opportunity to have further advice/information, and at the least be given the self-help booklet. If they are willing they can be referred directly to our generic teams based in Carmarthen and Llanelli, and an appointment will be arranged as soon as possible. In all cases where a patient is being referred please tick the "consent to referral" box on the screening form.

2. Where individuals wish to withhold their address, this will be respected, but people should then be given Prism's contact number, or other appropriate agency's number so that they can access the services independently if they so wish.

3. Question 4 – This is not currently included in the scoring bands, but is used to ascertain the recent levels of consumption for an individual. This is useful in terms of data collection, and also possibly for use by yourself with regard to the individual's current situation.

Confidentiality

This is of paramount importance. All those being screened need to be made aware that whilst the information they give in relation to alcohol use will be entered onto a database, no personal details other than age and sex will be included. Names and addresses will only be passed on to relevant individuals if further interventions are offered to, and accepted by, the client.

Alcohol and Obesity

Alcohol and weight gain have long been associated with each other.

However here are a few "did you knows?" to help you clarify the picture, and separate myth and reality!

Did you know…..?

That alcohol contains lots of calories (see calorie counter), but hardly any worthwhile nutrients

That to get enough iron for one day, you would need to drink 35 pints of stout!

That to get enough of all the essential vitamins and minerals to last you one day, you would need to drink 272 bottles of red wine!

That when the calories consumed in alcohol are stored in the body, they have their favourite places – the famous "beer belly" for men. For women it is the bottom and thighs which act as "storage tanks".

That alcohol can be used to help you lose weight. Unfortunately this is because continuous (immoderate) use over a prolonged period of time can lead to malnutrition. The alcohol becomes more important than the food, and the brain thinks the stomach is full because of all the liquid being consumed, so meals are skipped and become of less quality – junk food!

Calorie Counter

This is intended as a guide only, and is by no means comprehensive. Different brands may well have differing calorific values. Also, whilst use of alcohol may lead to weight gain in the short to medium term, long term heavy use may well result in weight loss and malnutrition.

Alcoholic Drink		Amount	Calories
Bacardi		25m	63
Bacardi Breezer (half sugar)		275ml	122
Baileys		1 serving	117
Bitter		568ml/1 pint	180
Brown ale		568ml/1 pint	160
Bottle stout		568ml/1 pint	200
Brandy		25ml	75
Bourbon		25ml	65
Campari		25ml	120
Cider	DRY	568ml/1 pint	200
	SWEET	568ml/1 pint	240
Guinness		568ml/1 pint	170
Gin		25ml	55
Lager		568ml/1 pint	150
Mild ale		568ml/1 pint	140
Pale ale		568ml/1 pint	180
Port		50ml	75
Rum		25ml	75
Sherry	DRY	50ml	55
	SWEET	50ml	65
Vermouth	DRY	50ml	55
	SWEET	50ml	75
Vodka		25ml	65
Whisky		25ml	60
Wine	DRY	125ml	90
	SWEET	125ml	115
	MEDIUM	125ml	93

Non-alcoholic Drinks		Amount	Calories
Apple juice, unsweetened		200ml	90
Blackcurrant Squash (no water)		15ml	35
Coca-Cola		330ml	125
Coffee,	semi-skimmed milk	220ml	14
	Black	270ml	5
	Wholemilk	200ml	14
Diet Coke		330ml	1.2
Grapefruit juice, unsweetened		200ml	80
Lemonade		568ml/1 pint	120
Orange juice, unsweetened		200ml	90
Tea,	semi-skimmed milk	200ml	14
	Wholemilk	200ml	22
Tomato juice		100ml	30

Beware of the "Munchies" or "kebab syndrome"! After a session of drinking blood sugars will be lower and you will be craving food – in the late evening the most likely sources of food will be takeaways, usually selling products which contain high levels of calories and fat.

That by drinking as little as 3 units in one session your blood pressure will be raised, combined with poor diet/physical inactivity/smoking, this is not good for your general health!

That the daily guidelines for alcohol consumption are –
Men 3-4 units per day maximum
Women 2-3 units per day maximum

That both men and women should have at least 2 dry days per week
That men should consume no more than 21 units per week
That women should consume no more than 14 units per week

For full details of how to work out units of alcohol please refer to the alcohol screening form.

A couple of examples for you -

A 12% bottle of wine (red or white) contains 9 units
A 500ml can of lager at 5.2% contains 2.6 units
A 3 litre bottle of cider at 7% contains 21 units

Remember!

Alcohol in small amounts can be enjoyed in relative safety by most people, however please keep an eye on consumption levels, in relation to ALL aspects of your health!

Acute short-term physical effects

Headache
Blurred vision
Loss of inhibitions
Violence
Loss of balance
Trauma
Arguments
Blood-shot eyes
Blackouts
Poor concentration
Restlessness
Difficulty in sleeping
High blood pressure
Rapid pulse
Vomiting
Diarrhoea
Inflammation of the stomach
Fatty liver
Trembling hands
Falls
Numbness in extremities
Peripheral neuritis
Bruising
Impaired sexual performance
Unwanted pregnancies
Sexually transmitted diseases
Menstrual disturbances
Reduced fertility
Miscarriages
General dehydration

Chronic long-term physical effects

Serious memory loss
Damage to nerves
Dementia
Epilepsy
Hallucinations
Chronic anxiety
Depression
Poor eyesight
Mouth cancer
Metabolic disorders
Oesophageal varcies
Cardiomyopathy
Anaemia
Heart failure
Impaired blood clotting
Pancreas
Hypoglycaemia
Ulcers
Liver cirrhosis
Hepatitis
Liver cancer
Back pain
Kidney infections
Foetal Alcohol Syndrome
Impotence
Peripheral neuritis and muscle degeneration
Malnutrition / General vulnerability to infection

BACK TO CONTENTS PAGE

Medication

PHARMACY

Pharmacotherapy Protocol

First line treatment must be followed for **3 months** whilst continuing to assess **weight loss**. Serious attempts to lose weight by diet, exercise and/or behavioural modifications must **have been successful** for anti-obesity drug treatment to be prescribed.

Anti-obesity drugs are contra-indicated in pre-conception, pregnancy or breastfeeding, where significant drug interactions exist, Children under 18 years, BMI<27kg/m2. Drugs should never be used as the sole element of treatment. **These treatments must NOT be available on repeat prescriptions without consultation with a nurse or doctor.**

Sibutramine (Reductil)[R]
Eligibility criteria

- 18-65 years
- BMI of ≥ 30 or 27/m^2 + significant co-morbidiites
- Co-morbidities include diabetes, hyperlipidemia, obstructive sleep apnoea and hypertension. Contraindicated in psychiatric disorders, uncontrolled hypertension >145/90mmHg.
- Incorporate monitoring into patient support package. Ensure patient receives support programme 'Change for Life' available from GP with initial prescription of Reductil.

Orlistat (Xenical) [R]
Eligibility criteria

- 18-75 years
- BMI of ≥ 30 or 28/^{2} + significant co-morbidiites
- Co-morbidities include diabetes, hyperlipidemia, obstructive sleep apnoea and hypertension. Plus CHD and stroke.
- Ensure patient is enrolled on 6 month support programme MAP 0800 731 7138

Prescribing Sibutramine

- Initial dose 10mg/day
- Dose may be increased to 15mg/day after 4 weeks in line with SPC.
- 1 month criteria – 2kg weight loss achieved
- 3 month criteria – 5% loss of body weight achieved

Lifestyle advise reinforced throughout

Prescribing Orlistat

- Initial dose 120mg tds with each main meal
- Note significant GI disturbance for patients.
- May impair absorption of fat soluble vitamins.
- Multivitamin supplementation may be required. If required it should be taken at least 2 hours after the orlistat dose.
- 3 Month criteria – 5% loss of body weight achieved.
- 6-month criteria – 10% loss of body weight achieved.

Lifestyle advice reinforced throughout

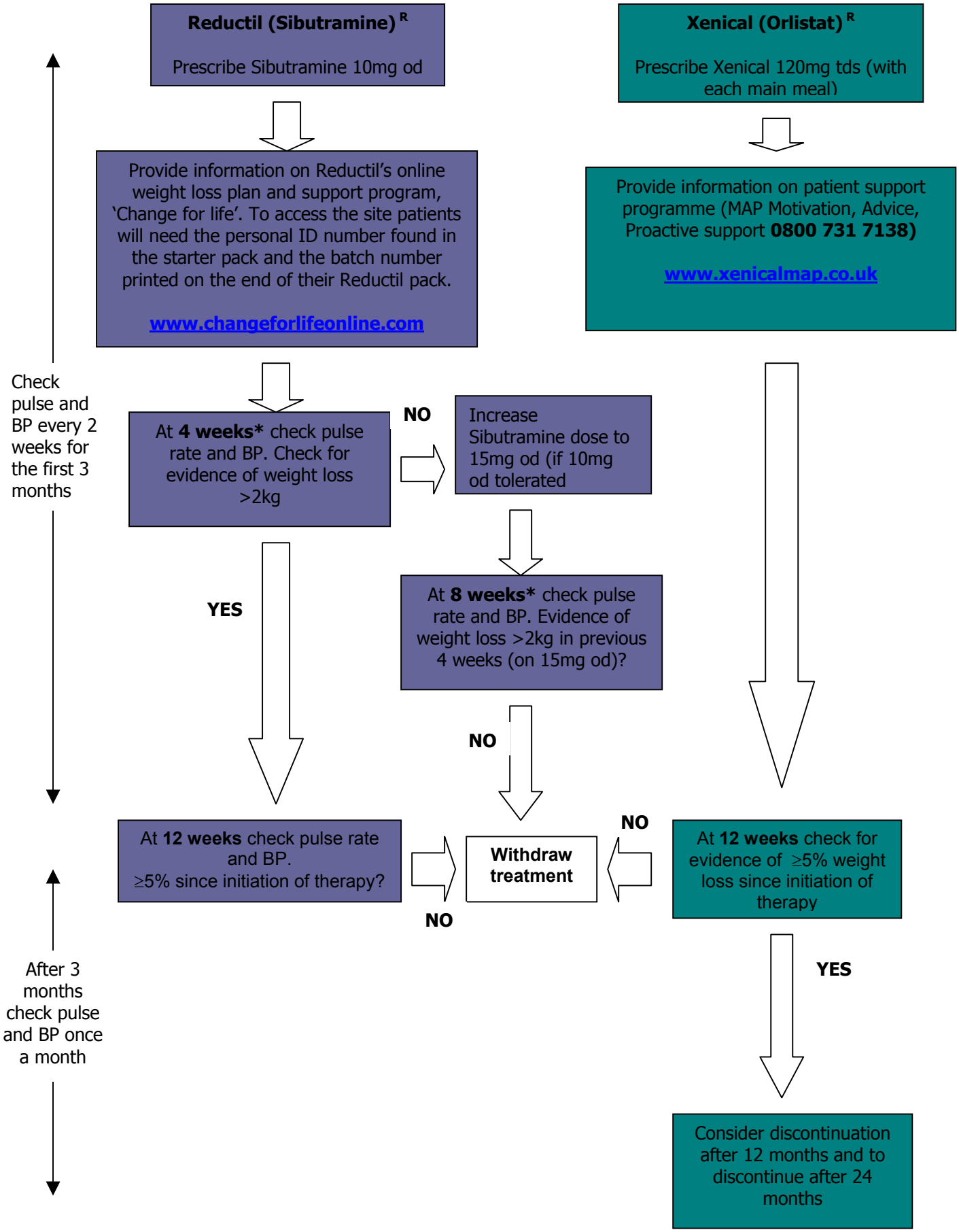
Discontinuation Therapy

- Treatment withdrawn if no evidence of 5% weight loss after 12 weeks of drug treatment, or weight loss stabilizes at less than 5% of initial body weight or if individuals regain 3kg or more after previous weight loss.
- Discontinue treatment if BP rises > 145/90mmHg or by more than 10mmHG (systolic or diastolic) or whose resting pulse rises by more than 10 beats/min (rare).
- Discontinue if BP is >145/90 on 2 consecutive visits in previously well controlled hypertensive patients
- Treatment not beyond 12 months
- Treatment stopped if there is inadequate response (e.g. weight gain)

Discontinuation of Therapy

- NICE recommends treatment should not usually be continued beyond 12 months and never beyond 24 months.
- Treatment withdrawn if no evidence of 5% weight loss after 12 weeks of drug treatment
- Treatment stopped if there is an inadequate response. (e.g. weight gain)

* Time refers to the time from beginning of treatment



* Time refers to the time from beginning of treatment

REDUCTIL

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Document last updated on the *e*MC: **Mon 06 February 2006**

Reductil 10mg & 15mg

1. NAME OF THE MEDICINAL PRODUCT

Reductil 10 mg capsules, hard

Reductil 15 mg capsules, hard

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

One capsule of Reductil 10 mg contains 10 mg of sibutramine hydrochloride monohydrate (equivalent to 8.37 mg of sibutramine).

One capsule of Reductil 15 mg contains 15 mg of sibutramine hydrochloride monohydrate (equivalent to 12.55 mg of sibutramine).

For excipients, see 6.1

3. PHARMACEUTICAL FORM

10 mg Hard capsule with a blue cap and yellow body

15 mg Hard capsule with a blue cap and white body

4. CLINICAL PARTICULARS

4.1 Therapeutic indications

Reductil 10 mg / 15 mg is indicated as adjunctive therapy within a weight management programme for:

- Patients with nutritional obesity and a body mass index (BMI) of 30 kg/m^2 or higher

- Patients with nutritional excess weight and a BMI of 27 kg/m^2 or higher, if other

obesity-related risk factors such as type 2 diabetes or dyslipidaemia are present.

Note:

Reductil may only be prescribed to patients who have not adequately responded to an appropriate weight-reducing regimen alone, ie patients who have difficulty achieving or maintaining>5% weight loss within 3 months.

Treatment with Reductil 10 mg / 15 mg should only be given as part of a long-term integrated therapeutic approach for weight reduction under the care of a physician experienced in the treatment of obesity. An appropriate approach to obesity management should include dietary and behavioural modification as well as increased physical activity. This integrated approach is essential for a lasting change in eating habits and behaviour which is fundamental to the long-term maintenance of the reduced weight level once Reductil is stopped. Patients should change their lifestyle while on Reductil so that they are able to maintain their weight once drug treatment has ceased. They should be informed that, if they fail to do so, they may regain weight. Even after cessation of Reductil continued monitoring of the patient by the physician should be encouraged.

4.2 Posology and method of administration

Adults: The initial dose is one (1) capsule of Reductil 10 mg swallowed whole, once daily, in the morning, with liquid (eg a glass of water). The capsule can be taken with or without food.

In those patients with an inadequate response to Reductil 10 mg (defined as less than 2 kg weight loss after four (4) weeks treatment), the dose may be increased to one (1) capsule of Reductil 15 mg once daily, provided that Reductil 10 mg was well tolerated.

Treatment must be discontinued in patients who have responded inadequately to Reductil 15 mg (defined as less than 2 kg weight loss after four (4) weeks treatment). Non-responders are at a higher risk of undesirable effects (see section 4.8 “Undesirable Effects”).

Duration of treatment:

Treatment must be discontinued in patients who have not responded adequately, ie whose weight loss stabilises at less than 5% of their initial bodyweight or whose weight loss within three (3) months after starting therapy has been less than 5% of their initial bodyweight. Treatment should not be continued in patients who regain 3 kg or more after previously achieved weight loss.

In patients with associated co-morbid conditions, it is recommended that treatment with Reductil 10 mg / 15 mg should only be continued if it can be shown that the weight loss induced is associated with other clinical benefits, such as improvements in lipid profile in patients with dyslipidaemia or glycaemic control of type 2 diabetes.

Reductil 10 mg / 15 mg should only be given for periods up to one year. Data on use over one year is limited.

4.3 Contraindications

- Known hypersensitivity to sibutramine hydrochloride monohydrate or to any of the excipients

- Organic causes of obesity

- History of major eating disorders

- Psychiatric illness. Sibutramine has shown potential antidepressant activity in animal studies and, therefore it cannot be excluded that sibutramine could induce a manic episode in bipolar patients.

- Gilles de la Tourette's syndrome

- Concomitant use, or use during the past two weeks, of monoamine oxidase inhibitors or of other centrally-acting drugs for the treatment of psychiatric disorders (such as antidepressants, antipsychotics) or for weight reduction, or tryptophan for sleep disturbances.

- History of coronary artery disease, congestive heart failure, tachycardia, peripheral arterial occlusive disease, arrhythmia or cerebrovascular disease (stroke or TIA)

- Inadequately controlled hypertension >145/90 mmHg; see section 4.4 “Special warnings and special precautions”)

- Hyperthyroidism

- Severe hepatic impairment

- Severe renal impairment and in patients with end stage renal disease on dialysis

- Benign prostatic hyperplasia with urinary retention

- Phaeochromocytoma

- Narrow angle glaucoma

- History of drug, medication or alcohol abuse

- Pregnancy and lactation (see section 4.6 “Pregnancy and lactation”)

- Children and young adults up to the age of 18 years, owing to insufficient data

- Patients above 65 years of age, owing to insufficient data.

4.4 Special warnings and precautions for use

Warnings:

Blood pressure and pulse rate should be monitored in all patients on Reductil 10 mg / 15mg, as sibutramine has caused clinically relevant increases in blood pressure in some patients. In the first three months of treatment, these parameters should be checked every 2 weeks; between month 4 and 6 these parameters should be checked once monthly and regularly thereafter, at maximum intervals of three months. Treatment should be discontinued in patients who have an increase, at two consecutive visits, in resting heart rate of $\geq$ 10 bpm or systolic/diastolic blood pressure of $\geq$ 10 mmHg. In previously well-controlled hypertensive patients, if blood pressure exceeds 145/90 mmHg at two consecutive readings, treatment should be discontinued (see section 4.8 “Undesirable effects, cardiovascular system”). In patients with sleep apnoea syndrome particular care should be taken in monitoring blood pressure.

- For use of sibutramine concomitantly with sympathomimetics, please refer to section 4.5.

- Although sibutramine has not been associated with primary pulmonary hypertension, it is important, in view of general concerns with anti-obesity drugs, to be on the look out for symptoms such as progressive dyspnoea, chest pain and ankle oedema in the course of routine check-ups. The patient should be advised to consult a doctor immediately if these symptoms occur.

- Reductil 10 mg / 15 mg should be given with caution to patients with epilepsy.

- Increased plasma levels have been observed in the assessment of sibutramine in patients with mild to moderate hepatic impairment. Although no adverse effects have been reported, Reductil 10 mg / 15 mg should be used with caution in these patients.

- Although only inactive metabolites are excreted by the renal route, Reductil 10 mg / 15 mg should be used with caution in patients with mild to moderate renal impairment.

- Reductil 10 mg / 15 mg should be given with caution to patients who have a family history of motor or verbal tics.

- Women of child-bearing potential should employ adequate contraception whilst taking Reductil 10 mg / 15 mg.

- There is the possibility of drug abuse with CNS-active drugs. However, available clinical data have shown no evidence of drug abuse with sibutramine.

- There are general concerns that certain anti-obesity drugs are associated with an increased risk of cardiac valvulopathy. However, clinical data show no evidence of an increased incidence with sibutramine.

- Patients with a history of major eating disorders, such as anorexia nervosa and bulimia nervosa, are contraindicated. No data are available for sibutramine in the treatment of patients with binge (compulsive) eating disorder.

- Sibutramine should be given with caution to patients with open angle glaucoma and those who are at risk of raised intraocular pressure, e.g. family history.

- In common with other agents that inhibit serotonin reuptake, there is a potential for an increased risk of bleeding (including gynaecological, gastrointestinal and other cutaneous or mucous bleeding) in patients taking sibutramine. Sibutramine should, therefore, be used with caution in patients predisposed to bleeding events and those taking concomitant medications known to affect haemostasis or platelet function.

- Cases of depression, suicidal ideation and suicide have been reported rarely in patients on sibutramine treatment. Special attention is therefore required in patients with a history of depression. If signs or symptoms of depression occur during the treatment with sibutramine, the discontinuation of sibutramine and commencement of an appropriate treatment should be considered.

- Reductil 10 mg / 15 mg contains lactose and therefore should not be used in patients with rare hereditary problems of galactose intolerance, Lapp lactase deficiency or glucose-galactose malabsorption.

4.5 Interaction with other medicinal products and other forms of interaction

Sibutramine and its active metabolites are eliminated by hepatic metabolism; the main enzyme involved is CYP3A4, and CYP2C9 and CYP1A2 can also contribute.Caution should be exercised on concomitant administration of Reductil 10 mg / 15 mg with drugs which affect CYP3A4 enzyme activity (see section 5.2 “Pharmacokinetic properties”). CYP3A4 inhibitors include ketoconazole, itraconazole, erythromycin, clarithromycin, troleandomycin and cyclosporin. Co-administration of ketoconazole or erythromycin with sibutramine increased plasma concentrations (AUC) of sibutramine active metabolites (23% or 10% respectively) in an interaction study. Mean heart rate increased by up to 2.5 beats per minute more than on sibutramine alone.

Rifampicin, phenytoin, carbamazepine, phenobarbital and dexamethasone are CYP3A4 enzyme inducers and may accelerate sibutramine metabolism, although this has not been studied experimentally.

The simultaneous use of several drugs, each of which increases levels of serotonin in the brain, may give rise to serious interactions. This phenomenon is called serotonin syndrome and may occur in rare cases in connection with the simultaneous use of a selective serotonin reuptake inhibitor [SSRI] together with certain antimigraine drugs (such as sumatriptan, dihydroergotamine), or along with certain opioids (such as pentazocine, pethidine, fentanyl, dextromethorphan), or in the case of simultaneous use of two SSRIs.

As sibutramine inhibits serotonin reuptake (among other effects), Reductil 10 mg / 15mg should not be used concomitantly with other drugs which also raise serotonin levels in the brain.

Concomitant use of Reductil 10 mg / 15 mg with other drugs which may raise the blood pressure or heart rate (e.g. sympathomimetics) has not been systematically evaluated. Drugs of this type include certain cough, cold and allergy medications (eg ephedrine, pseudoephedrine), and certain decongestants (eg xylometazoline). Caution should be used when prescribing Reductil 10 mg / 15 mg to patients who use these medicines.

Reductil 10 mg / 15 mg does not impair the efficacy of oral contraceptives.

At single doses, there was no additional impairment of cognitive or psychomotor performance when sibutramine was administered concomitantly with alcohol. However, the consumption of alcohol is not compatible with the recommended dietary measures as a general rule.

No data on the concomitant use of Reductil 10 mg / 15 mg with orlistat are available.

Two weeks should elapse between stopping sibutramine and starting monoamine oxidase inhibitors.

4.6 Pregnancy and lactation

Use in pregnancy: Sibutramine should not be used during pregnancy. It is generally considered inappropriate for weight-reducing drugs to be used during pregnancy, so women of childbearing potential should employ an adequate method of contraception while taking sibutramine and notify their physician if they become pregnant or intend to become pregnant during therapy. No controlled studies with Reductil have been conducted in pregnant women. Studies in pregnant rabbits have shown effects on reproduction at maternally toxic doses (see section 5.3 “Preclinical safety data”). The relevance of these findings to humans is unknown.

Use in lactation: It is not known whether sibutramine is excreted in human breast milk and therefore administration of Reductil 10 mg / 15 mg is contraindicated during lactation.

4.7 Effects on ability to drive and use machines

Although sibutramine did not affect psychomotor or cognitive performance in healthy volunteers, any centrally-acting drug may impair judgement, thinking or motor skills. Therefore, patients should be cautioned that their ability to drive a vehicle, operate machinery or work in a hazardous environment may be impaired when taking Reductil 10 mg / 15 mg.

4.8 Undesirable effects

Most side effects reported with sibutramine occurred at the start of treatment (during the first 4 weeks). Their severity and frequency diminished over time. They were generally not serious, did not entail discontinuation of treatment, and were reversible.

The side effects observed in phase II/III clinical trials are listed below by body system (very common>1/10, common ≤1/10 and>1/100):

Body system	Frequency	Undesirable effects
Cardiovascular system (see detailed information below)	Common	Tachycardia Palpitations Raised blood pressure/hypertension Vasodilation (hot flush)
Gastrointestinal system	Very common	Constipation
	Common	Nausea Haemorrhoid aggravation
Central nervous system	Very common	Dry mouth Insomnia
	Common	Light-headedness Paraesthesia Headache Anxiety
Skin	Common	Sweating

Sensory functions	Common	Taste perversion

Cardiovascular system

A mean increase in resting systolic and diastolic blood pressure of 2-3 mmHg, and a mean increase in heart rate of 3-7 beats per minute have been observed. Higher increases in blood pressure and heart rate cannot be excluded in isolated cases.

Any clinically significant increase in blood pressure and pulse rate tends to occur early on in treatment (first 4-12 weeks). Therapy should be discontinued in such cases (see Section 4.4 “Special warnings and special precautions.”).

For use of Reductil 10 mg / 15 mg in patients with hypertension, see section 4.3 “Contraindications” and 4.4 “Special warnings and special precautions”.

Clinically significant adverse events seen in clinical studies and during postmarketing surveillance are listed below by body system:

Blood and lymphatic system disorders:

Thrombocytopenia, Henoch-Schonlein purpura

Cardiovascular disorders:

Atrial fibrillation, paroxysmal supraventricular tachycardia

Immune system disorders:

Allergic hypersensitivity reactions ranging from mild skin eruptions and urticaria to angioedema and anaphylaxis have been reported

Psychiatric disorders:

Agitation

Depression in patients both with and without a prior history of depression (see section 4.4).

Nervous system disorders:

Seizures

Serotonin syndrome in combination with other agents affecting serotonin release (section 4.5).

Transient short-term memory disturbance

Eye disorders:

Blurred vision

Gastrointestinal disorders:

Diarrhoea, vomiting, gastrointestinal haemorrhage

Skin and subcutaneous tissue disorders:

Alopecia, rash, urticaria, cutaneous bleeding reactions (ecchmosis, petechiae)

Renal and urinary disorders:

Acute interstitial nephritis, mesangiocapillary glomerulonephritis, urinary retention

Reproductive system and breast disorders:

Abnormal ejaculation/orgasm, impotence, menstrual cycle disorders, metrorrhagia

Investigations:

Reversible increases in liver enzymes

Other:

Withdrawal symptoms such as headache and increased appetite have rarely been observed.

4.9 Overdose

There is limited experience of overdosing with sibutramine. The most frequently noted adverse events associated with overdose are tachycardia, hypertension, headache and dizziness. Treatment should consist of the general measures employed in the management of overdosing, such as keeping airways unobstructed as needed, monitoring of cardiovascular functions and general symptomatic and supportive measures. Early administration of activated charcoal may delay the absorption of sibutramine. Gastric lavage may also be of benefit. Cautious use of beta-blockers may be indicated in patients with elevated blood pressure or tachycardia.The results from a study in patients with end-stage renal disease on dialysis showed that sibutramine metabolites were not eliminated to a significant degree with hemodialysis.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: anti-obesity drug, ATC code A08A A10.

Sibutramine produces its therapeutic effects predominantly via its active secondary and primary amine metabolites (metabolite 1 and metabolite 2) which are inhibitors of noradrenaline, serotonin (5-hydroxytryptamine; 5 – HT) and dopamine reuptake. In human brain tissue, metabolite 1 and metabolite 2 are ~3 – fold more potent as in vitro inhibitors of noradrenaline and serotonin reuptake than of dopamine reuptake. Plasma samples taken from sibutramine-treated volunteers caused significant inhibition of both noradrenaline reuptake (73%) and serotonin reuptake (54%) with no significant inhibition of dopamine reuptake (16%). Sibutramine and its metabolites are neither monoamine – releasing agents nor are they monoamine oxidase inhibitors. They have no affinity with a large number of neurotransmitter receptors, including serotonergic (5 – HT_1, 5 – HT_{1A}, 5-HT_{1B}, 5-HT_{2A}, 5 – HT_{2C}), adrenergic ($_1$, $_2$, $_3$, $_1$, $_2$), dopaminergic (D_1-like, D_2-like), muscarinic,

histaminergic (H_1), benzodiazepine and NMDA receptors.

In animal models using lean growing and obese rats, sibutramine produces a reduction in bodyweight gain. This is believed to result from its impact on food intake, ie by enhancing satiety, but enhanced thermogenesis also contributes to weight loss. These effects have been shown to be mediated by the inhibition of serotonin and noradrenaline re-uptake.

In clinical trials in man, Reductil was shown to effect weight loss by enhancing satiety. Data are also available which demonstrate a thermogenic effect of Reductil by attenuating the adaptive decline in resting metabolic rate during weight loss. Weight loss induced by Reductil is accompanied by beneficial changes in serum lipids and glycaemic control in patients with dyslipidaemia and type 2 diabetes, respectively.

In obese patients with type 2 diabetes mellitus weight loss with sibutramine was associated with mean reductions of 0.6% (unit) in HbA_{1c}. Similarly, in obese patients with dyslipidaemia, weight loss was associated with increases in HDL cholesterol of 12-22% and reductions in triglycerides of 9-21%.

5.2 Pharmacokinetic properties

Sibutramine is well absorbed and undergoes extensive first-pass metabolism. Peak plasma levels (C_{max}) were achieved 1.2 hours after a single oral dose of 20 mg of sibutramine hydrochloride monohydrate. The half-life of the parent compound is 1.1 hours. The pharmacologically active metabolites 1 and 2 reach C_{max} in three hours with elimination half-lives of 14 and 16 hours, respectively. Linear kinetics have been demonstrated over the dose range of 10 to 30 mg, with no dose-related change in the elimination half-lives but a dose-proportionate increase in plasma concentrations. On repeated dosing, steady-state concentrations of metabolites 1 and 2 are achieved within 4 days, with an approximately 2-fold accumulation. The pharmacokinetics of sibutramine and its metabolites in obese subjects are similar to those in normal weight subjects. The relatively limited data available so far provide no evidence of a clinically relevant difference in the pharmacokinetics of males and females. The pharmacokinetic profile observed in elderly healthy subjects (mean age 70 years) was similar to that seen in young healthy subjects.

Renal Impairment

The disposition of sibutramine metabolites 1, 2, 5 and 6 was studied in patients with varying degrees of renal function. Sibutramine itself was not measurable.

The AUCs of active metabolites 1 and 2 were generally not affected by renal impairment, except that the AUC of metabolite 2 in end-stage renal disease patients on dialysis was approximately half of that measured in normal subjects (CLcr $\geq$ 80 mL/min). The AUCs of inactive metabolites 5 and 6 increased 2-3 fold in patients with moderate impairment (30 mL/min < CLcr $\leq$ 60 mL/min), 8-11 fold in patients with severe impairment (CLcr $\leq$ 30 mL/min), and 22-33 fold in patients with end-stage renal disease on dialysis as compared to normal subjects. Approximately 1% of the oral dose was recovered in the dialysate as a combination of metabolites 5 and 6 during hemodialysis process, while metabolites 1 and 2 were not measurable in the dialysate.

Sibutramine should not be used in patients with severe renal impairment, including end-stage renal disease patients on dialysis.

Hepatic impairment

In subjects with moderate hepatic impairment, bioavailability of the active metabolites was 24% higher after a single dose of sibutramine. Plasma protein binding of sibutramine and its metabolites 1 and 2 amounts to approximately 97%, 94% and 94%, respectively. Hepatic metabolism is the major route of elimination of sibutramine and its active metabolites 1 and 2. Other (inactive) metabolites are excreted primarily via the urine, at a urine: faeces ratio of 10 : 1.

In vitro hepatic microsome studies indicated that CYP3A4 is the major cytochrome P450 isoenzyme responsible for sibutramine metabolism. In vitro, there was no indication of an affinity with CYP2D6, a low capacity enzyme involved in pharmacokinetic interactions with various drugs. Further in vitro studies have revealed that sibutramine has no significant effect on the activity of the major P450 isoenzymes, including CYP3A4. The CYP450s involved in the further metabolism of metabolite 2 were shown (in vitro) to be CYP3A4 and CYP2C9. Although there are no data at present, it is likely that CYP3A4 is also involved in further metabolism of metabolite 1.

5.3 Preclinical safety data

The toxicity of sibutramine seen after single doses in experimental animals has generally been a result of exaggerated pharmacodynamic effects. Longer-term treatment was associated with only mild pathological changes and secondary or species-related findings. It follows that they are unlikely to present concerns during the proper clinical use of sibutramine. Reproduction studies were conducted in rats and rabbits. In rabbits, one study showed a slightly higher incidence of fetal cardiovascular anomalies in the treatment groups than in the control group, while another study showed a lower incidence than in controls. In addition, in the latter study but not in the former, the treatment group had slightly more fetuses with two minor anomalies (a tiny thread-like ossified connection between the maxilla and jugal bones, and very slight differences in the spacing of the roots of some small arteries from the aortic arch). The relevance of these findings to humans is unknown. Sibutramine's use in human pregnancy has not been investigated. Extensive genetic toxicity tests disclosed no evidence of sibutramine-induced mutagenicity. Studies in rodents have shown that sibutramine has no carcinogenic potential relevant to man.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Capsule content: lactose monohydrate, magnesium stearate, microcrystalline cellulose, colloidal anhydrous silica.

Capsule shell (10 mg): indigo carmine (E 132), titanium dioxide (E 171), gelatin, sodium lauryl sulphate, quinoline yellow (E 104).

Capsule shell (15 mg): indigo carmine (E 132), titanium dioxide (E 171), gelatin, sodium lauryl sulphate.

Printing ink: dimethicone, iron oxides and hydroxides (E 172), shellac, soybean lecithin (E 322), titanium dioxide (E 171).

6.2 Incompatibilities

Not applicable

6.3 Shelf life

3 years

6.4 Special precautions for storage

Do not store above 25°C. Store in the original package.

6.5 Nature and contents of container

Reductil 10 mg / 15 mg, capsules in a PVC/PVDC blister strip pack.

Calendar pack containing 28 capsules (4 weeks)

6.6 Instructions for use, handling and disposal

No special requirements

7. MARKETING AUTHORISATION HOLDER

Abbott Laboratories Limited

Queenborough

Kent ME11 5EL

United Kingdom

8. MARKETING AUTHORISATION NUMBER(S)

Reductil 10 mg: PL 0037/0326

Reductil 15 mg: PL 0037/0327

9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

14 January 2004

10. DATE OF REVISION OF THE TEXT

November 2005

SUPPORT SERVICE FOR PATIENTS TAKING REDUCTIL

Change for Life

To help patients achieve their weight loss goals, Abbott have developed an online weight loss plan called Change for Life which is a behavioural change programme for patients taking Reductil®.

Change for life has been designed to give patients the extra help and support they need to feel in control of their eating, lose weight and keep it off…for good! Change for life is an expert guide to losing weight and a complete weight-loss diary for patients to keep in the weeks and months ahead.

Change for life is not a diet. It is a day-by-day guide to making small, lasting, healthy changes to the food that patients eat. They will also learn to build more activity (for example walking) into their daily routine. The change for life programme is packed with tips on healthy eating, getting more active and staying motivated and will provide patients with valuable information and advice.

The entire change for life programme is available online at www.changeforlifeonline.com. To access the site patients will need the personal ID number found in the starter pack given to them by their GP and the batch number printed on the end of their Reductil® pack.

XENICAL

reflective
counselling
guide

Point
Xenical
patients
in the right
direction
with **ma**p

XENICAL®
orlistat

reflective
counselling
guide

Point **Xenical patients** in the right direction with **ma**p

Lifestyle changes, such as improved diet and regular exercise (in combination with drug therapy), can lead to weight loss in obese patients. However, it is essential that patients comply with treatment and follow the advice provided by healthcare professionals to achieve maximal health benefit.

There are various sources available to help pharmacist support patients, who have been prescribed Xenical. Consider how you would deal with the following patient who comes into the pharmacy.

case study

Ann Taylor, a 47 year-old regular customer comes into the pharmacy with a prescription for Xenical 120mg tds and asks to speak to you. She explains that her doctor has told her she has a body mass index (BMI) of 33kg/m^2, (although she's not sure what that means) and he is aiming to reduce her anti-hypertensive medication and help her lose more than 5 percent of her initial body weight. Ann, however, just wants to feel healthier and be able to run around with her children.

Reflective exercise

1. Consider how you would;

* Explain to Ann about BMI, hypertension and the importance of weight loss
* Describe the action of Xenical and its relationship with dietary fat intake.
* Explain benefits of the MAP programme to Ann and how it could help improve her chances of successful weight loss through improved compliance.

2. How can the MAP programme help you?

3. What additional support can you provide to Ann to complement the MAP programme?

Practical points

1. BMI is a measure of obesity. It is the ratio of weight (in kilogrammes) divided by height (in metres squared). Obesity occurs when there is an accumulation of excess fat in the body caused by eating more calories than are used in a day. Someone who is obese is defined as having a BMI of at least 30. Obesity is an independent risk factor for chronic diseases such as coronary heart disease, type 2 diabetes and some cancers, and can contribute to increased incidence of other medical conditions. Reducing BMI, by reducing weight, will therefore improve health. Xenical reduces dietary fat absorption by nearly a third.

In order to maximise the benefits of Xenical and minimise any treatment effects, caused by fat passing through the body, it is important that Ann:

- Eats regular meals daily
- Aims for around 3-5g of fat per 100g food
- Aims for <67g fat intake per day
- Takes Xenical immediately before, during or up to one hour after each main meal.

$$\text{BMI} = \frac{\text{weight (kg)}}{\text{height} \times \text{height (m}^2\text{)}}$$

The MAP programme (Motivation, Advice, Pro-active support) provides patients who are on Xenical with information and advice from Healthcare Professionals specially trained in nutrition and weight management, every day of the year. Patients should call 0800 731 7138 for advice.

XENICAL®
orlistat

MAP provides support and advice on healthy eating and increasing physical activity to patients prescribed Xenical. It complements advice from healthcare professionals.

The dietary advice provided is in line with British Dietetic Association guidelines for healthy weight management.

Registered patients can opt for follow-up calls at days 15 , 30, 90 and 180 of their programme but can also call MAP at any time. Patients receive a monthly newsletter, designed to consolidate the information discussed over the phone. Topics include; smart shopping, reading food labels, hidden fats, managing weight plateaus, physical activity and eating out advice.

Patients are also sent a motivational food diary, fat and calorie counter and a pedometer at set times throughout the programme. These help them to monitor their progress and encourage ongoing success.

Data suggests patients registered with MAP have improved compliance with Xenical[1].

2. MAP is accessible to healthcare professionals to enable them to discuss the advice given to patients on Xenical and obtain examples of patient literature.

3. Perhaps the most important thing pharmacists can do to help their patients, who have been prescribed Xenical, is to ensure they register with Xenical MAP.

Patients should be encouraged to take six 30-minute periods of gentle exercise each week such as brisk walking, or three 20-minute periods of strenuous exercise per week. In terms of diet patients should be encouraged to select from all our food groups; bread and cereals; fruit and vegetables; meat and fish; and dairy products. Patients should be encouraged to reduce the fat and sugar content of their foods to help weight loss. In addition, they should eat five portions of fruit and vegetables a day.

Pharmacies can also be a focal point for regular reviews of patients' progress by taking measurements such as weight, height and waist circumference; working out the BMI; and providing general encouragement.

Reference: 1) Prentice A et al. International Journal of Obesity and Related Metabolic Disorders 2004;28(Suppl 1):528

Freephone Support Line
0800 731 7138 & www.xenicalmap.co.uk

map motivation advice pro-active support

timeline

Prior to registration
Patient receives MAP freephone number and registers

Week 1
Patient receives welcome pack: includes tape measure, food and activity diary and a 'welcome to MAP booklet'

Week 4
Patient receives newsletter 1: "Healthy eating made simple"

Week 8
Patient receives newsletter 2: "Eating out advice booklet" and fat & calorie counter book

Week 12
Patient receives newsletter 3: "Taking steps to deal with weight loss plateaus"

Week 16
Patient receives newsletter 4: "Boosting weight loss with physical activity" and a pedometer

Week 20
Patient receives newsletter 5: "Understanding portion sizes and types of fat"

Week 26
Patient receives newsletter 6: "On the road to success: Keeping motivated"

Supporting weight loss every step of the way

P9791453/1105

map freephone telephone number
0800 731 7138

reflective
counselling
guide

Point
Xenical
patients
in the right
direction
with **map**

XENICAL® orlistat

XENICAL (orlistat)

Indications: XENICAL is indicated in conjunction with a mildly hypocaloric diet for the treatment of obese patients with a BMI ≥30 kg/m², or BMI ≥28 kg/m² with associated risk factors. Treatment should be discontinued after 12 weeks if patients have been unable to lose ≥5% of their body weight. **Dosage and administration:** One capsule immediately before, during or up to one hour after each of the three main meals. The patient should be on a nutritionally balanced, mildly hypocaloric diet (30% of calories from fat). Increase in faecal fat occurs 24 to 48 hours after dosing and upon discontinuation of therapy usually returns to pre-treatment levels within 48 to 72 hours. Patients with hepatic and/or renal impairment, children and elderly patients have not been studied. **Contra-indications:** Chronic malabsorption syndrome, cholestasis, breast-feeding, known hypersensitivity to any component of the product. **Side-effects:** Mainly gastrointestinal. During the first year of treatment, commonly observed events were oily spotting from the rectum, flatus with discharge, faecal urgency, fatty/oily stool, oily evacuation, increased defecation and faecal incontinence. The incidence of adverse events decreased with prolonged use of orlistat. Other adverse events were: abdominal pain/discomfort, flatulence, liquid stools, soft stools, rectal pain/discomfort, tooth disorder, gingival disorder, upper respiratory infection, lower respiratory infection, influenza, headache, menstrual irregularity, anxiety, fatigue, urinary tract infection, hypersensitivity reactions. Very rare cases of increases in liver transaminases and alkaline phosphatase and exceptional cases of hepatitis that may be serious. Very rare cases of bullous eruptions, diverticulitis and cholelithiasis. Treatment adverse events in type 2 diabetics included hypoglycaemia and abdominal distension. Reports of decreased prothrombin, increased INR and unbalanced anticoagulant treatment resulting in variations of haemostatic parameters have been reported in patients treated with anticoagulants in association with orlistat.**Precautions:** Anti-diabetic drug treatment may have to be closely monitored when taking orlistat. Co-administration of orlistat with cyclosporin is not recommended. Treatment may potentially impair the absorption of fat-soluble vitamins (A, D, E, and K). Patients should be advised to have a diet rich in fruit and vegetables and to adhere to the dietary recommendations as the possibility of experiencing gastrointestinal events may increase when orlistat is taken with a diet high in fat. If a multivitamin supplement is recommended, it should be taken at least two hours after orlistat or at bedtime. Caution should be exercised when prescribing to pregnant women. **Drug Interactions:** A decrease in cyclosporin levels has been observed in an interaction study and reported in several cases when orlistat was co-administered. This can lead to a decrease of immunosuppressive efficacy, therefore the combination is not recommended. If unavoidable, more frequent monitoring of cyclosporin blood levels should be performed following addition and upon discontinuation of orlistat until they have stabilised. In the absence of data, co-administration with acarbose should be avoided. Co-administration with warfarin or other anticoagulants should be monitored using INR values. Amiodarone plasma levels may be reduced when co-administered, reinforcement of clinical and ECG monitoring is warranted. No interactions with amitriptyline, atorvastatin, biguanides, digoxin, fibrates, fluoxetine, losartan, phenytoin, oral contraceptives, phentermine, pravastatin, nifedipine GiTS, nifedipine slow release, sibutramine or alcohol have been observed. **Legal Category:** POM **Presentation and Basic NHS Cost:** Xenical 120mg (84 capsules) £39.51. **Marketing Authorisation Number:** EU/1/98/071/003 (84 capsule blister pack). **Marketing Authorisation Holder:** Roche Registration Limited, 40 Broadwater Road, Welwyn Garden City, Hertfordshire, AL7 3AY Further information is available on request Xenical is a registered trade mark **Date of preparation:** January 2005

P9791467/106

Information about adverse event reporting can be found at yellowcard.gov.uk. Adverse events should also be reported to Roche Products Limited. Please contact UK Drug Surveillance on: 01707 367554

SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE MEDICINAL PRODUCT

XENICAL® 120 mg hard capsules.

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each hard capsule contains 120 mg orlistat.
For excipients, see 6.1.

3. PHARMACEUTICAL FORM

Capsule, hard.
The capsule has a turquoise cap and turquoise body bearing the imprint of "ROCHE XENICAL 120".

4. CLINICAL PARTICULARS

4.1 Therapeutic indications

XENICAL is indicated in conjunction with a mildly hypocaloric diet for the treatment of obese patients with a body mass index (BMI) greater or equal to 30 kg/m², or overweight patients (BMI $\geq$ 28 kg/m²) with associated risk factors.

Treatment with orlistat should be discontinued after 12 weeks if patients have been unable to lose at least 5 % of the body weight as measured at the start of drug therapy.

4.2 Posology and method of administration

Adults
The recommended dose of orlistat is one 120 mg capsule taken with water immediately before, during or up to one hour after each main meal. If a meal is missed or contains no fat, the dose of orlistat should be omitted.

The patient should be on a nutritionally balanced, mildly hypocaloric diet that contains approximately 30 % of calories from fat. It is recommended that the diet should be rich in fruit and vegetables. The daily intake of fat, carbohydrate and protein should be distributed over three main meals.

Doses of orlistat above 120 mg three times daily have not been shown to provide additional benefit. The effect of orlistat results in an increase in faecal fat as early as 24 to 48 hours after dosing. Upon discontinuation of therapy, faecal fat content usually returns to pre-treatment levels, within 48 to
72 hours.

Special populations
The effect of orlistat in patients with hepatic and/or renal impairment, children and elderly patients has not been studied. Orlistat is not intended to be used in children.

4.3 Contraindications

- Chronic malabsorption syndrome
- Cholestasis
- Breast-feeding
- Hypersensitivity to the active substance or to any of the excipients

4.4 Special warnings and special precautions for use

In clinical trials, the decrease in bodyweight with orlistat treatment was less in type II diabetic patients than in non-diabetic patients. Antidiabetic drug treatment may have to be closely monitored when taking orlistat.

Co-administration of orlistat with cyclosporine is not recommended (see section 4.5).

Patients should be advised to adhere to the dietary recommendations they are given (see section 4.2 Posology and method of administration).

The possibility of experiencing gastrointestinal events (see section 4.8 Undesirable effects) may increase when orlistat is taken with a diet high in fat (e.g. in a 2000 kcal/day diet, > 30 % of calories from fat equates to > 67 g of fat). The daily intake of fat should be distributed over three main meals. If orlistat is taken with a meal very high in fat, the possibility of gastrointestinal adverse events may increase.

4.5 Interaction with other medicinal products and other forms of interaction

Cyclosporine
A decrease in cyclosporine plasma levels has been observed in a drug-drug-interaction study and also reported in several cases, when orlistat was administered concomitantly. This can lead to a decrease of immunosuppressive efficacy. Therefore the combination is not recommended (see section 4.4). However, if such concomitant use is unavoidable, more frequent monitoring of cyclosporine blood levels should be performed both after addition of orlistat and upon discontinuation of orlistat in cyclosporine treated patients. Cyclosporine blood levels should be monitored until stabilised.

Acarbose
In the absence of pharmacokinetic interaction studies, the concomitant administration of orlistat with acarbose should be avoided.

Oral Anticoagulants
When warfarin or other anticoagulants are given in combination with orlistat, international normalised ratio (INR) values should be monitored.

Fat soluble vitamins
Treatment with orlistat may potentially impair the absorption of fat-soluble vitamins (A, D, E and K). The vast majority of patients receiving up to four full years of treatment with orlistat in clinical studies had vitamin A, D, E and K and beta-carotene levels that stayed within normal range. In

order to ensure adequate nutrition, patients on a weight control diet should be advised to have a diet rich in fruit and vegetables and use of a multivitamin supplement could be considered. If a multivitamin supplement is recommended, it should be taken at least two hours after the administration of orlistat or at bedtime.

Amiodarone
A small decrease in plasma levels of amiodarone, when given as a single dose, has been observed in a limited number of healthy volunteers who received orlistat concomitantly; in patients receiving amiodarone treatment, the clinical relevance of this effect remains unknown but may be of minor relevance. However, in patients receiving concomitant amiodarone treatment, reinforcement of clinical and ECG monitoring is warranted.

Lack of interactions
No interactions with amitriptyline, atorvastatin, biguanides, digoxin, fibrates, fluoxetine, losartan, phenytoin, oral contraceptives, phentermine, pravastatin, nifedipine Gastrointestinal Therapeutic System (GITS), nifedipine slow release, sibutramine or alcohol have been observed. The absence of these interactions has been demonstrated in specific drug-drug-interaction studies.

4.6 Pregnancy and lactation

For orlistat no clinical data on exposed pregnancies are available.
Animal studies do not indicate direct or indirect harmful effects with respect to pregnancy, embryonal/foetal development, parturition or postnatal development (see 5.3, Preclinical safety data).
Caution should be exercised when prescribing to pregnant women.

As it is not known whether orlistat is secreted into human milk, orlistat is contra-indicated during breast-feeding.

4.7 Effects on ability to drive and use machines

XENICAL has no influence on the ability to drive and use machines.

4.8 Undesirable effects

Adverse reactions to orlistat are largely gastrointestinal in nature. The incidence of adverse events decreased with prolonged use of orlistat.

The following table of undesirable effects (first year of treatment) is based on adverse events that occurred at a frequency of > 2 % and with an incidence ≥ 1 % above placebo in clinical trials of 1 and 2 years duration:

System Organ Class	Adverse Event	XENICAL	Placebo
• Infections and Infestations	*Very common (≥ 10 %):*		
	Influenza	39.7 %	36.2 %
• Metabolism and Nutrition Disorders	*Very common (≥ 10 %):*		
	Hypoglycaemia*	13.0 %	10.0 %
• Psychiatric Disorders	*Common (1 - < 10 %):*		
	Anxiety	4.7 %	2.9 %
• Nervous System Disorders	*Very common (≥ 10 %):*		
	Headache	30.6 %	27.6 %
• Respiratory, Thoracic and Mediastinal Disorders	*Very common (≥ 10 %):*		
	Upper respiratory infection	38.1 %	32.8 %
	Common (1 -< 10 %):		
	Lower respiratory infection	7.8 %	6.6 %
• Gastrointestinal Disorders	*Very common (≥ 10 %):*		
	Oily spotting from the rectum	26.6 %	1.3 %
	Abdominal pain/discomfort	25.5 %	21.4 %
	Flatus with discharge	23.9 %	1.4 %
	Faecal urgency	22.1 %	6.7 %
	Fatty/oily stool	20.0 %	2.9 %
	Flatulence	16.0 %	13.1 %
	Liquid stools	15.8 %	11.4 %
	Oily evacuation	11.9 %	0.8 %
	Increased defaecation	10.8 %	4.1 %
	Common (1 - < 10 %):		
	Soft stools	8.8 %	6.8 %
	Faecal incontinence	7.7 %	0.9 %
	Abdominal distension*	6.0 %	4.0 %
	Rectal pain/discomfort	5.2 %	4.0 %
	Tooth disorder	4.3 %	3.1 %
	Gingival disorder	4.1 %	2.9 %
• Renal and Urinary Disorders	*Common (1 - < 10 %):*		
	Urinary tract infection	7.5 %	7.3 %
• Reproductive System and Breast Disorders	*Common (1 - < 10 %):*		
	Menstrual irregularity	9.8 %	7.4 %
• General Disorders and Administration Site Conditions	*Common (1 - < 10 %):*		
	Fatigue	7.2 %	6.4 %

* only unique treatment adverse events that occurred at a frequency of > 2 % and with an incidence ≥ 1 % above placebo in obese type 2 diabetic patients.

In a 4 year clinical trial, the general pattern of adverse event distribution was similar to that reported for the 1 and 2 year studies with the total incidence of gastrointestinal related adverse events occurring in year 1 decreasing year on year over the four year period.

The following table of undesirable effects is based on post-marketing spontaneous reports:

• Immune System Disorders *Rare (0.01 - < 0.1 %):* Hypersensitivity (e.g. pruritus, rash, urticaria, angioedema, bronchospasm and anaphylaxis).
• Gastrointestinal disorders *Very rare (< 0.01 %):* Diverticulitis.
• Hepato-Biliary Disorders *Very rare (< 0.01 %):* Cholelithiasis. Hepatitis that may be serious.
• Skin and subcutaneous tissue disorders *Very rare (< 0.01 %):* Bullous eruptions.
• Investigations *Very rare (< 0.01 %):* Increase in liver transaminases and in alkaline phosphatase. Decreased prothrombin, increased INR and unbalanced anticoagulant treatment resulting in variations of haemostatic parameters have been reported in patients treated with anticoagulants in association with orlistat.

4.9 Overdose

Single doses of 800 mg orlistat and multiple doses of up to 400 mg three times daily for 15 days have been studied in normal weight and obese subjects without significant adverse findings. In addition, doses of 240 mg tid have been administered to obese patients for 6 months. The majority of orlistat overdose cases received during post-marketing reported either no adverse events or adverse events that are similar to those reported with recommended dose.

Should a significant overdose of orlistat occur, it is recommended that the patient be observed for 24 hours. Based on human and animal studies, any systemic effects attributable to the lipase-inhibiting properties of orlistat should be rapidly reversible.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmaco-therapeutic group: Anti obesity agent, ATC code A08A B01.

Orlistat is a potent, specific and long-acting inhibitor of gastrointestinal lipases. It exerts its therapeutic activity in the lumen of the stomach and small intestine by forming a covalent bond with the active serine site of the gastric and pancreatic lipases. The inactivated enzyme is thus unavailable to hydrolyse dietary fat, in the form of triglycerides, into absorbable free fatty acids and monoglycerides.

In the 2-year studies and the 4-year study, a hypocaloric diet was used in association with treatment in both the orlistat and the placebo treated groups.

Pooled data from five 2 year studies with orlistat and a hypocaloric diet showed that 37 % of orlistat patients and 19 % of placebo patients demonstrated a loss of at least 5 % of their baseline body weight after 12 weeks of treatment. Of these, 49 % of orlistat treated patients and 40 % of placebo treated patients went on to lose $\geq$ 10 % of their baseline body weight at one year.

Conversely, of patients failing to demonstrate a loss of 5 % of their baseline body weight after 12 weeks of treatment, only 5 % of orlistat treated patients and 2 % of placebo treated patients went on to lose $\geq$ 10 % of their baseline body weight at one year. Overall, after one year of treatment, the percentage of patients taking 120 mg orlistat who lost 10 % or more of their body weight was 20 % with orlistat 120 mg compared to 8 % of patients taking placebo. The mean difference in weight loss with the drug compared to placebo was 3.2 kg.

Data from the 4-year XENDOS clinical trial showed that 60 % of orlistat patients and 35 % of placebo patients demonstrated a loss of at least 5 % of their baseline body weight after 12 weeks of treatment. Of these, 62 % of orlistat treated patients and 52 % of placebo treated patients went on to lose $\geq$ 10 % of their baseline body weight at one year. Conversely, of patients failing to demonstrate a loss of 5 % of their baseline body weight after 12 weeks of treatment, only 5 % of orlistat treated patients and 4 % of placebo treated patients went on to lose $\geq$ 10 % of their baseline body weight at one year. After 1 year of treatment, 41 % of the orlistat treated patients versus 21 % of placebo treated patients lost $\geq$ 10 % of body weight with a mean difference of 4.4 kg between the two groups. After 4 years of treatment 21 % of the orlistat treated patients compared to 10 % of the placebo treated patients had lost $\geq$ 10 % of body weight, with a mean difference of 2.7 kg.

More patients on orlistat or placebo lost baseline body weight of at least 5 % at 12 weeks or 10 % at one year in the XENDOS study than in the five 2-year studies. The reason for this difference is that the five 2-year studies included a 4-week diet and placebo lead-in period during which patients lost on average 2.6 kg prior to commencing treatment.

Data from the 4-year clinical trial also suggested that weight loss achieved with orlistat delayed the development of type 2 diabetes during the study (cumulative diabetes cases incidences: 3.4 % in the orlistat group compared to 5.4 % in the placebo-treated group). The great majority of diabetes cases came from the subgroup of patients with impaired glucose tolerance at baseline, which represented 21 % of the randomised patients. It is not known whether these findings translate into long-term clinical benefits.

In obese type 2 diabetic patients insufficiently controlled by antidiabetic agents, data from four one-year clinical trials showed that the percentage of responders ($\geq$ 10 % of body weight loss) was 11.3 % with orlistat as compared to 4.5 % with placebo. In orlistat-treated patients, the mean difference from placebo in weight loss was 1.83 kg to 3.06 kg and the mean difference from placebo in HbA1c reduction was 0.18 % to 0.55 %. It has not been demonstrated that the effect on HbA1c is independent from weight reduction.

In a multi-centre (US, Canada), parallel-group, double-blind, placebo-controlled study, 539 obese adolescent patients were randomised to receive either 120 mg orlistat (n=357) or placebo (n=182) three times daily as an adjunct to a hypocaloric diet and exercise for 52 weeks. Both populations received multivitamin supplements. The primary endpoint was the change in body mass index (BMI) from baseline to the end of the study.

The results were significantly superior in the orlistat group (difference in BMI of 0.86 kg/m^2 in favour of orlistat). 9.5 % of the orlistat treated patients versus 3.3% of the placebo treated patients lost $\geq$ 10 % of body weight after 1 year with a mean difference of 2.6 kg between the two groups. The difference was driven by the outcome in the group of patients with $\geq$ 5 % weight loss after 12 weeks of treatment with orlistat representing 19 % of the initial population. The side effects were generally similar to those observed in adults. However, there was an unexplained increase in the incidence of bone fractures (6 % versus 2.8 % in the orlistat and placebo groups, respectively).

5.2 Pharmacokinetic properties

Absorption:
Studies in normal weight and obese volunteers have shown that the extent of absorption of orlistat was minimal. Plasma concentrations of intact orlistat were non-measurable (< 5 ng/ml) eight hours following oral administration of orlistat.

In general, at therapeutic doses, detection of intact orlistat in plasma was sporadic and concentrations were extremely low (< 10 ng/ml or 0.02 µmol), with no evidence of accumulation, which is consistent with minimal absorption.

Distribution:
The volume of distribution cannot be determined because the drug is minimally absorbed and has no defined systemic pharmacokinetics. *In vitro* orlistat is > 99 % bound to plasma proteins (lipoproteins and albumin were the major binding proteins). Orlistat minimally partitions into erythrocytes.

***Metabolism*:**
Based on animal data, it is likely that the metabolism of orlistat occurs mainly within the gastrointestinal wall. Based on a study in obese patients, of the minimal fraction of the dose that was absorbed systemically, two major metabolites, M1 (4-member lactone ring hydrolysed) and M3 (M1 with N-formyl leucine moiety cleaved), accounted for approximately 42 % of the total plasma concentration.

M1 and M3 have an open beta-lactone ring and extremely weak lipase inhibitory activity (1000- and 2500-fold less than orlistat respectively). In view of this low inhibitory activity and the low plasma levels at therapeutic doses (average of 26 ng/ml and 108 ng/ml respectively), these metabolites are considered to be pharmacologically inconsequential.

***Elimination*:**
Studies in normal weight and obese subjects have shown that faecal excretion of the unabsorbed drug was the major route of elimination. Approximately 97 % of the administered dose was excreted in faeces and 83 % of that as unchanged orlistat.
The cumulative renal excretion of total orlistat-related materials was < 2 % of the given dose. The time to reach complete excretion (faecal plus urinary) was 3 to 5 days. The disposition of orlistat appeared to be similar between normal weight and obese volunteers. Orlistat, M1 and M3 are all subject to biliary excretion.

5.3 Preclinical safety data

Preclinical data reveal no special hazard for humans based on conventional studies of safety pharmacology, repeated dose toxicity, genotoxicity, carcinogenic potential, and toxicity to reproduction.

In animal reproductive studies, no teratogenic effect was observed. In the absence of a teratogenic effect in animals, no malformative effect is expected in man. To date, active substances responsible for malformations in man have been found teratogenic in animals when well-conducted studies were performed in two species.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Capsule filling:
Microcrystalline cellulose (E 460),
sodium starch glycollate,
povidone (E 1201),
sodium lauryl sulphate and
talc.

Capsule shell:
Gelatine,
indigo carmine (E132),
titanium dioxide (E171) and
edible printing ink (black iron oxide, soya lecithin, polydimethysiloxane, shellac).

6.2 Incompatibilities

Not applicable.

6.3 Shelf life

3 years.

6.4 Special precautions for storage

For blister strips : Do not store above 25°C. Store in original package in order to protect from moisture.

For glass bottles with desiccant : Do not store above 30°C. Keep the container tightly closed in order to protect from moisture.

6.5 Nature and contents of container

PVC/PE/PVDC blisters and glass bottles with desiccant containing 21, 42 and 84 hard capsules. Not all pack sizes may be marketed.

6.6 Instructions for use and handling

No special requirements.

7. MARKETING AUTHORISATION HOLDER

Roche Registration Limited
Hexagon Place
6 Falcon Way
Welwyn Garden City
Hertfordshire
AL7 1TW

United Kingdom.

8. MARKETING AUTHORISATION NUMBERS

EU/1/98/071/001-006

9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

29 July 1998 / 29 July 2003

10. DATE OF REVISION OF THE TEXT

June 2005

P9791419/605

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DIABETES

Definition

Diabetes is a disease complex characterised by relative or absolute insulin deficiency and insensitivity or resistance to the metabolic action of insulin on target tissues. Hyperglycaemia results as a consequence of the defects in insulin secretion and action. This causes damage to blood vessels in many parts of the body involving both microvascular and macrovascular disease.

Type 1 diabetes is caused by an autoimmune process that results in destruction of the insulin producing beta cells in the pancreas, resulting in absolute insulin deficiency. The onset of the condition is usually abrupt, with marked polyuria, polydipsia, weight loss and fatigue. Patients are almost always under the age of 40 at onset and they are very prone to develop ketonuria or even ketoacidosis.

In contrast to type 1 diabetes, obesity is a major risk factor for the development of type 2 diabetes. Type 2 diabetes is around 6 times as common as type1. Although these patients maintain the ability to secrete insulin their tissues show a resistance to the action of insulin resulting in fasting hyperglycaemia and carbohydrate intolerance.

Symptoms

The clinical presentation of people with type 2 diabetes varies greatly. They may present with the classical osmotic symptoms of thirst, polyuria and polydipsia, along with tiredness. Most people with type 2 diabetes are diagnosed after the age of 40. The chronic hyperglycaemia is associated with long-term organ damage, particularly in the eyes, kidneys, nerves, heart and blood vessels. More specifically, these long-term complications of diabetes include retinopathy which can lead to loss of vision, nephropathy leading to renal failure, nephropathy with an increased risk of foot ulcers, amputations and foot deformations, autonomic neuropathy causing cardiovascular, gastrointestinal, genitourinary and sexual dysfunction. Patients with diabetes also have an increased risk of atherosclerotic cardiovascular, peripheral vascular and cerebrovascular disease in addition to an increased incidence of obesity, particularly abdominal obesity, hypertension and lipid disorders. The clustering of abdominal obesity, hypertension, lipid disorders with diabetes (especially type 2 diabetes) and cardiovascular disease is often called a 'metabolic syndrome' or insulin resistance syndrome, to indicate that insulin resistance could be a common denominator for the syndrome. The burden of life-

threatening chronic disease may have serious emotional and social impact on the patients and their families and the disease continues to impose a high toll on the society.

Diagnostic tests

Many people are unaware that they have diabetes, either because they have no symptoms or because they misinterpret the classical diabetic symptoms of lethargy, thirst, polydipsia and polyuria. Early diagnosis and treatment is likely to reduce the risk of diabetic complications. Currently the preferred method of detecting diabetes in these people is through opportunistic screening , ie testing for diabetes when people are in contact with health services for another reason.

A fasting venous plasma glucose should be requested in all adults aged >40 years in the following at risk groups:

-family history of type 2 diabetes

-established ischaemic heart disease

- hypertension

- body mass index >30

- Asian or Afro-Caribbean ethnic groups

- previous gestational diabetes or large baby

- If fasting glucose is >7.0 mmol/l diabetes is confirmed
- If fasting glucose is 6.1-6.9 mmol/l then arrange an oral glucose tolerance test (OGTT)
- For an OGTT measure venous plasma glucose fasting and 2h following 75g glucose taken orally:

- if 2h glucose >11.0 mmol/l diabetes is confirmed

- if 2h glucose is 7.8-11.0 mmol/l, impaired glucose tolerance (IGT) is present

- if fasting glucose is 6.1 - 6.9 mmol/l the patient has impaired fasting glycaemia (IFG)

Diagnostic cautions

- Fasting glucose requires a certainty of no previous calorie intake, ie nothing to eat and only water to drink
- The above values apply to venous plasma glucose; fasting capillary blood glucose is around 1.0 mmol/l lower
- Diagnostic procedures should not be performed in the presence of acute illness

- Interpret results with reservation in people on blood glucose raising drugs

Who to refer to

The vast majority of newly diagnosed people with type 2 diabetes can be managed in primary care. For detailed guidelines, see the local diabetes website: **www.diabetes-carmarthenshire.com**

GALLSTONES

Definition/Association with Obesity

Gallstones are common, particularly in Western populations where the prevalence of obesity is high. In these populations, incidence increases with age and over the age of 70 years it is estimated that 25–30% of people will have gallbladder stones.

Diagnosis

Many patients with gallstones experience no symptoms (the stones are 'silent'). The complications of gallstones are related to an inflammatory process accompanied by migration of the stones either within the gallbladder, within the biliary tree or beyond.

Complications are:

- *Gallbladder*:

  acute cholecystitis;- right sided abdominal pain occasionally associated with fever

  chronic cholecystitis;

  carcinoma (rare);

  mucocoele;

  abscess (empyema);

  gangrene;

  perforation.

Treatment Managment

Cholectstectony, (removal of the gallbladder – usually done by keyhole surgery)

Referral Procedure

Via GP.

DYSLIPIDAEMIA AND OBESITY

Definition

Most work has been done to elucidate the pathogenesis of the dyslipidaemia of obesity which seems to be closely related to insulin resistance in obese individuals, however more studies in humans are needed to further our understanding the metabolic mechanism underlining the changes and distinguish between the role of insulin resistance and body fat in the lipoprotein changes.

Association with Obesity

The dyslipidaemia associated with obesity no doubt plays a major role in the development of atherosclerosis and cardiovascular disease in obese individuals. All the components of the dyslipidaemia, including higher Triglycerides, decreased HDL levels and increased small dense LDL particles have been shown to atherogenic.

Diagnosis

The primary dyslipidaemia related to obesity is characterised by increased Triglycerides, decreased HDL levels and abnormal LDL composition (small dense LDL) and the accumulation of cholesterol rich remnant particles.

Treatment Management

Weight loss and exercise, even if they do not resolve in normalisation of body weight can improve dyslipidaemia and thus reduce CVD risk. In addition, obese individuals should be targeted for intense lipid lowering therapy when necessary.

References: Various places particularly, LIPID UPDATE 1V. Stratford upon Avon, 29-30 November 2004

RECOMMENDED MANAGEMENT GUDELINES for HIGH LIPID LEVELS for the GENERAL POPULATION

Aims

- **All adults 40 years onwards to have their total cholesterol & HDL cholesterol measured as part of an opportunistic CVD risk assessment in primary care**
- **Estimate 10 year CVD risk in accordance with the Joint British Societies Cardiovascular Risk Prediction Charts prior to lifestyle changes or treatment**
- **If Total CVD risk >20% over next 10 years.**
  To reduce total cholesterol to < 4.0 mmol/l (Minimum audit target < 5. 0mmol/l)
  To reduce LDL cholesterol to < 2.0 mmol/l (Minimum audit target < 3.0mmol/l)
- **If established CHD or diabetes refer to relevant Toolkits for Guidance**

CHOLESTEROL			
Total cholesterol (mmol/l)	**10 year CVD risk**	**Measures to take**	**Further measures**
<4.0	< 20%	Offer lifestyle advice	Reassess level in 5 years, repeat CVD risk assessment
	* >20%	Measure full fasting lipid profile. Correct underlying causes** and address other risk factors - see lifestyle section. Offer lifestyle advice	Reassess level annually
>4.0*	*< 20%	Correct underlying causes** Offer lifestyle advice/ trial of lipid lowering diet, Check effect after 3 months	If not to target, re-enforce lifestyle measures/lipid lowering diet. Re-assess annually and repeat CVD risk assessment
	* > 20%	Measure full fasting lipid profile. Correct underlying causes** and address other risk factors - see lifestyle section. Thorough trial of lipid lowering diet - check effect after 3 months. Refer to dietitian if applicable/see referral section.	If diet insufficient add drugs: 1st choice ~ statin Alternatively use fibrates if statins contraindicated or not tolerated. Re-assess level at 6 weeks; if not at target level monitor & titrate dose. If still not to target refer to specialist lipid clinic. If target level achieved, reassess annually.
Total cholesterol: HDL ratio >6mmol/l		Is considered a single risk factor indicating high risk of CVD, regardless of other risk factors and therefore also requires CVD prevention and treatment.	
Familial dyslipidaemia		Refer to Specialist lipid clinic for treatment regardless of CVD risk	
** **Underlying Causes**		Pregnancy, diabetes, hypothyroidism, obesity, anorexia nervosa, alcohol abuse, nephrotic syndrome, chronic renal failure, biliary cirrhosis, biliary obstruction, thiazides, B-blockers, oestrogens, corticosteroids, retinoids	

TRIGLYCERIDE		
Total triglyceride (mmol/l)	**Measures to take**	**Further measures**
<1.7	None	
1.7 - 4.5 If total cholesterol normal	Correct underlying causes ** Thorough trial of lipid lowering diet to include increase of fish oils, for at least 3 months	Re-assess If levels not sufficiently reduced initiate statin therapy
1.7 - 4.5 Plus elevated total cholesterol	Correct underlying causes ** Thorough trial of lipid lowering diet to include increase of fish oils, for at least 3 months.	If levels not sufficiently reduced treat with nicotinic acid or fibrate. Monitor every 3 months until stable. Reassess annually If not controlled refer to specialist lipid clinic
>4.5	Refer to specialist lipid clinic. Risk of acute pancreatitis	
Secondary Prevention	In patients with established CHD, diabetes, cerebrovascular disease, TIA, peripheral arterial disease (PAD), & 10 year CVD risk >20% fasting lipid samples are required. With the aim to reduce TC to< 4.0 mmol/l, LDL to< 2mmol/l & desirable levels of triglyceride < 1.7mmol/l and HDL > 1mmol/l for men, > 1.2mmol/l for women, using statin therapy. Those who fail to reach target levels despite dose titration should be referred to specialist lipid clinic.	

Adapted from: Monthly Index of Medical Specialities (March 2006)) & JBS 2: (2005)

METABOLIC SYNDROME

Definition

There are two definitions for the metabolic syndrome, the WHO definition.[77]

At least one of	Plus at least two of
• Type 2 diabetes	• Hypertension (BP >140/90 mm/Hg)
• Impaired glucose tolerance	• Obesity (BMI > 30kg/m², or waist-hip ratio > 0.90 for men, > 0.85 women)
• Insulin resistance	• Hypertriglyceridaemia (>1.7 mmol) or low HDL level (<0.9 mmol/l for men, < 1.0 mmol/l for women) • Microalbumin (albumin creatinine ratio >2.5 mg/mmol for men, > 3.5 mg/mmol for women.

The national cholesterol education programme – adult treatment panel three (NCEP/ATP 111) definition.[78]

Risk Factor	**Defining Level**
Abdominal obesity (waist circumference)	
Men	>102cm (>40in)
Women	>88cm (>35in)
HDL Cholesterol	
Men	<0.9 mmol/l
Women	<1.0 mmol/l
Triglycerides	>1.7 mmol/l
Fasting Glucose	>6.1 mg/dl
Blood pressure (SBP/DBP)	>130/>85mm/Hg

Association with Obesity

Obesity (particularly central or sometimes called transabdominal or android type apple shape obesity) is the most important feature of the metabolic syndrome. This is related to increased visceral and deep subcutaneous fat, which is associated with increased insulin resistance which tend to be more common in males than females. In both cases the extra stored fat increases the size of fat cells and raises the level of circulation free fatty acids (FFA). Exposure to increased levels of FFA by itself can produce insulin resistance, which is one important characteristic of the metabolic syndrome. The mechanism by which FFA produce insulin resistance is subject to considerable debate. The Randle Hypothesis proposed nearly 30 years ago suggested that FFA interfere with glucose metabolism by affecting the phosphofructokinase pathway. More recently, Shulman [79] has proposed an alternative hypothesis by which free fatty acids act to stimulate protein kinase C thetha. This intra cellular signal, in turn, increases phosphorylation of serine residues in the insulin receptor, thus inhibiting the activation of the receptor by phosphorylation of tyrosine residues.

Cytokines are the second secretory product of the fat cell that may play an important role in the same features of the Metabolic Syndrome. When fat cells enlarge, they secrete increased quantities of interleukin-6 (IL-6). This and other cytokines enter the portal circulation and transit to the liver in which they can enhance the production and release of inflammatory markers. The coagulation factors released from fat cells may influence vascular reactivity and the potential for the procoagulant state.

Whatever the precise mechanism may be, it is clear the therapies aimed at reducing insulin resistance/sensitivity. The rising use of thiazolidinediones drugs that activate the peroxisome proferator activated receptor gamma (PPAR-gamma) is a reflection of the benefits seen by increasing insulin sensitivity that is produced by these drugs.[80]

The metabolic syndrome through its associated insulin resistance, inflammatory markers, and procoagulant state is an important component in the risk of cardiovascular disease, the leading cause of death for the obese, for diabetics, and for other subgroup in the population. Identifying people with Metabolic Syndrome can provide a useful stimulus to provide therapeutic intervention aimed at reducing the health consequences of this syndrome.

Treatment Management

Dietary modification.[81] this requires assessment of past dietary habits using a valid food frequency questionnaire. The current dietary practises of the patient can help to highlight target areas, collecting a food record for, as many days as the patient is willing to keep it will be instrumental in future counselling efforts.

Physical Activity

Assessing physical [81] activity patterns are useful for designing the total lifestyle programme. The dietician may choose to collect a physical activity questionnaire from the patient and in addition provide the patient with an activity monitor to assess actual physical activity steps for a more accurate appraisal of daily activity levels.

For greater success, the dietary treatment needs to be highly individualised. It may be helpful to include a variety of weight loss strategies such as meal replacement (for quicker initial weight loss), slightly higher protein diets, low fat diets and perhaps even a Mediterranean diet approach. It is key to remember what works for one patient may not necessarily be ideal for another.

Working with the patient's doctor to provide the ideal combination of diet, physical activity suggestions, behavioural changes and drug (if prescribed by the doctor) are key to the patient's success. Frequently, this is the most effective procedure, especially for dyslipidaemic patients.

Finally, follow-up evaluations to monitor progress are key to weight management, both on the part of the doctor as well as the dietician in clinical practise.

Drug Treatment

Statins if total cholesterol and LDL are above 5 and 3 respectively.

Fibrates if LDL is <3 and Triglycerides are up with low HDL. This can be given on it's own or in a combination with statin if LDL is >3.

Metformin can be used to improve insulin resistance.

ACE inhibitors in hypertension.

OBSTRUCTIVE SLEEP APNOEA

Definition

Here there is an imbalance between internal muscle forces that hold open the upper airway (pharynx) and external forces (such as fatty tissue in the neck) that compress the upper airway. Repetitive narrowing and closure of the upper airway during sleep leads to reductions in breathing causing recurrent episodes of low blood oxygen and high carbon dioxide, which then lead to recurrent arousals (either fully or partially) from sleep

Association with Obesity

Risk factors include smoking, certain facial shapes and sedatives but it is most strongly associated with obesity, probably because the excess body tissue in the neck presses on the upper airway and lungs when asleep.

Diagnosis

Sleep apnoea syndrome is now believed to affect 4% of middle-aged males and 2% of middle-aged females, being at least as common as insulin dependent diabetes. Night time symptoms include heavy snoring, choking, dry mouth, nocturia, restless sleep and night sweats. Patients (or more usually their bed partners) will notice recurrent episodes of stopping breathing (apnoeas). The longer-term disruption in sleep can lead to early morning headaches, depression, loss of libido and neuro-cognitive impairment. Untreated, symptomatic sleep apnoea is a contraindication to driving. Sleep apnoea is now also becoming increasingly associated with other medical diseases such as hypertension, strokes, cardiac failure and impaired glucose tolerance – probably due to surges of catecholamines and related hormones that occur during the apnoeas.

The sleep fragmentation often leads to daytime tiredness, which is the hallmark of this disease. As well as affecting quality of life and occupation, sufferers are between 5-7 times higher risk of road traffic accidents – clearly affecting public health as well as their own health.

Sleep apnoea should be considered in any patient who snores heavily and has excessive daytime tiredness.

The diagnosis usually requires an overnight sleep study that can be performed in the patients' own home or in hospital.

Treatment Management

Weight loss is crucial in managing sleep apnoea but long-term weight loss can be difficult. The first line treatment is CPAP (Continuous Positive Airways Pressure) where the patient wears a mask for 4 or more hours when asleep; room air is delivered under slight pressure through the nose or mouth – and this works primarily by holding open (splinting) the upper airway, allowing the patient to get to deep sleep. CPAP has been shown to immediately and dramatically to improve snoring, sleepiness, insulin levels and has long-term reductions in driving risks and utilisation of health-care resources. Compliance with nightly CPAP has been variable but other treatments such mandibular (jaw) advancement devices, and surgery on the airway are still being evaluated. They are probably not as effective and are being reserved for selected patients who cannot tolerate CPAP.

We currently have over 400 patients attending Prince Philip Hospital, using CPAP.

Referral Procedure

They can be seen in a dedicated sleep clinic (in Prince Philip Hospital).

Unfortunately, the sleep clinic in Llanelli is only 1 of 3 specialist clinics in Wales. We currently receive referrals from Gwynedd, Pembrokeshire, Ceredigion, Carmarthenshire, Neath - Port Talbot and parts of Swansea. With a **routine waiting list of 18 months, we need more specific referral information from Primary Care and ENT surgeons to prioritise;** sleepiness whilst driving (especially if they have Group 2 licence holders), cardiac co-morbidity or poorly controlled diabetes can usually be seen within 1 month. Please see a screening questionnaire used to prioritise all of our referrals.

SLEEP CLINIC QUESTIONNAIRE

Name: Tel No:

Address: Weight:

Date of Birth: Alcohol intake(per week):

Full medication list: Collar size (male):

Height: Smoker (Y/N):

Please list all other illnesses:

Do you have excessive sleepiness whilst driving?

Have you ever fallen asleep at the wheel?

What time do you usually:-

go to bed

wake up

PTO

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BMI: B/P:

Abdominal girth (cms) Neck circumference (cms)

Epworth score: 4% Dip rate:

Occupation:

Referred by: AHI:

Treatment (incl CPAP pressure):

EPWORTH SLEEPINESS SCALE

This scale assesses your level of sleepiness during the day

How likely are you to doze off or fall asleep in the following situations, in contrast to just feeling tired? This refers to your usual way of life in recent times. Even if you have not done some of these things recently try to work out how they would have affected you. Please tick one option only for each question.

SITUATION	**CHANCE OF DOZING**			
	Would Never	**Slight chance**	**Moderate chance**	**High chance**
Sitting and reading	……..	……..	……..	……..
Watching	……..	……..	……..	……..
Sitting, inactive in a public place (eg cinema or a meeting)	……..	……..	……..	……..
As a passenger in a car for half an hour without a break	……..	……..	……..	……..
Lying down for a rest in the afternoon when circumstances Permit	……..	……..	……..	……..
Sitting and talking to someone	……..	……..	……..	……..
Sitting quietly after lunch without alcohol	……..	……..	……..	……..
In a car, while stopped for a few minutes in traffic	……..	……..	……..	……..

Do you?	**Occasional**	**Weekly**	**Nightly**
Wake refreshed	…….	……	……
Snore	…….	……	……
Stop breathing	…….	……	……
Pass water at night	…….	……	……
Choking sensation	…….	……	……
Morning headache	…….	……	……
Night Sweats	…….	……	……

OBESITY HYPOVENTILATION

Definition

Excess body weight can lead to profound changes in the mechanics of breathing, leading to poor chest expansion and direct compression of the lungs. The reduction in air reaching enough of the perfused parts of the lungs can lead to chronic low blood levels of oxygen (despite high demand) and chronic high levels of carbon dioxide. This *chronic respiratory (Type 2) failure* is very different to but can occur alongside sleep apnoea. Smoking and any other disease will exacerbate this condition and such patients often can deteriorate extremely quickly if they have a co-incidental illness e.g. chest infection.

Association with Obesity

See definition!
(Type 2 respiratory failure also occurs with severe COPD, muscle diseases or severe chest wall deformities such as kyphoscoliois.)

Diagnosis

Symptoms are similar to sleep apnoea and include daytime tiredness, early morning headaches, confusion, poor concentration / poor memory and often progressive ankle swelling.
The diagnosis depends on low oxygen and high levels of carbon dioxide seen in arterial blood gases; occasionally daytime gases are normal, and night time gases are needed.

Treatment Management

Patients presenting as an emergency are usually acidotic and can have up to a 40% mortality. Acute management requires treatment of any precipitating cause (e.g. excess oxygen, infection, sedatives, smoking etc) and giving the correct amount oxygen.
The risks of invasive ventilation (intubation) in these patients are great. Recent advances in acute, non-invasive ventilation (NIV) have greatly helped this condition. Patients where a tight mask, usually only at night – connected to a ventilator that matches their breathing patterns. The mask delivers air (plus extra oxygen if needed) at different pressures – to hold open the lung alveoli and small airways.
Emergency NIV is available in PPH in the Medical Admissions Unit and ITU, and in WWGH in their HDU.
Untreated chronic respiratory failure also has a high mortality, because of progressive right heart failure (cor pulmonale). Weight loss is central to long term management.

If patients remain symptomatic (and cannot lose weight), with repeatedly abnormal blood gases when deemed otherwise stable, there is increasing evidence that long-term domiciliary NIV and careful use of oxygen can improve not only survival but quality of life and reduce hospital admissions.

Referral Procedure

Anyone with suspected Type 2 respiratory failure should be referred urgently.
Such patients need to be assessed on an individual basis, have their other conditions and medications maximised (e.g. Diuretics, bronchodilators, withdrawal of sedatives) and then followed long-term in specialist respiratory clinics, as their oxygen or ventilation needs are likely to change over time.

A working group is liaising with the Welsh Assembly about funding for long-term NIV machines and support for these often morbidly obese patients. Currently, the respiratory nurses (Joe Annandale and Annette Williams)and Dr K. Lewis, within the Trust, review patients in dedicated clinics or as ward referrals when they are admitted as an emergency.

OBESITY & CORONARY HEART DISEASE

Definition

Coronary Heart Disease (CHD) is also known as Ischaemic Heart Disease (IHD), Coronary Artery Disease (CAD) and Coronary Atherosclerosis. All these terms mean the same thing, i.e. narrowing of the arteries that supply their heart muscle. All of the following conditions count as CHD:
Angina
Myocardial Infarction (also known as a heart attack, an infarct, a coronary, AMI or an MI)
Acute Coronary Syndrome (also known as ACS)
Coronary Bypass Graft (also known as CABG)
Coronary Angioplasty (also known as PCTA)

FOR OBESE PATIENTS WITH CO-EXISTING CHD PLEASE SEE 'CARMARTHENSHIRE HEART' CHD TOOLKIT FOR TREATMENT GUIDELINES

Association with Obesity

The impact of obesity on rates of coronary heart disease (CHD) is both direct and indirect.

Obesity per se is a recognised **independent risk factor for the development of CHD** but also works through its mechanistic association with hypertension, hyperlipidaemia, insulin resistance and inflammation (Mokdad et al 2001).

Myocardial infarction (MI), Hypertension and Congestive heart failure are all significantly more common among obese people than among people of normal weight. Morbidity risks increase steadily from being overweight BMI >25 and increase's more rapidly in obese people BMI >30 (Garrow 1999)
In women, obesity (following age and blood pressure) is the third most powerful predictor of cardiovascular disease, the risk of a fatal or non fatal MI among women with a BMI >29 is three times that among lean women (Garrow 1999).
Overweight women, but not overweight men, have a significantly increased risk of heart failure, while obese persons approximately double their risk of heart failure compared to a person with a normal body-mass index (Kenchaiah et al 2002).

Obesity is one of the major modifiable risk factors for CHD

Diagnosis

Effects of obesity on coronary risk

Obesity exerts its effects on coronary risk, primarily through its aetiologic importance on the pathophysiology of the insulin resistance syndrome, also termed "metabolic syndrome". This is a cluster of risk factors related primarily to central or abdominal obesity, high blood pressure, high triglycerides, low HDL cholesterol and insulin resistance (Ades 2004) (see metabolic syndrome section)
Abdominal obesity is particularly hazardous due to the visceral adipocytes capacity to produce cytokines with both direct and indirect atherogenic effects (BHF 2004). The increased risk appears to be related to substances produced by adipose (fat) tissue and is associated with an increased propensity to thrombosis (Isomaa et al 2001).
A 10KG WEIGHT LOSS ACCOUNTS IN A FALL OF 10% TOTAL CHOLESTEROL; FALL OF 15% LDL; FALL OF 30% TRIGLYCERIDES AND A RISE OF 8% HDL (SIGN, 1996)
(See High Lipid section; if High Lipid & CHD see CHD toolkit)

Hypertension

Blood pressure is determined by a complex system of circulating hormones, many of which are made in adipose tissue and the kidneys. These hormones control the diameter of the arteries and thereby control the pressure in the arteries. Many different factors are associated with high blood pressure and especially obesity. (See CHD Toolkit for other factors).

The reasons that obesity causes hypertension are multiple, but it appears that the excess adipose tissue secretes substances that are acted on by the kidneys, resulting in hypertension. Additionally, with obesity there are generally higher amounts of insulin produced (because of the excess adipose tissue) and this excess insulin also elevates blood pressure (Myers 2004).

A 10KG WEIGHT LOSS ACCOUNTS IN A FALL OF 10 mmHg SYSTOLIC BLOOD PRESSURE AND FALL OF 20mmHg DIASTOLIC BLOOD PRESSURE (SIGN, 1996)

All adults from 40 years onwards should have their blood pressure measured as part of an opportunistic CVD risk assessment in primary care (JBS 2:)

(See recommended management guidelines for hypertension, if Hypertensive & CHD see CHD toolkit)

Heart failure

Obesity exerts numerous adverse effects on cardiac function, in early obesity, an expanded intravascular volume results in an increase in cardiopulmonary volume or increased pre-load. Over time these changes lead to an increased prevalence of eccentric left ventricular hypertrophy and the propensity for more ventricular dysrhythmias; cohort studies have noted these early abnormalities as well as improvement in diastolic and systolic ventricular function following marked, purposeful weight reduction (Lavie et al 2003, Lavie et al 2004, Mehra et al 2004).

Intuitively, one would anticipate that obesity should adversely affect the outcome for patients with heart failure, surprisingly it has not done so, and some studies, even suggest that overweight and obese patients may have a better prognosis (Davos et al 2000, Horwich et al 2001). This paradox cannot be fully explained by the adverse effect of unplanned weight loss on the prognosis for patients with heart failure, but it is premature to translate these findings into a recommendation to avoid weight loss in overweight patients, although overly aggressive weight loss should probably be discouraged (Massie 2002).

(See Heart Failure section of CHD toolkit)

Treatment Management

For all patients with co-existing CHD see CHD toolkit

For Primary prevention, utilise the cardiovascular risk prediction chart on prevention of cardiovascular disease in clinical practice, which would be an indicator for initiation of certain treatments.

Please see chart addressing lifestyle measures of smoking cessation; healthy nutrition, moderate alcohol consumption and increase physical activity to prevent cardiovascular disease is also paramount (See Lifestyle section).

Referral Procedure

Please see CHD toolkit for referral guidelines if suspected CHD

See referral section for lifestyle issues.

References

Ades, P A. (2004) The obesity epidemic in the US: impact upon coronary heart disease. *Heartwise.* 25-27.

Garrow, J (1999) *Obesity* Blackwell Science. Oxford.

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Mokdad AH; Bowman BA; Ford ES et al (2003) Prevelance of obesity, diabetes, and obesity related health risk factors, 2001. *JAMA* 289: 76-79.

Myers, MD (2004) Hypertension (High Blood Pressure) *Objective Medical Information on Obesity, weight management, eating disorders and related topics.* (562) 493-2266

RECOMMENDED MANAGEMENT GUIDELINES for HYPERTENSION for the GENERAL POPULATION

Aims

- **All adults 40 years onwards to have their BP measured as part of CVD risk assessment**
- **To reduce systolic blood pressure < 140mmHg**
- **To reduce diastolic blood pressure to < 85mmHg**
- **If established CHD or diabetes refer to relevant Toolkits for Guidance**

ADVISE ALL PATIENTS TO ADOPT LIFESTYLE MEASURES AIMED AT CONTROLLING HYPERTENSION		
Blood Pressure (MMHG)	**Major Risk Factors**	**Recommended Action**
<u>≤130</u> 85	-	Reassess in 5 years.
<u>135 – 139</u> 85 – 89	+/-	Lifestyle intervention and reassess annually.
<u>140 – 159</u> 90 – 99	-	Re-measure BP monthly, lifestyle intervention. Observe and reassess CVD risk annually.
<u>140 – 159</u> 90 – 99	+	Confirm by 3 BP readings over 12 weeks, then initiate treatment.
<u>160 – 179</u> 100 – 109	-	Re-measure BP weekly, treat if BP remains at this level over 4-12 weeks.
<u>160 – 179</u> 100 – 109	+	Confirm by 3 BP readings over 3-4 weeks, treat if BP remains at this level.
<u>≥ 180</u> 110	+/-	Confirm over 1-2 weeks then treat (unless malignant phase of hypertensive emergency – admit immediately)
<u>≥ 220</u> 120	+/-	Treat immediately

Major risk factors	Target organ damage	Diabetes	Cardiovascular disease	CVD Risk <u>≥</u> 20%
Other Risk Factors	Estimate 10 year CVD Risk in accordance with the Joint British Societies Cardiovascular risk prediction Chart. (Persistently elevated BP >160/100mmHg-treat regardless of CVD risk)			
Target organ damage	L. Ventricular hypertrophy Heart failure Peripheral vascular disease Hypertensive or diabetic Retinopathy	Angina MI CABG/ angioplasty	Renal impairment Raised creatinine Proteinuria Micro/macroalbuminuria	Stroke Transient ischaemic Attack(TIA)
If hypertension Confirmed	ECG	Serum Cholesterol	Blood Glucose	U&E Urine - blood/protein
Treatment	See following "Quick Reference Guide-Hypertension"			
Follow up	Review until stable → Monthly x 3 months → 6 months → annually Annual Review to include ECG/Serum Cholesterol/Blood Glucose/U&E/Urine for blood & protein Continue to advise on lifestyle measures			
Specialist referral	Malignant hypertension/hypertensive emergency Evaluation of therapeutic problems Investigations of underlying causes			Patients with variable BP/white coat hypertension/pregnancy

Adapted from: Monthly Index of Medical Specialities (March 2006)
Joint British Societies guidelines on prevention of Cardiovascular Disease in clinical practice (JBS 2:2005)

RECOMMENDED MANAGEMENT GUDELINES for HIGH LIPID LEVELS for the GENERAL POPULATION

Aims

- **All adults 40 years onwards to have their total cholesterol & HDL cholesterol measured as part of an opportunistic CVD risk assessment in primary care**
- **Estimate 10 year CVD risk in accordance with the Joint British Societies Cardiovascular Risk Prediction Charts prior to lifestyle changes or treatment**
- **If Total CVD risk >20% over next 10 years.**
  To reduce total cholesterol to < 4.0 mmol/l (Minimum audit target < 5. 0mmol/l)
  To reduce LDL cholesterol to < 2.0 mmol/l (Minimum audit target < 3.0mmol/l)
- **If established CHD or diabetes refer to relevant Toolkits for Guidance**

CHOLESTEROL			
Total cholesterol (mmol/l)	**10 year CVD risk**	**Measures to take**	**Further measures**
<4.0	< 20%	Offer lifestyle advice	Reassess level in 5 years, repeat CVD risk assessment
	* >20%	Measure full fasting lipid profile. Correct underlying causes** and address other risk factors - see lifestyle section. Offer lifestyle advice	Reassess level annually
>4.0*	*< 20%	Correct underlying causes** Offer lifestyle advice/ trial of lipid lowering diet, Check effect after 3 months	If not to target, re-enforce lifestyle measures/lipid lowering diet. Re-assess annually and repeat CVD risk assessment
	* > 20%	Measure full fasting lipid profile. Correct underlying causes** and address other risk factors - see lifestyle section. Thorough trial of lipid lowering diet - check effect after 3 months. Refer to dietitian if applicable/see referral section.	If diet insufficient add drugs: 1st choice ~ statin Alternatively use fibrates if statins contraindicated or not tolerated. Re-assess level at 6 weeks; if not at target level monitor & titrate dose. If still not to target refer to specialist lipid clinic. If target level achieved, reassess annually.
Total cholesterol: HDL ratio >6mmol/l		Is considered a single risk factor indicating high risk of CVD, regardless of other risk factors and therefore also requires CVD prevention and treatment.	
Familial dyslipidaemia		Refer to Specialist lipid clinic for treatment regardless of CVD risk	
** **Underlying Causes**		Pregnancy, diabetes, hypothyroidism, obesity, anorexia nervosa, alcohol abuse, nephrotic syndrome, chronic renal failure, biliary cirrhosis, biliary obstruction, thiazides, B-blockers, oestrogens, corticosteroids, retinoids	

TRIGLYCERIDE		
Total triglyceride (mmol/l)	**Measures to take**	**Further measures**
<1.7	None	
1.7 - 4.5 If total cholesterol normal	Correct underlying causes ** Thorough trial of lipid lowering diet to include increase of fish oils, for at least 3 months	Re-assess If levels not sufficiently reduced initiate statin therapy
1.7 - 4.5 Plus elevated total cholesterol	Correct underlying causes ** Thorough trial of lipid lowering diet to include increase of fish oils, for at least 3 months.	If levels not sufficiently reduced treat with nicotinic acid or fibrate. Monitor every 3 months until stable. Reassess annually If not controlled refer to specialist lipid clinic
>4.5	Refer to specialist lipid clinic. Risk of acute pancreatitis	
Secondary Prevention	In patients with established CHD, diabetes, cerebrovascular disease, TIA, peripheral arterial disease (PAD), & 10 year CVD risk >20% fasting lipid samples are required. With the aim to reduce TC to< 4.0 mmol/l, LDL to< 2mmol/l & desirable levels of triglyceride < 1.7mmol/l and HDL > 1mmol/l for men, > 1.2mmol/l for women, using statin therapy. Those who fail to reach target levels despite dose titration should be referred to specialist lipid clinic.	

Adapted from: Monthly Index of Medical Specialities (March 2006)) & JBS 2: (2005)

Reference:

Williams B, Poulter N, Brown M, Davis M, McInnes G, Potter J, Sever P, McG Thom S. Guidelines for management of hypertension: report of the fourth working party of the British Hypertension Society 2004-BHS IV. *J Human Hypertens* 2004;**18**:139-185.

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Factfile 08/2004

UPDATED GUIDELINES ON CARDIOVASCULAR DISEASE RISK ASSESSMENT

Summary

- The British Hypertension Society and others have updated their recommendations on cardiovascular disease risk. These recommendations and charts are guidelines to help direct resources to those most likely to benefit from them - they are not directives.
- Coronary heart disease (CHD) risk assessment has been replaced by cardiovascular disease (CVD) risk assessment i.e. stroke plus CHD to reflect the objective of preventing both stroke and coronary events.
- Only three, rather than four, age strata are now considered. All patients below 50 years are assessed as if they were 49 years of age and those aged 60 years or greater are considered as if they are aged 69.
- The charts have been simplified since none are produced for patients with type 2 diabetes - such patients should be considered as if they have established CVD.

Introduction

Cardiovascular risk factors frequently co-exist and interact to determine an individual's absolute risk. Guidelines using charts or computerised systems to help decisions about intervention have replaced intuition. However, the previous Joint British Societies Risk Charts (1998) had several shortcomings which have been addressed in the 2004 recommendations.

This Factfile complements number 07/04 on *The drug treatment of hypertension*.

The changes

The most important change has been to merge stroke and coronary heart disease (CHD) in a combined cardiovascular disease (CVD) risk assessment. In addition, the age strata have been reduced from four to three, in order to reduce the difficulties associated with considering only short-term absolute risk. These include under-treatment of young (particularly female) patients, who are at high relative risk and the previous focus on the elderly (particularly men) in whom intervention provides only a limited extension of life.

The decision to regard patients with type 2 diabetes as requiring secondary prevention i.e. as if they had established CVD is likely to overestimate risk in younger diabetic patients and those who are newly diagnosed. However, the British Hypertension Society believes that this overall approach is valid since the vast majority of diabetic hypertensive patients are at or above the threshold of ≥20% risk of CVD over 10 years. Hence, for them, the previous diabetes chart is redundant.

These charts should **not** be used for estimating CVD risk in individuals who have already developed CHD or other major atherosclerotic disease. They are an aid to making clinical decisions about whether to use anti-hypertensive, lipid-lowering medication and aspirin and how intensively to intervene.

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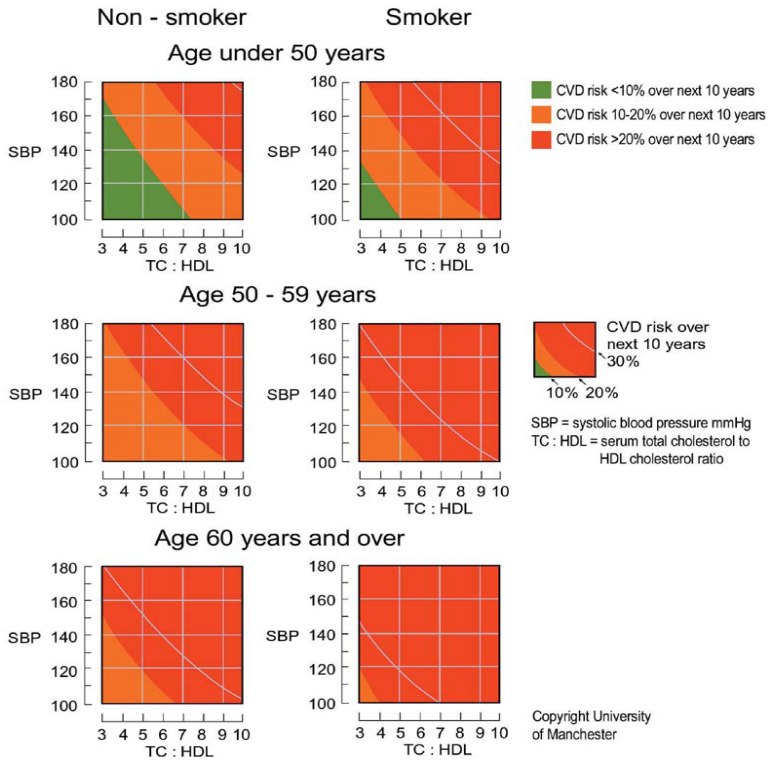
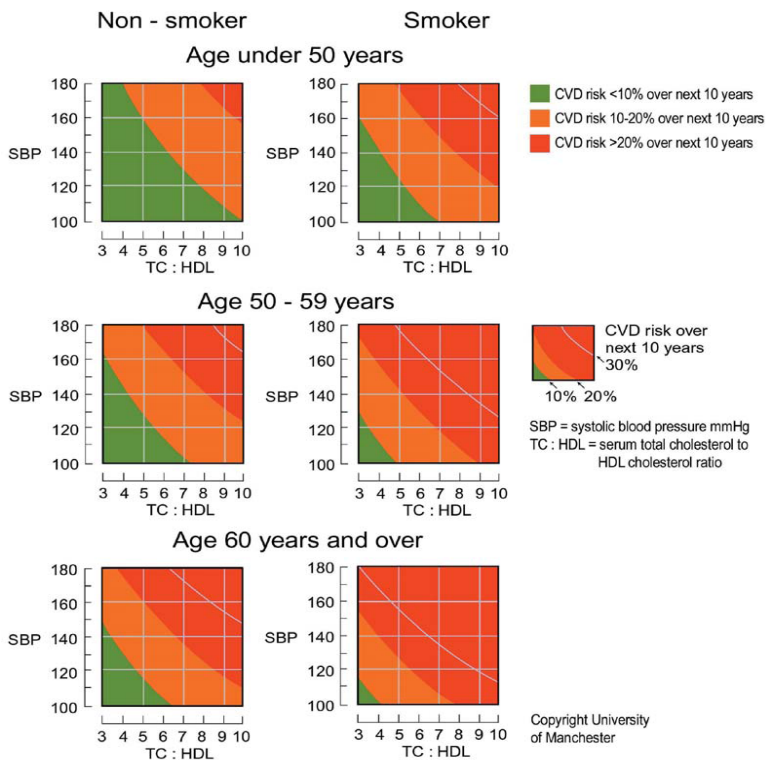
CARDIOVASCULAR RISK PREDICTION CHART

Updated Recommendations on Prevention of Cardiovascular Disease in Clinical Practice

Nondiabetic Men



Nondiabetic Women



How to use the Cardiovascular Risk Prediction Chart for Primary Prevention

- To estimate an individual's absolute 10-year risk of developing CVD, choose the panel for their gender, smoking status and age. Within this define the level of risk from the point where the co-ordinates for SBP and ratio of the total to HDL-cholesterol cross. If no HDL cholesterol result is available, assume it is 1.00mmol/l and use the lipid scale as total serum cholesterol.
- Highest risk individuals (red areas) are those whose 10-year CVD risk exceeds 20%, which is approximately equivalent to a 10-year CHD risk of >15% (indicated by the 1998 charts). As a minimum, those with CVD risk >30% (shown by the line within the red area) should be targeted and treated now. When resources allow, others with a CVD risk of >20% should progressively be targeted.
- The chart also assists in identification of individuals with a moderately high 10-year CVD risk - in the range 10-20% (orange area) and those in whom it is lower than 10% (green area).
- Smoking status should reflect life-time exposure to tobacco and not simply tobacco use at the time of assessment. Those who have stopped smoking within 5 years should be regarded as current smokers for the charts.
- These charts (and all other currently available methods of CVD risk prediction) are derived from *untreated* levels of BP and cholesterol. In patients already receiving antihypertensive therapy in whom the decision is to be made whether to introduce lipid-lowering medication (or vice-versa), the charts act as a guide.
- These charts can be used to illustrate the direction of impact of risk factor intervention on the estimated CVD risk. However, the size of such illustrations are crude and are not based on randomised trial evidence. Nevertheless, this approach may be helpful in motivating intervention. The charts' main role is to focus intervention on those who stand to benefit most.

Caveats

- Use of these charts is not appropriate for the following patient groups. Those with:
  - ? CHD or other major atherosclerotic disease;
  - ? Familial hypercholesterolaemia or other inherited dyslipidaemias;
  - ? Chronic renal dysfunction;
  - ? Diabetes mellitus
- The charts should not be used to decide whether to start antihypertensive medication if BP is persistently at or above 160/100 or when Target Organ Damage, e.g left ventricular hypertrophy is present. In either case, antihypertensive medication is recommended regardless of CVD risk. Similarly, the charts should not be used to decide whether to introduce lipid-lowering medication when the ratio of total to HDL cholesterol exceeds 7. Generally, medication is indicated, regardless of estimated CVD risk.
- The initial BP and the first (non-fasting) total and HDL cholesterol can be used to estimate an individual's risk. However, the decision on using drug therapy should generally be based on **repeat** risk factor measurements over a period of time.
- On average, men and women do not reach the level of risk predicted by the charts for each age band until they are aged 49, 59 and 69 years, respectively. Everyone aged over 69 should be considered at highest risk. The charts will overestimate the current risk most in the under 40s. Clinical judgement must be exercised in treatment decisions for younger patients. However, BP and cholesterol tend to rise most and HDL cholesterol to decline most in younger people already possessing adverse levels. Thus untreated, their risk at 49 years is likely to be higher than that predicted by <50 years chart.
- CVD risk is also higher than indicated in the charts for:
  - ? Those with a family history of premature CHD or stroke (male first-degree relatives aged <55 years and female first-degree relatives aged <65 years), which increases the risk by a factor of approximately 1.5;
  - ? Those with raised triglyceride levels;
  - ? Women with premature menopause;
  - ? Those who are not yet diabetic, but have impaired fasting glucose (6.1-6.9mmol/l).
- In people originating from the Indian subcontinent, it is safest to assume that CVD risk is higher (1.5 times) than that predicted by the charts.
- It should be recognised that these charts are limited in that they include only 6 variables (age, sex, smoking, TC, HDL-C, SBP). Other variables (eg pulse rate, serum, creatinine, albuminuria, hs CRP) further modify risk assessment. Consequently these charts should be used to guide rather than dictate practice.

This chart is available in a poster format.

OBESITY AND OSTEOARTHRITIS

Definition

Osteoarthritis is a degenerative disease affecting the synovial joints and is the most common form of arthritis. It most commonly affects hands, knees, hips and the spine. It occurs less commonly in people under the age of 45, and about 80 per cent of people aged 65 have evidence of the condition, but only a quarter of these have symptoms. Among older people, women tend to be more severely affected than men.

The disease process involves damage to the cartilage at the ends of bones. The bone tries to repair the damage but makes the condition worse resulting in bony outgrowths or spurs, and narrowing of the joint space.

Association with Obesity

The cause of osteoarthritis is unknown, and there is no cure for the disease. Research has proven that being overweight is a major risk factor for developing osteoarthritis in all weight-bearing joints. There is also link between obesity and osteoarthritis in the hand. Obese women are four to five times more likely to develop osteoarthritis of the knee than persons of average weight. Being overweight also makes the condition significantly worse [ARC 2002].

Diagnosis

Symptoms appear gradually with pain occurring from time to time at first, becoming more frequent as the disease progresses. Initially, pain and muscle spasm limits the movement within the joint, but as the disease progresses, the joint can becomes stiff and unstable as the muscles and ligaments around the joint become weaker and smaller. Movement may cause fairly loud creaking, and swelling occurs even from minor injuries.

Treatment Management

Management of patients with osteoarthritis is aimed at pain control, and to maintain and /or improve joint mobility and limit functional disability.

Weight loss of approximately 5kg can decrease the risks of developing osteoarthritis of the knee by 50%. Weight reduction is also likely to lessen the symptoms of pain associated with osteoarthritis.

GOUT

Definition

Gout is a disorder characterised by one or more of the following:
- an increase in the serum concentration of uric acid
- recurrent attacks of a characteristic type of inflammatory arthritis, typically affecting the first metatarsophalangeal joint (big toe).
- deposition of sodium urate crystals (tophi) chiefly in and around joints and soft tissues
- renal impairment associated with interstitial deposition of sodium urate crystals
- uric acid renal stones

Associations

The following abnormalities are commonly associated with, but not causally related to hyperuricaemia and gout:
- obesity
- dyslipidaemia (usually type 4) with raised very low-density (VLD) lipoproteins and normal cholesterol levels, and sometimes hypercholesterolaemia with elevated low-density lipoprotein (LDL)-cholesterol and low high-density lipoprotein (HDL)-cholesterol levels
- hypertension
- insulin resistance with hyperinsulinaemia and impaired glucose tolerance;
- ischaemic heart disease
- chronic renal insufficiency

Diagnosis

Clinical gout usually appears in men during middle life. In addition, the incidence of clinical gout appears to be increasing in both elderly men and women, both as a consequence of increased life span and of the high rate of thiazide diuretic use in the population.
From the above definition, the diagnosis is usually made from the typical clinical features. These may or may not be accompanied by an elevated serum urate concentration. Confirmation of the diagnosis when it presents with the typical acute monoarticular arthritis should ideally be made by aspiration and examination of the synovial fluid for urate crystals.

Management

The aims of treatment are to:
- quickly resolve attacks of acute gouty arthritis
- limit recurrences of acute gouty arthritis
- prevent disabling consequences of sodium urate crystal deposition in articular, renal and other tissues
- prevent uric acid renal stones
- recognise and treat the medical conditions commonly associated with gout

The acute attack

Full doses of any of the non-steroidal anti-inflammatory drugs are effective in terminating attacks of acute gout. Indomethacin is particularly favoured by some clinicians. Colchicine remains a very effective remedy—an initial dose of 1.0 mg followed by 0.5 mg every 6 hours until either the attack subsides or a total dose of 6.0 mg has been achieved, or symptoms of toxicity (nausea, vomiting, and diarrhoea) occur. More frequent doses of colchicine, 0.5 mg every 2 to 3 h, deliberately inducing symptoms of toxicity was previously recommended. This is unnecessary now that the non-steroidal anti-inflammatory drugs are available. Heavy dosage with colchicine can also cause gastrointestinal haemorrhage and favour the development of other severe side-effects, including profuse diarrhoea, rashes, renal and hepatic damage, more rarely peripheral neuropathy, myopathy, and alopecia in the long-term. Intravenous colchicine is no longer recommended.

An attack of acute gout can be effectively terminated by the adrenocorticotropin analogue, tetracosactrin, or by a single intravenous dose of hydrocortisone. Rebound attacks of acute gout tend to occur unless the situation is covered by either colchicine or a non-steroidal anti-inflammatory drug.

Interval treatment

Asymptomatic hyperuricaemia should not be treated with urate-lowering drugs unless the patient experiences more than one acute attack of gout per year. Allopurinol, a xanthine oxidate inhibitor, is effective in preventing acute gout. The drug should be introduced at a low level (e.g. 100–200 mg daily) and increased under cover of either colchicine or a non-steroidal anti-inflammatory drug, which should be continued until the serum urate concentration has stabilized at a normal level. Allopurinol is then continued indefinitely.

Referral

Most cases of gout can be managed in primary care. Specialist referral may be required either to prevent or to manage the consequences of damage to the joints (Rheumatology Clinic) or to the kidneys (Renal Clinic).

BREAST CANCER

Definition

Breast cancer occurs when an abnormal cell develops within the breast and then multiplies to form a lump called a tumour. These lumps commonly begin in the ducts (ductal carcinoma). They may also start in the lobes (lobular carcinoma).

Association with Obesity

Many studies have tried to find links between what women eat and their risk for breast cancer. This research often focuses on dietary fat, for three main reasons:

- A lot of pollutants and hormones that might trigger breast cancer are stored in animal fat.
- People who tend to eat high-fat foods tend to be overweight. Body fat can produce hormones, such as oestrogen, which may fuel the growth of breast cancers that need hormones to grow.
- Eating high-calorie foods, like fats can trigger an increase in your body's production of growth factors-substances that control the growth of different cells in the body. Over time, if you are eating a high-calorie diet, your body might have extra stimulation from the high levels of growth factors. Under these conditions, the risk of abnormal cell growth might be increased.

Because the results from studies investigating the link don't all agree, we still are not sure if dietary fat can alter the risk of developing the disease. But we do know that there are many reasons for eating a healthier diet and thus lowers the risk of many other diseases including heart disease, type II diabetes and several other forms of cancer.

Diagnosis

Breast awareness is an important part of caring for your body. Becoming familiar with your breasts and the changes that they go through throughout your life. You need to be aware of any changes that are new or different for you, such as:

- A change in size – it may be that one breast has become noticeably larger or lower.
- A nipple has become inverted (pulled in) or changed its position or shape.
- A rash on or around the nipple.
- Discharge from one or both nipples.
- Puckering or dimpling of the skin.
- A swelling under the armpit or around your collar bone.
- A lump or thickening in the breast that feels different from the rest of the breast tissue.
- Constant pain in one part of the breast or armpit.

Treatment/Management

Any patient complaining of any of the above symptoms should be referred to a Consultant in breast care. The patient will be seen in the clinic where a mammogram, ultra sound, physical examination and biopsy will be performed as required.

Referral Procedure

Referral to the unit is usually though the GP or any other medical professional.

ENDOMETRIAL CANCER AND OBESITY

Definition

Endometrial cancer is cancer of the endometrium or lining of the uterus. It is most common after the reproductive years.

Association with Obesity

The female reproductive system consists of two ovaries, two fallopian tubes, a uterus and a vagina. The ovaries produce two main hormones – oestrogen and progesterone. The balance between these two hormones changes each month, helping the endometrium thicken in case pregnancy occurs or sheds tissue if it doesn't. When the balance of these two hormones shifts towards more oestrogen – which stimulates growth of the endometrium a woman's risk of developing endometrial cancer increases. Factors that increase levels of oestrogen in the body include:-
Many years of menstruation (starting at a young age and going on into the 50's).
Never having been pregnant (the production of progesterone during pregnancy helps to protect against endometrial cancer by lowering levels of oestrogen).
Irregular ovulation – ovulation (the release of an egg from the ovary) in menstruating women is regulated by oestrogen. Irregularity or failure to ovulate increases exposure to oestrogen one cause of irregular ovulation is **obesity**. Treating obesity can help restore regular ovulation and menstruation cycle decreasing the risk of endometrial cancer.

OBESITY - ovaries are not the only source of oestrogen. Fat tissue can change some hormones into oestrogen. Being overweight can increase levels of oestrogen in the body increasing the risk of endometrial cancer. A high fat diet can add to the risk by promoting **obesity**.

Diagnosis

Prolonged menstruation or bleeding between menstruation.
More frequent vaginal bleeding or spotting during the years leading up to the menopause (peri-menopause).
Post menopausal bleeding.
Pelvic pain, especially in advanced disease.
Pain during intercourse.
Sudden weight loss.

Endometrial cancer is more likely to be treated successfully the earlier it is diagnosed.
These signs and symptoms may be caused by non cancerous (benign) conditions i.e. vaginal infections, uterine fibroids or polyps.

Treatment Management

Surgery is the most common treatment for endometrial cancer if diagnosed early – this would usually be a total abdominal hysterectomy and bilateral salpingo oopherectomy. In more advanced cases it may be necessary to undergo radiotherapy and/or chemotherapy as well as or instead of surgery.
Most cases of endometrial cancer are not preventable, however certain factors can lower the risk of developing the disease. Obesity is one of the highest risk factors for the development of endometrial cancer. You can help prevent endometrial cancer by maintaining a healthy weight. Excess fat tissue can increase the risk of endometrial cancer. Maintaining a healthy weight as one ages can lower the risk of developing endometrial cancer as well as other diseases.

OBESITY AND COLORECTAL CANCER

Definition

In the United Kingdom colorectal cancer is the second most common cancer, with approximately 30,000 new cases diagnosed each year, accounting for approximately 17,000 deaths per year (National Institute of Clinical Excellence, 2004).

Association with Obesity

There is evidence indicating that lifestyle factors including obesity may account for approximately three quarters of cases of colorectal cancer. Therefore adopting a healthy lifestyle could significantly reduce the incidence of the disease.

Diagnosis

CRITERIA FOR URGENT REFERRAL

- Rectal bleeding with a change in bowel habit to increased frequency of defecation and/or loose stools and persistent for at least 6 weeks
- Rectal bleeding persistently without anal symptoms – aged 60 years
- Change in bowel habit to increased frequency of defecation and/or looser stools persistent for at least 6 weeks
- Patients with an easily palpable right iliac fossa mass
- Patients with an easily palpable intraluminal rectal mass.
- Patients with an unexplained iron deficiency anaemia:

  - Men – Hb below 11g/dl
  - Women – Hb below 10g/dl (post menopausal)

Treatment Management

Studies have shown that a low consumption of meat can reduce the risk of developing colorectal cancer. However, epidemiological evidence points to an association between total calorie intake and body mass index, revealing the slim people are less likely to develop colorectal cancer.

Eating a healthy diet and choosing the right diet goes a long way towards keeping a person fit and well. Several nutritional factors are likely to have a major influence on risk of colorectal cancer. Hyperinsulinemia may be an important underlying risk factor. Physical inactivity and excessive adiposity, especially if centrally distributed, clearly increase the risk of colon cancer (Giovannucci, M.D.2003).

OBESITY AND REPRODUCTIVE HORMONE ABNORMALITIES

Definition

Overweight and obesity carry many health consequences, including reproductive dysfunction.

Association with Obesity

In particular excess fat in the abdominal area is strongly related to disorders of the reproductive system. Moderate weight loss and reduction of abdominal fat improves menstrual regularity, ovulation and infertility in women. This may be aetiologically related to insulin resistance, particularly in a subset of infertile women with polycystic ovary syndrome. As such weight loss should be promoted as an initial treatment option for obese women with infertility. However, the most effective method for achieving and maintaining weight loss is unclear. Gradual weight loss is best achieved through a sensible eating plan that can be maintained over long periods of time. The likelihood of maintaining weight loss is increased when diet is combined with regular exercise, cognitive behaviour therapy and a supportive group environment. Adoption of these principles in a primary health care setting can therefore aid in treatment of infertility related to obesity.

The link between obesity and infertility is complex. In addition to having altered gonadotrophin levels, obese women often exhibit varied reproductive hormone profile with increased serum Androgen (predominantly the ovarian androgens, testosterone and androstenediol) and reduced serum Sex Hormone Binding Globulin (SHBG). Abdominal fat is related to decreased SHBG and increased androgenisity of infertile women. Obesity and abdominal obesity are strongly associated with insulin resistance. Increased androgen production and reduced binding of androgen to SHBG contribute to hyperandrogenism resulting in anovulation through inhibition of follicular maturation. Evidence also suggests that hyperinsulinaemia increases ovarian androgen production and decreases serum SHBG. This is of particular significance in a considerable proportion of women with PCOS in which insulin resistance has been consistently documented in lean and obese women, compared to weight match controls. Obesity and abdominal obesity may therefore contribute to hormonal abrasions that increase the prevalence of anovulation, irregular menstruation and infertility. The impact of obesity is greater for women with an underlying metabolic abnormality such as PCOS.

Diagnosis

The association between abdominal obesity and menstrual abnormalities and infertility is also apparent, although it has not yet been elucidated whether it is the fissural or subcutaneous depot that is related to reproductive dysfunction. It has been found that for women with upper body fat predominance (waist - hip ratio >0.8), the relative risks of irregular menstruation and oligomenorrhoea were 1.56 and 2.29 respectively, compared with women with a lower body fat predominance.[82] In 40,980 postmenopausal

women, WHR (waist – hip ratio) were significantly positively associated with a history of infertility.[83]. Another study documented a 30% decrease in the probability of conception for each 0.1 increase in WHR in women of reproductive age (number = 500) presenting for ART. [84]. Android obesity is additionally associated with a low pregnancy rate after invitro fertilisation (IVF) [85].

Treatment Management

As a precursor to pharmacologic intervention (such as Clomifene Citrate, gonadotrophins and insulin sensitising agents) treatment of obesity itself should be the initial aim in obese infertile women. Reduction of fat and abdominal fat should result in improved menstrual function and fertility and a reduction of metabolic risks. In cases where infertility is linked to insulin to insulin resistance, weight loss is again a logical option because weight loss and lowering of abdominal fat reduces insulin resistance.

Guidelines for Long Term Treatment of Overweight and Obesity

1. Sensible diet and changed eating habit for long term.
2. Effective physical activity programme sustainable long term.
3. Behaviour modification, reduction of stress, wellbeing.
4. Combination of dietary and behaviour therapy and increased physical activity.
5. Social support by physician, family, spouse and peers.
6. Smoking cessation and reduction in alcohol consumption.
7. Avoidance of "crash diets" and short term weight loss.
8. Minor roles for drugs involved in weight loss.
9. Avoidance of aggressive surgical procedures for majority.
10. Adoption of weight loss programmes to meet individual needs.
11. Long term observation, monitoring and encouraging of patients who have successfully lost weight.

POLYCYSTIC OVARY SYNDROME (PCO)

Definition

The cause of PCOS is not known, but seems to involve insulin resistance and impaired glucose tolerance. The raised serum concentrations of insulin (hyperinsulinaemia) appears important in the pathogenesis of the syndrome.[88] Hyperinsulinaemia can lead to increased serum concentration of free (active) testosterone by stimulating production of androgens by the ovaries and by inhibiting the production of sex hormone binding globulin in the liver. In addition, weight gain (which may itself result from hyperinsulinaemia) tends to exacerbate the features of polycystic ovary syndrome, by increasing serum insulin concentrations and reducing sex hormone binding globulin.
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PCO is the commonest cause of anovulalatory infertility accounting for about 80% of all cases.[89]

Association with Obesity

Oligomenorrhoea or amenorrhoea occurs in around two thirds of women with PCOS, are found even more common in women with the syndrome who are obese (i.e have a BMI of 30 kg per square meter or above).[87]
Women with PCOS are more likely than other women of the same age to have risk factors for cardiovascular disease (in particular, obesity, central body fat distribution, hypertriglyceridaemia, reduced HDL Cholesterol concentration and hypertension).
During follow-up for about 30 years they are twice as likely to develop diabetis mellitus[90] (8% of lean and 11% of obese women with PCOS have abnormal glucose tolerance[91]) and nearly three times as likely to have a stroke or transient ischaemic attack.[90] However, they do not seem to be at increased risk of developing symptoms of, or dying from secondary heart disease.[5] Women with PCOS also seem more likely to develop endometrial cancer.[90]

Diagnosis

It requires the presence of at least 2 of the following 3 criteria:-

1. Oligomenorrhoea and/or anovulation.
2. Hyperandrogenism (clinical and/or biochemical).
3. Polycystic ovaries defined as the presence of 12 or more follicles in each ovary measuring 2 to 9 mm in diameter and/or ovarian volume above 10 cm^2).[86]

Young women in their late teens or early 20's with clinical hyperandrogenisation (i.e acne and hirsutism) or of a menstrual disturbance (usually oligomenorrhoea or omenorrhoea).

Classical PCO has a combination of obesity, severe hirsutism and infertility,
darkned skin in the limb flexures, or on the neck (acanthosis nigrcans) – an uncommon finding suggest hyperinsulinaemia.

Biochemical tests. Testosterone usually above 2.5 nmol/l with low S.H.B.G and high Free Androgen index (total Testosterone nmol/l x 100 ÷ by S.H.B.G (nmol/l). High LH/FSH ratio usually >2:1.
Ultra-sound scanning of the ovaries.

Treatment Management

Treatment is aimed at managing current symptoms. Where appropriate treatment also needs to include strategies to prevent the development of diabetes mellitus. Accordingly, overweight women with PCO should be advised of the importance of losing weight and given advise on exercise and diet.[92] These measures may improve insulin sensitivity, reduce serum insulin concentrations, improve menstrual cycle regularity, make ovulation more reliable and reduce circulating testosterone concentration. The discovery of a link between PCO and insulin resistance has led to trial of drug treatment that aim to improve insulin sensitivity (such as Metformin).

Referral Procedure

When the main presenting problem is infertility, causes other than PCOS need to be excluded, and for this the patient and her partner need to be referred to a specialist. Also the patient should be referred to a specialist for advice whenever the diagnosis is in doubt or an alternative diagnosis becomes a possibility.

OBESITY AND LOW BACK PAIN

Definition

There are two main types of back pain namely, chronic and acute low back pain. Low back pain is considered to be chronic if it has been present for greater than three months. Chronic low back pain may originate from an injury, disease or stresses on different structures of the body. The intensity of pain may range from mild to severe.

Acute low back pain is defined as low back pain present for up to six weeks. It may be experienced as aching, stabbing, sharp or dull, well defined or vague. The intensity of pain may range from mild to severe and may fluctuate.

Association with Obesity

People who are overweight or obese and suffer from back pain may not be aware that their excess weight is actually contributing to their back pain. While it has not been thoroughly studied exactly how excess weight can cause or contribute to back pain, it is known that people who are overweight often are at greater risk of back pain, joint pain and muscle strain than those who are not obese.

The spine is designed to carry the body's weight and distribute the loads encountered during rest and activity. When excess weight is carried the spine is forced to assimilate the burden which may lead to structural compromise and damage e.g. injury or sciatica.

One region of the spine that is most vulnerable to the effects of obesity is the lower back; the lumbar spine. Lack of exercise and bodily conditioning leads to poor flexibility and weak muscles in the back, pelvis and thighs. This can increase the curve of the lower back causing the pelvis to tilt too far forward. Further this is detrimental to proper posture and as posture weakens, other regions of the spine such as the neck may become painful.

Diagnosis

You may try to dismiss the cause of some spinal pain to the process of normal ageing. It is true that with age body tissues can cause changes to spinal anatomy. However, if you are overweight or obese, chances are you have, or will have, back pain. Indeed childhood obesity and back pain is on the increase due to many factors that include sedentary behaviour (e.g. computer games). Symptoms may include musculo skeletal pain, sciatica, muscle spasm resulting in the trunk tilting to one side more than the other and difficulties doing general day to day activities because of the pain.

Treatment and Management

Treatments for back pain can vary greatly depending on the type and source of the pain. There are several different general categories of treatment that are usually recommended ranging from physical therapy, medications, coping skills and surgical procedures. The treating physician/physiotherapist will tailor a programme involving a combination of these options to address the patient's needs.

If the treating physician feels that more testing is needed based on the patients history and physical exam findings then these tests may include blood tests, x-rays, MRI scans etc.

Patients will generally be advised to change their lifestyles – such as eating a healthier diet and taking regular exercise – in order to reduce the burden on the spine. To these ends the patient may be referred to a weight management clinic at the local hospital.

Referral Procedure

There is a direct referral system from the GP to the Physiotherapy Department or to any other medical professional including a referral to see a consultant.

FETAL DEFECTS

- We tend to use 'fetal' rather than 'foetal' these days.

- The main link between birth defects or congenital anomalies and obesity is through diabetes. Type 1 diabetes has a clear connection with many different types of congenital anomaly, especially the heart and kidneys. With increasing levels of obesity and older maternal age, we are starting to see more mothers with type 2 diabetes and there is some evidence that this is also linked to these birth defects. (Obese mothers are also likely to have other complications of pregnancy, not related to congenital anomalies)

- Being severely underweight is also linked to some birth defects, most notably gastroschisis

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Surgery

WEIGHT LOSS SURGERY [93]

Surgery is now considered a well-established treatment for carefully selected patients with clinically severe obesity. This is defined as:

- BMI $\geq$ 40 Kg/m^2 or
- BMI $\geq$ 35 Kg/m^2 with significant co-morbidities

(NICE, 2002)

Surgery to aid weight reduction (bariatric surgery) may be considered as a treatment option **providing there is evidence that all appropriate and available non-surgical measures have been adequately tried but have failed to maintain weight loss, e.g. slimming groups, dietetic intervention, exercise and pharmacotherapy.**

Surgery is recommended as a treatment option for people with morbid obesity providing all of the following criteria are fulfilled:

- They are aged 18 years or over
- They have tried all other appropriate non-surgical treatments to lose weight but have failed to maintain weight loss
- There are no specific clinical or psychological contraindications to this type of surgery
- They are generally fit enough to have an anaesthetic and surgery
- They should understand the need for long-term follow-up at the obesity clinic led by the surgeon and dietitian.

(NICE,2002)

(The referral criteria for patients to be referred from a specialist hospital obesity clinic does not apply since there are currently no clinics of this kind throughout Wales)

There are two main types of surgical intervention that are highly effective in helping patients with clinically severe obesity to lose a significant amount of their excess weight.

• Restrictive (Vertical Band Gastroplasty & Gastric Band)

Where the size of the stomach is reduced using staples or a band so that only small meals can be eaten and hunger is satisfied early. They are generally the simplest and safest type of operation for treating morbid obesity.

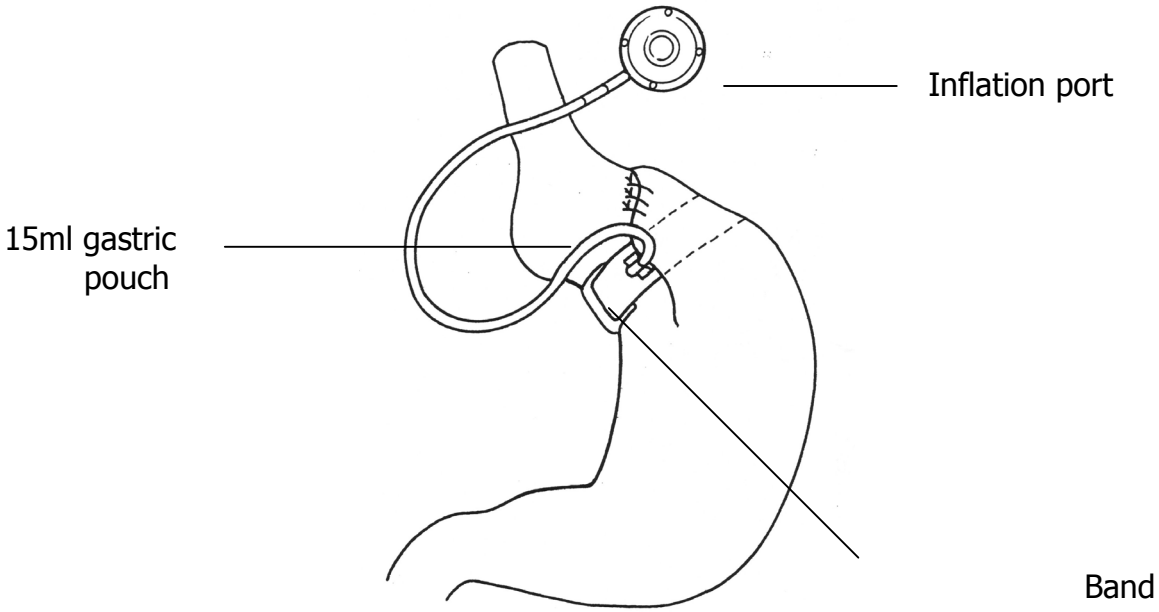
• Restrictive/Malabsorptive (Gastric Bypass & Bilio Pancreatic Diversion)

A combined approach, with some surgical restriction, plus bypassing of some of the digestive system so that food passes through the body without its calorie content being fully absorbed. These procedures have been shown to be the most successful type of bariatric surgery in terms of the amount of weight lost. They may be the best choice for people with a BMI $\geq$ 50 Kg/m^2.

Restrictive Procedures

Restrictive procedures are mostly based on dividing the stomach into two compartments. The upper part is turned into a small pouch that fills up quickly, giving a sense of fullness. It empties slowly through a small gap, formed by a ring or band, into the rest of the stomach, before passing normally through the rest of the digestive system.

GASTRIC BAND



The **gastric band** is the most commonly performed procedure. It can be carried out using a keyhole technique (laparoscopic surgery) and is reversible. The operation involves placing an inflatable band around the top of the stomach to create a pouch, with a narrow opening (stoma) to the rest of the stomach. The width of the stoma limits how quickly food leaves the pouch and enters the rest of the stomach.

Inflating the band with fluid makes the stoma narrower by causing the band to tighten. This is done after the operation by injecting fluid into a reservoir connected to the band by a thin tube. The reservoir is placed under the skin on the lower chest or abdomen. The band is inflated to create the correct size of the stoma. This is usually done a few weeks after the initial operation, leaving time for the swelling caused by surgery to settle down. When the band has been inflated, it encourages early satiety helping the patient adhere to a weight reducing diet.

Side Effects

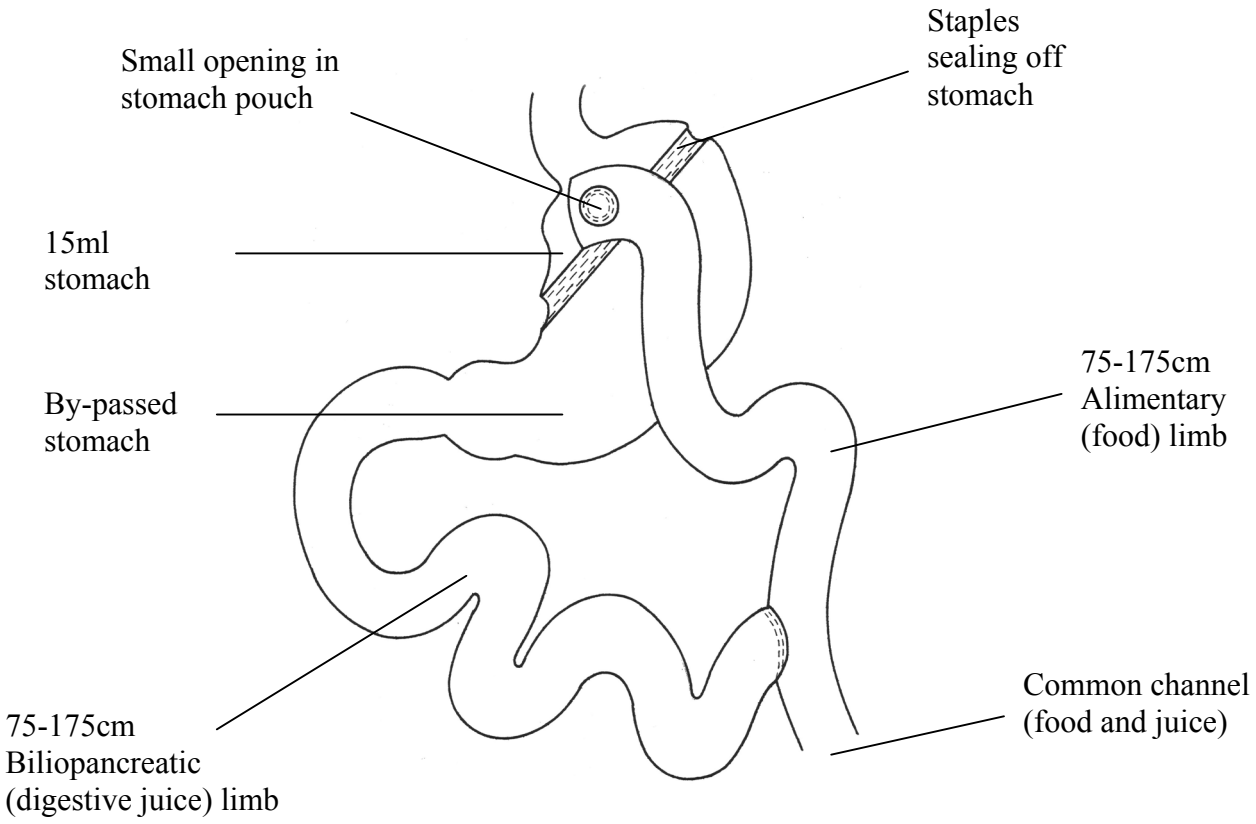
Nausea, vomiting and indigestion may occur after meals, especially after eating too much. The restricted diet may cause some shortages of nutrients. Daily supplements may be recommended to help prevent such deficiencies.

Dietary advice post-gastric band

Following placement of a gastric band it is essential that patients receive specialist dietary advice regarding the reintroduction of foods, texture modification and meal frequency to help avoid side effects and nutritional deficiencies. It is recommended that patients follow a fluid diet only for a period of time after placement of the band. Gradual reintroduction of foods of suitable textures is later recommended.
This advice should be obtained from a registered dietitian

Restrictive/Malabsorptive Procedures

GASTRIC BYPASS



A small pouch is made at the top of the stomach using a line of staples. Part of the intestine is also bypassed which means that food does not enter the remainder of the stomach or part of the duodenum.

Like the restrictive procedures, the pouch created at the top of the stomach means only small meals can be eaten, and leads to an early sensation of fullness. The malabsorption comes from the bypass. Nutrients (including calories) are absorbed into the bloodstream as food travels along the small intestine. By bypassing some of this, a gastric bypass reduces the amount of calories that the body can take up from the food in these small meals. It is an irreversible procedure.

Side Effects

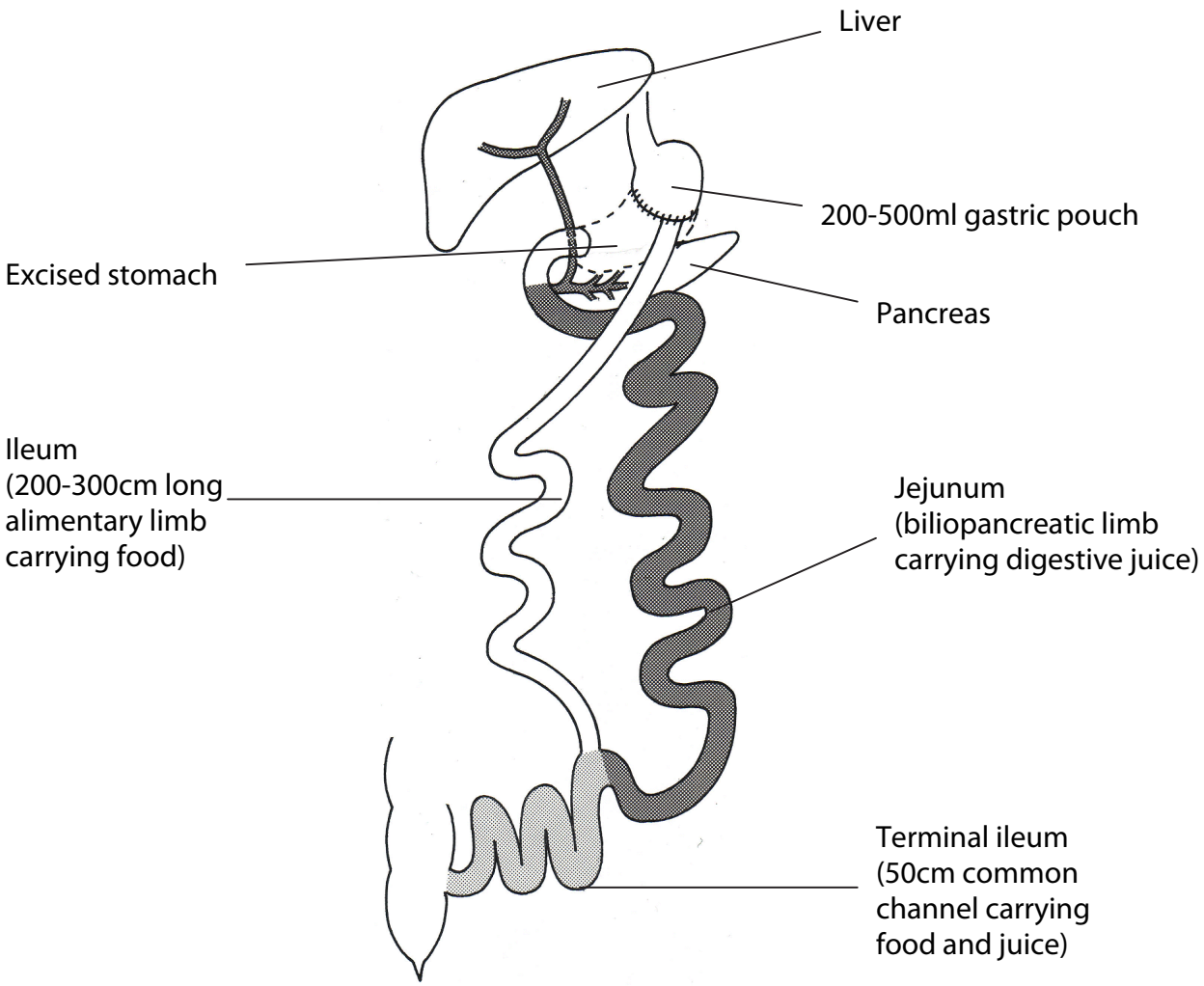
Patients may experience some nausea and vomiting. In the long term a gastric bypass can lead to deficiencies of nutrients, especially iron, calcium and B vitamins. Supplements as either tablets or injections are usually required for life to prevent these. Protein Energy Malnutrition can occur as the volume of food eaten is greatly reduced, achieving an adequate protein intake is more difficult. Dumping syndrome can also occur, because part of the digestive system has been bypassed, the energy in food can get into the bloodstream much more quickly than normal. This can result in unpleasant symptoms including dizziness and nausea. These symptoms can be avoided by avoiding sugary and highly processed foods.

Dietary Advice Post-Gastric Bypass

Following a gastric bypass it is essential that patients receive specialist dietary advice regarding the reintroduction of foods, texture modification and meal frequency to help avoid side effects and nutritional deficiencies. Initially after the procedure fluids or a very small amount of pureed diet is recommended with the gradual reintroduction of more solid consistencies at 3-6 months post-op. It is essential that patients include adequate protein in their diets as well as vitamins and mineral supplements to avoid deficiency. Dietary assessment is required on a regular basis to ensure these patients are meeting their nutritional requirements.

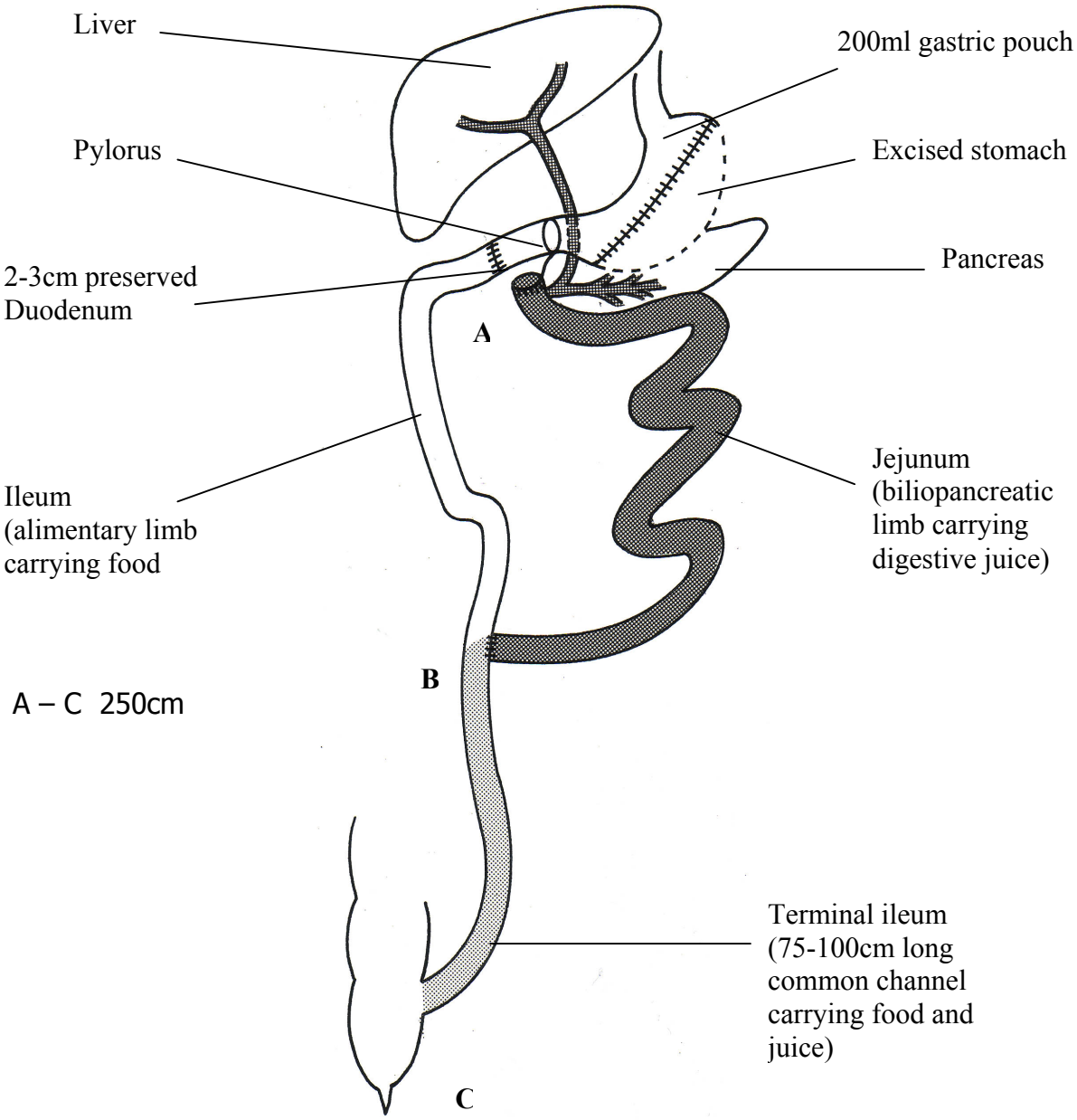
This advice should be obtained from a registered dietitian.

BILIO-PANCREATIC DIVERSION (BPD)



This procedure involves removal of three quarters of the stomach to create a small pouch which is connected to the final segment of small intestine, bypassing the duodenum and jejunum. A bypass of intestine in this way separates food from bile and other digestive juices. This results in only 30% of ingested food being absorbed. This procedure creates a significant malabsorptive component to maintain weight loss long term. Weight loss following the BPD is mainly due to fat malabsorption. It is an irreversible procedure and is usually only recommended for those with a BMI ≥ 50.

DUODENAL SWITCH



Side Effects

Protein Energy Malnutrition is common due to the significant malabsorptive component created. In addition to this, micronutrient deficiencies, particularly Vitamin B12, iron, calcium, Vitamin D and Vitamin A are common. Multivitamin and mineral supplements are required life-long after this procedure. Vitamin B12 injections are usually provided every three months. Anaemia, dumping syndrome, diarrhoea, foul smelling stools and stomal ulcer are other possible side effects.

Dietary Advice Post BPD

Following a BPD it is essential that patients receive specialist dietary advice regarding the reintroduction of foods, texture modification and meal frequency to help avoid side effects and nutritional deficiencies. Initially after the procedure oral fluids are introduced and then very small quantities of pureed diet. Within a few weeks, the consistency and amount of food tolerated should improve. It is essential that patients include adequate protein in their diets as well as vitamin and mineral supplements to avoid deficiencies. Dietary assessment is required on a regular basis to ensure these patients are meeting their nutritional requirements.

This advice should be obtained from a registered dietitian.

Referral Procedure to Obesity Surgeon

Professor J.N Baxter (Morriston Hospital, Swansea) is currently the only obesity surgeon available in Wales. At present there is a 12-18 month waiting list for an initial appointment at the obesity clinic, and a 3-4 year waiting list for surgery.

Referrals are accepted from GPs or Consultants only. If doctors have any queries regarding the suitability of surgery for a patient, they can speak to the surgeon directly for advice (See contact details at the end of this section).

Before considering making a referral, it is fundamental that doctors have ensured that the patient has tried all other treatment options and failed to maintain weight loss, i.e. dietitians, slimming groups, exercise and pharmacotherapy.

Also the surgeon would prefer if doctors could refer younger patients and give preference to those with Diabetes, Sleep Apnoea, High Blood Pressure, Abnormal Blood Lipids and Skeletal Pain.

Follow-Up

After surgery, patients will be expected to attend the obesity clinic with the surgeon and dietitian every three months for the first 18 months, then six monthly for the next four years. Following this period, patients will be reviewed annually.

Post-operative dietary assessment and counselling is essential for all patients who have undergone obesity surgery. Patients will have the opportunity to see the dietitian at the obesity clinic.

Carmarthenshire Dietetic Department provides a service to most of the GP practices in the County (See list). A referral can be made to the dietitian using the appropriate referral form (See section on making a referral).

Help and Support

With all weight loss surgery, long term weight loss depends on permanent changes to your diet and exercise habits. Ongoing support for these patients is important in helping them achieve and maintain these changes.

Joining a group of weight loss surgery patients in person or online provides valuable motivation and support both before and after the operation.

It is recommended that patients contact **WLSINFO (Weight Loss Surgery Information & Support)**

The activities of the charity are organised by a team of volunteers, supported by a group of Health Care Professionals who form the Advisory Group. The charities activities include:

- Providing quality assured information online at: **http://www.wlsinfo.org.uk**
- A web accessible library service online at: **http://www.fade.nhs.uk**
- Quality assured printed material via a series of booklets which are currently being produced
- An information and support helpline at: **0151 222 4737**

Further information is also available from:

- British Obesity Patients Support Association (BOSPA)
www.bospa.ork.uk

- Centre for Obesity Surgery
www.obesitysurgery.org.uk

- NICE guidance on Obesity Surgery
www.nice.org.uk

- British Obesity Surgery Society
www.ukobesitysurgery.co.uk

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Appendix

ACKNOWLEDGEMENTS

ACKNOWLEDGEMENTS

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- Liz Newbury-Davies, Senior Health Promotion Officer (Heart Health), Carmarthenshire Local Public Health Team
- Beth Cossins, Principal Health Promotion Specialist, Carmarthenshire Local Public Health Team
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- Kath Haines, Prescribing Support Manager, Carmarthenshire Local Health Board
- Rhoswen Davies, CHD Clinical Nurse Specialist, Carmarthenshire Local Health Board
- Alison Downing, CHD Clinical Nurse Specialist, Carmarthenshire Local Heath Board
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- Steve Simmonds, Projects Officer, Community Pharmacy Wales
- Mike (Alfie) Howard, Education, Training and Brief intervention Co-ordinator, PRISM
- Ian Scale, Principal Public Health Officer, Pembrokeshire Public Health Team
- Nicola Morris, Assistant Psychologist, Department of Neuropsychiatry, Whitchurch Hospital, Cardiff.
- Linda Durgan, Mid and West Wales Smoking Cessation Coordinator
- Dr Nuha A A Haboubi, FRCPath, Consultant Chemical Pathologist & Lipidologist, Carmarthenshire NHS Trust, Pathology Dept, West Wales General Hospital.
- Dr Keir Lewis MD, MRCP, MB BS(Hons), BSc(Hons), Senior Clinical Lecturer, Swansea School of Medicine and Honorary Consultant, Carms NHS Trust
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- Sarah Barrett, Orthopaedic Specialist Nurse, West Wales General Hospital, Carmarthen
- Dr Meurig Williams, Consultant Diabetologist, Carmarthenshire NHS Trust
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- Sister Helen Thomas, Picton Ward, West Wales General Hospital, Carmarthen
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- Mr W G Sheridan, MA, MCh, FRCS, FRCSI, Consultant General & Colorectal Surgeon.
- John Price, Health Promotion Manager, Prince Philip Hospital

- Dr Judith Greenacre, MB BCh DCH FFPH, Consultant in Public Health, St David's Hospital
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REFERRALS

Paediatric Dietetics - Referral Criteria

In Carmarthenshire, only **clinically obese** children and young people can be referred to Paediatric Dietetics.

Referral to Paediatric Dietetics can only be made via a Paediatrician who has assessed the following:

- ***Child or Young person meets the 'Definitions of Obesity' i.e above 98th centile on Paediatric BMI Chart (see appendix)***
- ***The family and child or young person are assessed as ready and willing to undertake change***

The programme used by the Dieticians is based on current best practice.
A six month programme of advice on 'Lifestyle Changes' is offered during 4 appointments.
Failure to attend appointments indicates lack of motivation to change and leads to discharge.
Limitations, including staff time and the limited referral route should be noted.
The results of these interventions are due to be audited by the end of 2005, which may lead to a change in practice.

For children and young people requiring advice, but do not meet the referral criteria, written information on Diet and lifestyle is available. (see appendix)

Department of Nutrition & Dietetics – Contact Information

Dietician	**Address/ Tel No**	**E-mail**
Karen Thomas Paediatric Dietician (Team Lead)	Department of Nutrition & Dietetics West Wales General Hospital Carmarthen Tel: 01267 227067	karen.thomas@carmarthen.wales.nhs.co.uk
Sheila Lloyd Paediatric Dietician		sheila.lloyd@carmarthen.wales.nhs.co.uk
Eleri Gibbin Paediatric Dietician		e.gibbon@carmarthen.wales.nhs.co.uk

REFERRAL TO DIETITIAN

Department of Nutrition & Dietetics
Prince Philip Hospital
Llanelli, SA14 8QF

Department of Nutrition & Dietetics
West Wales General Hospital
Carmarthen, SA31 2AF

GP: .....

Patient Name: .....

Address: .....

DOB: .....Tel No: .....

Referring GP/Consultant: .....

Reason for referral: .....

Relevant Results: **Date:**

Weight		Cholesterol		Hb		Fasting Glucose		Urea	
Height		HDL		Total Protein		Random Glucose		Creatinine	
BMI		LDL		Albumin		HbA1c		Na	
Centile		Triglycerides		Uric Acid				K	
		Total Cholesterol/HDL Ratio		Other					

Current Medication: .....

Medical History: .....

Note: Please make sure all the relevant information is enclosed. If we feel we do not have enough information we will return the referral to you which may result in a delay for the patient.

ALL WALES SMOKING CESSATION SERVICE

Intensive support is currently provided through the All Wales Smoking Cessation Service. They offer a 6-8 week programme, either in a group or in individual sessions.

If you want free and friendly advice and support to help you quit please contact the All Wales Smoking Cessation Service on the number below for details of your local service:

0800 085 2219

How does the service work?

The programme will give people:

- A chance to think about giving up smoking and what this means for you
- Information about the products available to help you quit smoking
- Help to set a quit date – we encourage you to quit during the second week
- Ideas on preparing to quit
- Support and guidance to help you through the first few weeks of quitting
- Follow up at 4 weeks and 12 months

Who is the service for?

The service is for adults who are really serious about wanting to give up smoking and who need extra support and encouragement.

How much does it cost?

The National Public Health Service provides the service free of charge.

REFERRALS TO PRISM

For referrals to PRISM, the health professional can either phone PRISM or send a referral letter in. The criteria for referral is the client MUST consent. Patient can also self-refer.

Contact Details

PRISM Mid and West Wales Alcohol and Drug Advisory Service

Forestry House
Brewery Road
Carmarthen
Carmarthenshire
SA31 1TF

5a, 1st Floor Cowell St
Llanelli
SA15 1UU

Ffon / Tel: 01267 231634

Ffacs / Fax: 01267 223593

Ffon – 01554 741636

Fax – 01554 758786

Ebost / Email: support@prism-carmarthenshire.org.uk

offices open 9.00am-5.00pm Mon-Thurs 9.00am-4.30pm Friday

Patients can be seen at a local venue (eg GP practices) if it is more convenient for them, but please make your initial referral to the Carmarthen/Llanelli office as above. For further information/service leaflets, please contact either of the offices

Doctor's Referral Form

Llywodraeth Cynulliad Cymru
Welsh Assembly Government
CORFF NODDEDIG SPONSORED BODY

National Public Health Service for Wales
Gwasanaeth Iechyd Cyhoeddus Genedlaethol Cymru

Amser Hamdden LeisureTime

CYNLLUN CYFEIRIO SIR GAERFYRDDIN ~ CADW'N HEINI

VITALITY

Bywiogi

CARMARTHENSHIRE COUNTY EXERCISE REFERRAL SCHEME

Learn to enjoy a new healthier lifestyle in just 12-weeks!

Cyngor Sir Gâr
Carmarthenshire
County Council

Referral Procedures

GP completes referral booklet and client signs.

GP sends referral slip to Vitality team in a pre-paid envelope.

Client receives appointment time for initial screening at the appropriate leisure site.

Activity programme plan completed by fitness instructor and faxed to GP for signature of approval.

GP fax's back programme plan in order for client to begin their 12-week exercise programme.

Fitness Assessments are conducted at week 1, 6 and 12.

Upon completion client completes Post Course Questionnaire Forms for evaluation purposes.

Clients continue a personal exercise programme and enjoy a new healthier lifestyle!

For more information:

Lindsey Roberts
Ty'r Nant
Trostre Business Park
Llanelli
Carmarthenshire
SA14 9UT

Phone No: 01554 747517

GP COPY: Yellow SITE COPY: Pink VITALITY COPY: White Referral No: _____

Carmarthenshire GP Exercise Referral Scheme

Doctors Referral Form

Name: _____ DOB: _____

Address: _____

_____ **Telephone No:** _____

_____ Practice Stamp

_____

Post code: _____

Doctor's Name: _____ Medical Practice: _____

Date of Referral:_____

Referral Reasons: (please indicate all that apply)

Previous MI			
Weight reduction		Inactive / Sedentary	
Family History of CHD Indicators		High Cholestrol	
Mild depression / Anxiety / Stress		Asthma/copd	
Osteoporosis/Athritis		Substance Misuse	
Hypertension:		Diabetes:	
Medication		Medication	
Non-Medication		Non-Medication	

Please attach medication printout _____

Baseline Measures: (It will help us to produce the best exercise programme if we have background information on the participant)

Resting Heart Rate	Heart Rate Regular Yes / No	B/P Systolic	B/P Diastolic
		_____	_____

Contraindications to Exercise: Diastolic > 99 Systolic > 180

Additional referral information:
ie Other conditions not indicated previously:- _____

I refer this individual to the Carmarthenshire County Exercise Referral Scheme under the terms and conditions set out in the manual.

Signature of Referrer (GP): _____ Date: _____

CHOSEN VENUE: _____

I hereby give consent to the above GP and medical practice to forward details of my medical records to the staff of the GP Exercise Referral Scheme so that an appropriate safe exercise programme can be devised for my purposes suitable to my age, ability, medical conditions and lifestyle.

I understand that only information relevant to the activites will be forwarded and that all staff involved in handling this data will have signed a confidentiality agreement and ethical agreement.

Participant Signature: _____ Date: _____

Name (in capitals): _____

RESOURCES

RESOURCES

DIET AND NUTRITION

1) BRITISH HEART FOUNDATION

Resources for use by patients and health professionals

So you want to lose weight for good – **FREE** to download and order

Food should be fun and healthy - £3.00 suggested donation when ordered or **FREE** to download

Guide to food labelling - **FREE** to order and download

Cut the saturated fat from your diet – **FREE** to order

Available from the British Heart Foundation online at www.bhf.org.uk or by tel:020 07935 0185

2) BRITISH MEAT AND NUTRITION EDUCATION SERVICE (BMNES)

Resources for use by patients and health professionals

Enjoying a healthy diet is all about getting the balance right. There are no healthy or unhealthy foods, only healthy or unhealthy diets – **FREE**

Getting the balance right – poster available in A4 and A3 (English and Welsh) and A1 (English only) – **FREE**

Available to download and order from: **www.meatandhealth.co.uk**

3) FOODSTANDARDS AGENCY

Resources for use by patients and health professionals

The Balance of Good Health – information for communicators

Eat Well: Your Guide to Healthy Eating

The following are all available in Welsh: -

- Sugar
- Salt
- Fats
- Labelling claims
- Eat Well – a guide to healthier eating for the over 60's

Available from the Food Standards Agency – **www.foodstandards.gov.uk** ***or by Tel: 0845 606 0667***

4) Welsh Assembly Government

Resources for use by patients and health professionals

Hassle free food. A guide to cheap, quick and healthy eating – **FREE** (bilingual)

Eating for life – FREE

Just eat more (fruit and vegetables) – **FREE** (bilingual)

Big Fat Problem - A guide to eating well, getting fit and living longer – **FREE** (bilingual)

Available to download and order from the Chief Medical Officer website at www.cmo.wales.gov.uk or by Tel: 02920 898688

5) BRITISH NUTRITION FOUNDATION

Resources for use by patients and health professionals

Healthy eating – a whole diet approach – FREE

Available to download from www.nutrition.org.uk

6) BRITISH DIETETIC ASSOCIATION

Resources for use by patients and health professionals

Food Facts – information sheets on the following: -

- The truth about fad diets
- Fat – getting the balance right
- Salt and Health
- The truth about detox diets
- Understanding the food label
- Fluid – why you need it and how to get enough
- Vegetarian diets – keeping a healthy balance
- Help yourself to healthy snacks
- Eating for a healthy heart
- Healthy packed lunches
- A healthy breakfast – the best start to your day
- Want to lose weight and keep it off?
- Getting the balance right – a guide to healthy eating
- Eat, drink and be healthy at Christmas
- Beef up on healthy barbecues
- Healthy eating for children Glycaemic Index
- Omega 3 fatty acids – fishing for facts

Available to download for FREE from www.bda.uk.com
N.B if unable to download fact sheets, please contact your local dietetic department for a copy.

7) World Cancer Research Fund

Resources for use by patients and health professionals

A healthy weight for life

Available to order and download for FREE from www.wcrf-uk.org

8) USEFUL WEBSITES

The following websites contain good information on diet, nutrition and health with printable downloads: -

British Nutrition Foundation	**www.nutrition.org.uk**
British Dietetic Association	**www.bda.uk.com**
British Heart Foundation	**www.bhf.org.uk**
Food Standards Agency (FSA)	**www.food.gov.uk**
Dietitians Working in Obesity Management (DOM-UK)	**www.domuk.org**
FSA Salt Awareness Website	**www.salt.gov.uk**
FSA Healthy Eating Website	**www.eatwell.gov.uk**
BBC online Food	**www.bbc.co.uk/food**
Big Fat Problem Campaign	**www.bbc.co.uk/wales/bigfatproblem**
Weight Concern	**www.weightconcern.com**
Male Health (Men's Health Forum)	**www.malehealth.co.uk**
Men's Weight Management Website	**www.fatmanslim.com**
Chief Medical Officer (Wales)	**www.cmo.wales.gov.uk**
Association for the study of Obesity	**www.aso.org.uk**
National Obesity Forum	**www.nationalobesityforum.org.uk**
World Cancer Research Fund	**www.wcrf-uk.org**

CHILDHOOD OBESITY

An Approach to Weight Management in Children and Adolescents (2-18 years) in Primary Care (available on web site: **www.rcpch.ac.uk)**

Weight Reduction Advice for Children (Diet & Lifestyle Information)

BMI Chart – Boys & Girls (Birth – 20 years) Published by Child Growth Foundation

Food First – Diet & Lifestyle Factsheets No1 –5 (**www.bda.uk.com**)

PHYSICAL ACTIVITY

British Heart Foundation

Physical Activity and your Heart – Heart information Series

Exercise for Life!

Put Your Heart into Walking (Bilingual)

Order from BHF tel: 020 7935 0185 or on line at www.bhf.org.uk

British Heart Foundation
Physical Activity Advice Handouts

Physical Activity after Heart Attack

Physical Activity and Angina

Physical Activity and Diabetes

Physical Activity and High Blood Pressure

Physical Activity for Weight Loss

Order from BHF tel: 01604 640016 or on line at www.bhf.org.uk

British Heart Foundation/Countryside Agency
(Walking the Way to Health)

Walk more – feel the difference

Order from WHI team tel: 01242 533258 or on line at www.whi.org.uk

Sportex Health

Patient Advice Sheets

Physical Activity and High Blood Pressure

Physical Activity and Weight Loss

Physical Activity after Heart Attack

Physical Activity and Type 2 Diabetes

Physical Activity and Mental Health

Physical Activity after Cancer Diagnosis

Physical Activity and Chronic Pain

Physical Activity and Asthma

Asthma Attack Prevention and Treatment

Exercising with Colds and Flu

Order from Sportex Journal tel: 020 8287 3312 reference advise handouts or on line at www.sportex-online.co.uk *Charge payable for these advice sheets*

Sportex Health

Photocopiable Patient Advise Sheets:

Accumulating Physical Activity throughout the day

Exercise and angina

Exercise rehabilitation after a heart attack

Cardiac Phase 4 rehabilitation

Exercise and hypertension

Exercise and NIDDM

Exercise and obesity

Exercise and bone health

Exercise and asthma

Exercise after cancer diagnosis

Exercise and mental health

Arthritis and Exercise

Exercise and prevention of falls and injuries

Available from the Health Promotion Service contact Liz Newbury Davies (Senior Health Promotion Officer, Heart Health) 01554 744400

ALCOHOL

Safer Drinking: A Self Help Guide

Drinking? Some questions answered.

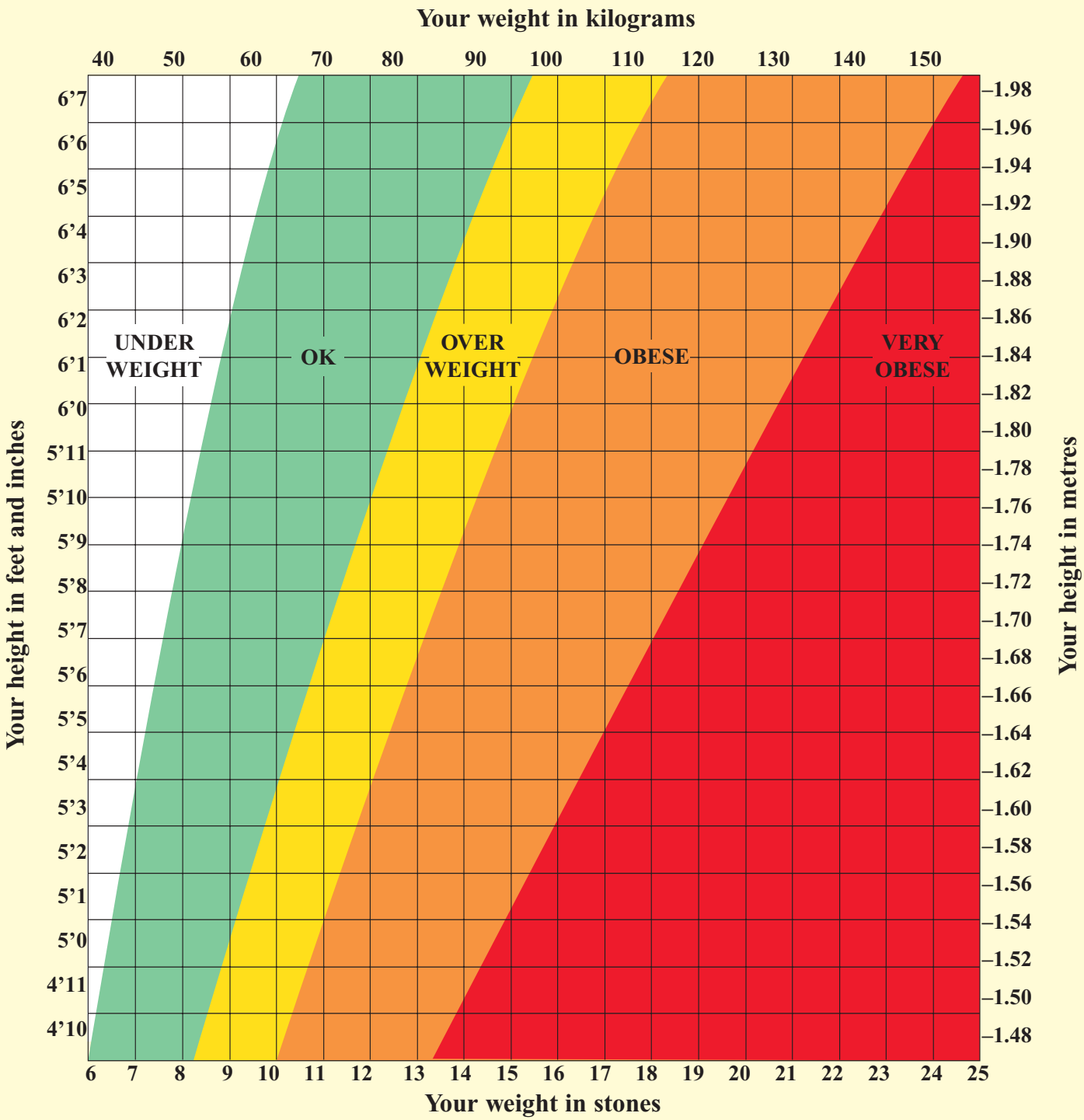
Available from:

PRISM
Mid and West Wales Alcohol Drug Advisory Service
Forestry House
Brewery Road
Carmarthen
Carmarthenshire
SA31 1TF

Ffon / Tel: 01267 231634
Ffacs / Fax: 01267 223593

For further advice on available resources for alcohol please contact PRISM

Body Mass Index Chart



Waist Circumference

[1]

	Ideal	Increased Risk	Greater Risk
Males	<94cm	<94 - 101cm	>102cm
	<37 inches	37 - 40 inches	>40 inches

[1]

	Ideal	Increased Risk	Greater Risk
Females	<80cm	<80 - 87cm	>88cm
	<32 inches	32 - 35 inches	>35 inches

References

1. Han TS et al. Waist circumference action levels in the identification of cardiovascular non risk factors: prevalence study in a random sample. BMJ (1995); 311 : 14 01-5.

USEFUL CONTACTS

USEFUL ADDRESSES

Organisation	Address	Telephone/Fax/E-Mail/Web
ALCOHOL		
Alcohol Concern		www.alchoholconcern.org.uk
		www.howsyourdrink.org.uk www.downyourdrink.org.uk
Drinkline		Tel: 08009178282
PRISM - Mid & West Wales Alcohol and Drug Advisory Service	Forestry House 5a, 1st Floor Cowell St Brewery Road Llanelli Carmarthen SA15 1UU Carmarthenshire SA31 1TF	Tel: 01267 231634(Carmarthen) Tel: 01554 741636(Llanelli) Fax: 01267 223593 Email: support@prismcarmarthenshire.org.uk
CARDIOVASCULAR		
British Cardiac Patients Association	BCPA Head Office, 2 Station Road, Cambridge, CB4 5QJ	Freephone 0800 4792800 www.bcpa.co.uk
British Heart Foundation	14 Fitzharding Street, London W1H 4DH.	Tel: 020 79350185 www.bhf.org.uk Heart information line: 08450 708070
British Heart Foundation-Walking the Way to Health (National Scheme)	Dawn Vernon Associates, Renelac House, 46 New Park Street, Devizes, Wiltshire SN10 1DT.	
Cardiac Rehabilitation	PPH: Jackie Phillips WWGH: Sandra Phillips, Paul Smith,	Tel: 01554 783619 Tel: 01267 227958
Cardiac Patient Support Groups: Dickie Tickers	Carmarthen @Cambrian room, WWGH, 7.30pm, 1st Tuesday/month, none July or August	Tel:Mr David Davies 01994 230517 Mr Ceri Lewis 01267 234040 Mr Ken Davies 01559 395673
Heart to Heart / Calon I Galon	Ammanford & District 7pm, 3rdTuesday /month	Tel: Mr Towler 01269 597437 Mr Williams 01269 595801
Scarlets Heart	Llanelli, Llanelli Soccer Club Stebonheath 7pm, 3rd Tuesday/month	Tel: Mr Hugh Jones 01558 824262 Mrs Barbara Terry 01558 777245
HEART UK (The Cholesterol Charity)	7 Neath Road, Maidenhead, Berkshire, SL6 1PE	Tel: 01628 628638 E mail: ask@heartuk.org.uk
HEART UK adviceline		Tel: 01628 628638
Chest Pain Clinic	Prince Philip Hospital, Bryngwynmawr, Dafen, Llanelli SA14 8QF.	Tel: 01554 783536
Coronary Heart Disease Specialist Nurse Alison Downing	Carmarthenshire LHB, Unit5, Parc Dafen, Heol Cropin, Llanelli, Carms	Tel: 01554 744400 Fax: 01554 744401 Alison.Downing@carmarthenshirelhb.wales.nhs.uk

USEFUL ADDRESSES

Organisation	Address	Telephone/Fax/E-Mail/Web
COUNSELLING		
Carmarthenshire Counselling Service		Tel: 01554 890894 valnewton@carmscounselling.freeserve.co.uk
DIABETES		
Diabetes UK	10 Parkway, London NW1 7AA.	Tel: 0207 424 1000 Fax: 0207 424 1001 Email: info@diabetes.org.uk www.diabetes.org.uk
Diabetes Carmarthenshire Website		www.diabetescarmarthenshire.com
HYPERTENSION		
Blood Pressure Association	60 Cranmer Terrace, London SW17 0QS.	Tel: 0208 772 4994 Fax: 0208 772 4999 www.bpassoc.org.uk
British Hypertension Society	For enquires about information on hypertension contact: Jackie Howarth, Business Admin Officer, Clinical Sciences Building, Level 5, Leicester Royal Infirmary, PO Box 65, Leicester LE2 7LX	Tel: 07717 467973 www.bhsoc.org.uk
High Blood Pressure Foundation		Tel: 0131 3829211 www.hbpf.org.uk
NUTRITION		
British Dietetic Association	5th Floor, Charles House, 148/9 Great Charles St, Queensway, Birmingham, B3 3HT	Tel: 0121 2008080 www.bda.uk.com E mail info@bda.uk.com
British Meat, Nutrition and Education Service	Good Relations Healthcare, Holburn Gate, 20 Southampton Buildings London, WC2A 1PQ	Tel: 020 78613118 www.meatandhealth.co.uk
British Nutrition Foundation	High Holborn House, 52-54 High Holborn, London WC1V 6RQ.	Tel: 0207 404 6504 www.nutrition.org.uk
Dietetic Department	Prince Phillip Hospital West Wales General Hospital	Tel: 01554 783061 Tel: 01267 227067
Food Standards Agency Food Standards Agency (Wales)	Aviation House, 125 Kingsway, London WC2B 6NH. 11th Floor, Southgate House, Wood Street, Cardiff, CF10 1EN	Tel: 0207 276 8000 www.food.gov.uk www.salt.gov.uk www.eatwell.gov.uk
Grab 5 Fruit & Vegetable Campaign		Tel: 020 78371228 www.grab5.com
Weight Loss Programme for Men		Tel: 0115 9503999 www.fatmanslim.com
		www.5aday.nhs.uk
Health Promotion Officer –Caroline Nichols (Community Nutrition) Carmarthenshire Local Public Health Team	Carmarthenshire LPHT, Unit 5, Parc Dafen, Heol Cropin, Llanelli. Carms	Tel: 01554 744468 Email: caroline.nichols@nphs.wales.nhs.uk

USEFUL ADDRESSES

Organisation	Address	Telephone/Fax/E-Mail/Web
OBESITY		
Association for the Study of Obesity		**www.aso.org.uk**
Weight Concern	Brook House, 2-16 Torrington Place, London, WC1E 7UN	Tel: 0207 6796636 E mail: enquiries@weightconcern.org.uk
International Obesity Taskforce	231 North Gower Street, London, NW1 2NR	Tel: 0207 691 1900 www.iotf.org.uk
National Obesity Forum	PO Box 6625, Nottingham, NG2 5PA	Tel: 0115 8462109 E mail: info@nationalobesityforum.org.uk www.nationalobesityforum.org.uk
Dietician in Obesity Management	20 Brock Meadon Close, Woodford Green, Esses, IG8 9NR	Tel: 02085032042 E mail: info@damuk.org.uk www.damuk.org
The Obesity Awareness and Solution Trust	The Lottery Centre, Southern Way, Harlow, Essex, CM18 7BL	Tel: 01279 866010 E mail: enquiries@toast-uk.org.uk **www.toast-uk.org**
PHYSICAL ACTIVITY		
Countryside Agency (Walking your way to health)		Tel: 01242 533258 www.whi.org.uk
Department of Recreation & Sport, Carmarthenshire County Council		Tel: 01554 747500 www.carmarthenshire.gov.uk
Sportex Health (Patient advice sheets – Physical Activity)		Tel: 02082 873312 www.sportexmedicare.com
Vitality GP Exercise Referral Scheme Countrywide coverage	Ty'r Nant, Trostre Business Park, Llanelli, SA14 9UT	Tel: 01554 747500
SMOKING		
Action on Smoking and Health		www.ash.org.uk
Advice and information on quitting smoking		www.givingupsmoking.co.uk NHS Smoking Helpline: 0800 1690169
Smokers Help Line Wales		0800 169 0169 (Free phone, 24 hours)
No Smoking Day		www.nosmokingday.org.uk
All Wales Smoking Cessation Service		Tel: 0800 085 2219
Zyban-telephone helpline		Tel: 0800 221 441
Quitline		Tel: 0800 002200

GENERAL USEFUL ADDRESSES

Department of Health		www.doh.gov.uk
Department of Postgraduate Education for General Practice		www.primarycare-wales.org.uk
D.V.L.A		Tel: 0870 240 0009 www.dvla.gov.uk
Dyfed Powys Primary Care Effectiveness Team (PCET)	PCET Office, St David's Hospital, Carmarthen SA31 3YH.	Tel: 01267 225225
Health Evidence Bulletins: Healthy Living (Sections on health & lifestyle issues, including obesity)		http://hebw.cf.ac.uk/healthyliving/index.html
Carmarthenshire local Public Health Team- Beth Lewis (Principal Health Promotion Specialist) Liz Newbury-Davies (Senior Health Promotion Officer) Caroline Nichols (Health Promotion Officer)	Carmarthenshire LPHT, Unit 5, Parc Dafen, Heol Cropin, Llanelli, Carms SA14 8QW	Tel: 01554 744425 Email: firstname.lastname@nphs.wales.nhs.wales.uk
National Assembly for Wales	Cardiff Bay, Cardiff, CF99 1NA	Tel: 0292 082 5111
National Assembly for Wales, Health Promotion Library	Ffynnon las, Ty Glas Avenue, Llanishen, Cardiff CF14 5EZ.	Tel: 02920 681239 Fax: 02920 756000 Email: hplibrary@wales.gsi.gov.uk www.cmo.wales.gov.uk
National Health Service		www.nhs.uk
NetDoctor		www.netdoctor.co.uk
NHS Direct		Tel: 08454647 www.nhsdirect.nhs.uk
Patients UK (look at specific conditions using the A-Z list, the CHD listing is excellent)		www.patient.co.uk
Surgery Door (Online health information)		www.surgerydoor.co.uk
National Electronic Library for Health		www.nelh.nhs.uk
National Institute for Health and Clinical Excellence	Mid City Place, 71 High Holburn, London, WCIV 6NA	Tel: 02070675800
Chief Medical Officer Wales		www.cmo.wales.gov.uk
Professor J N Baxter, Obesity Surgery	Department of Digestive Diseases and Nutrition, Morriston Hospital, Swansea, SA6 6NL	Tel: 01792 703573

COMMERCIAL SLIMMING ORGANISATIONS – VENUE DETAILS

Please find below venues and contact details for the recommended slimming clubs. **These are correct at the time of printing please contact the relevant slimming organisation for up to date information on classes**: -

1) WEIGHT WATCHERS

Telephone Number: 08457 123000
Website: www.weightwatchers.co.uk
E mail: meetinginfo@weight-watchers.co.uk

AREA	VENUE	TIME
CARMARTHEN	The Library, St Peters St	Wednesday 10.30am 11.45am 5.00pm
TUMBLE	Neuadd Y Tumbl. Heol Y Neuadd	Monday 6.15pm
BURRY PORT	Memorial Hall, Parc Y Minos Street	Monday 6.30pm
LLANDEILO	Capel Newydd, Crescent Road	Thursday 6.00pm
LLANDYBIE	The old school (Library), High Street	Wednesday 6.30pm
LLANELLI	The Leisure Centre, Park Crescent Glenalla Community Centre Capel Als, Marble Hall Road Dafen Community Centre, Dafen Park, Maescanner Road	Tuesday 5.30pm Thursday 6.00pm Wednesday 10.00am Wednesday 6.00pm
AMMANFORD	Pensioners Hall, Quay Street	Tuesday 5.15pm
Newcastle Emlyn	St Nicolas Owen Catholic Church Hall	Monday 6.00pm

2) SLIMMING WORLD

Telephone Number: 08700 75 46 66

Website: www.slimming-world.co.uk

AREA	LEADER	VENUE	TIME
CARMARTHEN	01559 384517	The Library, St Peters Street	Tuesday 5.30pm
	01559 384517	Carmarthen Youth Project, 7 Queen Street	Wednesday 11.00am
	01554 384517	Bro Myrddin Indoor Bowls Club, Park Terrace	Thursday 5.00pm Thursday 6.30pm
ST CLEARS	01994 230525	Leisure Centre, Station Road	Wednesday 5.00pm and 6.30pm
KIDWELLY	01554 823150	Salt Rock Bar, Causeway Street	Monday 6.30pm
TUMBLE	01269 842657	The Great Mountain Working Mens Club	Monday 4.45pm Monday 6.00pm
TRIMSARAN	01792 233551	Miners Welfare Hall, Heol Llanelli	Tuesday 6.30pm
PENYGROES	01269 595248	Calfaria Chapel Vestry, Bridge Street	Thursday 6.00pm
BURRY PORT	01554 832150	The British Legion, Station Road	Wednesday 6.00pm
LLANELLI	01554 780188	The Conservative Club, 2 Cowell Street	Monday 12.15pm
	01554 753474	The Conservative Club, 2 Cowell Street	Tuesday 6.00pm
	01554 823966	The Church Hall, Bank Road (opposite Rugby Social Club), Llangennech	Thursday 5.30pm
	01554 775282	Ysgol Bryn, Ynyslas,	

		Llwynhendy	Thursday 6.00pm
	01554 780188	Dafen Welfare Hall Dafen Park	Monday 5.30pm
	01554 775282	The Melbourne Hotel Station Road, Llanelli	Wednesday 6.00pm
NEWCASTLE EMLYN	01559 370015	Holy Trinity Church Community Hall, Church Lane	Wednesday 5.15pm
AMMANFORD	01269 823468	St Johns Ambulance Hall, Margaret Street	Monday 6.00pm
	01269 851542	St Johns Ambulance Hall, Margaret Street	Monday 10.30am
BRYNAMMAN	01792 865157	Brynamman Industrial Club, 11 Amman Road, Lower Brynamman	Tuesday 6.30pm

Using information resources in the NHS Wales E-library

The NHS Wales E-library allows access to a range of free and licensed resources including databases, evidence based resources, ejournals and guidelines.

Resources available now include the Ovid Collection (Medline, PsycINFO..), Cochrane Library, Clinical Evidence, the British Medical Journal (BMJ) online, over 180 other Full Text journals, the Oxford Textbook Collection & TRIP+.

Access via the Intranet - http://howis.wales.nhs.uk/ from your NHS networked PC at work click on

NHS E-library

or

Access via the Internet - http://www.wales.nhs.uk/ - follow the Knowledge Skills link if working from home or offsite

Some resources on this site are free to use but the majority have restricted access and authorised NHS Wales users will need to register for a personal **Athens password** in order to use these.

Athens passwords

Full details of how to obtain a password is available within the E-library.

If possible, you should register from an NHSnet-connected computer as this will allow you to self-register quickly, enabling immediate access to NHS Wales resources.

The OVID collection includes:

- **AMED**
- **ASSIA for Health**
- **BNI-Plus**
- **CINAHL**
- **EBM Reviews**
- **EMBASE**
- **EMBASE**
- **HMIC**
- **Medline**
- **PsycINFO**

Other databases include:

- **National Research Register**
- **Social Care Online**

Evidence-based resources include:

- **Bandolier**
- **Clinical Evidence**
- **Cochrane Library**
- **TRIP**

e-books full-text online include:

- **Oxford Textbook of Public health**
- **Oxford Textbook of Primary Care**
- **Oxford Textbook of Endocrinology & Diabetes**

e-journals full text online include:

- **International Journal on Obesity**
- **Nutrition Bulletin**
- **Nutrition and Food Research**

Descriptions of content and coverage of each resource are available in the e-library.

Further details about these and other information resources are available from your local health library.

The Athens administrator for your area is:-

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