

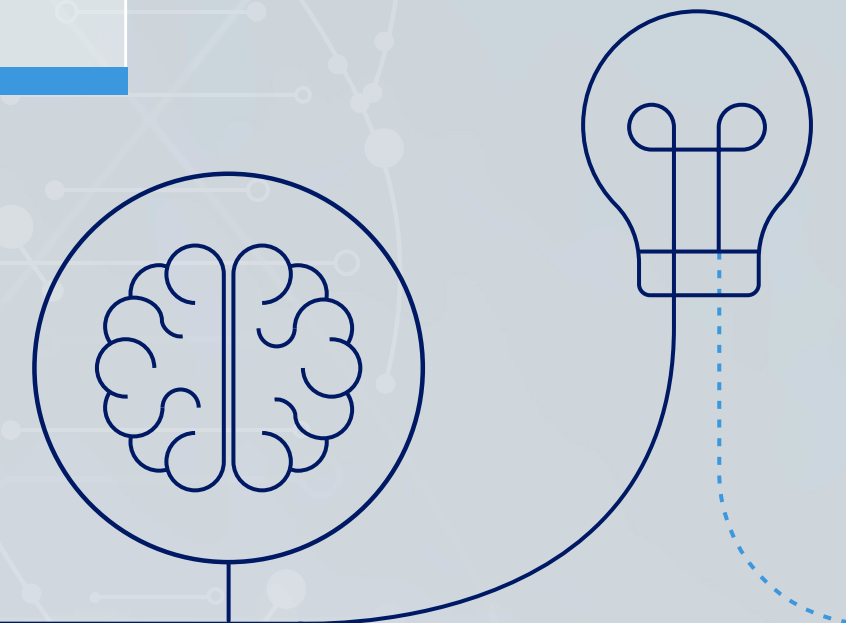
Time to put your knowledge to the test!

Welcome to the **Module 4** quiz on the effects of amylin on **appetite regulation**. This is your chance to apply what you have learned and see how well you understand the material

The quiz consists of **7 questions** in total

Please start by pressing the button on the right. Good luck!

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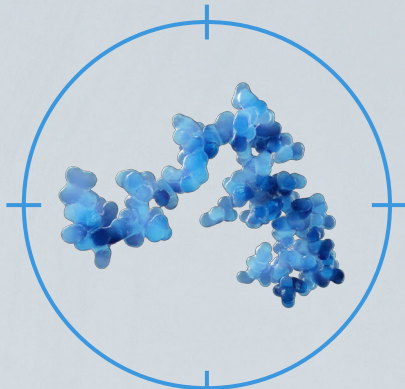




Question 1

In humans, what are increased plasma levels of amylin correlated with?

- A.** Reduced hunger sensation, reduced desire to eat, and increased satiety
- B.** Increased satiety
- C.** Reduced hunger sensation





Question 1

In humans, what are increased plasma levels of amylin correlated with?

A. Reduced hunger sensation, reduced desire to eat, and increased satiety

B. Increased satiety

C. Reduced hunger sensation



Your answer is correct!

Increased amylin levels in plasma are correlated with reduced hunger sensation and desire to eat as well as increased satiety, increasing the time to next meal

Eller LK et al. *Clin Endocrinol (Oxf)* 2008;68:890–7.

NEXT >



Question 1

In humans, what are increased plasma levels of amylin correlated with?

A. Reduced hunger sensation, reduced desire to eat, and increased satiety

B. Increased satiety

C. Reduced hunger sensation

Your answer is incomplete

Increased satiety is correlated with increased amylin levels in plasma

However, increased plasma amylin is also associated with additional subjective measures of appetite, such as reduced hunger sensation and reduced desire to eat

Eller LK et al. *Clin Endocrinol (Oxf)* 2008;68:890–7.

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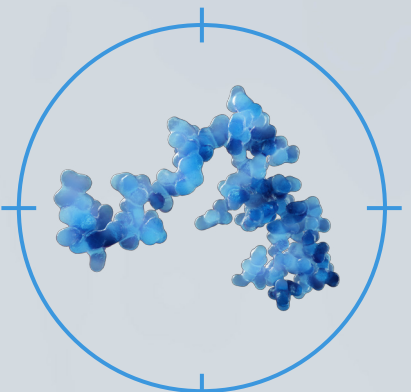
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Question 1

In humans, what are increased plasma levels of amylin correlated with?

A. Reduced hunger sensation, reduced desire to eat, and increased satiety

B. Increased satiety

C. Reduced hunger sensation

Your answer is incomplete

Reduced hunger sensation is correlated with increased amylin levels in plasma

However, increased plasma amylin is also associated with additional subjective measures of appetite, such as reduced hunger sensation and reduced desire to eat

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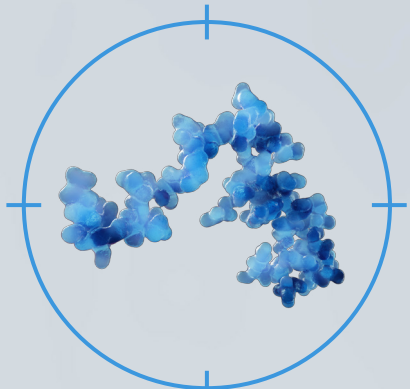
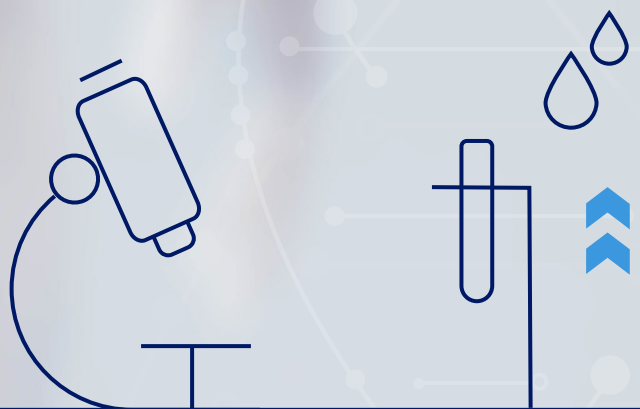
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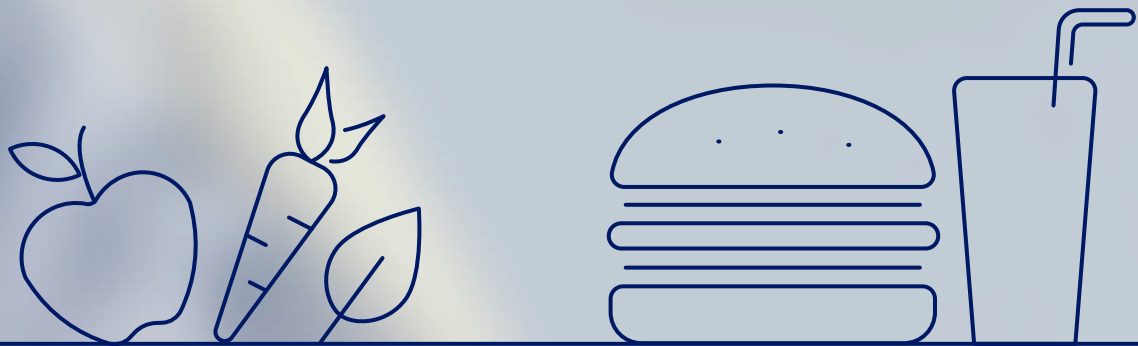
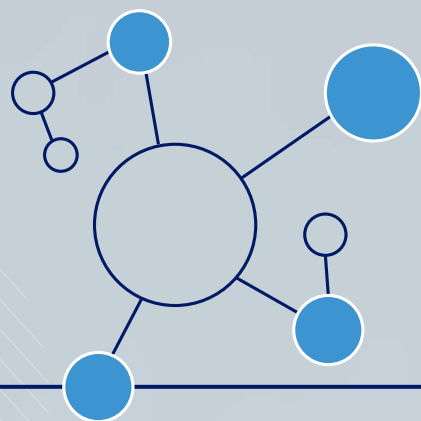


Question 2

True or false: Amylin supports regulation of food intake via homeostatic and hedonic processes in the brain.

A. True

B. False



Question 2

True or false: Amylin supports regulation of food intake via homeostatic and hedonic processes in the brain.

A. True

B. False



Your answer is correct!

Reduced food intake in response to amylin is mediated via homeostatic processes, or regulation of energy intake and expenditure; and hedonic processes, or reward and pleasure-associated eating

Boccia L et al. *Peptides* 2020;132:170366;
Tulloch AJ et al. *Gastroenterology* 2015;148:1205–18.

NEXT >



Question 2

True or false: Amylin supports regulation of food intake via homeostatic and hedonic processes in the brain.

A. True

B. False



Your answer is incorrect

Reduced food intake in response to amylin is mediated via homeostatic processes, or regulation of energy intake and expenditure; and hedonic processes, or reward and pleasure-associated eating

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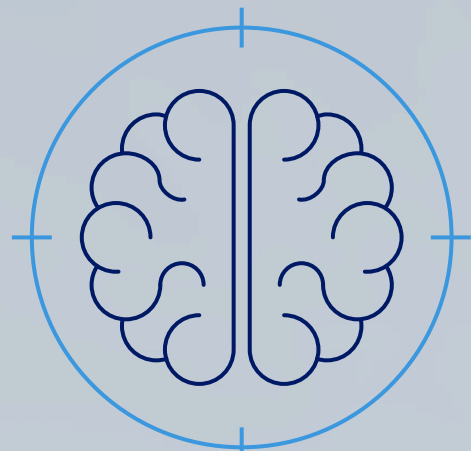
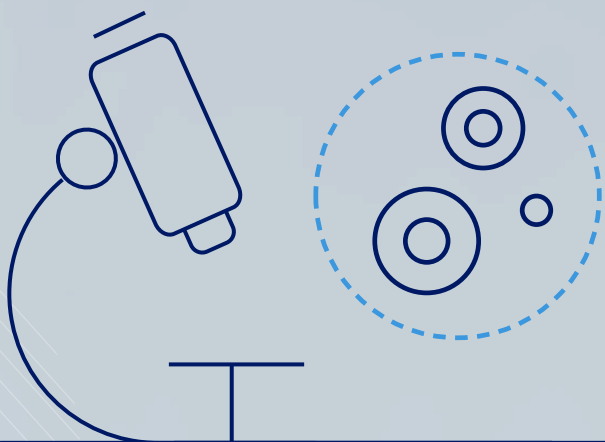
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Question 3

What is a characteristic feature of the area postrema?

- A. It is the only binding site for amylin
- B. It lacks the blood–brain barrier
- C. It is primarily involved in central regulation of appetite



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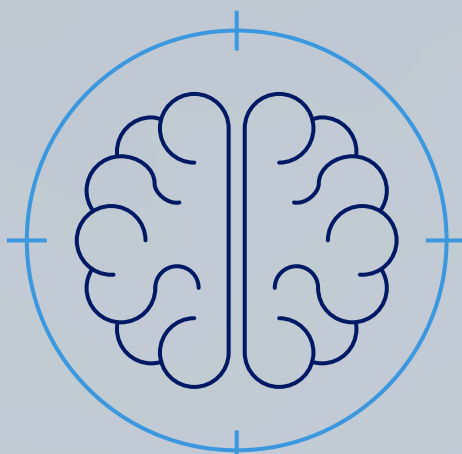
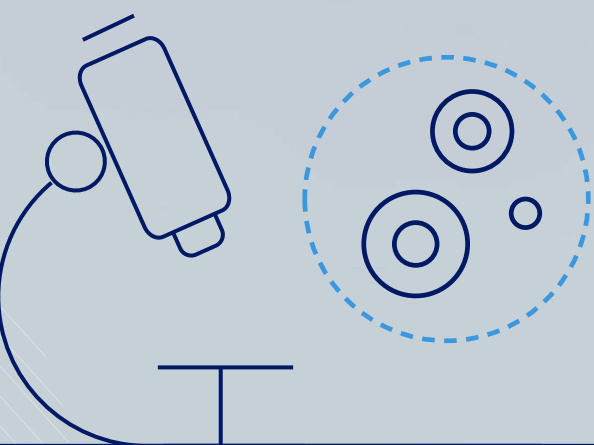
Your answer is incorrect

The area postrema is the primary, not the only, target of amylin. Amylin may also bind the nucleus of the solitary tract, and preclinical studies have shown that amylin may bind deeper brain regions, such as the arcuate nucleus

Boccia L et al. *Peptides* 2020;132:170366; Potes CS, Lutz TA. *Physiol Behav* 2010;100:511–8; Lutz TA et al. *Diabetes* 2018;67:805–17; Zakariassen HL et al. *Basic Clin Pharmacol Toxicol* 2020;127:163–77; Zakariassen HL et al. *Neuropharmacology* 2020;167:107987.

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Question 3

What is a characteristic feature of the area postrema?

- A. It is the only binding site for amylin
- B. It lacks the blood-brain barrier**
- C. It is primarily involved in central regulation of appetite

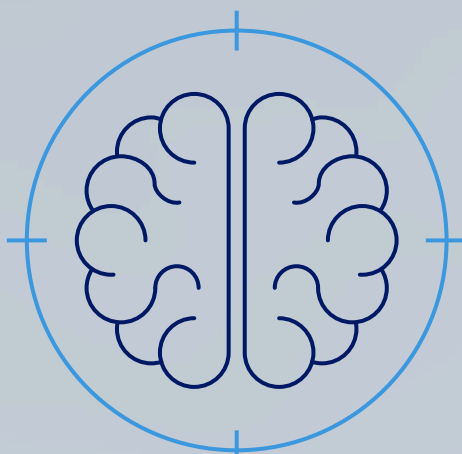
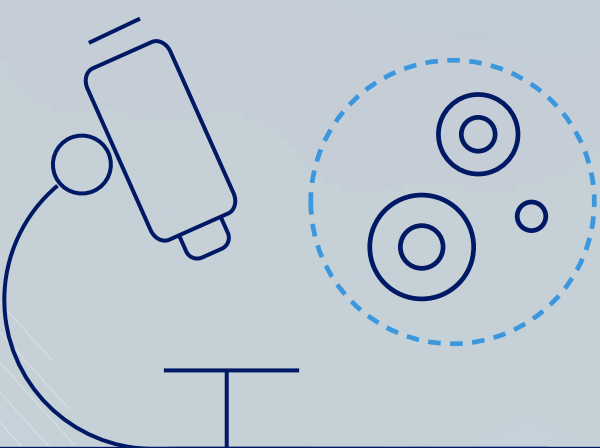


Your answer is correct!

The area postrema is an area within the brainstem that lacks the blood-brain barrier, enabling amylin to quickly bind and induce central appetite regulatory processes

Boccia L et al. *Peptides* 2020;132:170366;
Potes CS, Lutz TA. *Physiol Behav* 2010;100:511–8.

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Your answer is incorrect

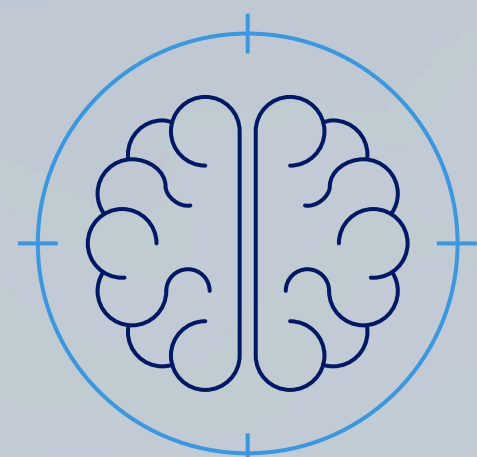
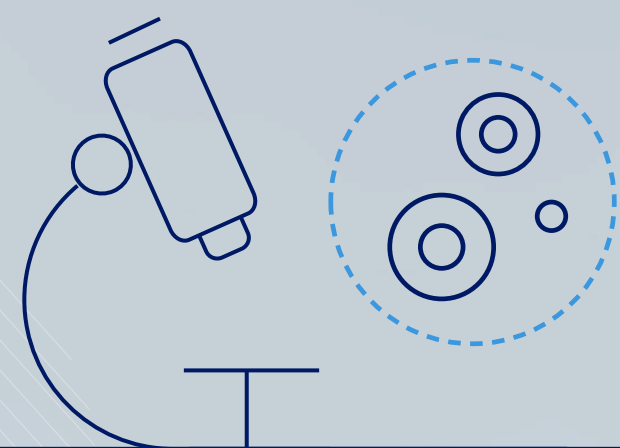
The area postrema is the primary binding site of amylin, but it is not involved in downstream central appetite regulatory processes

The key areas of the brain involved in central appetite regulation are hypothalamus, limbic region, and prefrontal cortex

Boccia L et al. *Peptides* 2020;132:170366;
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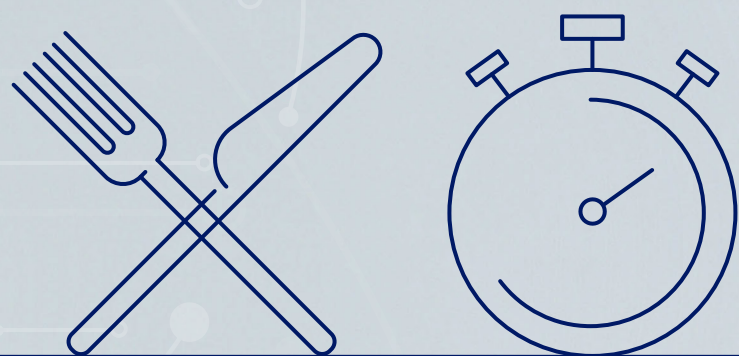
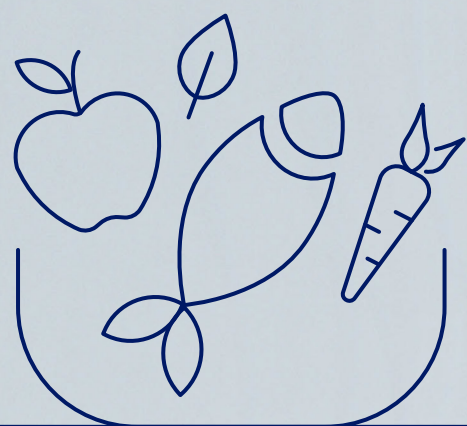
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Question 4

Which of the following effects does amylin **not** have?

- A. Increase feeling of fullness between food intake
- B. Increase feeling of fullness during food intake
- C. Increase feeling of fullness before food intake



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B. Increase feeling of fullness during food intake

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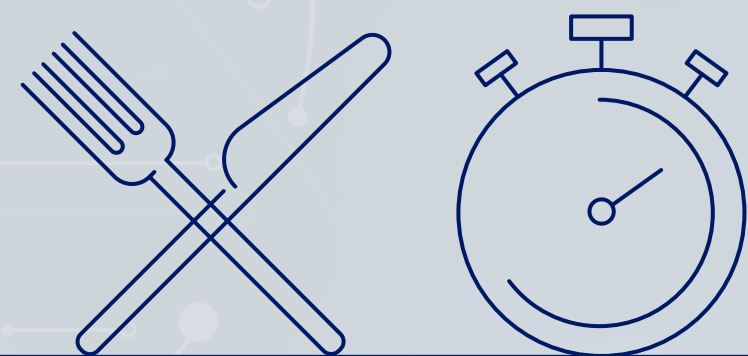
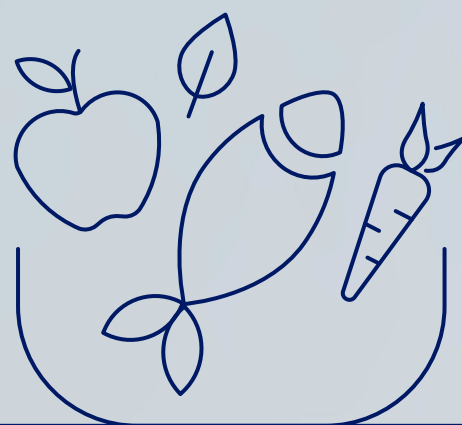
Your answer is incorrect

Amylin levels are negatively correlated with hunger and desire to eat, but positively correlated with satiety. Increased satiety refers to feelings of fullness between meals

Klaassen T, Keszthelyi D. *Lancet* 2021;397:1060–1; Eller LK et al. *Clin Endocrinol (Oxf)* 2008;68:890–7; Lutz TA et al. *Physiol Behav* 1995;58:1197–202; Reidelberger RD et al. *Am J Physiol Regul Integr Comp Physiol* 2001;280:R605–11.

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Question 4

Which of the following effects does amylin **not** have?

A. Increase feeling of fullness between food intake

B. Increase feeling of fullness during food intake

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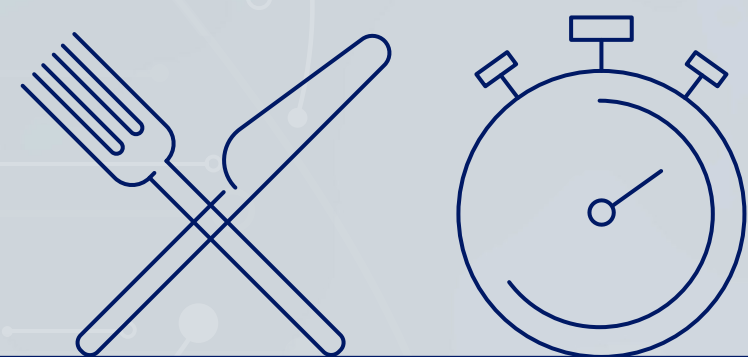
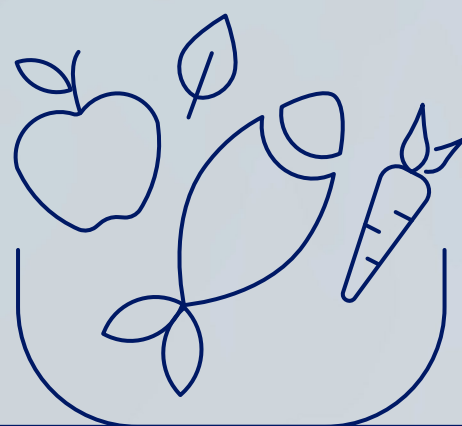
Your answer is incorrect

In preclinical studies, amylin infusion reduces meal size and duration in a dose-dependent manner. Increased satiation refers to feelings of fullness while having a meal. Feeling increasingly full during food intake acts as a termination signal to stop eating

Klaassen T, Keszthelyi D. *Lancet* 2021;397:1060–1; Eller LK et al. *Clin Endocrinol (Oxf)* 2008;68:890–7; Lutz TA et al. *Physiol Behav* 1995;58:1197–202; Reidelberger RD et al. *Am J Physiol Regul Integr Comp Physiol* 2001;280:R605–11.

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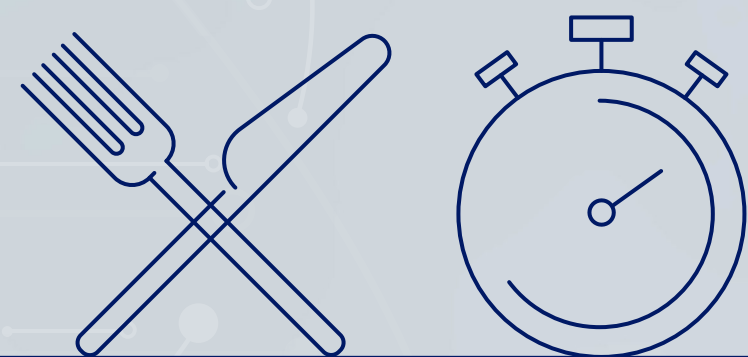
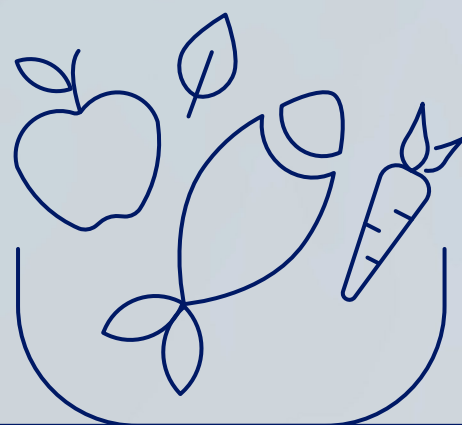


Your answer is correct!

Amylin signaling does not affect feelings of fullness before food intake, as amylin is released in response to nutrients from digested food

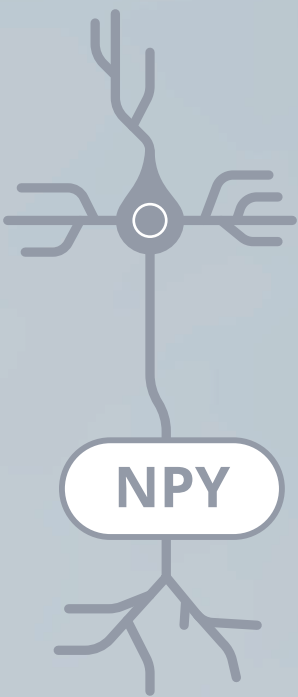
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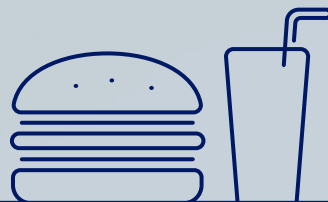
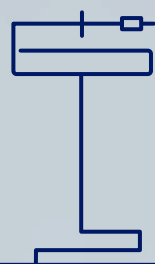
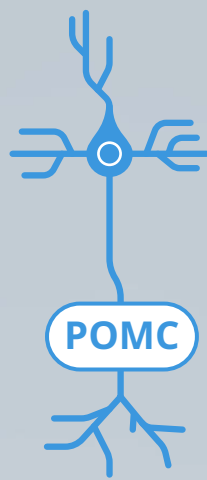
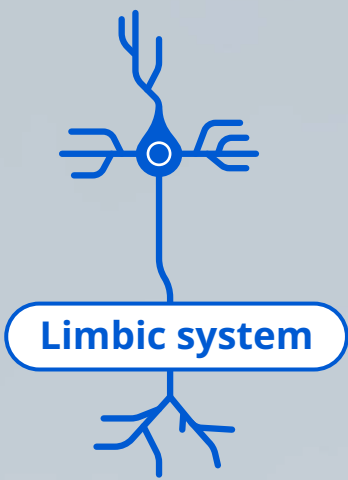
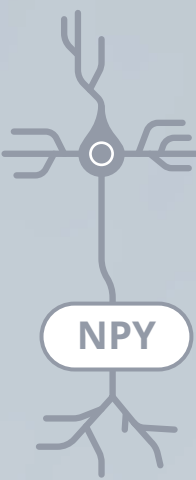
Question 5

Pair the neuron types with the matching regulatory process of food intake.



A. Homeostatic systems–needing food

B. Hedonic systems–wanting food



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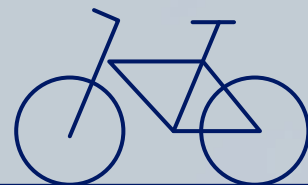
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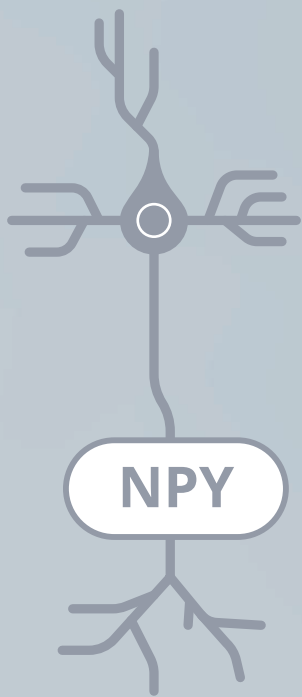
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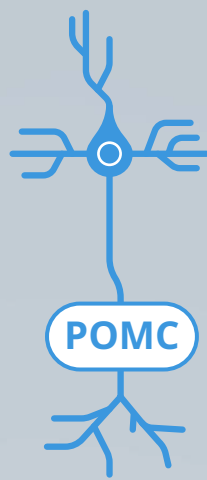
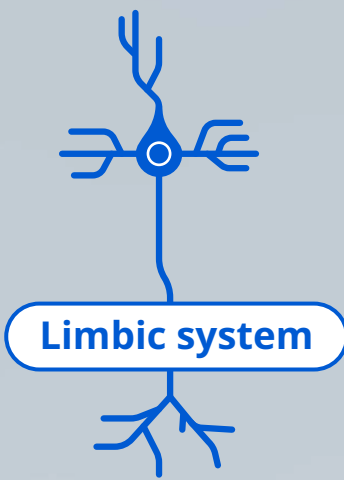
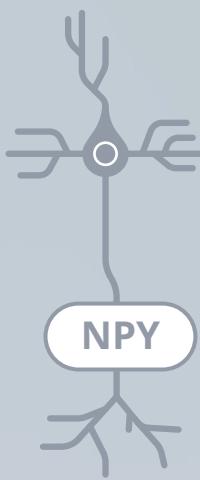
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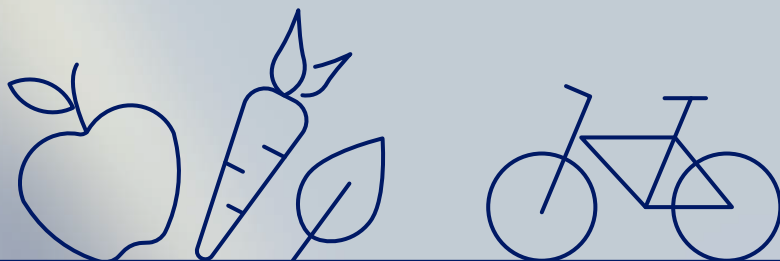
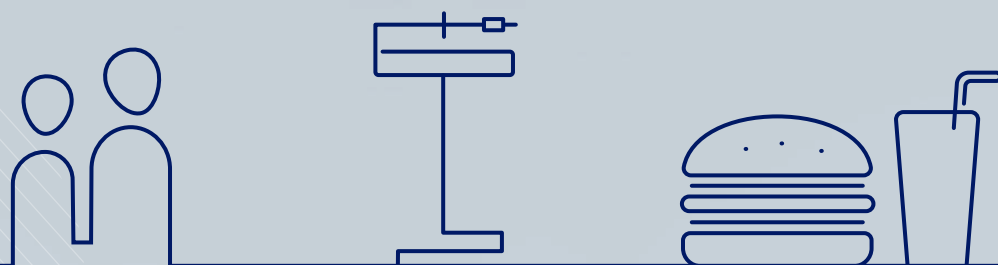


Your answer is correct!

Neurons in the arcuate nucleus, including NPY neurons, regulate homeostatic processes

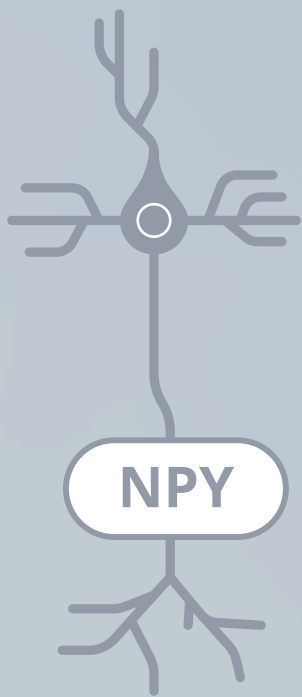
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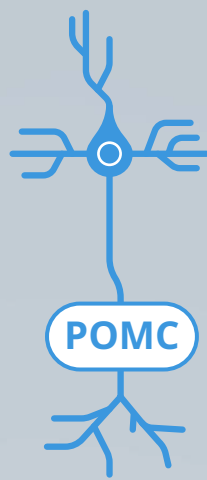
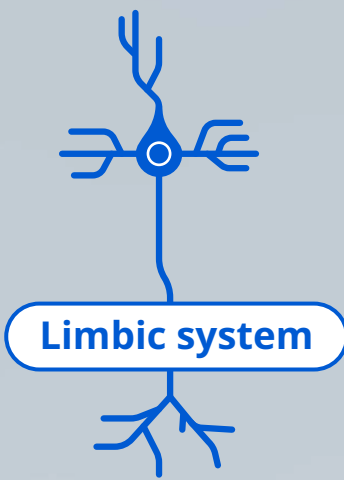
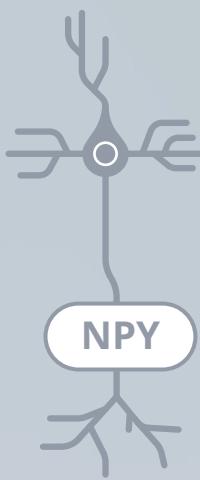
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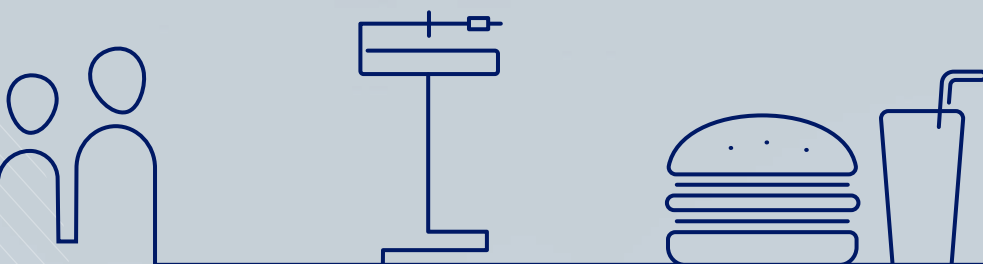
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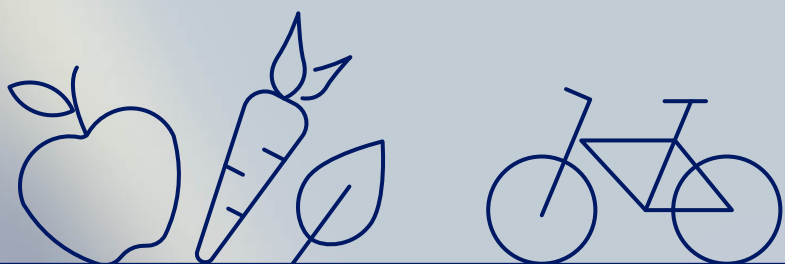
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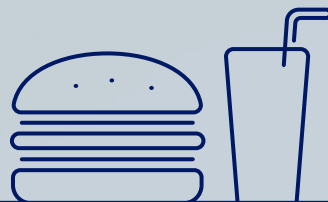
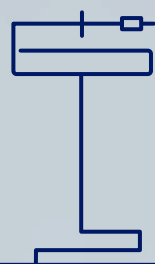
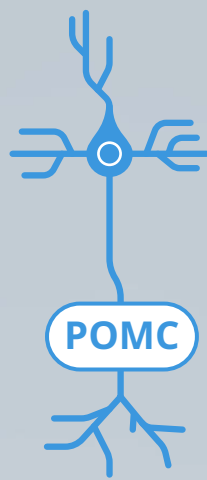
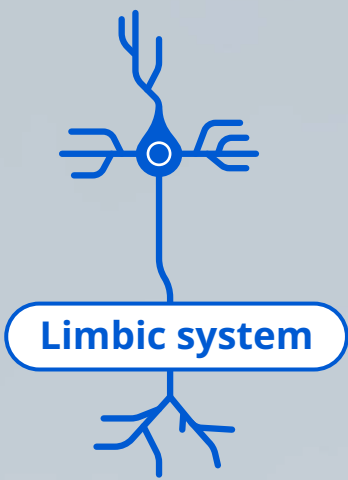
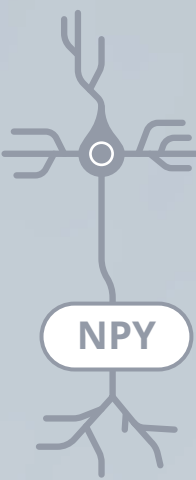
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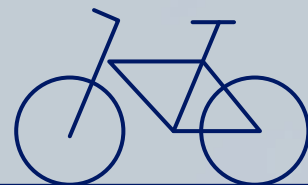
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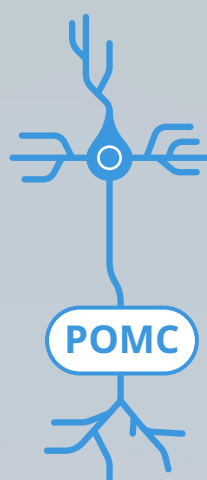
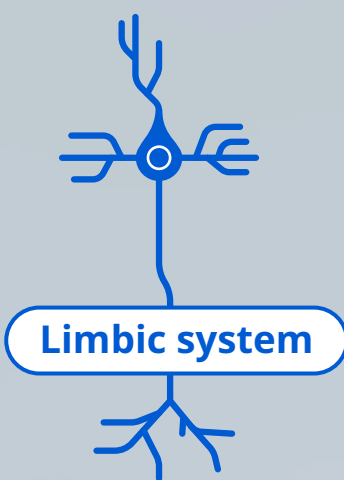
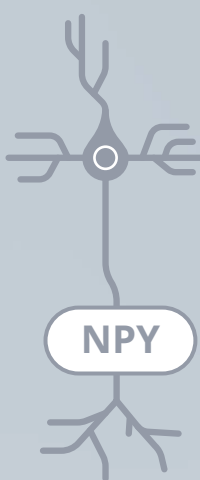
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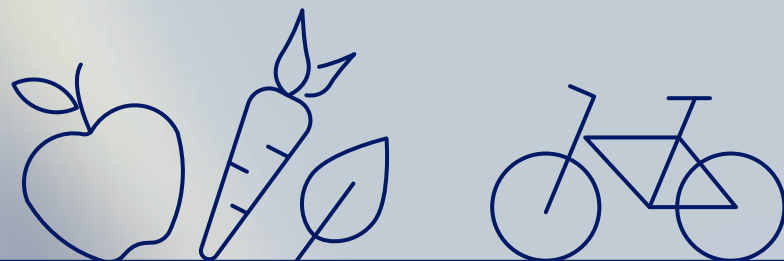
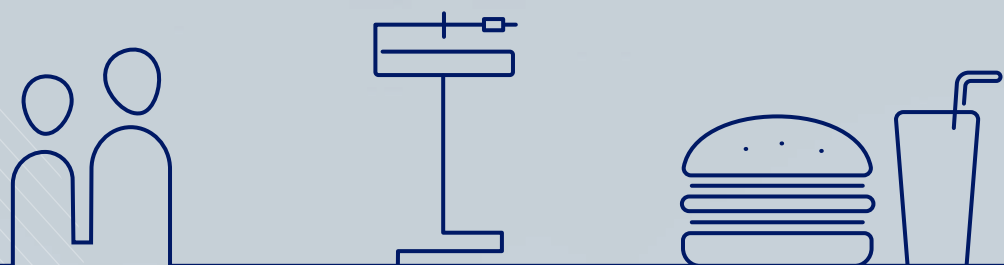


Your answer is correct!

Neurons in the arcuate nucleus, including AGRP neurons, regulate homeostatic processes

Boccia L et al. *Peptides* 2020;132:170366;
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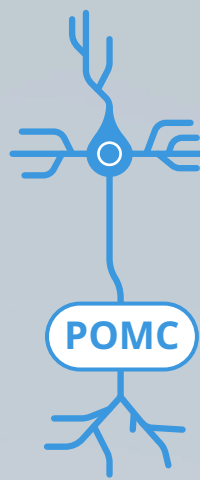
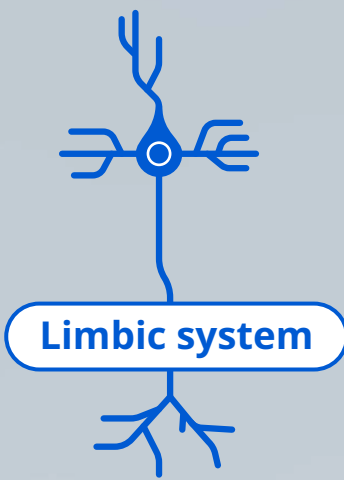
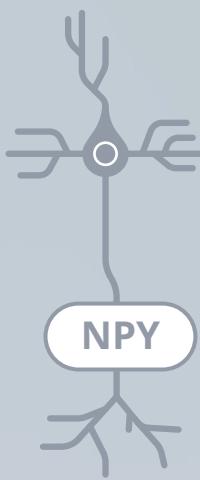
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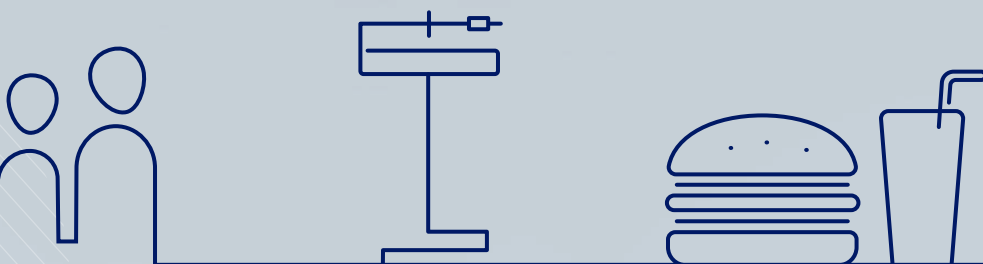
Your answer is incorrect

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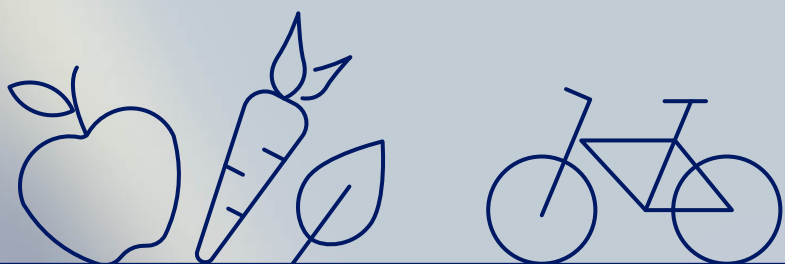
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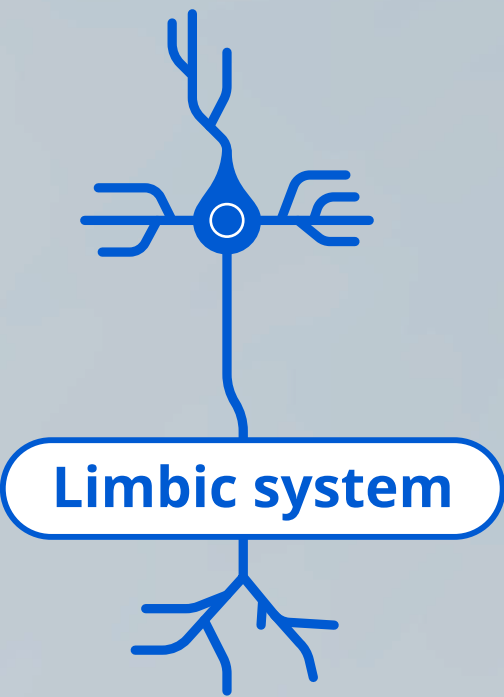
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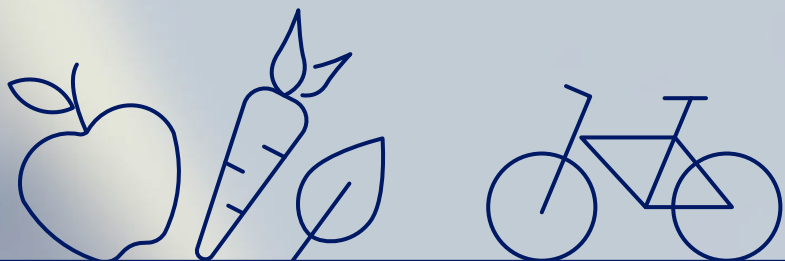
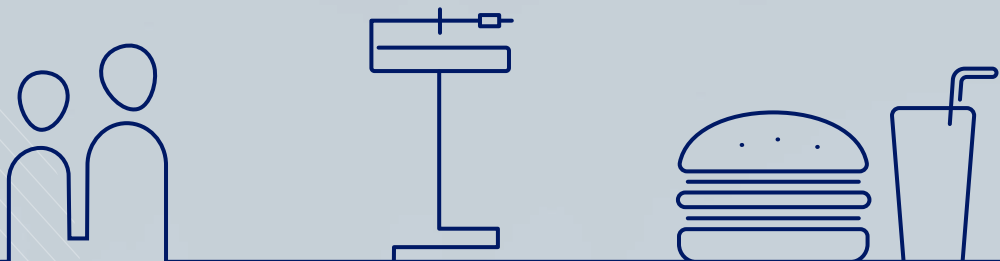
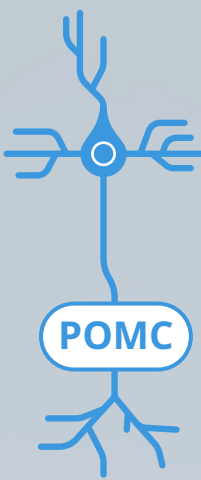
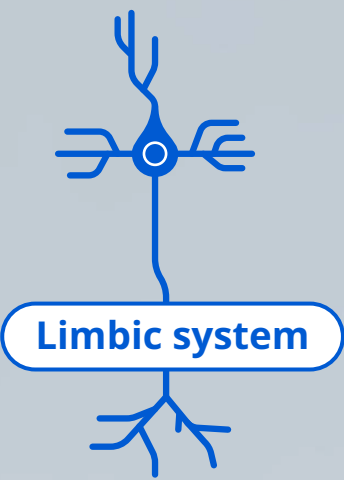
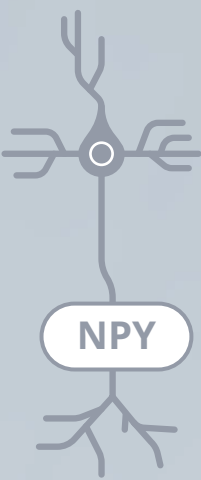


Question 5

Pair the neuron types with the matching regulatory process of food intake.

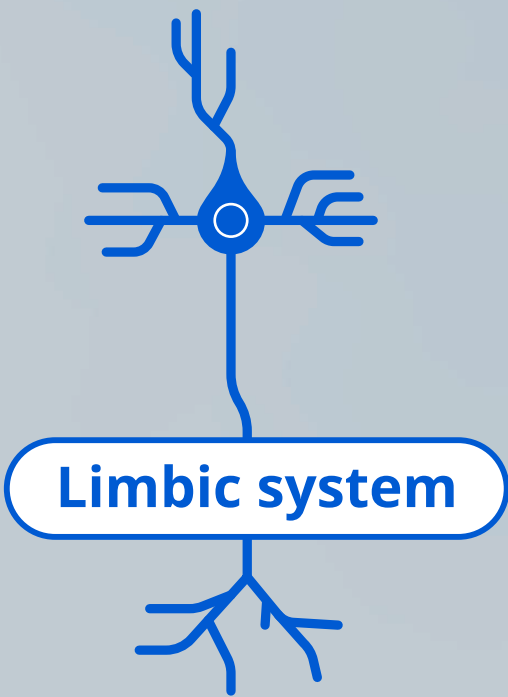


- A. Homeostatic systems–needing food
- B. Hedonic systems–wanting food



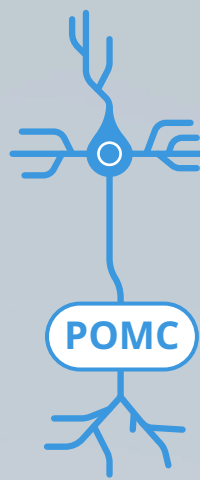
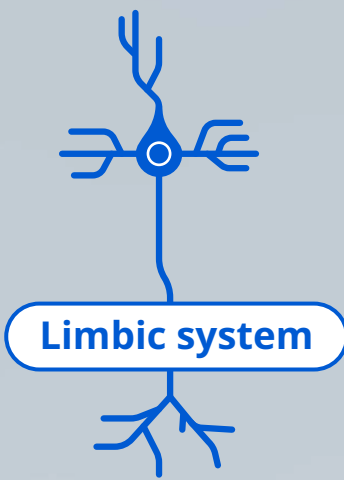
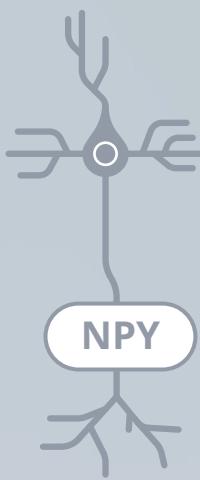
Question 5

Pair the neuron types with the matching regulatory process of food intake.



A. Homeostatic systems-needing food

B. Hedonic systems-wanting food



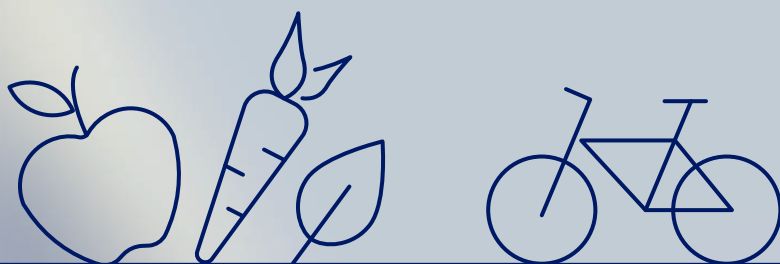
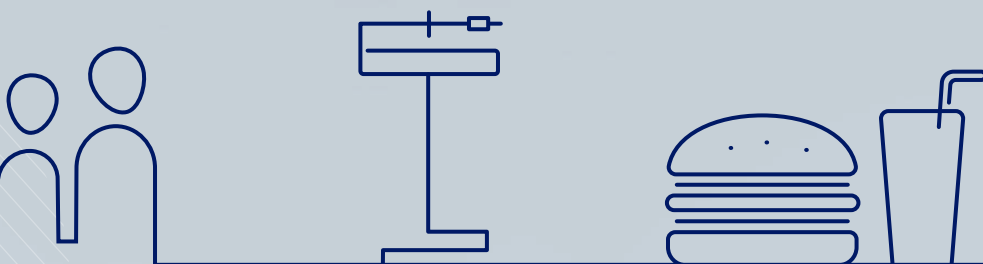
Your answer is incorrect

Neurons in the limbic region may regulate hedonic processes, or reward and pleasure-associated eating

Boccia L et al. *Peptides* 2020;132:170366;
Tulloch AJ et al. *Gastroenterology* 2015;148:1205–18.

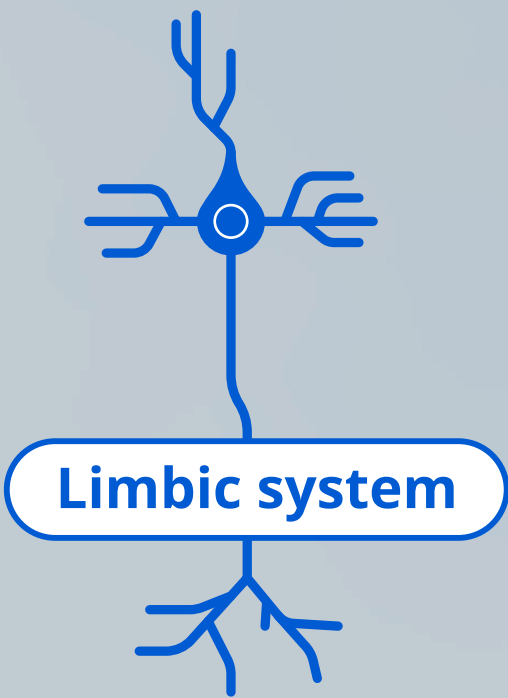
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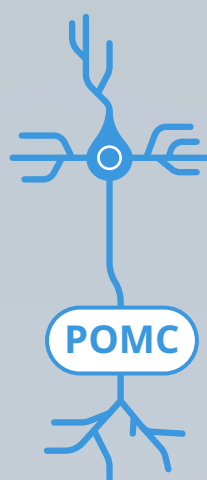
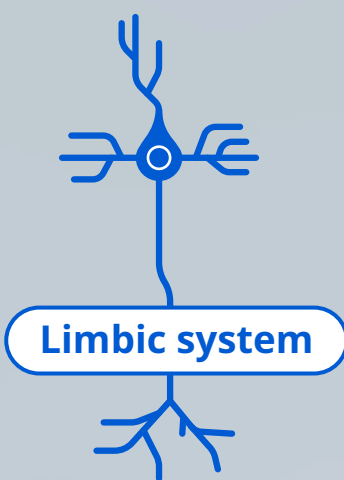
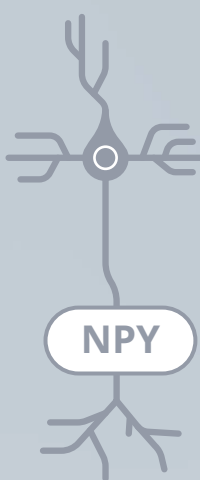
Question 5

Pair the neuron types with the matching regulatory process of food intake.



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B. Hedonic systems-wanting food

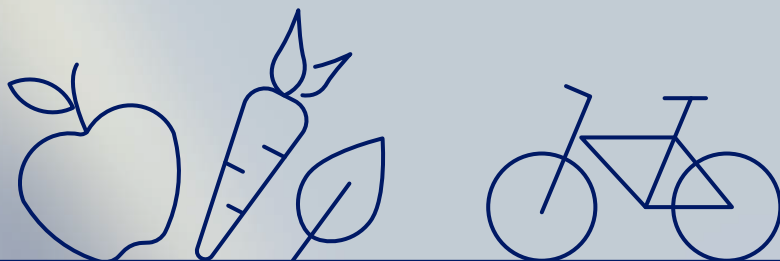
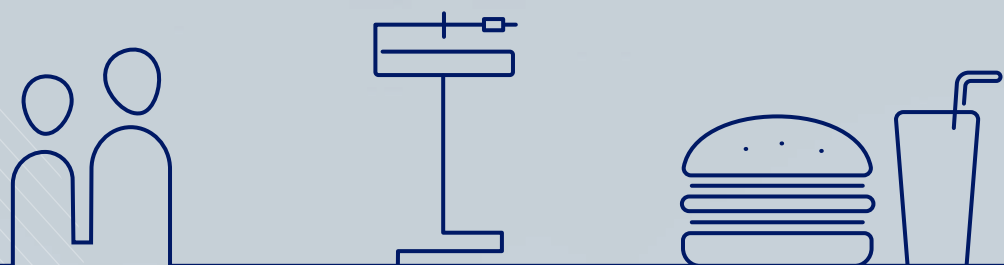


Your answer is correct!

Neurons in the limbic region may regulate hedonic processes, or reward and pleasure-associated eating

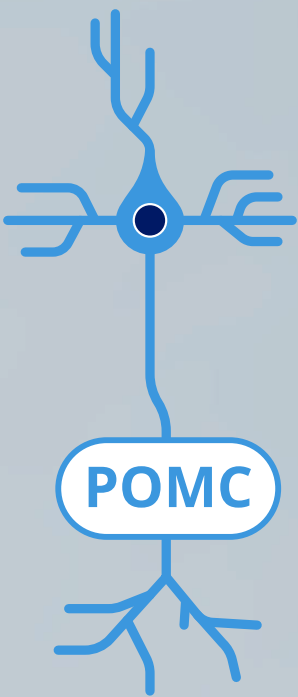
Boccia L et al. *Peptides* 2020;132:170366;
Tulloch AJ et al. *Gastroenterology* 2015;148:1205–18.

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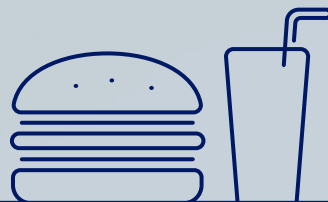
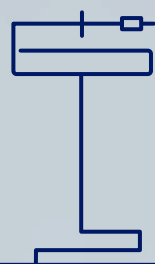
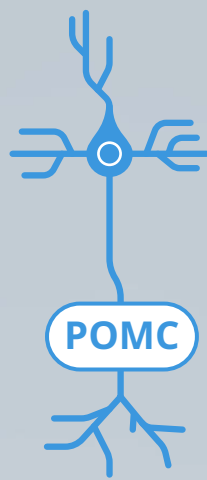
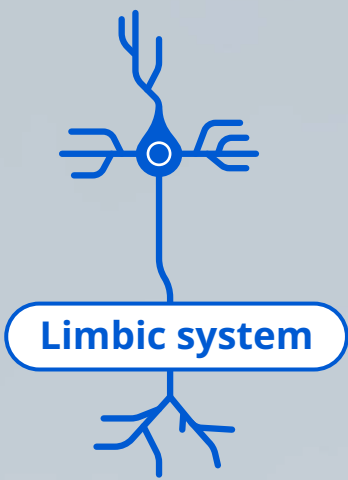
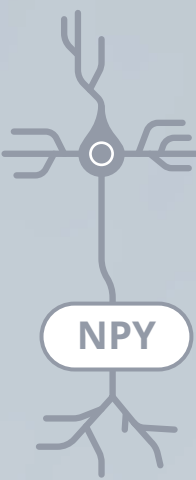
Question 5

Pair the neuron types with the matching regulatory process of food intake.



A. Homeostatic systems-needing food

B. Hedonic systems-wanting food



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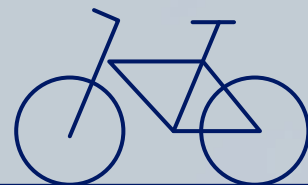
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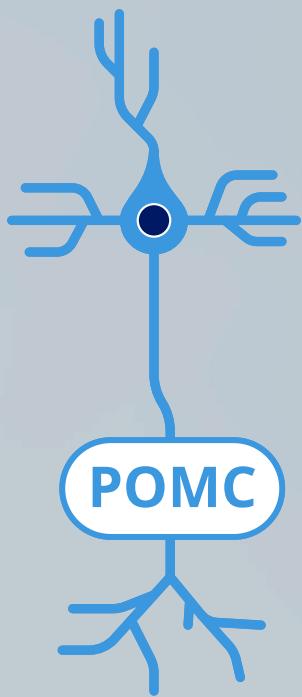
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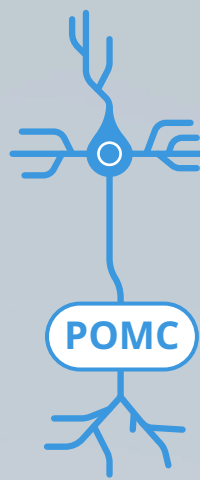
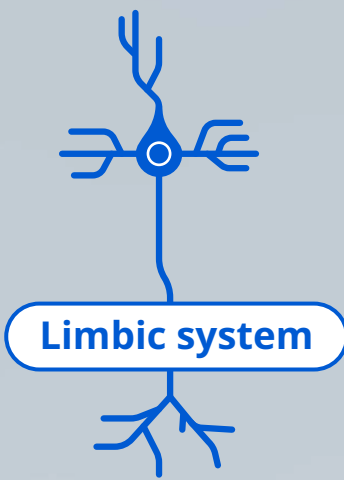
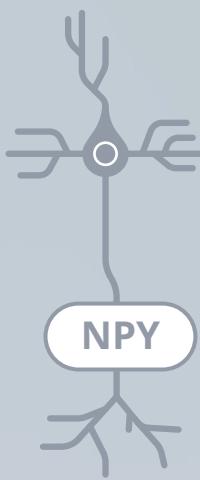
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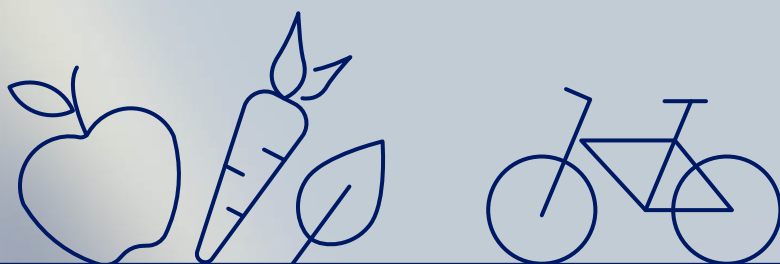
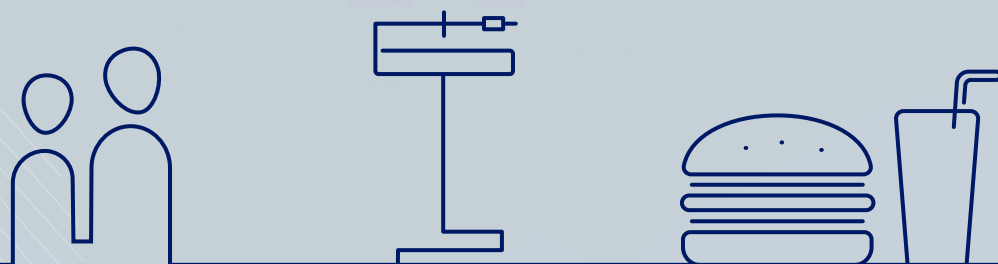


Your answer is correct!

Neurons in the arcuate nucleus, including POMC neurons, regulate homeostatic processes

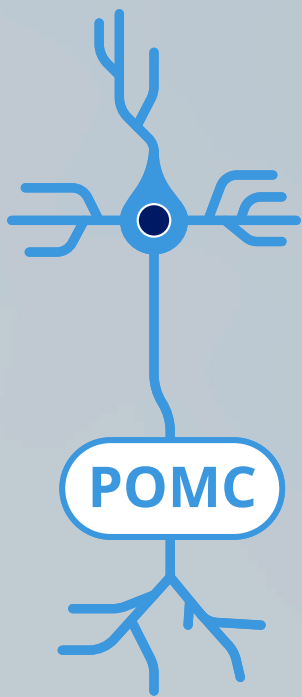
Boccia L et al. *Peptides* 2020;132:170366;
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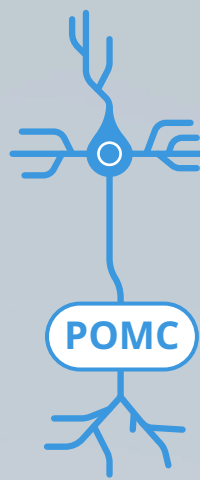
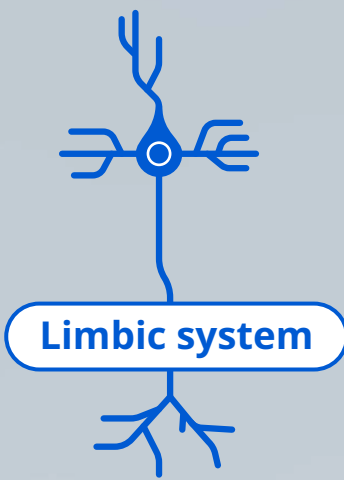
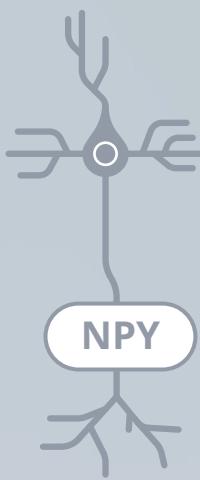
Question 5

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A. Homeostatic systems-needing food

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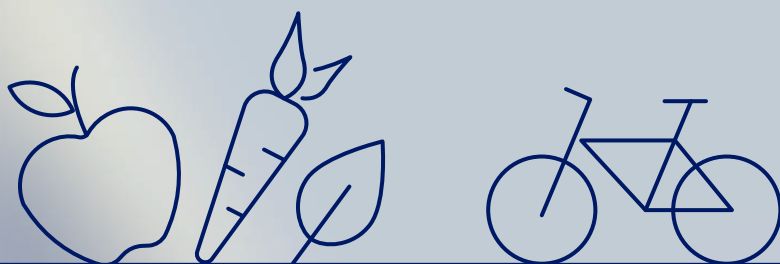
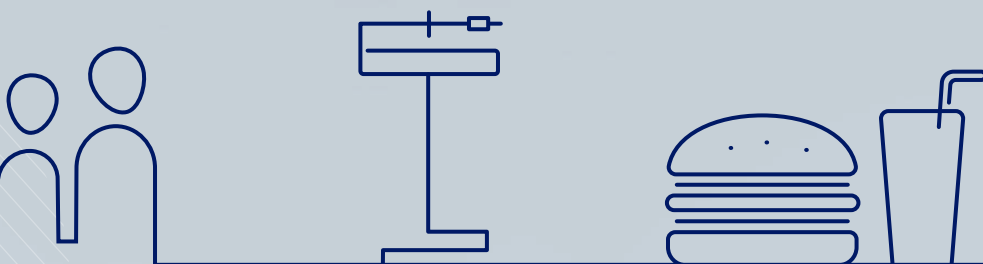
Your answer is incorrect

Neurons in the arcuate nucleus, including POMC neurons, regulate homeostatic processes

Boccia L et al. *Peptides* 2020;132:170366;
Tulloch AJ et al. *Gastroenterology* 2015;148:1205–18.

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Question 6

Which statement about the effect of amylin in rats is **false**?

A. Amylin reduces meal size

B. Amylin reduces meal size and duration in a dose-dependent manner

C. Amylin signaling affects food intake without being modulated by other hormones



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Question 6

Which statement about the effect of amylin in rats is **false**?

A. Amylin reduces meal size

B. Amylin reduces meal size and duration in a dose-dependent manner

C. Amylin signaling affects food intake without being modulated by other hormones

Your answer is incorrect

In rats, amylin infusion reduces meal size

Lutz TA et al. *Physiol Behav* 1995;58:1197–202; Reidelberger RD et al. *Am J Physiol Regul Integr Comp Physiol* 2001;280:R605–11; Osto M et al. *Physiol Behav* 2007;91:566–72.

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Question 6

Which statement about the effect of amylin in rats is **false**?

A. Amylin reduces meal size

B. Amylin reduces meal size and duration in a dose-dependent manner

C. Amylin signaling affects food intake without being modulated by other hormones



Your answer is incorrect

In rats, amylin infusion reduces meal size and duration in a dose-dependent manner

Lutz TA et al. *Physiol Behav* 1995;58:1197–202; Reidelberger RD et al. *Am J Physiol Regul Integr Comp Physiol* 2001;280:R605–11; Osto M et al. *Physiol Behav* 2007;91:566–72.

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Question 6

Which statement about the effect of amylin in rats is **false**?

A. Amylin reduces meal size

B. Amylin reduces meal size and duration in a dose-dependent manner

C. **Amylin signaling affects food intake without being modulated by other hormones**



Your answer is correct!

Preclinical experiments in rats have shown that the regulation of food intake by amylin may be modulated by other hormones. Together with amylin, leptin and insulin can synergistically reduce food intake

Lutz TA et al. *Physiol Behav* 1995;58:1197–202; Reidelberger RD et al. *Am J Physiol Regul Integr Comp Physiol* 2001;280:R605–11; Osto M et al. *Physiol Behav* 2007;91:566–72.

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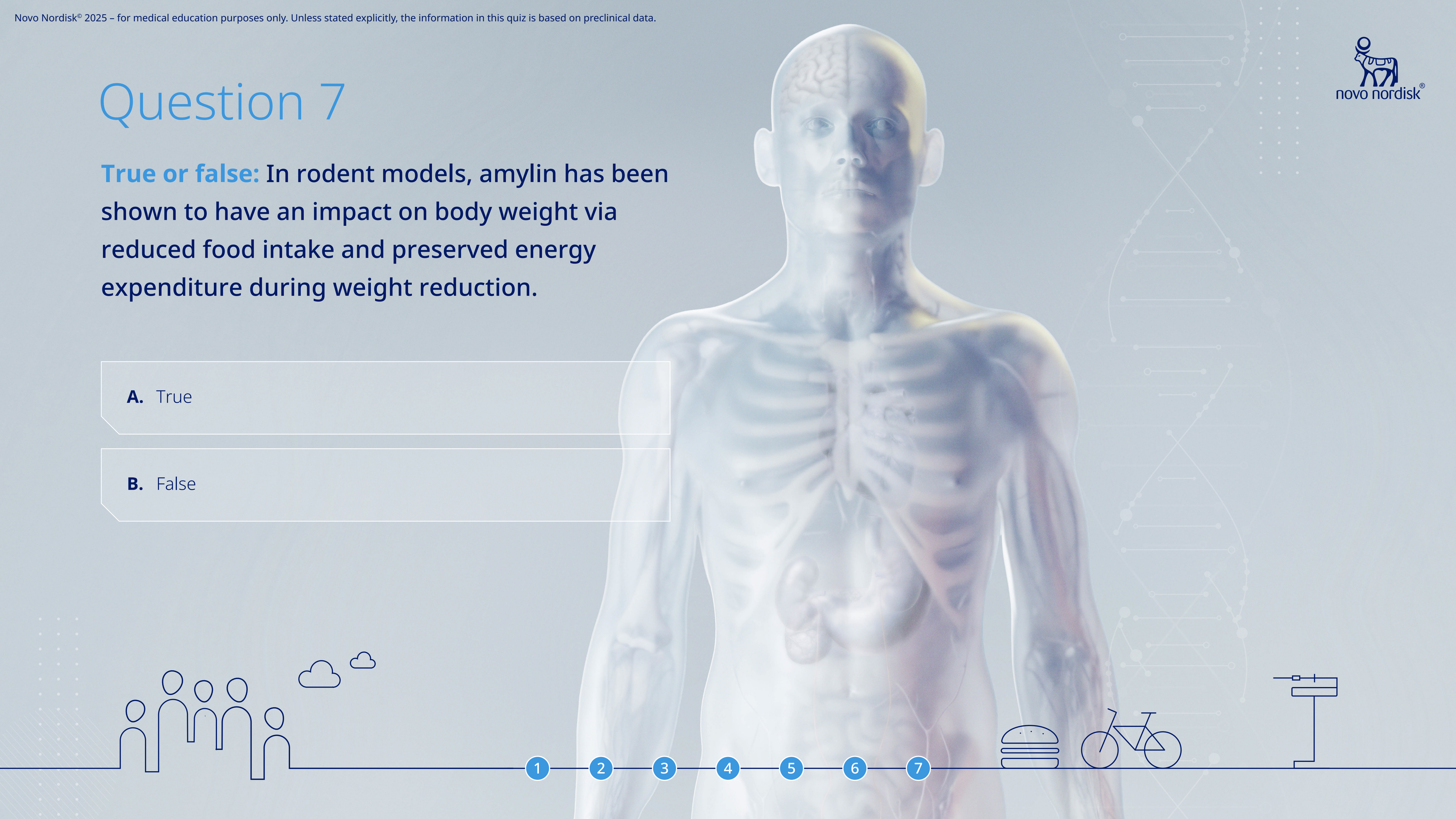


Question 7

True or false: In rodent models, amylin has been shown to have an impact on body weight via reduced food intake and preserved energy expenditure during weight reduction.

A. True

B. False



Question 7

True or false: In rodent models, amylin has been shown to have an impact on body weight via reduced food intake and preserved energy expenditure during weight reduction.

A. True

B. False



Your answer is correct!

Amylin may affect body weight by reducing food intake via increased satiety and satiation. Evidence from preclinical studies indicate that amylin signaling may also maintain energy expenditure, while increasing fat oxidation and promoting fat mass loss.

Eller LK et al. *Clin Endocrinol (Oxf)* 2008;68:890–7;
Wielinga PY et al. *Physiol Behav* 2010;101:45–52;
Coester B et al. *Diabetes* 2020;69:1110–25.

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Question 7

True or false: In rodent models, amylin has been shown to have an impact on body weight via reduced food intake and preserved energy expenditure during weight reduction.

A. True

B. False



Your answer is incorrect

Amylin may affect body weight by reducing food intake via increased satiety and satiation. Evidence from preclinical studies indicate that amylin signaling may also maintain energy expenditure, while increasing fat oxidation and promoting fat mass loss.

Eller LK et al. *Clin Endocrinol (Oxf)* 2008;68:890–7;
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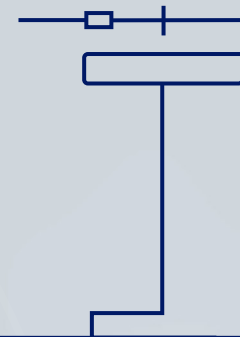
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You have completed the quiz!

Module 4: Effects on appetite regulation

