Current Treatments For Obesity

Jointly sponsored by The Dulaney Foundation and *Diabetic Microvascular Complications Today*.
Release Date: March 2005. Expiration Date: March 31, 2006.
This continuing medical education activity is supported by an unrestricted educational grant from Eli Lilly and Company.

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STATEMENT OF NEED

Approximately 61% of adults in the United States are obese or overweight, an epidemic that may overtake smoking as the top preventable cause of death. Generally, obesity is most prevalent in people between the ages of 20 and 60 years. In addition, childhood rates of obesity are growing and are especially high among non-Hispanic blacks and Mexican-Americans.

Obesity is also a worldwide epidemic, as 300 million people – or 8.2% of the global population – have the condition, according to the World Health Organization (WHO).

TARGET AUDIENCE

This activity is designed for primary care physicians, nurse practitioners and other clinicians, in order that they may familiarize themselves with the options available for the treatment of obesity.

LEARNING OBJECTIVES

After successful completion of this program, the participant should be able to:

- discuss the impact of obesity in our society;
- list the current nonpharmacologic interventions available to patients to help treat obesity;
- review the over-the-counter products currently available for the treatment of obesity and overweight;
- itemize the prescription medications currently available for the treatment of obesity and overweight;
- discuss medications that are on the horizon for the treatment of obesity and overweight.

METHOD OF INSTRUCTION

Participants should read the learning objectives and CME program in their entirety. After reviewing the material, they must complete the self-assessment test, which consists of a series of multiple-choice questions.

Participants have a choice of completing this activity online, by visiting www.diabeticmctoday.com, or by using the forms following this activity.

Upon completing this activity as designed and achieving a passing score of 70% or higher on the self-assessment test, participants will receive a CME credit letter awarding AMA/PRA category 1 credit following receipt of the registration and evaluation materials.

The estimated time to complete this activity as designed is 1 hour.

ACCREDITATION

This activity has been planned and implemented in accordance with the essentials and standards of the ACCME through the joint sponsorship of The Dulaney Foundation and *Diabetic Microvascular Complications Today*.

DISCLOSURE

In accordance with the disclosure policies of The Dulaney Foundation and to conform with ACCME and FDA guidelines, all program faculty are required to disclose to the activity participants: 1) the existence of any financial interest or other relationships with the manufacturers of any commercial products/devices, or providers of commercial services, that relate to the content of their presentation/material or the commercial contributors of this activity; and 2) identification of a commercial product/device that is

unlabeled for use or an investigational use of a product/device not yet approved.

FACULTY DISCLOSURE DECLARATIONS

None.

FACULTY CREDENTIALS

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INTRODUCTION

Obesity is the excessive accumulation of body fat. While there are numerous ways to accurately measure body fat, they are expensive and rarely used. The easiest and simplest method to measure body fat is to use the correlation of weight and height to calculate body mass index (BMI).

To determine BMI, divide a patient's weight in kilograms by height in meters squared (kg/m^2). This method is widely accepted in the medical community. Generally, a patient with a BMI <18.5 kg/m^2 is considered underweight, a BMI ≥25 overweight, and a BMI ≥30 obese (Table 1).

PREVALENCE OF OBESITY

Obesity and overweight are widespread, encompassing about 61% of the US population. Of this figure, it is estimated that 34% are overweight and 27% are obese. The prevalence has risen from 46% in the 1970s to 54% in the 1980s. In fact, overweight and obesity will soon overtake smoking as the top preventable causes of death in this country. The prevalence of obesity is generally the greatest in the population aged 20 years to 60 years.

Childhood obesity is a growing problem in the United States, especially among non-Hispanic blacks and Mexican-Americans. The WHO has estimated that 8.2% of the global population (300 million people) is obese.

TABLE 1. BODY WEIGHT CLASSIFICATION

Classification	Body mass index (BMI)(kg/m^2)
Underweight	<18.5
Normal	18.5-24.9
Overweight	25-29.9
Obese	>30

CAUSES

Many causes have been identified as contributors to this growing problem. Energy intake exceeds energy expenditure in many people. Increased access to fast-food restaurants, high-calorie foods and larger portion sizes, combined with less physical activity at home and in the work place, Americans have difficulty maintaining a healthy weight.

RISKS AND COSTS

Numerous health risks and costs are linked to obesity. In addition to the weight or mass enlarged fat cells produce, the secretion of fatty acids and peptides also produce problems. The resulting disorders linked to obesity include hypertension, stroke, heart disease, hyperlipidemia, type 2 diabetes, osteoarthritis, mood and sleep disorders, eating disorders, gout and gall bladder disease, as well as breast, endometrial and colon cancers.

An estimated 3% to 7% of all health care costs can be attributed directly to overweight and obesity. These numbers total billions of dollars per year (Table 2). Additionally, experts say that approximately 280,000 to 325,000 preventable deaths occur each year as a result of these conditions.

WHO TO TREAT

What do we do about obesity? The US government has determined that obesity is a condition for which Medicare will cover treatment. This is a major step toward treating obesity as a medical illness and eliminating the stigma associated with the condition. Few guidelines have been developed regarding whom to treat and what treatment options to use. Lifestyle modifications should be suggested to all overweight individuals.

Most experts agree that pharmacologic treatment is indicated for individuals with a BMI >30 or a BMI >27 with two or more associated comorbidities. Pharmacotherapy is also recommended for women with a waist circumference of >35 inches and ≥40 inches for men. It is important that patients have a realistic understanding of the goals of pharmacologic treatment. It has been proven that even a modest weight reduction, 5% to 10%, can improve cardiovascular risk factors and obesity-related comorbidities.

NONPHARMACOLOGIC TREATMENTS

Diet and exercise are the mainstays of nonpharmacologic treatment. Even though nearly 30% of men and 45% of

women say they are trying to lose weight, only 20% claim to be exercising and restricting food intake.

Studies have shown that by reducing caloric intake by 500 to 1,000 kcal below the intake required to maintain a person's current weight, individuals can lose about 1 lb per week. Adding exercise to the regimen may not appear to cause significantly greater weight loss, however, those individuals who exercise are more likely to stick to their weight-loss plan. Exercise also decreases the incidence of comorbidities. It is best to recommend that patients start slowly with an exercise plan. They can feel better and see results with as little as 20 minutes of moderate exercise 3- to 4 days per week.

Fad diets often make it difficult for patients to decide what diet will work best for them. Low-carbohydrate diets, such as Atkins and South Beach, appear to cause greater reductions in weight during the first 6 months compared with traditional low-fat diets. However, at 6 months, weight loss appears to even out. Beyond 6 months, patients on low-fat diets appear to continue to lose weight, while those on low-carbohydrate diets level off and may even begin to regain weight.

Diets that incorporate the support of groups, such as Weight Watchers, appear to work well for many patients long term. Physicians should recommend a diet that a patient is most likely stick with. Diets in which calories are excessively restricted are the ones most likely to fail because they are difficult to maintain.

OTHER FORMS OF TREATMENT

Other nonpharmacologic methods for losing weight include hypnosis, acupuncture and support groups like Overeaters Anonymous. These methods have shown benefit in some individuals. Another method becoming more common is bariatric surgical treatment, or gastric bypass. This surgery should be restricted to those patients with a BMI ≥40 or ≥35 combined with significant comorbidities. This extreme method of weight loss has the greatest long-term success, with at least 80% of patients maintaining a body weight below 10% of their preoperative weight for 10 years. However, the risks involved, including intestinal obstruction and electrolyte imbalances, restrict its use to those with extreme obesity.

OTC and herbal treatments. Deciding on a nonprescription treatment can be daunting for patients, given the number of agents available, the barrage of advertisements from manufacturers and recent scares related to certain over-the-counter (OTC) agents.

A major change in the ingredients of OTC diet supplements arose following the withdrawal of phenylpropanolamine (PPA) from the market and the FDA ban on ephedra. PPA, a sympathomimetic, causes an increased risk for hemorrhagic stroke in women. This risk was even greater for those with hypertension or anorexia/bulimia and those taking other concomitant sympathomimetic agents.

Ephedra, also known as Ma Huang, has been linked with death and is known to cause hypertension, tachycardia, arrhythmias, stroke, seizures and myocardial infarction. The owner of the company Metabolife was charged with lying to the FDA regarding the dangers of the supplement. The agents that are now contained in OTC diet treatments are generally herbal supplements or vitamins and often contain caffeine. A careful review of all OTC treatment ingredients is important.

One should also consider the fact that the FDA does not regulate herbal supplements, and often the dosage found within the product is different from that stated on the label. Even when the dosage is correct on the labeling, recommending a safe and effective dose is challenging, given that very few studies back a product's claim or a pharmacist's recommendation.

Caffeine. The herbal form of caffeine is known as guarana or kola nut. Caffeine is a methylxanthine and is related to theophylline. In some studies, it has been shown to increase lipolysis – circulating fatty acid levels and oxygen consumption – which could explain its potential in weight reduction. However, caffeine can cause an increase in blood pressure and heart rate, especially at higher doses. A safe and recommended dose has not been established, since studies related to caffeine have been small and often were done in conjunction with the administration of ephedrine. Due to the potential risks of hypertension and tachycardia, further studies need to be conducted before caffeine can be recom-

TABLE 2. COST OF OBESITY IN THE UNITED STATES (1995)

Disease	Cost in billions of dollars
Diabetes	32.4
Coronary heart disease	7.0
Osteoarthritis	4.3
Hypertension	3.2
Gallbladder disease	2.6
Colon cancer	1.0
Breast cancer	0.84
Endometrial cancer	0.29
Total	51.63

Source: Primary Care Clinical Office Practice. *2003; 30:281-299.*

mended as a dietary supplement.

Green tea. Green tea is made from the leaves of Camellia sinensis that produce black tea when oxidized. The unoxidized green tea contains catechins, which are believed to cause the greatest antioxidant effect. Catechins are also thought to enhance the sympathetic nervous system at the fat cell level, leading to thermogenesis of brown adipose tissue and potentially causing weight loss. Because green tea also contains caffeine, it is difficult to differentiate whether the effects on weight loss are due to catechins or caffeine. For patients interested in using green tea in its natural liquid form or in the form of a tablet, caution should be exercised in those for whom caffeine is contraindicated or may worsen an existing condition such as hypertension.

Chitosan was originally devloped as a lipid-binding agent, but more recently has become popular for use in individuals wanting to lose weight.

Bitter orange. Citrus aurantium, or bitter orange, is quickly replacing ephedra in OTC diet agents. Its effect, stimulation of thermogenesis of brown adipose tissue, is thought to be similar to that of ephedra at a milder degree. Bitter orange contains the sympathomimetics synephrine and octopamine. Orange juice may contain these sympathomimetics in very small quantities. It is yet to be determined whether this agent is safe and effective, as more products add it to their list of ingredients. For the time being, it is not an agent that should be recommended until further studies have been done.

Capsaicin. There have been reports of patients losing a moderate amount of weight from eating chili peppers regularly. It is believed that weight loss from this method is potentially caused by capsaicin's ability to enhance thermogenesis and stimulate fat oxidation. No large studies have confirmed this.

Fiber. Fiber, such as glucomannan and psyllium, has been studied as a potential weight-loss agent since it was suggested that the recent increases in weight in our country could be attributed to the population's decrease in dietary fiber intake. Patients who were enrolled in the study group of small studies and were given fiber supplements tended to decrease their food intake and feel less hungry than those in the control groups. Overall, short trial results show that minimal weight loss was seen among fiber-supplemented groups. Given these relatively weak findings, recommending fiber as a weight-loss therapy to patients will likely have little benefit. If patients are taking fiber therapy, counsel them to drink plenty of water.

Chitosan. Chitosan is derived from the exoskeletons of crustaceans such as shrimp. It was originally developed as a lipid-binding agent, but more recently chitosan has become popular for use in individuals wanting to lose weight.

It has been claimed to work by blocking fat absorption, much in the same way as orlistat. Advertisements of products containing chitosan claim that precipitation between oils and chitosan can be seen when the two are mixed in vitro, and manufacturers of the products claim that this fat-binding effect, which occurs when patients eat fatty meals, will cause subsequent weight loss. Two studies that looked at fecal fat loss were done comparing chitosan directly with orlistat. Patients taking chitosan had no significant fecal fat loss compared with the orlistat groups, which lost about 30% of their fat intake. It appears that the agent does not have the same in vivo activity as it does in vitro, and it should not be recommended at this time.

Chromium. Chromium picolinate has been touted for aiding weight loss because of its activity on glucose metabolism. Chromium works by increasing glucose uptake in the cells and subsequently oxidizing glucose to carbon dioxide in individuals with chromium-deficient tissues. The recommended dosage of chromium is 50 to 200 mcg/day. In those patients with normal chromium levels, it is unlikely that additional chromium will have any effect on glucose uptake and subsequent weight loss. Furthermore, chromium is poorly absorbed from the gastrointestinal tract, and therefore most of the supplement taken by the individual is expelled unused from the body. Toxicity is also possible if high enough doses are taken. Symptoms of toxicity may include nausea, vomiting, convulsions and coma. For these reasons chromium, especially in high doses, is not recommended for the treatment of obesity.

Laxatives. Any patient wanting to take laxatives as a weight-loss agent should be strongly discouraged from doing so. Long-term use of laxatives has been associated with a decrease in normal bowel function, and individuals may become dependent on the agents for regularity. Laxatives are also associated with dehydration and electrolyte imbalances. One should be leery of any young individuals, especially teenage females, purchasing laxatives at a pharmacy. Strongly discourage their use if it is believed they will be used for weight loss.

Syrup of ipecac. Syrup of ipecac has long been used to induce vomiting in individuals who have ingested a toxic agent. It has not been studied for any potential use in treating obesity. Its use in causing weight loss is a practice seen most frequently in teenagers and young adults. Long-term use in patients with eating disorders has caused a number of fatalities. Toxic cardiac effects when the agent is absorbed may include bradycardia, atrial fibrillation, hypotension and myocarditis. Question individuals as to why they are seeking

the medication before selling it to them in a pharmacy.

PRESCRIPTION TREATMENT OPTIONS

There are three main classes of prescription drugs on the market for the treatment of obesity: mixed noradrenergic-serotenergic agents, noradrenergic agents and absorption-reducing agents (Table 3). The limited number of drugs to treat such a widespread condition may appear disheartening. These agents, however, have been proven to help patients lose weight with minimal side effects. In addition, a number of agents on the horizon may expand patients' choices for weight-loss medications.

Sibutramine. The mixed noradrenergic-serotonergic drug currently on the market is sibutramine (Meridia, Abbott, Abbott Park, Ill). A Schedule IV medication, it works by inhibiting the reuptake of serotonin and norepinephrine, consequently causing a feeling of satiety and leading to an increase in thermogenesis. It differs from the mechanism of action of fenfluramine and dexfenfluramine in that it does not induce the release of serotonin. This induction is believed to have led to fenfluramine's risk for valvular heart disease.

The recommended dose of sibutramine is 10 mg/day for patients with a BMI >30 or a BMI >27 with concomitant risk factors. Patients can take it with or without food. The dose can be increased by 5 mg/day if the patient is not losing weight adequately or lowered by 5 mg/day if the patient has trouble tolerating the drug.

Because of its noradrenergic effects, sibutramine's common side effects are insomnia, constipation and dry mouth. Average increases of 4 mm/Hg systolic and 2 mm/Hg to 4 mm/Hg diastolic blood pressure may also be noted when taking this drug. However, that effect appears to reverse as the patient continues on the medication and loses weight.

Sibutramine is contraindicated in patients with uncontrolled hypertension. Pulse rate also needs to be monitored when initiating sibutramine. Sibutramine has been reported to potentially cause seizures and mydriasis. For these reasons, it should be used with caution in patients with narrow angle glaucoma and a history of seizures. There is the potential for drug interactions when combining sibutramine with selective serotonin reuptake inhibitors, monoamine oxidase inhibitors, dextromethorphan, sumatriptan, meperidine, fentanyl and lithium. Caution should also be used in individuals taking sumatriptan, antidepressants and some opioids.

Orlistat. Orlistat (Xenical, Roche, Nutley, NJ) works by inhibiting gastrointestinal lipase, which in turn decreases the absorption of dietary fat by approximately 30%. Since orlistat works primarily in the intestinal tract, minimal systemic side effects have been reported.

The dosage of orlistat is typically 120 mg and is taken

TABLE 3. PRESCRIPTION MEDICATIONS COMMONLY USED TO TREAT OBESITY

Drug/Brand name	Mechanism of action	Dosage	Schedule	Drug Interactions	Contraindications
Sibutramine/Meridia	Mixed noradrenergic/ serotonergic	5-15 mg/day	IV	SSRIs, MAOIs, sumatriptan, dextromethorphan, meperidine, fentanyl, lithium	Renal/liver dysfunction, substance abuse history, uncontrolled hypertension, CHF, stroke, arrhythmias, CAD, use with caution in glaucoma patients
Orlistat/Xenical	GI lipase inhibitor	120 mg up to 3 times	N/A	Cyclosporine, fat-soluble vitamins, warfarin (indirectly)	Malabsorption disorders cholestasis
Phentermine/Ionamin	Noradrenergic	15-30 mg/day	IV	MAOIs, SSRIs, sibutramine, alcohol, TCAs, CNS stimulants	CVD, hypertension, hyperthyroidism, those taking MAOIs, abuse history

Source: NEJM. *2002;346:591-602.*

with or up to 1 hour after a meal. Since most individuals eat three meals, orlistat is commonly taken three times daily. However, this should be adjusted to the patient's eating habits and the number of meals eaten per day.

> Leptin was discovered in 1994. It sends messages to the hypothalmus regarding energy availability.

Minimal drug interactions have been noted with the use of orlistat. The major interaction noted was the decrease in absorption of vitamins A, D, E, K and beta-carotene. It is recommended that patients take a daily multivitamin either 2 hours before or 2 hours after their dose of orlistat. It is recommended that individuals taking warfarin be closely monitored for alterations in their INR while taking this drug. Orlistat is contraindicated in women who are pregnant or breastfeeding as well as in individuals with malabsorption syndrome or cholestasis.

Phentermin. Phentermine (Ionamin, Celltech, Berks, UK), a Schedule IV noradrenergic drug, has been used for the short-term treatment of obesity since 1959. The FDA states that this medication may be given "for a few weeks." This is typically translated as 10 to 12 weeks, the duration of most phentermine (fen-phen) obesity trials. Phentermine is a sympathomimetic agent that acts by suppressing appetite for 12 to 14 hours following a dose of 15 to 30 mg each morning.

Due to its noradrenergic effects, many of the side effects and contraindications observed with sibutramine are also seen with phentermine. Given the poor press from fen-phen, the potential for abuse, approval for only short-term treatment and the introduction of orlistat and sibutramine, phentermine has lost favor with many physicians.

DRUGS ON THE HORIZON

Leptin. Leptin, a hormone discovered in 1994, sends messages to the hypothalamus regarding energy availability. In individuals with leptin deficiency, severe obesity occurs. Given this discovery, scientists began investigating its use in the treatment of obesity. Although the hormone appeared promising at first, results from recent trials have been disappointing and research has been halted.

Zonisamide and topiramate. Both zonisamide (Zonegran, Elan, Dublin, Ireland) and topiramate (Topamax, Ortho-McNeil, Raritan, NJ) caused weight loss in individuals taking the drugs during antiseizure trials. Both agents are being studied further for their potential use in the treatment of obesity. In recent small trials, patients taking zonisamide or topiramate lost ≥5% of their body weight; however, neurological side effects were relatively problematic and included fatigue, memory/concentration difficulties and paresthesia. Larger studies are needed to assess the safety and efficacy of these medications in the treatment of obesity.

Cannabinoid receptor antagonists. The receptor CB1 is being studied for its regulation of food intake. This receptor is the target for the active compound in marijuana. When CB1 is stimulated, appetite increases. Dronabinol (Marinol, Solvay, Marietta, Ga), a CB1 stimulant, is used to treat cachexia in patients with diseases such as AIDS. An agent that acts as an antagonist to the CB1 receptor is currently being studied, and results have been promising. Decreases in weight have been dramatic. When the agent was withdrawn, however, patients regained some of the lost weight.

Metformin. Metformin, a medication used to treat type 2 diabetes, was recently studied as a potential treatment for obesity. Results were relatively disappointing, with minimal weight loss reported; however, the incidence of diabetes decreased dramatically in obese patients. This agent may find usefulness for obese patients in the treatment of insulin resistance.

The risks and costs of obesity are extraordinary, and it is imperative that we treat this condition. In the battle against obesity, along with lifestyle modifications, we have available medication options that can be used to reduce weight and help prevent further complications, such as diabetes.

Agents currently on the horizon may further help the cause. With the recent acknowledgment by our government regarding the seriousness of obesity, there is hope that we may one day find a way to control this condition and deter the complications that almost inevitably follow. ■

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CME QUESTIONS

Circle the most appropriate answer in the "ANSWER SECTION" on the following page.

1. A BMI of 27 would place a patient in which classification?
a. Underweight
b. Desired weight
c. Overweight
d. Obese

2. Which of the following diseases may be directly caused by obesity in an individual?
a. Lung cancer
b. Gout
c. Benign prostatic hyperplasia (BPH)
d. Rheumatoid arthritis

3. Pharmacologic treatment for obesity should be considered for individuals with a BMI of:
a. <18.5
b. >25
c. >27
d. >30

4. Risk of heart disease in obese individuals may be reduced with a weight loss of:
a. 5%
b.15%
c. 20%
d. ≥25%

5. The best diet to recommend to patients is:
a. Low-carbohydrate diet
b. Low-fat diet
c. Diet that incorporates a support group
d. The one the patient will adhere to

6. Phenylpropanolamine (PPA) was withdrawn from the market due to its association with causing:
a. Myocardial infarction (MI)
b. Excessive somnolence
c. Ischemic stroke
d. Hemorrhagic stroke

7. It has been proposed that green tea causes weight loss in individuals through which one of the following mechanisms of action?
a. Anorexia
b. Thermogenesis of adipose tissue
c. Satiety
d. Binding to fat thereby decreasing absorption

8. Psyllium has been proposed to help individuals lose weight by which one of the following mechanisms of action?
a. Increase glucose uptake by the cells
b. Thermogenesis of adipose tissue
c. Satiety
d. Binding to fat thereby decreasing absorption

9. Chitosan has been proposed to help individuals lose weight by which one of the following mechanisms of action?
a. Increase glucose uptake by the cells
b. Thermogenesis of adipose tissue
c. Satiety
d. Binding to fat, thereby decreasing absorption

10. Which one of the following has been derived from the exoskeleton of crustaceans?
a. Chromium picolinate
b. Camelia sinensis
c. Chitosan
d. Guarana

REGISTRATION/EVALUATION FORM: CURRENT TREATMENTS FOR OBESITY

To obtain AMA/PRA category 1 credit, you must:

- Read the learning objectives and the CME article and complete the self-assessment test.
- Photocopy and complete this registration/evaluation form and record your test answers in the Answer Section below.
- Send the Registration/Evaluation form to **The Dulaney Foundation, Post Office Box 25271, Tampa, FL 33622-5271, or fax to 813-258-8002.**
- Retain a copy of your test answers. Your answer sheet will be graded, and if you achieve a passing score of 70% or better, you will receive a CME credit letter awarding AMA/PRA category 1 credit within 4 weeks. If you do not achieve a passing score, you will be notified and offered the opportunity to complete the activity again.

ANSWER SECTION

Circle the best answer for each question on page 44.

1. A B C D	2. A B C D	3. A B C D	4. A B C D	5. A B C D
6. A B C D	7. A B C D	8. A B C D	9. A B C D	10. A B C D

REGISTRATION FORM

First name _____ Last name _____ Degree (MD, PhD) _____

Specialty _____

Institution or practice name _____

Address _____

City _____ State _____ Zip Code _____ Country _____

Telephone _____ Fax _____ E-mail address _____

The processing fee has been underwritten by an unrestricted educational grant from Eli Lilly and Company.

I attest that I have completed this activity as designed and I am claiming ____ (up to 1 credit) AMA/PRA category 1 credit.

Signature _____ Date _____

Credit for this activity is available until March 31, 2006.

The planning and execution of useful and educationally sound continuing education activities are guided in large part by input from participants. Please assist us in evaluating the effectiveness of this activity and make recommendations for future educational offerings by completing this evaluation form. Your response will help ensure that future programs are informative and meet the educational needs of all participants. Please note: CME credit letters and long-term credit retention information will only be issued upon receipt of this completed evaluation. Thank you for your cooperation.

OBJECTIVES

After successful completion of this program, you should be able to:

• discuss the impact of obesity in our society.	5	4	3	2	1
• list the current nonpharmacologic interventions available to patients to help treat obesity.	5	4	3	2	1
• review the over-the-counter products currently available for the treatment of obesity and overweight.	5	4	3	2	1
• itemize the prescription medications currently available for the treatment of obesity and overweight.	5	4	3	2	1
• discuss medications that are on the horizon for the treatment of obesity and overweight.					

(Please circle the number that is most accurate; 5 represents strongly agree and 1 represents strongly disagree.)

OVERALL EVALUATION

• The information presented increased my awareness/understanding of the subject.	5	4	3	2	1
• The information presented will influence how I practice.	5	4	3	2	1
• The information presented will help me improve patient care.	5	4	3	2	1
• The faculty demonstrated current knowledge of the subject.	5	4	3	2	1
• The program was educationally sound and scientifically balanced.	5	4	3	2	1
• The program avoided commercial bias or influence.	5	4	3	2	1
• Overall, the program met my expectations.	5	4	3	2	1
• I would recommend this program to my colleagues.	5	4	3	2	1

(Please circle the number that is most accurate; 5 represents strongly agree and 1 represents strongly disagree.)

- If you anticipate changing one or more aspects of your practice as a result of your participation in this activity, please provide a brief description of how you plan to do so: _____
- Please provide any additional comments pertaining to this activity (positive and negative) and suggestions for improvements: _____

_____

- Please list any topics you would like to see addressed in future educational activities: _____

_____