แบบฝึกทบทวน SIID355 Topic 2 Obesity

จัดทำโดยวิชาการรุ่น 134 เพื่อทบทวนความรู้รายบท (Optional) ไม่ได้มีความเกี่ยวข้องกับข้อสอบจริง

และ หากมีข้อสงสัยในเฉลย/พบจุดผิดพลาดสามารถแจ้งมาได้ทางไลน์วิชาการ Premium ครับ

Recall Questions

1. Which of the following is *not* one of the WHO criteria for defining obesity in adults?
A. BMI ≥ 30 kg/m² in Asian
B. Waist-to-hip ratio ≥ 0.9 in men
C. Waist circumference ≥ 80 cm in women
D. Body fat percentage > 25% in males

Answer: D
(*WHO does not use body fat % in routine obesity classification*)

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2. What is the primary site of leptin production?
A. Liver
B. Hypothalamus
C. Adipose tissue
D. Pancreas

Answer: C
(*Leptin is secreted primarily by adipocytes*)

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3. What clinical measurement is used to assess central obesity risk, particularly in Asian populations?
A. BMI only
B. Waist circumference
C. Waist-to-height ratio
D. Skinfold thickness

Answer: B
(*Waist circumference is emphasized in Asian-specific criteria*)

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4. Which hormone is secreted by the gut and contributes to decreased appetite?
A. Ghrelin
B. Leptin
C. GLP-1
D. Orexin

Answer: C

(GLP-1 is released from L cells, delays gastric emptying, lowers blood glucose, reduces appetite)

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5. Which of the following peptides is an orexigenic neuropeptide co-expressed with NPY in the arcuate nucleus?
A. POMC
B. CART
C. AGRP
D. GLP-1

Answer: C
(AGRP is co-expressed with NPY in orexigenic neurons of the arcuate nucleus, promoting appetite)

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6. What is the major *modifiable* determinant of total daily energy expenditure?
A. Non-exercise activity thermogenesis (NEAT)
B. Basal metabolic rate (BMR)
C. Thermic effect of food
D. Exercise

Answer: A
(Although BMR is the largest component of total daily energy expenditure (~60–70%), it is relatively fixed and not easily modified in the short term. NEAT, which includes low-intensity, spontaneous physical activities like standing, fidgeting, or walking, is a highly variable and modifiable component — even under "resting" or non-exercise conditions)

Analytical Questions

7. All of these hormones/adipokines rises before breakfast <u>except</u>?
A. Cortisol
B. Ghrelin
C. PYY
D. Growth hormone

Answer: C

*(**Cortisol:** Rises in the early morning hours and peaks before waking/breakfast as part of the diurnal rhythm. **Ghrelin:** Increases before meals and drops after food intake, stimulating hunger.*
***Growth hormone:** Peaks during early fasting and sleep, rising together with Ghrelin*
***PYY:** rises after food intake, in response to nutrients—especially lipids—in the gut)*

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8. A 40-year-old male has a waist circumference of 91 cm, triglycerides of 160 mg/dL, HDL of 42 mg/dL, and FBS of 104 mg/dL. Metabolic syndrome is suspected.

Based on the NCEP-ATP III criteria, which of the following is <u>not</u> a diagnostic criterion in <u>this man</u>?
A. Waist circumference
B. Triglyceride
C. HDL
D. Fasting blood sugar (FBS)

Answer: C

(WC ≥90 cm (Asian male), Triglyceride ≥150 mg/dL, FBS ≥100 mg/dL, HDL <40 mg/dL (male))

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9. A person undergoes fasting. Initially, NE and GH levels increase, but after 72 hours they drop. What happens to BMR during this later phase of fasting?
A. Decreases
B. Remains constant
C. Continues to increase
D. Becomes dependent on diet

Answer: A
(*BMR drops after 72 hours of fasting due to decreased NE and GH production)*

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10. A patient consumes a low-protein, high-carbohydrate diet.
Which hormone response is most likely increased postprandially?
A. Ghrelin and PYY
B. GLP-1 and insulin
C. CCK and glucagon
D. Leptin and orexin

Answer: B
*(Increase blood glucose from High-carbohydrate diet intake stimulates GLP-1 and insulin release***)**

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11. A person switches to a Mediterranean diet. Which of the following expected changes is *least* supported by the data presented?
A. Increased HDL
B. Decreased blood pressure
C. Reduced triglycerides
D. Increased fasting glucose

Answer: D
*(The Mediterranean diet is associated with decreased fasting glucose and HbA1c, not an increase***)**

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12. Which of the following factors shows the strongest correlation with DM type II

A. BMI
B. Visceral adipocyte size
C. Subcutaneous fat thickness
D. Total body fat percentage

Answer: B

(visceral adipocyte size — particularly their area, perimeter, width, and height — shows the strongest positive correlation with insulin resistance)

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13. Which of the following best describes the role of leptin in appetite regulation as integrated through the arcuate nucleus?

A. Activates NPY/AGRP neurons in the arcuate nucleus, reducing hedonic food intake.
B. Stimulate POMC/CART neurons, reducing satiety signaling via the homeostatic system.
C Suppress NPY/AGRP neurons, promoting satiety for long-term energy balance.
D. Secreted at periphery and acts on the hedonic system to increase reward-driven eating.

Answer: C.

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14. Which of the following *does not increase* basal metabolic rate (BMR)?

A. High protein diet with frequent weight training
B. Core body temperature rises 0.5 degree Celsius
C. Short-term exposure to hot temperatures
D. Elevated thyroxine levels despite low TSH

Answer: C

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15. The metabolism-boosting meal plan with no carbohydrates and one cheat day per week is most strongly *not recommended* in which of the following conditions?

A. Type 1 diabetes mellitus with insulin therapy
B. BPH patient taking alpha adrenergic-blockers
C. Secondary Hypothyroidism
D. When used together with intermittent fasting

Answer: A

(Type 1 DM, carbohydrate restriction can be dangerous due to the risk of severe hypoglycemia in the context of insulin therapy and impaired endogenous glucose regulation.)
