



DEPARTMENT OF HEALTH

Guideline on Management of Overweight & Obesity in Primary Care



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Professional Development & Quality Assurance

Clinical Audit and Guideline Working Group

Guideline for diagnosis, evaluation and lifestyle management of overweight in adults for primary prevention of related morbidity and mortality

1. Introduction

1.1 According to the World Health Report 2002, a number of risk factors account for the majority of Non-communicable disease burden including overweight, low fruit/vegetable intake and physical inactivity.¹

1.2 A cross-sectional study was conducted in January 2003 by Department of Health to determine the prevalence of obesity, overweight and underweight in the population; to explore people's perception of own body weight; and to describe the weight control behavior among local adults in Hong Kong.² Based on Asian standards, 16.4% were overweight and 17.4% were obese.² Another local survey by in mid 1990s found that 32.6% of men and 26.7% of women were overweight, and 5.4% of men and 7.0% of women were obese.³ In that survey, overweight and obesity were defined as BMI 25.1 to 30.0 kg/m² and BMI > 30.0 kg/m² respectively.³

1.3 Obesity predisposes people to higher risks of associated diseases (Table 1)⁴.

Table 1. Relative risk of different diseases in obese versus nonobese people⁴

Disease	Relative risk	
	Women	Men
Type 2 diabetes	12.7	5.2
Hypertension	4.2	2.6
Heart attack	3.2	1.5
Colon cancer	2.7	3
Angina	1.8	1.8
Gall bladder disease	1.8	1.8
Ovarian cancer	1.7	
Osteoarthritis	1.4	1.9
Stroke	1.3	1.3

1.4 Obesity and overweight in adulthood are associated with large decreases in life expectancy.⁵ These decreases are similar to those seen with smoking.⁵

1.5 Primary care has an important role in preventing and treating obesity. It is useful to consider obesity as a chronic disease of multifactorial etiology that is a lifelong condition for most persons.⁶ The report by the National Heart Lung and Blood Institute identified a number of potentially effective weight loss interventions: (1) diet; (2) exercise; (3) behavioral strategies; (4) the preceding 3 in combination where possible; (5) limited use of pharmaceutical interventions in conjunction with strategies to change lifestyle; and (6) surgery for selected morbidly obese patients.⁷

1.6 In Hong Kong Chinese subjects, obesity, as reflected by either the body mass index or waist circumference, had a closer association than plasma insulin with the fasting plasma glucose concentration, blood pressure, and high-density lipoprotein-cholesterol and triglyceride concentrations.⁸

1.7 There is no clear cut-off point for age in defining adult. However, all overweight and obese adults (age 18 years of age or older) with a BMI of 25 are considered at risk for developing associated morbidities or diseases such as hypertension, high blood cholesterol, type 2 diabetes, coronary heart disease, and other diseases.⁷ For practical purpose, we came to the consensus to use 18 years age or older as our cut-off point for this guideline.

2. Diagnosis

2.1 The most commonly used screening test for obesity, and the one upon which the clinical definition is based, is the body mass index (BMI, calculated as weight in kilograms divided by height in meters squared).(B)⁹

The U.S. Preventive Services Task Force (USPSTF) reviewed literature showing that BMI is easy to measure, highly reliable, and closely correlated (0.7-0.8) with body fat content in adults and children.¹⁰

2.2 Classification of BMI

The World Health Organization(WHO) acknowledged that BMI may not correspond to the same degree of fatness in different populations.¹¹ The following table is the WHO Asia Pacific perspective for Asians (WHO IOTF 2003)¹²:

Classification	BMI (kg/m ²)
<i>Underweight</i>	< 18.5
<i>Normal range</i>	18.5 – 22.9
<i>Overweight:</i>	≥ 23
<i>Pre-obese</i>	23 – 24.9
<i>Obese I</i>	25 – 29.9
<i>Obese II</i>	≥ 30

2.3 Other anthropometric measurements may also be useful for assessing obesity. In Hong Kong Chinese, BMI, Waist Hip Ratio (WHR) and Waist Circumference (WC) provide important information in assessing cardiovascular risks.(B)¹³.

In men, central adiposity as reflected by WC and to some extent, WHR, explained most of the variance in blood pressure, plasma glucose, lipid, insulin and albuminuria. In women, all three indexes reflecting general and central obesity contribute to the variance in these risk factors.¹³ Waist cut off points varies with different studies, in a study in Mainland Chinese suitable waist cut-off points were 85cm for men and 80cm for women in Chinese.¹⁴ In another study, waist circumference cutoff of 80 cm is recommended for both Chinese men and women (Wildman et al 2004).

2.4 Bioelectric impedance analysis (BIA), although simple to perform, is not recommended for accurate assessment of percentage body fat.(B) However, it can be used on motivated patients who wish to use the index as a reference.(GPP)

Bioelectric impedance analysis (BIA) is a simple means of estimating percentage body fat. However, BIA was not found to be a useful tool for the prediction of coronary artery disease risk factors in some Chinese population.¹⁵

Measuring body fat by other techniques is often expensive and is not readily available, a more practical approach for the clinical setting is the measurement of BMI; epidemiological and observational studies have shown that BMI provides an acceptable approximation of total body fat for the majority of patients⁷. The clinician may use other anthropometric measurements to provide more assessing obesity.

2.5 Once the diagnoses of overweight, pre-obese and obese have been made, it is recommended that it is recorded properly in the medical records for continual management of the problem. (GPP)

Strong evidence suggests that obesity is associated with increased morbidity and mortality.⁴ Weight loss in obese persons reduces important disease risk factors. Even a small weight loss (as little as 10 percent of initial body weight) in overweight and obese adults appears to reduce various chronic disease risk factors (e.g., hypertension, hyperlipidemia, hyperglycemia) and may decrease morbidity and mortality.⁷

3 Assessment and management

3.1 For those overweight patients, the combination of dietary caloric restriction and regular exercise should be discussed.(A)

The National Institutes of Health, National Heart, Lung, and Blood Institute reviewed 86 RCT articles to determine the effectiveness of diets on weight loss (including LCDs, very low-calorie diets (VLCDs), vegetarian diets, American Heart Association dietary guidelines, the NCEP's Step I diet with caloric restriction, and other low-fat regimens with varying combinations of macronutrients).¹⁶ Of the 86 articles reviewed, 48 were accepted for inclusion in these guidelines. These RCTs indicate strong and consistent evidence that an average weight loss of 8 percent of initial body weight can be obtained over 3 to 12 months with an LCD and that this weight loss effects a decrease in abdominal fat.¹⁶

3.2 It is recommended that diet with moderately restricted total fat, moderate in carbohydrates and moderate in proteins should be advised.(C)

Most dietary guidelines of major professional bodies recommend balanced nutrition reduction diets moderately restricted in total fat, moderate in carbohydrates (mainly complex carbohydrates), and moderate in protein.¹⁷ These diets result in loss of body weight and body fat, as overall caloric intake is reduced.¹⁷ An individually planned diet creating a deficit of 500 to 1,000 kcal per day should be an integral part of any program aimed at achieving a weight loss of 1 to 2 lb per week.⁷

3.3 Initially, encourage moderate levels of activity for 30 to 40 minutes per day, three to five days per week.⁷ Set a long-term goal to accumulate at least 30 minutes or more of moderate-intensity physical activity on most, preferably all, days of the week.⁷ (C)

Among obese men, aerobic exercise reduced the risk of cardiovascular and all-cause death below that of non-obese men who did not exercise.¹⁸ Current physical activity contributes to weight loss, reduces cardiovascular risk factors (e.g. hypertension and diabetes mellitus) and the risk for coronary heart disease, increases cardio-respiratory fitness independent of weight loss, and decreases body and abdominal fat.¹⁹

**3.4 The motivation of overweight patients to reduce weight should be assessed.(A)
Motivational interviewing technique is recommended for management of overweight patients.(A)**

It had been shown that strategy based on ‘stages of change’ or transtheoretical model can be effective to increase individual’s level of physical activities.²⁰

A pilot study result suggest that augmenting a standard behavioral treatment program for obese women with NIDDM with a motivational interviewing component may significantly enhance adherence to program recommendations and glycemic control, although weight loss was not significantly lower in the motivational group when compared with the standard group.²¹

A recent systematic review and meta-analysis on motivational interviewing found that there is a significant effect for motivational interviewing for management of overweight or increase physical activities. Motivational interviewing outperforms traditional advice giving in the treatment of behavioral problems.²²

3.5 For those overweight patients, the assessment for the presence of cardiovascular disease risk factors including
a. cigarette smoking,
b. blood pressure,
c. family history of premature cardiovascular disease (men \geq 55 years; women \geq 65 years or postmenopausal)
should be performed. (C)

Some obesity-associated diseases and risk factors place patients in a very high risk category for subsequent mortality.⁷ These diseases will require aggressive modification of risk factors in addition to their own clinical management.⁷ Obesity also has an aggravating influence on several cardiovascular risk factors.^{4,7} Identifying these risk factors is required as a guide to the intensity of clinical intervention.⁷

3.6 For those overweight patients, the assessment for the presence of other cardiovascular disease risk factors including
a. dyslipidemia
b. impaired fasting sugar or diabetes
should be considered.(GPP)

Dyslipidemia and impaired fasting sugar are also considered cardiovascular risk factor associated with obesity.⁷ However, the development committee of this guideline decided that screening for blood sugar and cholesterol in overweight patients should be determined on individual basis owing to resource implication. The clinicians should exercise their clinical judgments in prioritizing whom to screen for blood sugar and cholesterol level.

3.7 For those overweight patients who are motivated to reduce weight, follow-up should be considered.(GPP)

The intensity (number of contacts and duration) and degree of a particular reinforcement were most related to weight loss.⁷ It is therefore reasonable to follow-up the progress of their weight reduction by members of the primary care team.

Summary of recommendations

- **The most commonly used screening test for obesity, and the one upon which the clinical definition is based, is the body mass index (BMI, calculated as weight in kilograms divided by height in meters squared).(B)**
- **Other anthropometric measurements may also be useful for assessing obesity. In Hong Kong Chinese, BMI, Waist Hip Ratio (WHR) and Waist Circumference (WC) provide important information in assessing cardiovascular risks.(B).**
- **Bioelectric impedance analysis (BIA), although simple to perform, is not recommended for accurate assessment of percentage body fat.(B) However, it can be used on motivated patients who wish to use the index as a reference.(GPP)**
- **Once the diagnoses of overweight, pre-obese and obese have been made, it is recommended that it is recorded properly in the medical records for continual management of the problem. (GPP)**
- **For those overweight patients, the combination of dietary caloric restriction and regular exercise should be discussed.(A)**
- **It is recommended that diet with moderately restricted total fat, moderate in carbohydrates and moderate in proteins should be advised.(C)**
- **Initially, encourage moderate levels of activity for 30 to 40 minutes per day, three to five days per week. Set a long-term goal to accumulate at least 30 minutes or more of moderate-intensity physical activity on most, preferably all, days of the week. (C)**
- **The motivation of overweight patients to reduce weight should be assessed.(A) Motivational interviewing technique is recommended for management of overweight patients.(A)**
- **For those overweight patients, the assessment for the presence of cardiovascular disease risk factors including
 - d. cigarette smoking,
 - e. blood pressure,
 - f. family history of premature cardiovascular disease (men \geq 55 years; women \geq 65 years or postmenopausal)should be performed. (C)**
- **For those overweight patients, the assessment for the presence of other cardiovascular disease risk factors including
 - c. dyslipidemia
 - d. impaired fasting sugar or diabetesshould be considered.(GPP)**
- **For those overweight patients who are motivated to reduce weight, follow-up should be considered.(GPP)**

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Ranking of evidence and grade of recommendation

Adapted from the US Agency of Health Care Policy and Research

Level	Type of Evidence
Ia	Evidence obtained from meta-analysis of randomized controlled trials
Ib	Evidence obtained from at least one randomized controlled trial
IIa	Evidence obtained from at least one well-designed controlled study without randomization
IIb	Evidence obtained from at least one other type of well-designed quasi-experimental study
III	Evidence obtained from well-designed non-experimental descriptive studies, such as comparative studies, correlation studies and case control studies
IV	Evidence obtained from expert committee reports or opinions and/or clinical experience of respected authorities
Grading	Recommendation
A	Requires at least one randomized controlled trial as part of a body of literature of overall good quality and consistency addressing the specific recommendation. (Evidence levels Ia, Ib)
B	Requires the availability of well-conducted clinical studies but no randomized clinical trials on the topic of recommendation. (Evidence levels IIa, IIb, III)
C	Requires evidence obtained from expert committee reports or opinion and/or clinical experience of respected authorities. Indicates an absence of directly applicable clinical studies of good quality. (Evidence level IV)
GPP	Recommended best practice based on clinical experience of Guideline Development Group.

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Footnotes

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- Comments and suggestions are welcomed and should be addressed to the chairman of the group.

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