

Nutrition Guideline

Adult Weight Management

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

Recommendations

- Obesity is a complex chronic disease that requires lifelong management.
- Prior to initiating any interventions, assess barriers and readiness for treatment and lifestyle change.
- Always measure both height and weight of individuals; do not rely on self reported data. Ask your client for permission prior to performing these measurements.
- Promote achievement and maintenance of a healthier body weight to reduce the risk of chronic disease.
- Weight bias is common and is a barrier to care. Provide an environment that is welcoming and respectful, and practice mindfulness with your use of language.
- Develop an individualized treatment plan to address each client's health and specific barriers.
- Ensure that lifestyle interventions include a focus on nutrition, physical activity and behaviour modification. In addition to these lifestyle interventions, medication and/or bariatric surgery may be appropriate treatment options for certain individuals with obesity.
- Encourage regular physical activity that is enjoyable and appropriate for each person.
- Health care providers can develop appropriate, individualized goals with the client for each stage of weight management (prevention of weight gain, weight loss, prevention of weight regain). Promote weight stabilization and prevention of weight regain as an important and realistic goal.
- If weight loss is indicated, target a 5 to 10% weight loss in 6 months at an average rate of 0.5 to 1kg (1 to 2lb) per week. Excessive weight loss of greater than 1 kg (2 lb) per week is not recommended.
- In general, eating 500 to 1000 calories less than current intake is recommended for weight loss. Diets that are not recommended for obesity management include low-carbohydrate (less than 35% carbohydrate), very-low-fat (less than 15% fat) and very-low-calorie diets (less than 800 calories per day). Clients eating less than 1500 calories per day may be at increased nutrition risk.
- Encourage clients to choose 4 to 5 well-balanced meals/snacks each day, including breakfast. Larger portions can lead to increased calorie intake and increased body weight.
- Referral to a Registered Dietitian is recommended for clients, particularly those who are eating less than 1500 calories per day (actual or reported), using or interested in shakes or meal replacements, have vitamin/mineral deficiencies, need or use supplements, have multiple food restrictions, need individualized calorie requirements or have questions related to nutrition, health and weight.

Health Benefits

Among adults with overweight or obesity, a reduction of 5% to 10% of current weight may help lower the risk of developing chronic disease and improve management of existing chronic disease.^{1,2,3,4}

- May reduce risk factors for diabetes
 - Blood glucose levels in persons with diabetes and pre-diabetes
 - Hemoglobin A1C levels in persons with type 2 diabetes
- May reduce risk factors for cardiovascular disease
 - Serum triglyceride levels
 - Total serum cholesterol levels
 - LDL cholesterol levels
 - Blood pressure in both hypertensive and pre-hypertensive individuals
- May reduce risk for and symptoms of obstructive sleep apnea
- May reduce endocrine and gynecological problems; such as polycystic ovarian syndrome, infertility and poor pregnancy outcomes

Some individuals may see improvements in other chronic diseases, including depression, joint pain, sleep and mood, however the evidence is variable. Although clients may achieve good outcomes with lifestyle interventions, the current literature shows there is little or no long term change to certain critical end points (i.e. cardiovascular events,⁵ obesity-related cancers^{6,7}).

Key Questions

What is the prevalence of overweight and obesity?

Based on measured data from 2007-2009, in Canada 62.1% of adults have overweight or obesity (a body mass index (BMI) equal to or above 25 kg/m²), and over 25% of adults have obesity (a BMI equal to or above 30 kg/m²).^{8,9} The prevalence of overweight and obesity is underestimated when based on self-reported data (51.1%).⁸ Obesity prevalence is 17.4%, with great variance across health regions (ranging from 5.3% to 35.9%) and provinces (12.5% in British Columbia to 25.4% in Newfoundland and Labrador).¹⁰ In Alberta, the prevalence of self-reported obesity has increased from 20.5% in 2003 to 23.9% in 2007/08. In 2004, 60.9% of adults in Alberta were overweight or obese.¹¹

The prevalence of obesity is higher in the Aboriginal population. Based on self-reported 2002/03 data, the prevalence is similar for off-reserve First Nations (26.1%), Inuit (23.9%) and Métis (26.4%) but higher for on-reserve First Nations adults (36.0%).

The prevalence of measured obesity has doubled across all age groups between the 1981 and 2007/09 surveys.^{10,12} The greatest increase is in Class III Obesity (BMI equal to or above 40 kg/m²), tripling from 0.9% in 1978/79 to 2.7% by 2004. Obesity prevalence tends to increase with each successive age group until after age 65 when it declines.

What are the risks of overweight and obesity?

Obesity is associated with:⁹

- Shorter life expectancy. Longevity is decreased by 2 to 4 years in individuals with BMI 30 to 35 kg/m², and by 8 to 10 years with BMI 40 to 45 kg/m².¹³
- Increased risk for chronic disease, including coronary artery disease, hypertension, stroke, cancer, type 2 diabetes mellitus, gall bladder disease and osteoarthritis.^{1,10,14}
- Increased risk for respiratory problems including asthma, obstructive sleep apnea, obesity hypoventilation syndrome and difficulty with intubation and/or anesthesia.
- Endocrine abnormalities including insulin resistance, polycystic ovarian syndrome, menorrhagia and impaired fertility.¹
- Liver abnormalities including nonalcoholic fatty liver disease (NAFLD).
- Kidney failure and urinary incontinence.
- Acid reflux and/or gastroesophageal reflux disease (GERD).
- Neurological changes including benign intracranial hypertension, pseudotumor cerebri and neuralgia paresthetica.
- Joint pain.
- Mobility problems and difficulties with activities of daily living (ADL).
- Skin abnormalities including intertrigo, cellulitis, lymphedema, ulcers and infections.

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- Psychosocial problems including weight bias, social and employment discrimination and stigmatization.
- Mental health diagnoses including depression, anxiety and attention deficit disorder.¹⁵
- Lower quality of life.

How is overweight or obesity assessed in adults?

Overweight and obesity is assessed with BMI and waist circumference and can provide an indication of associated health risk.^{1,9,16} **Measure height, weight and waist circumference.** Do not rely on self-reported data.^{17,18}

The BMI ranges, associated health risks and treatment targets are different for children and older adults. For BMI and waist circumference targets and for information on how to properly measure height, weight, BMI and waist circumference in the different age groups, *Refer to Guideline: Body Measurements.*

Is BMI the best measure of obesity?

BMI is an important tool to assess obesity class and is an indicator of associated health risk; however, it has limitations. There can be significant variation in the incidence and severity of co-morbid conditions in people with obesity or people with the same BMI. Generally, the risk of health problems do increase with BMI, however someone with a BMI 35 kg/m² can have more severe complications of obesity than another person with a BMI 65 kg/m².

The Edmonton Obesity Staging System (EOSS)¹⁹ is a system of classifying severity of obesity (see Figure 1). In addition to the BMI to determine obesity class, a stage is identified by assessing for the presence and severity of risk factors (e.g. borderline hypertension), co-morbidities (e.g. hypertension), and functional limitations (e.g. limitations in activities of daily living). Independent of BMI, the EOSS stage demonstrates correlation to morbidity and mortality.²⁰ It is a useful tool to assist health professionals with assessment of obesity-related health risk and guide clinical decisions for treatment.

Should body composition be measured?

Body composition can be accurately measured with specialized equipment (bioelectrical impedance analysis [BIA] or dual energy X-ray absorptiometry [DXA]) using standardized testing methods and trained technicians. These measuring techniques are not commonly available outside of research studies.^{21,22} Body composition analysis can identify sarcopenic obesity (i.e. low muscle mass) that is not identified with BMI or waist circumference measurements. Weight scales or equipment capacity (DXA) may be limited to 137kg (300lb).²³

It is not practical or necessary for health care providers to measure body composition to establish a treatment plan. Some home-based weight scales include an option to measure body fat percentage using BIA, but the resulting measures may be inaccurate, especially in clients with a BMI greater than 35 kg/m² and changing fluid status.

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What needs to be included in any treatment plan?^{2,9}

Obesity is a chronic and often progressive condition. Successful obesity management requires realistic and sustainable treatment strategies. Early intervention means addressing root causes and removing roadblocks. Prior to initiating any intervention, it is important to look for diagnoses or evidence of social, physiological, medical, and psychological causes of obesity and to identify associated barriers to treatment.²⁴ All clients should be provided with education and counselling regarding the chronic and complex nature of obesity which requires long term interventions.(see Figure 2)⁹

Lifestyle interventions are the cornerstone for treatment and management of chronic diseases. Key components to lifestyle intervention include:

- Nutrition
- Physical activity
- Behaviour modification including self monitoring

The combination of all three components is more successful than any one intervention alone.² In addition, frequent contacts between the client and health practitioner provided over the long-term can further promote weight loss and weight maintenance.^{1,2} Short term “quick fix” solutions focusing on maximizing weight loss are generally unsustainable and often associated with high rates of weight regain.

All health care providers can provide general education and support in these areas. Enhanced intervention requires specific health care providers such as a Registered Dietitian, mental health specialist, exercise specialist, physical or occupational therapists.^{1,9,25} Health care providers should also be aware of weight bias and its potential impact on client care²⁶ (see *What is “weight bias”?* below). Medication or bariatric surgery may be appropriate treatment options for some people with obesity. Individuals should be referred to their physician for more information regarding these treatments.⁹

Refer to Guideline: Bariatric Surgery for Adults

What is “weight bias”?²⁶

Weight bias is the negative attitude toward or stereotypes about individuals who are overweight or obese. It is common in health care, the workplace, education, media and personal/professional relationships. Weight bias affects our interactions in a negative way, leading to prejudice and discrimination. Both children and adults with obesity experience higher rates of verbal teasing, derogatory humour, cyberbullying, being ignored or excluded by peers, and physical aggression than their normal weight peers, which can negatively impact their quality of life. This can have serious physical and mental health consequences, some of which can reinforce weight gain and obesity.

Weight bias is present across all disciplines with higher rates of weight bias amongst health care professionals who are female, have lower BMI's, and exercise/fitness professionals. Disrespectful treatment and negative attitudes from health care providers is a key factor influencing attendance and adherence to recommendations and may cause delays in seeking health care. Health care professionals with obesity also experience bias from both patients and coworkers.

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Weight bias contributes to negative stereotypes and obesity myths, which are not substantiated in the literature. Examples include:

- Anyone can control his or her weight
- Anyone can achieve any weight they desire
- People with obesity are less physically active and eat unhealthy diets
- People with obesity lack motivation and self-control, are lazy, self-indulgent, undisciplined, less productive, less competent, non-compliant, and are looking for the “easy-way out”
- People with obesity are less intelligent and less educated

All of us have some degree of bias or stereotypes related to weight. It is important to identify your own potential biases, educate yourself and others, and take steps to reduce weight bias.

Be mindful of your use of language.

In one study, patients with obesity ranked various terms used by health care providers to discuss weight. The most preferred terms included weight, excess weight, BMI or weight problem. Undesirable terms included fatness, obesity, excess fat, large size, heaviness, unhealthy BMI, unhealthy body weight.²⁷

It is appropriate to use defined terms when documenting or describing the medical condition (e.g. “based on your height and weight, the BMI is 44, Class 2 Obesity”), but it is not recommended to describe the person (e.g. “you are obese” or “morbidly obese”). It is difficult for many clients to differentiate between the terms used to describe their medical condition and the negative connotations of those terms in society. Clients may see the term “normal” on the BMI chart and target this range as their weight goal because they want to be “normal” and not “obese”; however, that “normal” BMI range may not be appropriate for them.

Provide an environment that is welcoming and respectful.

A welcoming and respectful environment addresses both the physical space and the personal interactions. Ensure that the physical space, from the waiting room to the counseling/exam rooms, is appropriate for clients with higher BMI's. This can include equipment such as higher-capacity chairs and weight scales, and large blood pressure cuffs.

Maintain privacy and sensitivity for all clients, regardless of BMI, by providing a confidential area for measurement of height and weight. Prior to measurement, ask the client for permission to be weighed. Record the measurements without comment or judgment; conversations can be deferred until you and the client are in the counseling session. Once in the counselling session, ask for permission to discuss weight.

For more information on weight bias and stigma, please refer to www.yaleruddcentre.org

How do I know if my client is ready for treatment?

Clients vary considerably in their readiness and capacity to engage in treatment. Not all individuals with overweight or obesity are ready or able to participate in treatment. Clinical judgment is required to determine if treatment is appropriate.² Barriers need to be identified prior to initiating any intervention. It is important to assess for diagnoses or evidence of social, physiological, medical, and psychological causes of obesity.⁹

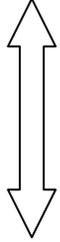
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Table 1: General guidelines for applying stages and processes of change to the adoption of healthful behaviours²⁸

Readiness to Change	Stage	Identification	Strategies
 <p>Not Ready</p> <p>Ready</p>	Pre-contemplation	Not intending to change behaviour.	Provide information. Build awareness.
	Contemplation	Intending to change behaviour in the next 6 months.	Address ambivalence. Build confidence and support.
	Preparation	Intending to change behaviour in the immediate future.	Develop specific action plan. Reinforce small changes.
	Action	Changes in behaviour have been made within the past 6 months.	Improve self management skills. Provide self-help, not information-only materials.
	Maintenance	Behaviour established for 6 months or more. Attempting to avoid relapse but less actively engaged in the change process.	Problem solving and support. Recommend more challenging changes, if motivated. Develop plan for relapse prevention.

Source: Adapted from International Dietetics & Nutrition Terminology (IDNT) Reference Manual: standardized language for the nutrition care process

What is an appropriate weight reduction goal with lifestyle interventions?^{1,9}

The goals for obesity management are to improve health and to prevent or delay obesity-related co-morbid conditions. Health care providers have an important role to promote achievement and maintenance of a healthier body weight to reduce the risk of chronic disease. Help clients set weight targets based on a weight they can sustain while enjoying their life and reaping the benefits of improved health. The emphasis should be on behaviour change to achieve and maintain a healthy lifestyle and a more healthful weight, not necessarily an “ideal” or cosmetic weight.

Achieving a stable weight and preventing further weight gain are appropriate and important goals.

If weight loss is indicated, lifestyle interventions can achieve a **5 to 10% loss from the initial weight in 6 months at an average rate of 0.5 to 1kg (1 to 2lb) per week**. This outcome is realistic and achievable.

Weight loss of greater than 1kg (2lb) per week is not recommended. Significant weight loss will produce a reduction in adipose tissue; however, negative effects include losses of lean body (muscle) mass, possible nutritional deficiencies and lack of sustainability of lost weight in the long-term (weight regain). If the rate of weight loss is excessive, medical assessment and supervision is recommended.

How many calories are recommended for weight loss?

In general, a **reduction of 500 to 1000 calories below current daily intake** can produce weight loss at an average rate of 0.5 to 1kg loss per week.^{1,9,34}

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When the calorie intake is below the total energy needs, weight loss will occur, however this does not continue indefinitely. Commonly, as the client loses weight, the same amount of calories that was below their needs at the higher weight will eventually meet the needs of their lower weight. When weight loss stops, this is known as a “plateau”. This is a normal part of how our bodies achieve energy balance. This is a simple explanation; however energy balance and metabolism is complex and unique for each client. If your client is struggling to meet weight loss goals despite lowering their calories, assessment by a Registered Dietitian is recommended.

Clients eating **less than 1500 calories per day may be at nutrition risk**; assessment by a Registered Dietitian recommended.²³ Individualized calorie recommendations need to be made by a Registered Dietitian.²

Calorie intakes of **less than 1200 calories per day do not meet nutrient requirements** and require vitamin and mineral supplementation.²³

Very-low-calorie diets that provide 800 calories or less per day are not recommended.⁹ Semi-starvation diets and restricting calorie intake for long periods of time may result in adaptive decreases in energy expenditure^{35,36} though more research is required in this area.

How often should an individual eat?

It is recommended that clients eat 4 to 5 well-balanced meals/snacks, including breakfast, each day. Eating breakfast has been associated with healthier lifestyle behaviours and lower prevalence of overweight and obesity.³⁷ Skipping breakfast is associated with lower calcium and fibre intake, a greater likelihood of choosing convenient energy-dense foods later in the day and increased intake in the evening. Greater calorie intake in the daytime is preferable to evening consumption.²

Some people (shift workers, clients with certain medical conditions) may need a different eating pattern. Referral to a Registered Dietitian is recommended to help develop a healthy eating pattern that is right for these clients.

Refer to Guideline: Planning Healthy Meals and Snacks

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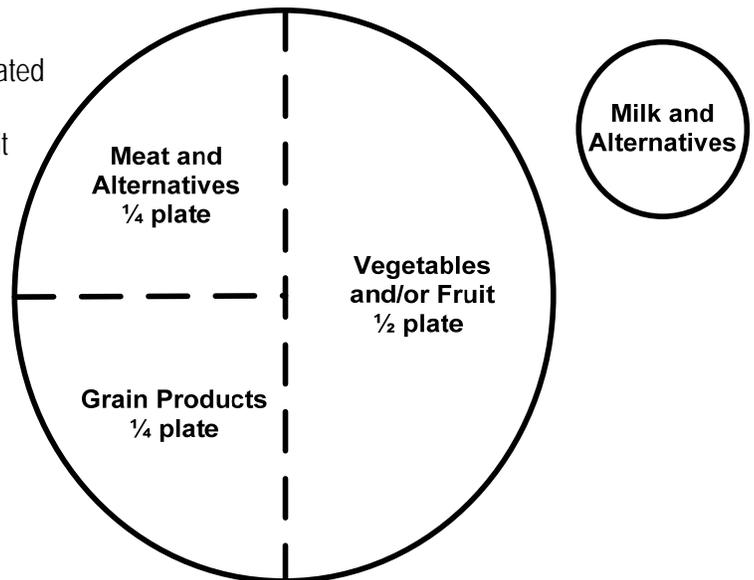
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What does a healthy portion of food look like on a plate?

A healthy meal will help with portion control and meeting recommended servings of the four food groups from Canada's Food Guide.²² A healthy meal will include at least three of the four food groups. Choose a smaller plate to encourage smaller portions.

To build a healthy meal, imagine the plate separated into three parts:

- fill $\frac{1}{2}$ of the plate with Vegetables and/or Fruit
- fill $\frac{1}{4}$ of the plate with Meat and Alternatives
- fill $\frac{1}{4}$ of the plate with Grain Products
- add one serving of Milk and Alternatives on the side to complete your meal



Refer to Guidelines:

General Healthy Eating for Children and Adults;
Planning Healthy Meals and Snacks;
Portion Sizes

What role does portion control play?²²

Over the years the portion sizes of foods eaten both inside and outside the home has increased. In general, using larger dishes results in more servings, more calories and can contribute to weight gain.^{38,39,40} Larger portions may lead to increased calorie intake and increased body weight.

Building awareness of, and controlling, portions of food and beverages is an important part of a comprehensive weight management program to reduce calorie intake. *Portion distortion* refers to the perception that the portion of food served or in a package is an appropriate amount to eat in one sitting. This distortion is further fostered in consumers through packaging, dinnerware, and serving utensils that have also increased in size. Portions commonly served in restaurants are often twice the size or more of standard serving sizes. How much individuals eat is as important as what they eat.

Individuals who are limiting energy intake as a part of an obesity management strategy can aim for the lower number of servings per day within the recommended serving ranges on Canada's Food Guide to help meet their nutrient requirements. Eating lower energy dense foods such as vegetables, fruit and whole grains can help to enhance a feeling of fullness (also called satiety), while providing fewer calories.

Refer to Guideline: Portion Sizes

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Are meal replacements appropriate to use?

A *meal replacement* is defined as a formulated food that, alone, can replace one or two daily meals.^{2,41} Health Canada has regulatory requirements for products designated as a meal replacement for use with energy restricted diets.⁴² Some products commonly referred to as “meal replacements” do not meet Health Canada’s guidelines for nutrient composition of meal replacements for an energy restricted diet.⁴¹ These include some pre-measured, portioned foods such as frozen meals, bars, shakes and powders.

For some individuals who have difficulty with self-selection and/or portion control, substituting one or two daily meals or snacks with meal replacements as part of a structured calorie-reduced plan may be a successful weight loss and weight maintenance strategy.² If the calories from meal replacements are not incorporated as part of the total calories for the day, the increased calories may contribute to weight gain. Meal replacements should not be used as a beverage choice or replace all meals and snacks. If a client is considering using meal replacements, a referral to a Registered Dietitian is recommended.

What types of beverages are recommended?

Clients following a calorie-reduced plan are recommended to choose calorie-free beverages more often. Beverages do not provide the same fullness as solid foods⁴³ and people tend to not eat fewer calories at the next meal to compensate for the calories that they drink, leading to problems with weight gain.^{42,44} The best beverage choices are water and low fat milk (or equivalent unsweetened fortified beverages such as soy milk).⁴⁴ Water is a calorie-free way to satisfy thirst.

Beverages such as sugar-sweetened coffee or teas, regular pop, high fat milk products, energy drinks, fruit juice, fruit drinks and alcohol can contribute significantly to daily caloric intake and may contribute to weight gain.⁴² Individuals should limit 100% fruit juice to 1/2 cup (125 mL) per day, and if chosen, incorporate it as part of their calorie-reduction plan.

Diet pop has no sugar and no calories, but also does not have many nutrients. If the client wants to reduce calories, diet pop is a better choice than regular pop.⁴⁵ Clients can choose diet pop once in a while, but it is important to make sure it does not replace healthy food choices.

Refer to Guideline: Food and Drinks High in Calories, Fat, Sugar or Salt

What is the role of milk products?

Some clients with low calcium intakes who increase intake of milk products to the recommended levels have improved weight loss and body fat loss when combined with a energy-restricted diet.^{46,47,48,49} Including milk products as part of an energy-restricted diet can significantly affect weight (loss of 1.29 kg), body fat mass (loss of 0.72 kg), lean mass (gain of 0.58 kg) and waist circumference (loss of 2.19 cm) compared to other energy-restricted diets.⁵⁰

Increasing intake of milk products to the recommended levels without energy restriction does not produce these positive effects. Increasing calcium intake with use of supplements to the recommended levels does not have a positive effect on weight or body composition.

Refer to Guidelines: Calcium and Vitamin D; Vitamins and Minerals

What is the role of fibre?

Fibre can play an important role in obesity management as it promotes satiety.^{2,51,52,53} Fibre does this in at least three ways by: slowing down the time to eat due to increased chewing; displacing available energy and nutrients from the diet; and reducing the absorption efficiency of the small intestine.⁵²

The recommended intake of dietary fibre for adults (19 to 50 years) is 14 grams for every 1000 calories eaten.⁵⁴ For example, 21 grams of fibre is recommended for adults consuming 1500 calories per day and 28 grams of fibre is recommended for adults consuming 2000 calories per day. Individuals should choose high fibre foods such as vegetables, fruits, whole grains and legumes (cooked beans, peas and lentils) to meet total daily fibre recommendations.⁵²

Refer to Guideline: Fibre

What should I tell my client who is interested in a commercial weight loss program?

Clients should talk to their doctor before starting any program and ensure the program will address obesity not just weight. A safe and healthy program offers the following:

- Recommends a healthy weight loss of no more than 1kg (2lb) per week.
- Consists of a healthy eating plan that reduces calories and includes all four food groups from Canada's Food Guide.⁵⁵
- Provides at least 1200 calories per day to meet nutrition requirements. Most individuals will require more than 1200 calories per day.⁵⁶
- Encourages regular, enjoyable physical activity which is suited to the individual's lifestyle and physical condition.
- Employs qualified professionals like nurses, doctors, dietitians and exercise specialists.
- Does not use magical claims or pressure to join the program.
- Is affordable and clients can drop out without penalty.
- Provides information about costs, risks and the estimated time frame for reaching goals.
- Has programs that will help clients maintain their weight once they have reached their goals.
- Provides options to allow for personal choice, including allergies and cultural preferences.
- Helps clients make changes that they can keep doing for a lifetime, not just a few months.

What diets are not recommended for obesity management?

Low-carbohydrate diets (less than 35% of daily calories from carbohydrate) are not recommended. Low carbohydrate diets restrict the intake of carbohydrate-containing foods, resulting in a relatively high fat and high protein diet.^{2,57} The Daily Recommended Intake (DRI) for carbohydrate is at least 130 grams.⁵³

Individuals should be aware of the following points in regards to low-carbohydrate diets:^{2,54}

- Depletion of glycogen stores results in diuresis and initial dramatic weight loss.
- Ketones are produced and loss of both adipose tissue and muscle mass occurs during weight loss.
- Compared to energy-restricted or low-fat diets, some studies have shown more weight loss at 6 months on a reduced carbohydrate diet, but the results were no longer significant at 12 months.
- They are difficult to sustain over time and maintenance of weight loss is unlikely.
- They are low in vegetables and fruit, grain products, and milk and alternatives; therefore, if followed over the long term can increase the risk for nutrient deficiencies and chronic diseases.

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- Their safety has not been evaluated for long term use.
- Caution should be used in suggesting even short term use of low carbohydrate diets for individuals with osteoporosis, kidney disease or low LDL cholesterol.

Very-low-calorie diets (less than 800 calories per day) are not recommended. If they are used, they must be prescribed by a physician.² Individuals must be monitored regularly by a physician to avoid severe negative nitrogen balance and electrolyte changes associated with starvation.^{2,31,58} Adherence to a very-low-calorie diet results in significant initial weight loss but weight regain is common after clients complete the intervention and return to normal eating patterns.

Very-low-fat diets (less than 15% of daily calories from fat) are not recommended. The high carbohydrate content of these diets can increase triglyceride levels, and their high fibre content (up to 40 to 70 grams daily) may improve satiety but can decrease the absorption of calcium, iron and zinc. These diets should be monitored for their impact on triglyceride levels and for nutritional adequacy.^{2,54}

Low glycemic index (GI) diets are not recommended specifically for weight loss or weight maintenance.⁵⁹ Low GI diets may be used to improve glycemic and lipid control as part of a cardiovascular risk reduction strategy for people with diabetes.^{54,60}

Referral to a Registered Dietitian is recommended for people following any restrictive diet.

Are there any recommended herbal supplements, teas or over the counter diet pills?

Evidence for efficacy of dietary supplements to stimulate weight loss or prevent weight gain is absent or inconclusive.⁶¹ There is insufficient evidence to recommend in favour of or against the use of herbal remedies, dietary supplements or homeopathy for obesity management.⁹ Safety concerns exist due to inadequate labelling, lack of evaluation from a regulatory body and possible drug/nutrient interactions.⁵⁶

If clients are using a product or have questions, consultation with a Registered Dietitian, pharmacist or physician is recommended. A helpful resource is the Natural Medicine Comprehensive Database www.naturaldatabase.therapeuticresearch.com

Refer to Guideline: Natural Health Products

What is the role of physical activity?

Physical activity is recommended as a component of a comprehensive obesity management strategy for the prevention of weight gain, for weight loss and for prevention of weight regain after weight loss.⁶² By increasing activity, individuals increase energy expenditure which may contribute to negative energy balance. However, the amount and intensity of activity required to significantly impact weight status is significantly more than what most people can achieve. Clients should be encouraged to engage in regular physical activity for the health benefits, not for weight loss.

For obesity management, physical activity is more effective when combined with nutrition therapy compared to physical activity alone.^{2,59,63} Physical activity may contribute to positive changes in body composition by increasing lean body mass and decreasing fat mass.^{9,64} Some changes in body composition do not necessarily result in changes of total body weight, and are not measurable with a weight scale. Decreases in abdominal fat mass (subcutaneous and/or visceral) may be identified as a reduction of waist circumference.⁵⁹

What are the activity recommendations for people with overweight/obesity?

The main goal is to increase movement and activity and reduce sedentary behaviour. Health Canada's 1997 Physical Activity Guide recommendation of 30 to 60 minutes of moderate intensity activity most days of the week is intended for health promotion and disease prevention.⁶⁵ The Canadian Physical Activity Guidelines were released in 2011 by the Canadian Society for Exercise Physiology.⁶⁶ For adults to achieve health benefits, the recommendation is to accumulate at least 150 minutes per week of moderate-to-vigorous aerobic physical activity per week in bouts of 10 minutes or more. Both guidelines were not developed as treatment for individuals with chronic diseases such as obesity. For weight loss and prevention of weight regain, individuals may need to do more physical activity.

Guidelines for appropriate physical activity strategies for weight loss and prevention of weight regain for adults with overweight/obesity have been published by The American College of Sports Medicine⁵⁷

- The main goal is to increase movement and activity and reduce sedentary behaviour.
- At least 150 minutes of moderate intensity activity per week is needed to prevent significant weight gain and reduce associated chronic disease risk factors.
- An increase to 150 to 250 minutes per week of moderate intensity activity is required to promote modest weight loss.
- More than 250 minutes per week of moderate intensity activity is required for clinically significant weight loss and enhanced prevention of weight regain.
- Resistance or strength training is not an effective means for weight loss, but is associated with health benefits including increase in fat free mass, decrease in fat mass and chronic disease risk factors.
- Flexibility or stretching activities are not an effective means for weight loss, but are associated with health benefits including reduction of injury and improvement of range of motion.

Recommended targets for minutes of activity and intensity may not be appropriate for all individuals as a starting point or attainable as an end goal. Recommendations for physical activity should be individualized for each person. To be realistic and sustainable, recommendations must be appropriate for an individual's health status, current activity level, and preferences.⁹ Assessment by a physician may be indicated prior to becoming more physically active.

Frequency (i.e. number of sessions per week or number of sessions per day) and duration (i.e. total time in minutes for each session) should be increased gradually before increasing intensity. Adherence to activity is poor and risk of injury high if individuals unaccustomed to activity do "too much, too fast, too soon".⁶⁷ Starting slowly (e.g. 10 minute sessions) and building gradually (e.g. increasing to 30 minutes per day for 5 days per week or adding 500 steps per day for each week of activity to reach goal of 3000 to 4000 additional steps per day) will assist in achieving increases in activity that are safe and sustainable.^{61,64}

A **pedometer** is a self-monitoring tool that can provide an estimation of both activities of daily life (shopping, house cleaning and laundry) and leisure activities (walking, gardening, dancing and sports). This helpful tool can assist with measurement of all movement to help differentiate whether a client is "active" or "has a busy life". Pedometers can be useful to assess baseline activity level and individualize goal setting, but do not provide information on intensity level or type of activity.⁶⁸

What is the role of behaviour modification?

Behaviour modification refers to a number of components or techniques to help people build awareness and provide tools to evaluate and monitor behaviour. There are several theories or models, such as Cognitive Behavioural Therapy, that been shown to be effective as part of a comprehensive weight management program.^{9,69} A comprehensive weight management program includes behaviour modification combined with nutrition and activity to improve outcomes with obesity management.⁷⁰ Continued behavioural interventions are necessary to help maintain health and weight outcomes.

Behaviour modification includes the following components:²⁶

- **Self-Monitoring** – People who are more successful with behaviour change and chronic disease management participate in their own care by using various tools to monitor themselves. The purpose is to build awareness of their behaviour and to monitor progress or change. Self-monitoring can assist with goal setting and problem solving. Examples include records of daily intake and activity (lifestyle journals), pedometers, serum glucose levels, blood pressure and body weight.
- **Stimulus Control** – Identifying and modifying social and environmental cues or triggers that influence behaviour. Reinforcement and reward for positive or desirable behaviour are incorporated as part of the strategy. Examples include changing the home/work environment by not having high calorie snacks available, or bringing a healthy lunch from home instead of eating out.
- **Problem Solving** – Steps include defining the problem, discussing solutions, weighing pros/cons of each potential solution, selecting and implementing a solution, and evaluating and adjusting the strategy.
- **Cognitive Restructuring** – Identifying and modifying maladaptive thoughts or beliefs related to the individual's self perception and expectations of obesity management interventions and outcomes. For example, replacing negative self-talk with more positive and empowering statements, challenging "all or nothing" thinking and reframing inappropriate goals or outcome expectations.
- **Social Support** – Family, friends, healthcare providers and the community play an important positive role in supporting lifestyle changes by providing continued reinforcement and encouragement. People and places can also exert negative influences and present barriers to change. Individuals may need assistance to develop skills, such as assertiveness, to help with these social barriers.
- **Stress Management** – Reactions to stress vary, but often impact appetite, eating behavior, self monitoring and participation in activity. Strategies should be targeted at addressing both the environmental cues (lack of time and planning) and the emotional responses (emotion-driven eating). Identification of non-food strategies or coping methods is important to support long term changes.
- **Rewards/Contingency Management** – Process where behaviours are changed by using rewards for specific actions. It is important to focus on behaviour changes—weight loss is an outcome, not a behaviour. Rewards should be determined by the individual, be meaningful, be non-food related and only be received if progress with the behaviour change has been made.

In some cases there may be a significant psychological or mental health barrier. Depression, anxiety and attention deficit disorder occur at a higher rate in adults with obesity²⁴ and may impact the client's ability to implement behaviour changes. Referral to a mental health professional is recommended. For information and additional links that are helpful in deciding whether to see a psychologist or how to find one visit the Psychologist's Association of Alberta website at <http://www.psychologistsassociation.ab.ca>

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What are the recommendations to maintain weight loss or prevent weight regain?

Weight loss is only one phase of weight management. Prevention of regain (i.e. maintenance of weight loss) is an important and often difficult phase of treatment. Weight maintenance or a “plateau” should not be perceived as a lack of results; it is an important clinical outcome in and of itself. Prevention of weight regain is not just up to the individual, but influenced by multiple variables including:⁷¹

- Energy balance and metabolism
- Maintenance of behaviour change strategies
- Co-morbid conditions
- Outcome expectations
- Perception or definition of success
- Mental health e.g. presence of depression
- Level of activity
- Social support
- Coping style
- Stressful life events
- Self management and self monitoring

To achieve and maintain health benefits and behaviour changes, significant and lifelong lifestyle changes are required. Nutrition, physical activity and behaviour modification all have an important role. Combining all three interventions, as opposed to any one alone, is more likely to result in successful maintenance of weight loss and help with the prevention of regain.⁹

The emphasis should be on behaviour change to achieve and maintain a healthy lifestyle and a more healthful weight, not necessarily an “ideal” or cosmetic weight. The success of obesity management can be measured by improvements in health and well being rather than the amount of weight lost. Success is different for every individual; better quality of life, greater self-esteem, higher energy levels, improved overall health, prevention of further weight gain, modest (5%) weight loss or maintenance of weight. For many clients, even modest reductions in body weight can lead to significant improvements in health and well-being.

Is there a specialty clinic available for adults with obesity?

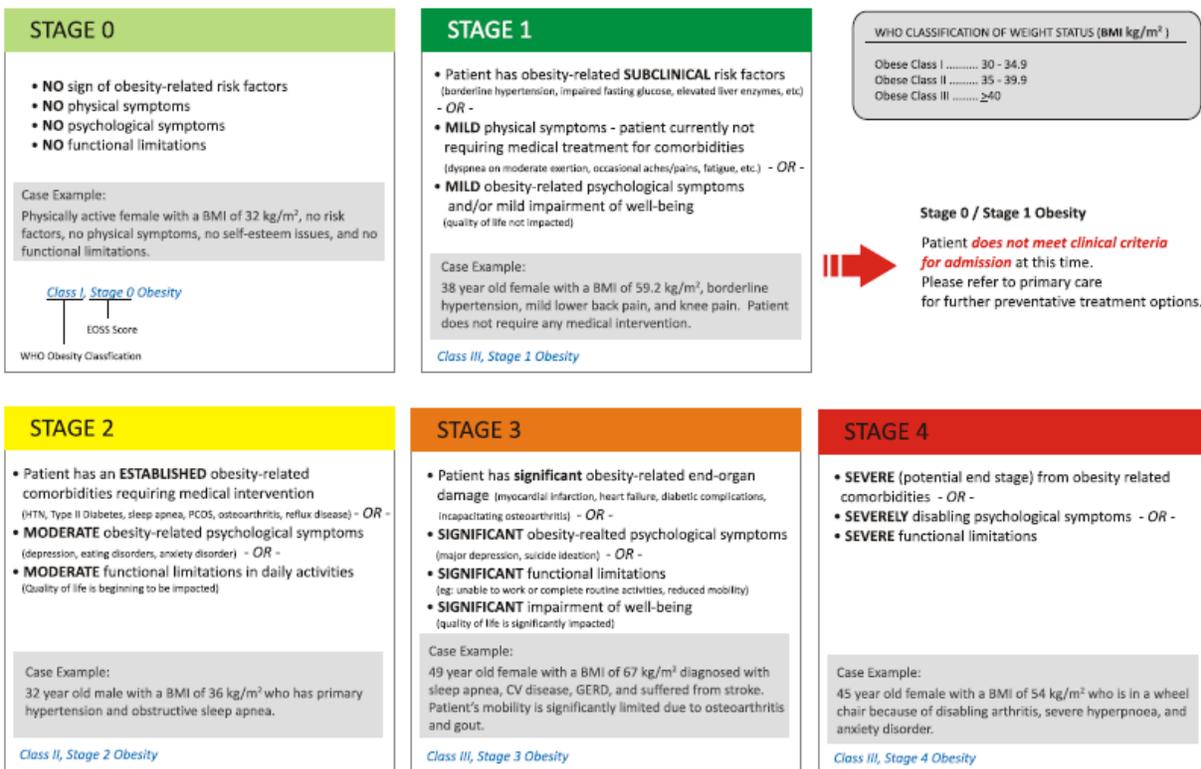
The Alberta Health Services Provincial Obesity Program operates five interdisciplinary Adult Bariatric Specialty Clinics across the province. Referral is required. Please refer to the Alberta Health Services website www.albertahealthservices.ca for more information regarding these clinics, available services, and referral requirements.

Handouts

Refer to approved provincial Alberta Health Services weight management nutrition handouts to support patient education. For more information, contact Nutrition.Resources@albertahealthservices.ca

Figure 1: Edmonton Obesity Staging System (EOSS)¹⁸

EOSS: EDMONTON OBESITY STAGING SYSTEM - Staging Tool



Sharma AM & Kushner RF, *Int J Obes* 2009

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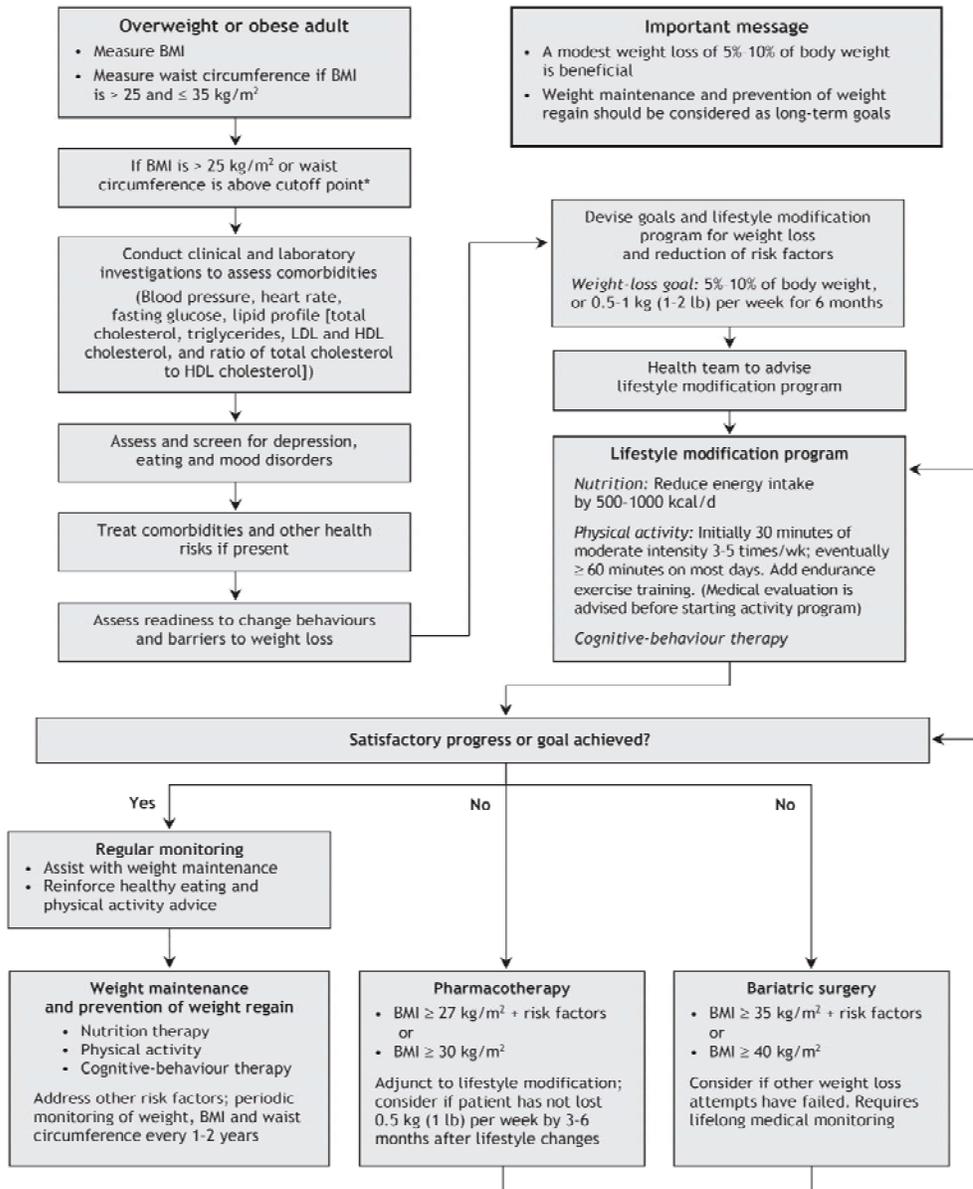
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Figure 2. 2006 Canadian Clinical Practice Guidelines: Algorithm for the assessment and stepwise management of the overweight or obese adult.⁹



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