

THIS CE IS
NOW
FREE!

APPROVED BY CCCEP FOR
1.75 CEUs



CCCEP file #743-0408

This lesson has been approved for 1.75 CEUs by the Canadian Council on Continuing Education

in Pharmacy. Approved for 1.75 CEUs by l'Ordre des pharmaciens du Québec. Accreditation of this program will be recognized by CCCEP until June 9, 2011.

LEARNING OBJECTIVES

Upon successful completion of this lesson, you should be able to:

1. define the terms "overweight" and "obesity" in adults, and use appropriate terminology to discuss these conditions with patients
2. identify the consequences of being overweight and obese, and describe ways in which to manage these conditions in adults
3. educate obese and overweight patients on measures for, and impact of lifestyle modification
4. counsel and monitor patients taking anti-obesity medications
5. discuss the roles pharmacists can play to help overcome the growing problem of obesity

To successfully complete the post-test for this lesson, you may need a calculator, access to the Internet, and a recent edition of the *Compendium of Pharmaceuticals and Specialties (CPS)* for additional information.

INSTRUCTIONS

1. After carefully reading this lesson, study each question in the post-test and select the one option you believe is the best answer. Although more than one option may be considered acceptable, only one option is the *best* answer.
2. To pass this lesson, a grade of at least 70% (14 out of 20) is required. If you pass, your CEU(s) will be recorded with the relevant provincial authority(ies). (Note: some provinces require individual pharmacists to notify them.)

ANSWERING OPTIONS

- A. For immediate results, answer online at www.pharmacygateway.ca.
- B. Mail or fax the printed answer card to (416) 764-3937. Your reply card will be marked and you will be advised of your results within six to eight weeks in a letter from *Pharmacy Practice*.

Management of adult obesity

By Marlene Shehata, BPharm., PC, M.Sc. Med, Ph.D. Med (IP) and Fady Shehata, MD, M.Sc. Med



Over the last two decades, we have witnessed a worldwide surge in the incidence of obesity. Canada has not been spared this rampant increase in obesity. According to the 2004 Canadian Community Health Survey, 59% of Canadian adults are overweight (compared to only 11% in 1972) and just under half of them are considered obese (23% of Canadians).^{1,2} Particularly worrisome is that the "extremely obese" (weighing at least 100 pounds above their ideal weight) are the fastest-growing group among obese adults.³

Even more disturbing is that obesity among Canadian youth is advancing at a faster pace than obesity among adults. In the past 15 years alone, a dramatic upturn in childhood obesity has resulted in an overall obesity prevalence of 10% among Canadian children. One in four Canadian youth between two and 17 are overweight or obese.² Compounding the problem is the fact that obesity is occurring at a much earlier age. For example, obesity rates have almost tripled during the past four decades among two- to five-year-olds.⁴ These children are at significant risk for (and are already experiencing) many of the comorbidities associated with obesity.² Overweight and obese children also tend to grow into obese adults who then face greater risk

of obesity-related chronic diseases.²

No longer just an issue of cosmetics or self-image, obesity is now considered a chronic disease in and of itself.³ At its most severe, an estimated one in 10 premature deaths among Canadian adults aged 20–64 years is directly attributable to being overweight or obese.² Both obesity and its associated health risks also impose a significant financial burden on the Canadian healthcare system with more than \$2 billion a year, or 2.4% of total healthcare expenditures, being spent on weight-loss programs, products, medications and obesity-associated comorbidities.⁵ In an attempt to reverse the

Supported by an unrestricted grant from



alarming increase in obesity, a panel of 32 experts convened to develop clinical practice guidelines for the management and prevention of obesity in adults and children (hereafter referred to as “the Canadian guidelines”).²

This lesson focuses on helping pharmacists understand and manage obesity in adults. With the exception of surgery, it reviews key points from the Canadian guidelines (released in 2007) and addresses some of the roles pharmacists can take in this growing health problem. Multiple resources are also provided to supplement this information.

Etiology of obesity

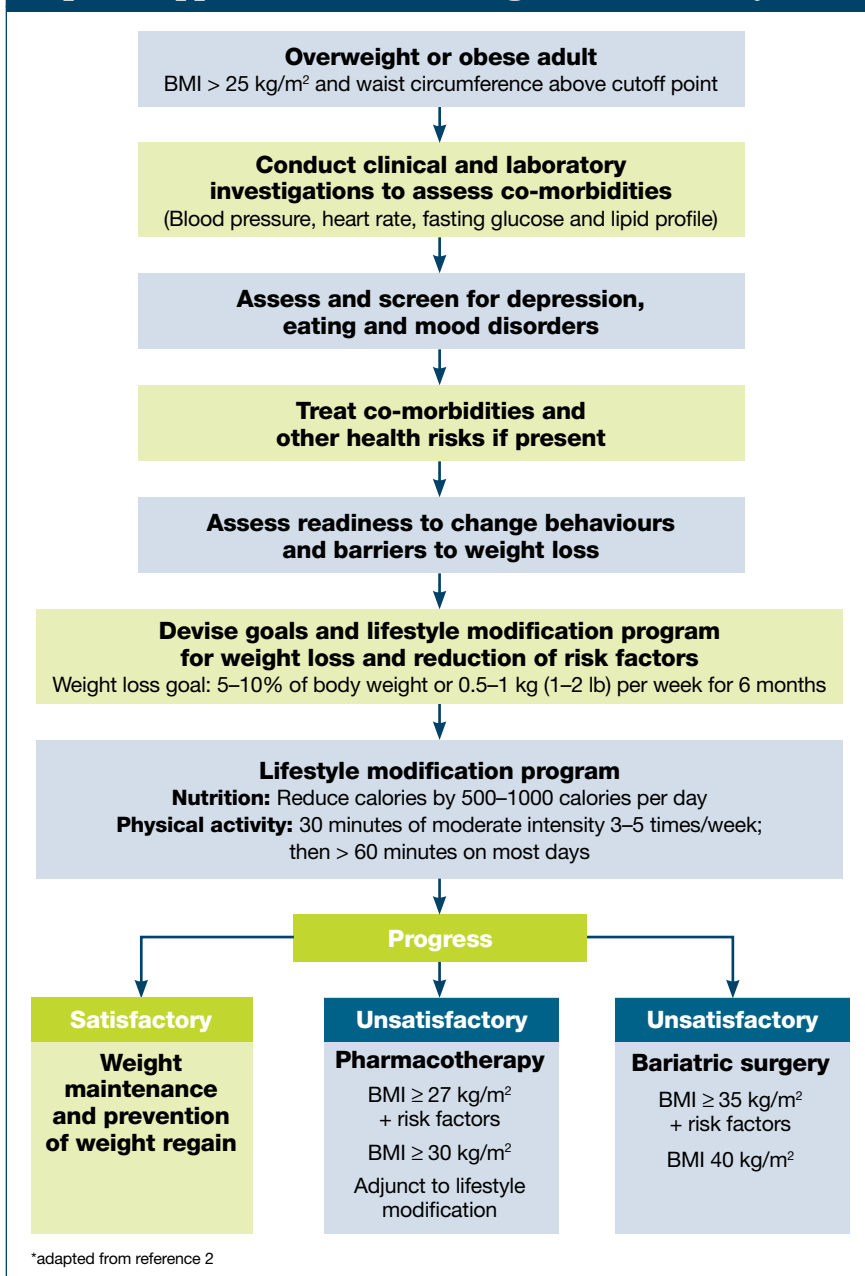
The etiology of obesity is not fully understood. Adipocytes (fat cells) used to be considered a simple storage system, but are now recognized as an active endocrine gland.^{3,6} As with all endocrine glands, adipocytes are able to release numerous hormones and cytokines (collectively referred to as “adipokines”) that exert negative effects throughout the body. However, not all fat is considered equal. In particular, abdominal adipose tissue (central obesity or visceral adiposity) has unique adverse metabolic and cardiovascular properties.^{3,6,7}

In addition, obesity is a multifactorial chronic disease that develops from an interaction of genetic, environmental, societal and psychological factors.⁸ At the most fundamental level, obesity is the result of an imbalance between caloric intake and expenditure, combined with a disturbance in factors that regulate the feedback process.⁹ This imbalance stems, in part, from today’s sedentary lifestyle, and is compounded by poor nutritional habits.

Weight gain may be an overlooked side effect of a drug. Examples of drugs associated with weight gain include both typical and atypical antipsychotics, most tricyclic antidepressants, monoamine oxidase inhibitors, some serotonin reuptake inhibitors, mood stabilizers, anticonvulsants, insulin, sulfonylureas, thiazolidinediones, antihypertensives (excluding selective beta-blockers), and glucocorticoids.^{2,9,10} Some drugs cause more weight gain than others, and at least some (especially the atypical antipsychotics) are associated with central obesity. To illustrate the potential magnitude of the problem, lithium by itself can cause weight gain in up to 65% of patients, with more than a 10-kg weight gain in up to 20% of patients.¹⁰ Olanzapine, often taken with lithium, has been associated with a gain of about 4.5 kg over a 10-week period in about 75% of patients.¹¹

figure 1

Stepwise approach for the management of obesity*



In some cases, there may be an alternative to the drug a person is taking,^{2,9,10} but its efficacy and safety profile must be taken into account. One guideline is to recommend an alternative if a patient gains more than five per cent of his or her original weight.¹⁰ From a prevention perspective, when an alternative is not available, patients should be advised to implement weight-control procedures before weight gain becomes a problem.¹⁰

Co-morbidities

Obesity is associated with an alarming number of diseases. In fact, as shown in Table 1, almost every organ system in the body is impaired by excess fat.^{3,6,9} Metabolic effects that are driven by abdominal obesity (i.e., the “metabolic syndrome”) are of greatest concern because they lead to outcomes such as hypertension and dyslipidemia, which greatly increase the risk for type 2 diabetes,

figure 2

What have I got to lose?*

The formula

If you are _____ pounds, and reasonably active, you eat about _____ calories a day. (For calories, multiply your weight by 15.)**

Cutting 10% of your calories a day = _____ calories a day, and will produce a weight loss of about _____ pounds (10% of original weight) in 3 months.

Weight loss of _____ (15% of original weight) can be achieved in 6 months.

One example

If you are 250 pounds, and reasonably active, you eat about 3750 calories a day. (Multiply your weight by 15.)** Cutting 10% of your calories a day = 375 calories a day, and will produce a weight loss of about 25 pounds in 3 months.

Weight loss of 38 pounds can be achieved in 6 months.

* adapted from reference 12; rough estimates only and will vary from person to person

** the number of calories needed to maintain each pound of weight

figure 3

What's in a portion? *12,27

1 oz meat = matchbox
3 oz meat = deck of cards or bar of soap
8 oz meat = thin paperback book
3 oz fish = cheque book
1 oz cheese = 4 dice
1 ½ oz natural cheese = 6 dice
2 oz processed cheese = 8 dice
medium potato = computer mouse
2 tbs peanut butter = ping pong ball
1 c pasta or ice cream = tennis ball
average bagel = hockey puck

* adapted from reference 12

figure 4

Sample “bag stuffer”

Did You Know...?

- An alarming 60% of Canadians are overweight. Being overweight is now considered an epidemic.
- Being overweight is more than a cosmetic concern. It is now considered a chronic disease. Depending on how overweight a person is, it can cause serious illnesses such as diabetes, heart disease, high blood pressure, lipid problems and stroke.
- Losing weight can help control health problems a person already has. Sometimes this means a person will not need as much medication as when he or she was overweight.
- The fastest-growing groups of overweight Canadians are children, adolescents and teenagers. Being overweight when young can cause self-esteem problems, as well as the possibility of health problems. Young people who are overweight also tend to be overweight when they are adults.
- Losing weight does not have to be hard. In fact, experts strongly recommend the “go slow” approach—losing about 1–2 pounds a week. Most people find this quite easy to do.
- The best way to lose weight is to reduce the number of calories a person eats, plus have some regular physical activity.
- Some people try to lose weight by going on a “crash diet.” This is not a good idea. In most cases, weight that is lost returns quite quickly.
- Once a person has lost weight, it can be a challenge to keep that weight off. Changes such as eating fewer calories and getting exercise tend to be life-long commitments.

These are just a few facts about being overweight. Be sure to ask your pharmacist for more information. He or she can give you specific details to help you lose weight and reduce its risks.

(© Brenda McBean Cochran 2008)

coronary artery disease, associated myocardial infarction and stroke.³ On a more positive note, a small weight loss (even 5% of body weight) can improve all metabolic abnormalities.³

Diagnosis

A combination of Body Mass Index (BMI) and waist circumference is recommended to determine adult weight class and obesity-related health risks.² BMI reflects total body fat, while waist circumference assesses (and predicts) the more serious adverse effects of central obesity.

Both measurements are relatively straightforward. BMI involves measuring a person's weight and height and is reported as weight in kilograms divided by height in

metres squared (kg/m²). Waist circumference, which isn't picked up by BMI, measures around the patient's abdomen, midway between the lowest rib and the top of the pelvic bone.² Based on these measurements, Table 2 defines a person's weight classification and associated level of health risks.

Management

Management of obesity follows a multi-step approach (Figure 1), and encompasses lifestyle modifications involving diet and physical activity with behavioural therapy, as needed. Medication may be prescribed when lifestyle intervention fails to achieve the desired weight loss. As a last resort, surgery may be performed in extremely obese patients.

LIFESTYLE INTERVENTION

Increased physical activity with a low-calorie diet is the cornerstone treatment for overweight and obese individuals. Overall, an initial weight loss goal of five to 10% of body weight is recommended at the rate of 0.5–1 kg (1–2 lbs) a week for six months.²

Weight loss is one of the most difficult things to implement and maintain. On this note, pharmacists can do a great deal to reinforce that the recommended weight loss may not be as hard as it initially appears. Figure 2 is an easy formula that illustrates the “go slow” approach, breaking weight loss and calorie reduction into less potentially overwhelming numbers. Discussing this formula with patients, and plotting their specific weight, will make weight-loss goals seem much more achievable.¹²

Dietary therapy

Dietary therapy should be planned to create a deficit of 500–1000 calories per day. This negative energy balance can often be achieved by reducing portion sizes and using simple substitutions, such as low-fat milk, less salad dressing, and fresh fruits in place of energy-rich desserts.¹³ For relatively straightforward cases, “100 ways to cut 100 calories” (America on the Move) is a good tool to discuss with patients. For more complicated cases, such as Class II or Class III obesity, or a diabetic patient, an experienced health professional (preferably a registered dietician) should be involved in planning a patient's diet and serving sizes.²

Many people have difficulty knowing what is meant by a “serving” or “portion.” For example, a typical pasta serving is usually about five times greater than the recommended serving size.¹⁴ On a practical note, pharmacists can help patients by likening serving sizes to something familiar to the average consumer (Figure 3).

table 1

Medical complications of obesity ^{2,6,9}
accelerated atherosclerosis
• coronary artery disease
• diabetes
• dyslipidemia
• hypertension
cancer
• breast • uterus • cervix • colon
• esophagus • pancreas • kidney • prostate
depression
erectile dysfunction
gallbladder disease
gout
gynecological disorders
• abnormal menses (earlier age in children)
• infertility
• polycystic ovarian syndrome
idiopathic intracranial hypertension
• stroke
• cataracts
nonalcoholic fatty liver disease
osteoarthritis
phlebitis
• venous stasis
pulmonary disease
• abnormal function
• obstructive sleep apnea
• hypoventilation syndrome
severe pancreatitis

One only has to look at bookstore shelves to see that a huge number of diets, other than those specified by the Canadian guidelines, are promoted to the consumer. Many fall into “low-carbohydrate diets” (e.g., Atkins, South Beach), “very low-fat” diets (Ornish, Pritikin), and “very low-calorie diets” (VLCD). In general, these “fixed” diets are not recommended without medical approval or supervision. Some have medical risks due either to their macronutrient composition or to the rapid initial weight loss that they induce. Weight that is lost quickly tends not to be sustainable, with most gained back in a relatively short period of time.^{14,15}

A wide variety of additional diets, with multiple combinations of carbohydrates, fats and calories, are promoted to the consumer with overly zealous titles. The American Dietetic Association reviews and assesses those that have appeared over the past few years in order to help health professionals know which programs can be safely recommended to patients.

Similarly, consumers are also deluged, through the Internet and popular press, with

table 2

Body weight classification and risk of health problems by BMI and waist circumference* ²		
Measure	Weight classification	Risk of health problems
BMI (kg/m²)		
< 18.5	underweight	increased
18.5–24.9	normal weight	least
25–29.9	overweight	increased
30–34.9	Class I obesity	high
35–39.9	Class II obesity	very high
≥ 40.0	Class III obesity	extremely high
Waist circumference		
men		
< 102 cm (40 in)		lower
≥ 102 cm (40 in)		increased
women		
< 88 cm (35 in)		lower
≥ 88 cm (35 in)		increased

*Classification and level of health risk (for adults only); BMI = Body Mass Index

promises of quick and painless weight-loss cures (e.g., “30 lbs in 3 weeks—No Diet!”). Such promises are enticing to the overweight or obese person. Table 3 presents points to pass along to patients about such ads aimed at helping them sort through the maze of promotions directed at them.

Physical activity

Patients should be encouraged to maintain long-term and consistent physical activity, so that goals of weight loss, long-term maintenance of body weight and reduced cardiovascular morbidity may be achieved.² However, recommendations such as 30–60 minutes of physical activity three to five days a week can actually be a barrier to activity.^{12,16} Many overweight and obese patients are sedentary and find it hard to participate in programmed activities due to physical discomfort (e.g., joint and muscle pain) and psychological upset (e.g., concerns about finding appropriate clothing).¹⁷ Many people, unless they can overcome such barriers, won't become physically active.¹²

Using a behavioural modification approach (described later in this article), the first step is to break physical-activity recommendations into smaller steps, and reinforce that it doesn't have to be difficult. For example, research shows that dividing activity into short bouts (minimum of 10 minutes per session) actually promotes fitness.¹⁶ Patients can therefore choose one or more preferred physical activities and perform them intermittently throughout the day. Most programs also advocate incorporating

table 3

Consumer beware*
How can you spot a false weight loss claim? An ad is probably a rip-off if it promises:
• you can eat all your favourite high-calorie foods and still lose weight
• you can lose weight without diet or exercise
• a product can block the absorption of fat, carbs or calories
• a product can make you lose more than 3 pounds a week
• a product will work for everyone
• a product will cause you to lose weight permanently
• any patch, cream, gel, etc. can help you lose weight
The only thing you're guaranteed to lose is your money!
<small>*Adapted from FatFoe, Federal Trade Commission (www.wemarket4u.net/fatfoe/results.htm)</small>

physical activity into daily routines (e.g., replacing taking the elevator with using the staircase).¹⁶ Even this seemingly small amount of activity can add to a patient's daily physical-activity goal.

Walking is considered the ideal form of physical activity for overweight and obese patients.^{7,18} It is highly accessible (no getting ready to go to the gym), low cost (e.g., a pair of walking shoes vs. a fitness club), and lends itself to a gradual start where a person can work up to his or her own rate and intensity. Perhaps best of all, walking is part of many daily routines most people don't even consider physical activity (e.g., vacuuming, carrying groceries upstairs, mowing the lawn).

table 4

Tools and resources for overweight and obese patients*

10,000 Steps: Explains the pedometer-based popular 10,000 Steps program, which allows programming of “step” activities (e.g., walking) and “nonstep” activities (e.g., swimming). How to use a pedometer and conversion rates for nonstep activity is found under Frequently Asked Questions and an online “step log” is on the main page. Bodily changes with moderate and vigorous activity is found under Extra Activities For You (select from left side of FAQs). www.10000steps.org.au

America On The Move: Developed in co-operation with the American Academy of Family Physicians, geared to help health professionals educate patients about healthy eating and physical activity. The Toolkit offers numerous resources for health professionals (e.g., Patient Contract), and consumers (e.g., 100 Ways to Cut 100 Calories and 100 Ways to Add 2000 Steps). Site has ready-to-use presentation on the importance of weight gain prevention (with patient resources). A unique activity tool, it also features 6 online “trails” (e.g., China Silk Road) where users enter their daily physical activity (in steps or minutes) to move along the trail. At each “stop,” the user is given information related to that particular trail (fun and educational for children). Select subheading from right side; for the Toolkit, select Health Professionals. <http://aom.americaonthemove.org/site/c.krLXJ3PKuG/b.1524889>

American Dietetic Association: Unique service that reviews the latest popular diet books. Also many downloadable nutrition fact sheets on a wide range of topics (e.g., What’s a Mom to Do? Healthy Eating Tips for Families). For book reviews, scroll to “Weight Management.” www.eatright.org/nutritionfactsheets

Dietitians of Canada: In addition to many print resources, this site features a number of interactive online educational tools: EATracker lets users track their day’s foods and activities and compares them to Health Canada guidelines (useful as a starting and monitoring tool). Virtual Grocery Store helps users learn how nutrition information on labels can help them make healthy choices. One Day @ a Time is designed for people who are too busy to maintain a healthy active lifestyle and takes users through 9 daily scenarios with lots of tips and advice. All available in English and French. Also a helpful way to find a registered dietitian in your area. More than 190 dietitians are registered with the site, along with contact information and their specialties. www.dietitians.ca/public/content/eat_well_live_well/english/index.asp

Health Canada Food/Nutrition: Use this site to download or order free multiple (100) copies of Canada’s Food Guide (2007). It is available in English and French, with a version also tailored to First Nations, Inuit and Metis. The Resource for Educators and Communicators is highly recommended. Among many other support materials are ready-to-use presentations for consumers and for educators. “Create My Food Guide” is especially helpful for patients: an interactive tool with a large number of foods to choose from, users get to plan meals with their choice of the proper amounts and compositions of foods according to the Food Guide (multiple languages). Also helpful are food serving counts for dishes with multiple ingredients (e.g., chili con carne). Order online or phone 1-800-622-6232. www.hc.sc.gc.ca/fn-an/food-guide-ailment/index_e.html

Health Compass AtoZ: Great tools for assessing and managing healthy weight. Online calculators include BMI, waist circumference, calories burned (many options for physical activity with associated intensities and duration) and fitness assessment. Also many quizzes (e.g., Is your child at risk for being overweight?) and information tools, including a personalized weight-loss program. For in-store use or patient take-home materials. Select “Cool Tools” to go to weight tools, quizzes and informational tools. www.healthatoz.com

Mindless Eating: This extensive site is built around the book by the same name (Mindless Eating: Why We Eat More Than We Think). Using the premise that people eat out of habit and societal cues, it provides such tools as the Mindless Eating Meter (tests user’s response to such things as volumes and arrangements of food); The Mindless Eating Challenge (a comprehensive quiz about eating habits and challenges with users identifying barriers and potential solutions to challenges); and the Toolbox, a prepared teaching module using an interactive approach with students or adults. An excellent site and book to recommend to patients (book may be ordered online. \$12.00 USD). <http://mindlesseating.org/index2.htm>

The National Weight Control Registry: A database of about 5,000 people who have succeeded at long-term weight loss. NCWR Facts (in Research Findings) and a write up from Good Morning America describe some of the ways these people have kept off their excess weight. www.nwcr.ws/default.htm

Public Health Agency of Canada: All about Canada’s Physical Health Guide, has 4 guides targeted to children, youth, mid-age adults and older adults. All come with a substantial handbook full of tips and ideas for gradually increasing physical activity presented in an entertaining way. Family and Teacher Guides also available. For descriptions of light, moderate and vigorous activity, see link at the end of What Is It? (under Physical Activity Guide, left side main page.) All are downloadable or may be ordered online or by phoning 1-888-334-9769 (12 documents; quantities of 100; free). www.phac-aspc.gc.ca/pau-uap/paguide/index.html

* Most sites have many more elements and patient materials. For the most part, only those that are unique or of particular value to the pharmacist are included.

A pedometer (step-counter) is highly recommended.¹⁹ At the very least, these devices help patients add up the number of steps taken during the course of a day. The pedometer count provides patients with a tangible number, which can be a powerful motivator for continuing—and increasing—physical activity. A pedometer is also a terrific way to start a physical activity program. By planning small, simple, achievable goals for one day, patients will have a solid number with which to plan the next day’s activities.^{12,18}

Behavioural therapy

Very simply, behavioural therapy refers to a wide variety of specific interventions, using learning principles to develop and implement strategies to change lifestyle habits (sometimes referred to as lifestyle modification).^{2,16,17} Not every patient requires formal behavioural therapy, but behaviour and lifestyle modification *principles* should be applied to all overweight and obese patients, and by all health professionals.

The key to successful lifestyle modification is that it be *patient-centred*. In other words, patients should be encouraged to identify dietary changes and physical activity that work for them. Understandably, a patient is more likely to adhere to a program that he or she has chosen than one “dictated” by a health professional.¹² Lifestyle intervention also works best if, after agreeing on overall goals, changes to reach those goals are small, doable, measurable and associated with rewards (however small) for each success.² In the end, it really doesn’t matter *how* a person reaches his or her weight-loss goal, only that it is eventually reached.¹⁶

An important note is that initial weight loss is extremely hard to maintain, with patients frequently regaining all lost weight within five years.¹⁷ As such, once weight has been lost, the focus needs to shift to long-term weight maintenance² and, as with any chronic disease, patients should be encouraged to think of lifestyle changes as an approach they will follow the rest of their lives. Physical activity is critical at this stage, with compelling evidence that prevention of weight regain in formerly obese patients requires 60–90 minutes of moderate activity per day.⁷ As with initial weight loss, it is particularly important to help patients identify specific maintenance techniques that best fit their lifestyle.

For ways to incorporate behavioural principles in pharmacy practice, readers are referred to an article on self-management written specifically for pharmacists.²⁰ This

**NOW
FREE!**

ce lesson

PHARMACY PRACTICE NATIONAL CONTINUING EDUCATION PROGRAM

Management of adult obesity

article uses clear language, scales and patient-pharmacist dialogues to illustrate how pharmacists can help patients with strategies such as goal-setting, action plans (the small doable steps to reach a goal), readiness-to-change, problem-solving, followup and self-efficacy (how confident a patient is in his or her ability to change).

PHARMACOTHERAPY

Drug therapy is considered for patients with BMI ≥ 30 kg/m² with no obesity-related comorbidities or risk factors, or BMI ≥ 27 kg/m² with obesity-related comorbidities or risk factors.² Generally speaking, pharmacotherapy is initiated only when lifestyle measures fail to achieve the desired weight loss of 0.5–1 kg per week after an adequate trial of 3–6 months.² However, some physicians use it in the short term to motivate or “kick-start” a patient’s weight loss,²¹ or if a patient “plateaus” during a weight-loss management program.²² There is a common misconception that drug therapy alone will achieve weight loss. However, it should be made clear that drug therapy is most effective, typically producing a five to 10% weight reduction, only when combined with dietary and physical activity modifications.²

Currently, two drugs (orlistat and sibutramine) are approved in Canada for long-term management of obesity. Neither drug is deemed better than the other, and combination therapy does not seem to produce greater weight loss.²³ If no significant weight loss (at least 5% of initial body weight) is noticed with a particular drug within the first three months, discontinuation should be considered.²² Even a five per cent weight loss may be considered a success in patients who have previously not been able to lose weight.

Orlistat

Orlistat reduces up to 30% of dietary fat absorption by inhibiting gastric and pancreatic lipase enzymes. It is poorly absorbed with less than one per cent systemic bioavailability, which allows for minimal systemic adverse effects. The dose prescribed is typically 120 mg three times daily. Each dose should be taken with a meal in order to exert its effect. If a meal does not contain any fat, that dose of orlistat can be omitted.²⁴

Common side effects of orlistat include fatty and oily stools, fecal urgency, oily spotting and fecal incontinence, which prohibit its use in patients with any rectal or bowel problem.²⁴ These side effects can be incredibly bothersome to individuals. To reduce their occurrence, each meal should contain no more than 30% fat because it is the unab-

sorbed fat that causes most of the symptoms.²⁴ Distributing fat intake over the whole day can also help.²⁴ Some clinicians advise the addition of psyllium (6 gm with each dose or 12 gm only at bedtime) to reduce gastrointestinal side effects by about 40%.¹⁴

Orlistat reduces the absorption of fat-soluble vitamins, which can be replaced by a daily multivitamin.²¹ Because orlistat may reduce the absorption of Vitamin K, it may potentiate warfarin’s effect and warrant International Normalized Ratio (INR) monitoring beginning within three to five days of orlistat initiation. Absorption of lipophilic drugs such as amiodarone and cyclosporin is also reduced and requires monitoring.²⁴

Sibutramine

Sibutramine is a potent serotonin and norepinephrine reuptake inhibitor that acts centrally to enhance satiety (feeling of fullness). It is recommended in patients whose major barrier to weight reduction is their lack of fullness sensation or their tendency to snack frequently. Sibutramine also stimulates thermogenesis (heat production) as a secondary mechanism. Increased heat production means the body is steadily burning fat and sugar, and thereby expending calories. Sibutramine is extensively metabolized by hepatic cytochrome P4503A4 enzymes to active metabolites. Most of the drug and its metabolites are renally excreted, which necessitates dose adjustment in patients with renal impairment.²⁵

Common side effects of sibutramine include insomnia, nausea, dry mouth and constipation. Sibutramine also lowers high density lipoprotein (HDL) and triglyceride levels, and may increase blood pressure and pulse rate. Sibutramine is currently contraindicated in patients with uncontrolled hypertension, pre-existing cardiovascular disease, or tachycardia. Concomitant treatment with monoamine oxidase inhibitors or serotonergic drugs is not recommended because of the potential risk of serotonin syndrome. Due to its pharmacology and elimination pathways, sibutramine is associated with other possible contraindications and drug interactions, and requires close monitoring by pharmacists.²⁵

The pharmacist’s role

According to statistics for the general population, at least 59% of people pharmacists see are overweight or obese. Since many people who come to the pharmacy already have an obesity-related disease, the percentage of this population in the pharmacy setting is likely to be even higher. The availability

of over-the-counter medications, as well as natural or alternative remedies, further increases the numbers of overweight and obese people likely to visit a pharmacy.

Pharmacists are therefore ideally positioned to help a large proportion of overweight and obese individuals, many of whom may be overlooked. As a relatively newly recognized health problem, many people are simply unaware of the risks of being overweight and obese. Others may need help understanding and managing lifestyle interventions. Pharmacists can do a great deal to proactively reach out to people who need help in the area of attaining and maintaining healthy weight.

Clinic days are an excellent way to promote awareness about obesity. For example, advertising the clinic day throughout the store (including the dispensary), and perhaps also in local physicians’ offices, will draw people’s attention to the disease. Try using brightly coloured paper, and a title such as “Weight Control Clinic.” Avoid words like “obesity” and “overweight” as these can sound insulting²⁶ and could turn people away from the possibility of attending. A few bullet points about the clinic, including its purpose, help promote awareness and encourage attendance. Consider inviting a nutritionist or dietician and an exercise therapist to the clinic. Obesity is very much a team effort, and these health professionals have more experience than pharmacists in their areas of lifestyle modification. As with all clinics, pamphlets and tools should be available for use during the clinic.

Other signage in the pharmacy can help raise awareness. For example, if there is a weight-loss product section (i.e., natural or alternative remedies), post a sign nearby like: “If you use, or are thinking of buying one of these products, talk to your pharmacist first. He or she can give you valuable information about effective ways to manage weight.” Another place for signage is in close proximity to written information or pamphlets on weight control and/or physical activity. Again, a small note simply saying “Speak to your pharmacist if you have any questions about this information” may help people feel more comfortable bringing up the subject of weight gain. With a little bit of thought, pharmacists will identify other strategic areas where signage can be used.

Bag stuffers are an excellent and unobtrusive way to raise awareness. Figure 4 indicates some points you may want to include. A primary goal in the fight against obesity is initial prevention; maintenance

of weight loss after obesity can be difficult. For both reasons, bag stuffers should be given to all patrons (including those who go to the front cash), and not just those who are overweight or obese.

Finally, the issue of weight control may be raised with individual patients who are having a prescription filled for a *condition associated with excess weight* (e.g., diabetes, high blood pressure, osteoarthritis). Most of these patients should already be aware of the role of weight in their condition, hopefully having received this information from their physician. At the same time, specific details for, and monitoring of weight loss are often not addressed by the doctor. After reviewing the primary prescription(s), in most cases it is appropriate to ask the patient something like, “Has your doctor talked to you about the role of weight in (your condition)?” or “Did you know that weight loss can help people who have (your condition)?”

Such questions can then be followed with a general offer of assistance (e.g., “Do you need any help with that?” or “I can help you with that if you need it.”). This approach facilitates further counselling and education about weight loss.

Beyond the possibility of beginning a weight-loss discussion with patients who have a coexisting morbidity, pharmacists are ill-advised to *initiate* such a conversation with people who are overweight or obese. Most people with these conditions are sensitive about their weight and, no matter how well-intentioned, a direct confrontation may appear insulting.

Minimally, pharmacists should be prepared to supplement information supplied in any of the awareness measures they implement. Most of the information has been supplied in this article, and additional resources are listed in Table 4.

Summary

Viewing the growing problem of obesity as a chronic disease is a relatively new concept, and one that is gaining more widespread acceptance. Due to its many comorbidities, it has been projected that, if left unchecked, obesity will outstrip improvements brought about by advances in public and medical care, resulting in an overall decrease in life expectancy in developed countries. Measures are needed to turn the tide of the increasing number of people with obesity. To date, results of studies evaluating lifestyle interventions have been modest, if not disappointing, due in part to lack of awareness (by both patients and healthcare professionals) and lack of adherence to weight loss measures. Historically, pharmacists have focused little on weight-loss measures, but there is no question they are in an excellent position to provide much needed involvement with this group of patients. **CP**

References

1. Shields M. Measured obesity: overweight Canadian children and adolescents. Nutrition: Findings From The Canadian Community Health Survey 2004. Statistics Canada Catalogue no. 82-620-MWE2005001. www.statcan.ca/english/research/82-620-MIE/2005001/pdf/cobesity.pdf (accessed November 2007). 2. Lau DC, Douketis JD, Morrison KM, et al. Obesity Canada Clinical Practice Guidelines Expert Panel. 2006 Canadian clinical practice guidelines on the management and prevention of obesity in adults and children. CMAJ 2007;176(8 suppl):Online1-117. http://www.cmaj.ca/cgi/content/full/176/8/S1?etoc (accessed October 2007). 3. Grundy SM, Cannon CP, Klein S, et al. Managing obesity as a chronic disease: a pathophysiological approach to cardiometabolic risk reduction. Medscape CME. www.medscape.com/viewprogram/8345 (accessed January 2008). 4. Miller JL, Silverstein JH. Management approaches to pediatric obesity. Nat Clin Pract Endocrinol Metab 2007;3(12):810-8. 5. Birmingham CL, Muller JL, Palepu A, et al. The cost of obesity in Canada. CMAJ 1999;160:483-8. 6. Ransom T. Medical complications. National Obesity Certificate Program. Halifax Nov 2, 2007. 7. Zoeller RF. Physical activity and obesity: their interaction and implications for disease risk and the role of physical activity in healthy weight management. Am J Lifestyle Med 2007;1(6):437-46. 8. Barness LA, Opitz JM, Gilbert-Barness E. Obesity: Genetic, molecular, and

environmental aspects. Am J Med Genet A 2007;143:3016-34. 9. Obesity what's new? 2007 American College of Physicians and American Hospital Formulary System DI Essentials. http://online.statref.com/Document/DocumentBodyContent.aspx?DocId=2273&Fld=92 (accessed November 2007). 10. Drugs associated with weight gain. Pharmacist's Letter/Physician's Letter 2007;23(3):220312. 11. Sheehan AH. Weight Gain. In: Tisdale JE Miller DA, Eds. Drug-Induced Diseases. Prevention Detection and Management. Bethesda, MD: American Society of Health-System Pharmacists 2006:409-19. 12. Blackburn GL, Greenberg I, Day KM, et al. Small steps and practical approaches to the treatment of obesity. Medscape/Web MD. www.medscape.com/viewarticle/565825. (accessed January 2008). 13. Heymsfield SB, Harp JB, Rowell PN, et al. How much may I eat? Calorie estimates based upon energy expenditure prediction equations. Obes Rev 2006;7:361-70. 14. Anon. Natural medicines in the clinical management of obesity. Natural Medicines Comprehensive Database. Clinical Management Series. Last Updated February 4, 2008. 15. Palmer T. Practical approaches to nutritional intervention. National Obesity Certificate Program. Halifax Nov 2, 2007. 16. Tyler C, Johnston CA, Foreyt JP. Themed review; lifestyle management of obesity. Am J Lifestyle Med. 2007;1(6):423-429. 17. Sarwer DB, Wombie LG, Berkowitz RI. Behavioral treatment of obesity in the primary care setting. In: Gumbiner B, ed. Obesity.

1st ed. Washington DC: American College of Physicians—American Society of Internal Medicine; 2001: 202-20. 18. Choi BC, Pak AW, Choi JC, et al. Daily step goal of 10,000 steps: a literature review. Clin Invest Med 2007;30(3):E146-E151. 19. Bravada DM, Smith-Spangler C, Sundaram V et al. Using pedometers to increase physical activity and improve health: a systematic review. JAMA 2007;298(19):2296-304. 20. Ogle BG, Chong E. Self-management support of patients with chronic diseases. Pharm Prac 2008;24(2):insert. 21. Ransom T. Pharmacotherapy. National Obesity Certificate Program. Halifax Nov 2, 2007. 22. Lean M, Mullan A. Obesity: which drug and when? Int J Clin Pract. 2007;61(9): 1555-60. 23. Sari R, Balci MK, Cakir M, et al. Comparison of efficacy of sibutramine or orlistat versus their combination in obese women. Endocr Res 2004;30: 159-67. 24. Repchinsky C, Welbanks, L, Bhalla A, et al. Compendium of pharmaceuticals and specialties. 42nd ed. Ottawa, ON: Canadian Pharmacists Association; 2007. 25. Meridia Product Monograph. Abbott Laboratories, Limited. Saint-Laurent (QC). May 26, 2005. 26. Wadden T. Facilitating behavioral change. Presentations From the Treatment of Obesity Conference, July 2006. www.medscape.com/viewarticle/549473_8 (accessed December 2007). 27. Avoid portion distortion. University of Nebraska Lincoln Extension. http://lancastr.unl.edu/food/portndis.pdf (accessed February 2008).

Questions

To answer online, go to www.pharmacygateway.ca, CE section, CE Online, Pharmacy Practice

1 If you were giving a talk to consumers about obesity, which of the following would be true statements?

- Obesity is responsible for about one in 10 premature deaths in Canadian adults.
- Diabetes and cardiovascular conditions are more likely to occur in people who carry most of their extra weight around their middle.
- During the past four decades, obesity has tripled in children aged two to five.
- If obesity rates continue to rise, developed countries are likely to see an overall decrease in life expectancy.
- All of the above

2 Eighty-two per cent of Canadians are either overweight or obese.

- true
- false

L.M. is a 45-year-old female who weighs 195 lbs (88 kg) and is 5 ft. 2 in. (155 cm) tall. She saw a sign about your weight loss clinic and has a question about her specific weight loss. Apparently, her doctor prescribed dietary intake and physical activity according to the Canadian guidelines two months ago, but she never feels full, and “it doesn't seem to be working.” She's feeling discouraged as she's lost only about 8 lbs. A friend of hers takes medication to help with weight loss and L.M. wants

to know which one she should ask her doctor for. She has no other health problems.

3 L.M.'s Body Mass Index (BMI) is:

- about 22
- about 27
- about 36
- about 42
- none of the above

4 At what level of health risk does L.M.'s weight classification put her?

- least risk
- increased risk
- high risk
- very high risk
- extremely high risk

**NOW
FREE!**

ce lesson

PHARMACY PRACTICE NATIONAL CONTINUING EDUCATION PROGRAM

Management of adult obesity

Questions

To answer online, go to www.pharmacygateway.ca, CE section, CE Online, Pharmacy Practice

5 Which of the following would you recommend for L.M.?

- a) orlistat
- b) sibutramine
- c) either a) or b)
- d) none of the above

6 L.M. admits that, although she's joined a gym, she rarely goes and really doesn't get any physical activity. How would you respond to this information?

- a) Explain to L.M. that if she's not doing any physical activity, she'll need to cut back further on her calorie intake.
- b) Find out from L.M. what kind of physical activity would work for her.
- c) Suggest that simple walking is considered a good physical activity for weight loss.
- d) Both b) and c)
- e) All of the above

7 To encourage L.M., she should be told that daily physical activity doesn't have to be done all at once, but can be done in short bouts of a minimum of five minutes throughout the day.

- a) true
- b) false

8 According to the Health Compass AtoZ calories burned calculator, about how many calories would L.M. expend if she walked at a moderate pace for 20 minutes?

- a) 50 calories
- b) 100 calories
- c) 150 calories
- d) 200 calories

9 With reasonable activity, how much weight could L.M. expect to lose in six months by cutting back 10% of her daily calories?

- a) about 20 pounds
- b) about 30 pounds
- c) about 45 pounds
- d) about 60 pounds

10 An advantage of orlistat is that people no longer need to worry about their fat intake.

- a) true
- b) false

11 J.T. is a 56-year-old male who has been taking orlistat for about one month. On assessment, you find out he often forgets to take a dose until about 30 minutes after his meal, in which case he just doesn't take it. At the same time, he always takes the multivitamin his doctor prescribed with one of his daily doses of orlistat. His only other health problem is atrial fibrillation, for which he takes warfarin

5 mg daily. Potential drug-related problems in this situation is/are:

- a) J.T. should be advised he can take orlistat within up to one hour after a meal.
- b) J.T. is probably not getting much, if any, benefit from his multivitamin because it should be separated from orlistat by at least two hours.
- c) Orlistat increases the effect of warfarin, so sibutramine is a better choice for J.T.
- d) Both a) and b)
- e) None of the above

12 T.S. is a 47-year-old patient who is getting her first prescription for sibutramine. She is currently taking metoprolol, but her blood pressure is uncontrolled (> 145/90 mm Hg). You notice she has a bottle of St. John's wort in her hands, to purchase along with her prescription. Which of the following are potential drug-related problems in this situation?

- a) Metoprolol is likely contributing to her weight gain.
- b) Although T.S. is taking an antihypertensive, sibutramine is contraindicated given her level of blood pressure.
- c) T.S. should avoid St. John's wort while she is taking sibutramine.
- d) Both b) and c)
- e) All of the above

13 Potential drug-drug and drug-disease interactions with sibutramine include all of the following except:

- a) coronary artery disease
- b) bipolar disorder
- c) beta-carotene
- d) fluoxetine
- e) sumatriptan

14 So that patients have realistic expectations about weight loss, at some point they should be told:

- a) Drug therapy is likely to result in a 30% weight loss within six months.
- b) A 5% weight loss can improve health risks related to central obesity.
- c) After weight is lost, much of it tends to be regained.
- d) Both b) and c)
- e) All of the above

15 According to the National Weight Control Registry, more than 50% of patients who are able to successfully maintain lost weight:

- a) Eat breakfast every day.
- b) Weigh themselves once a week.
- c) Watch < 10 hours of television per week.
- d) Set weight loss goals for themselves.
- e) All of the above

16 According to the 10,000 Steps program, all of the following about using a pedometer are true except:

- a) It won't work properly unless it's in an upright position.
- b) It must be worn on the right side of the body.
- c) It won't indicate a person's level of fitness.
- d) In the case of a wheelchair, an odometer may be substituted for a pedometer.

17 According to Canada's Physical Activity Guide and the 10,000 Steps program, a person is doing "moderate intensity" activity, as specified in the Canadian guidelines, when he or she has a slight but noticeable increase in body warmth, breathing and heart rate.

- a) true
- b) false

18 How many steps may be programmed into a pedometer if a person who uses the 10,000 Steps program swims vigorously for 20 minutes?

- a) 100 steps per minute
- b) 200 steps per minute
- c) 1,000 steps in total
- d) 2,000 steps in total
- e) none of the above

19 If you were going to do a clinic day related to obesity, which of the following would you use to advertise the clinic?

- a) Healthy weight—what you need to know
- b) Are you overweight? Join us on July 30 to learn how to lose pounds
- c) Clinic Day: Applying the Canadian guidelines to manage obesity
- d) Either a) or b)
- e) Any of the above

20 The pharmacy in which you work just started carrying a "weight-loss" gel that promotes weight loss of about two pounds a week. Would you recommend this product to a patient wanting to lose weight?

- a) yes
- b) no

ce faculty

THIS MONTH

Management of adult obesity

AUTHOR

Co-author **Marlene Shehata**, BPharm., PC, M.Sc. Med, Ph.D. Med (IP), is currently a part-time professor of pharmacology at the University of Ottawa, a Ph.D. candidate at the Faculty of Medicine, University of Ottawa Heart Institute and a cardiovascular geneticist working toward understanding the molecular and genetic contributors to cardiovascular diseases including hypertension, dyslipidemia, obesity, diabetes and the metabolic syndrome. She has taught university for six years and has served as the CE co-ordinator for two Ontario professional societies. Shehata has written CE modules for health professionals on the management of dyslipidemia in type 2 diabetes, as well as presented in CE programs for health professionals on a variety of topics.

Co-author **Fady Shehata**, MD, M.Sc. Med, is a clinician scientist and has co-authored articles on obesity and other topics in many journal publications. His work as a clinician scientist has enabled him to combine his clinical experience gained from bedside settings with his research experience from lab settings.

All lessons are reviewed by a minimum of six pharmacists for accuracy, currency and relevance to current pharmacy practice.

This lesson is valid until June 9, 2001. Information about management of adult obesity may change over the course of this time. Readers are responsible for determining the most current aspects of this topic.

CE CLINICAL EDITOR

Brenda McBean Cochran, B.S.P., M.Sc.(Phm) Pharmacist consultant, Bedford, N.S.

CE MANAGING EDITOR

Honey Fisher
honey.fisher@pharmacygroup.rogers.com

This lesson is published by Rogers Publishing Ltd., One Mount Pleasant Rd., 7th floor, Toronto, ON M4Y 2Y5. Editorial office: Tel: (416) 764-3927 Fax: (416) 764-3931. CE queries: Tel: (416) 764-3879 Fax: (416) 764-3937 mayra.ramos@rci.rogers.com. No part of this CE lesson may be reproduced, in whole or in part, without the written permission of the publisher.

The author, expert reviewers and provider state that they have no real or potential conflict to disclose. This lesson is supported by an unrestricted grant from Genpharm Inc.



TO ANSWER THIS CE LESSON ONLINE

If currently logged into our ONLINE CE PROGRAM, please return to the "Lessons Available Online" Page and click on "Link to questions" for this CE Lesson.

If not logged in but already registered to our ONLINE CE PROGRAM, please click here:
<http://ce.pharmacygateway.com/Pharmacy/login/index.asp>

If you have not registered for our ONLINE CE PROGRAM and wish to answer online, please click here:
<http://ce.pharmacygateway.com/Pharmacy/login/adduser.asp>

If you have any questions. Please contact:

Pharmacy Practice, Pharmacy Post, Novopharm CE Compliance Centre, More CCCEP-approved CE's, or Tech Talk (English and French CE's)
Mayra Ramos
Fax: (416) 764-3937 or
email: mayra.ramos@rci.rogers.com

Quebec Pharmacie and L'actualite Pharmaceutique
Stephane Paradis
Fax: (514) 843-2183
email: stephane.paradis@rci.rogers.com