New Approaches to Weight Loss: Biology Linked to Behavior

Learning Assessment Questions

1. **What is the role of leptin as an adiposity signal?**

   A. Inhibit neuropeptide Y (NPY)/Agouti-related peptide (AgRP) neurons and stimulate the release of pro-opiomelanocortin (POMC)***

   B. Stimulate NPY/AgRP neurons and stimulate the release of POMC

   C. Inhibit NPY/AgRP neurons and inhibit the release of POMC

   D. Stimulate NPY/AgRP neurons and inhibit the release of POMC

   **Correct answer: A**

   Leptin promotes weight loss through inhibition of NPY/AgRP neurons and stimulates the release of POMC.

2. **The mesolimbic dopamine circuit is important in obesity, often referred to as which of the following:**

   A. Insulin feedback loop

   B. Leptin signal inhibitor

   C. Negative response

   D. Reward system***

   **Correct answer: D**

   The mesolimbic dopamine circuit is referred to as the *reward system*.

3. **The evidence for critical question 1 (CQ1) demonstrated which one of the following:**
A. Bariatric surgery does not promote lasting weight loss

B. Behavioral therapy promotes long-lasting and permanent weight loss

C. Weight loss reduces the risk of type 2 diabetes for some adults***

D. Low-fat, vegan style diets do not promote weight loss

**Correct answer: C**

CQ1 explored the importance of weight reduction in affecting cardiovascular risk factors, such as diabetes.

4. Which of the following weight loss products does not act through the central nervous system:

A. Combination naltrexone HCl–bupropion HCl

B. Nonprescription orlistat***

C. Lorcaserin

D. Combination phentermine–topiramate

**Correct answer: B**

Combination naltrexone HCl–bupropion HCl, lorcaserin and combination phentermine–topiramate promote weight loss through central nervous system activity. Nonprescription orlistat promotes weight loss by blocking absorption of dietary fat.

5. A physician asks the pharmacist to recommend a prescription weight loss product that is not a controlled substance. Which of the following can be recommended:

A. Nonprescription orlistat

B. Lorcaserin
C. Combination phentermine–topiramate

D. Combination naltrexone HCl–bupropion HCl***

**Correct answer: D**

Nonprescription orlistat is available over-the-counter. Prescription orlistat and combination phentermine–topiramate are both categorized as CIV controlled substances. Combination naltrexone HCl–bupropion HCl is the only FDA-approved noncontrolled weight loss prescription product available at this time.

6. **What is the most realistic response the pharmacist can give to the patient who asks about losing 50 pounds in 1 month for a class reunion?**

A. This goal is realistic and nonprescription orlistat can help achieve this goal

B. This goal is unrealistic because healthy weight loss is a gradual and slow process***

C. This goal is realistic and prescription medications will help attain this goal without lifestyle changes

D. This goal is realistic and can be reached if he reduces his caloric intake by 50 to 100 calories daily for 1 month

**Correct answer: B**

This patient’s goal is not realistic because weight loss is a gradual, slow process. Patients cannot expect more than a 1 to 2 pound weight loss per week.

7. **One aspect of weight loss is to set realistic weight loss goals and provide rewards for meeting them. Which of the following is the best reward:**

A. Attend a movie that the individual is looking forward to seeing***

B. Take a week off from exercises to let the body rest
C. Go with the family to a buffet

D. Eating one’s favorite desserts for several days

**Correct answer: A**

When one's weight loss goals are met, the most appropriate response is to continue the successful lifestyle interventions that led to the weight loss. Rewards should not work against weight loss, such as ignoring exercise or dietary restrictions.

8. **An individual asks about weight loss. The pharmacist notes that he or she is taking levetiracetam for seizures. Which of the following is contraindicated for those taking this medication:**

A. Nonprescription orlistat

B. Lorcaserin

C. Combination phentermine–topiramate***

D. Combination naltrexone HCl–bupropion HCl

**Correct answer: C**

Combination phentermine–topiramate is contraindicated for those taking seizure medications. The other 3 medications do not carry this warning.

9. **What advice in regard to dietary supplements should the pharmacist give those who purchase nonprescription orlistat?**

A. Avoid vitamins containing pyridoxine while taking nonprescription orlistat

B. Double the recommended amount of calcium while taking nonprescription orlistat

C. Do not take iron-containing supplements within 2 hours of taking nonprescription orlistat
D. Take a daily multivitamin while taking nonprescription orlistat***

**Correct answer: D**

Nonprescription orlistat affects absorption of oil-soluble vitamins, so patients are advised to take a daily multivitamin while taking the nonprescription over-the-counter orlistat.

10. Pharmacists should warn patients to immediately visit a physician if they experience a sudden decrease in vision when dispensing which of the following:

A. Combination phentermine–topiramate***

B. Lorcaserin

C. Nonprescription orlistat

D. Combination naltrexone HCl–bupropion HCl

**Correct answer: A**

Combination phentermine–topiramate increases the risk of glaucoma and patients must be warned to immediately visit a physician if they notice a sudden decrease in vision.