

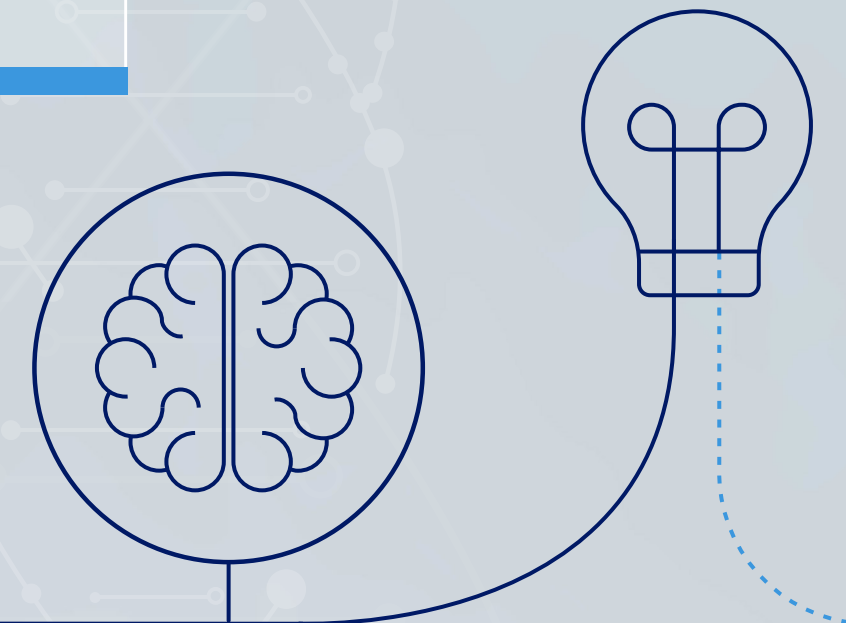
# Time to put your knowledge to the test!

Welcome to the **Module 5** quiz on the effects of amylin on **glucose metabolism**. This is your chance to apply what you have learned and see how well you understand the material

The quiz consists of **8 questions** in total

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

START >







# Question 1

Which of the following is a key function of amylin in regulating blood glucose levels?

- A. Increasing glucagon secretion
- B. Slowing gastric emptying
- C. Increasing food intake
- D. All of the above



# Question 1

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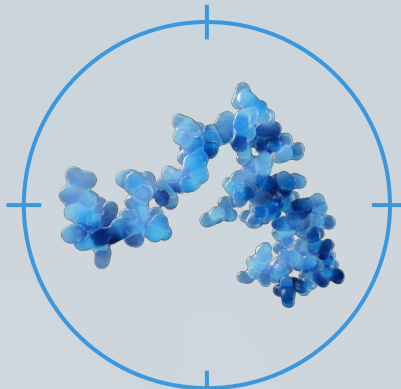
**Your answer is incorrect**

Amylin decreases glucagon secretion, which reduces glucose production by the liver

Hay DL et al. *Pharmacol Rev* 2015;67:564–600; Lutz TA. *Appetite* 2022;172:105965; Martin C. *Diabetes Educ* 2006;32:101S–104S.

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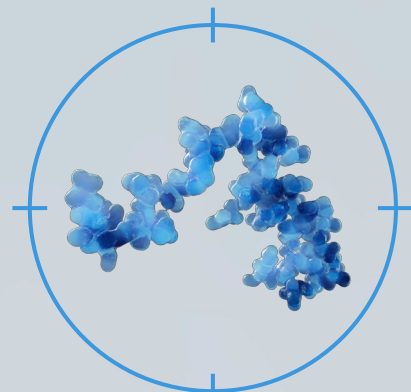


**Your answer is correct!**

Amylin helps regulate postprandial blood glucose levels by slowing down gastric emptying, leading to a reduced amount of digested food from which glucose can be absorbed into the bloodstream

Hay DL et al. *Pharmacol Rev* 2015;67:564–600; Lutz TA. *Appetite* 2022;172:105965; Martin C. *Diabetes Educ* 2006;32:101S–104S.

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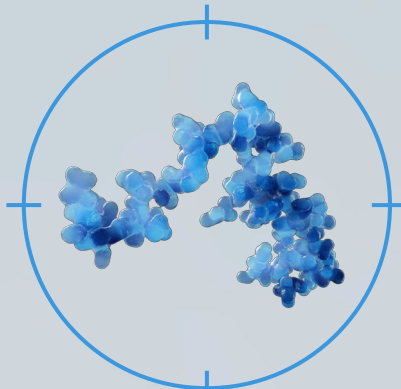
**Your answer is incorrect**

Amylin decreases food intake by inducing feelings of fullness

Hay DL et al. *Pharmacol Rev* 2015;67:564–600; Lutz TA. *Appetite* 2022;172:105965; Martin C. *Diabetes Educ* 2006;32:101S–104S.

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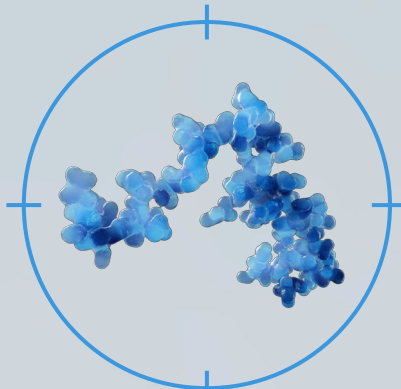
**Your answer is incorrect**

Amylin decreases glucagon secretion, which reduces glucose production by the liver, and decreases food intake by inducing feelings of fullness

Hay DL et al. *Pharmacol Rev* 2015;67:564–600; Lutz TA. *Appetite* 2022;172:105965; Martin C. *Diabetes Educ* 2006;32:101S–104S.

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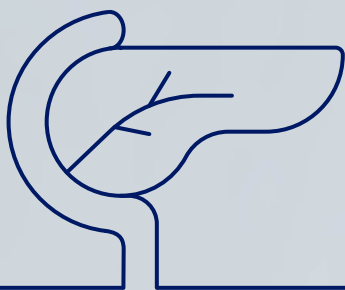
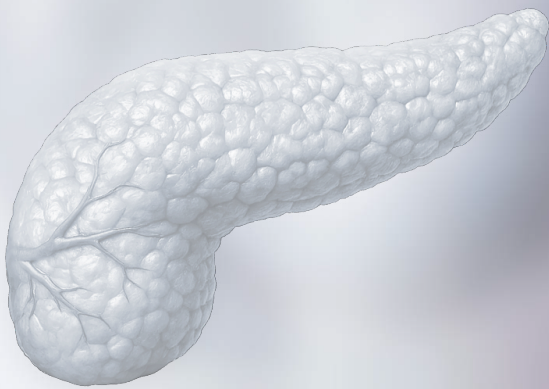
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# Question 2

Amylin is co-secreted with which hormone from pancreatic  $\beta$  cells?

- A. Glucagon
- B. Glucose
- C. Insulin
- D. None of the above



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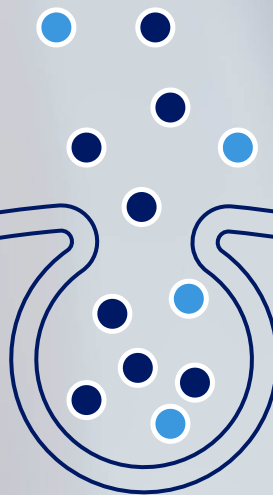
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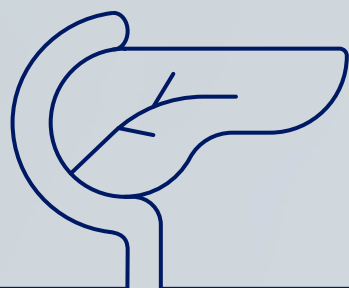
**Your answer is incorrect**

Glucagon is secreted from pancreatic  $\alpha$  cells

Lutz TA. *Appetite* 2022;172:105965; Bower RL, Hay DL. *Br J Pharmacol* 2016;173:1883–98; Hay DL et al. *Pharmacol Rev* 2015;67:564–600.

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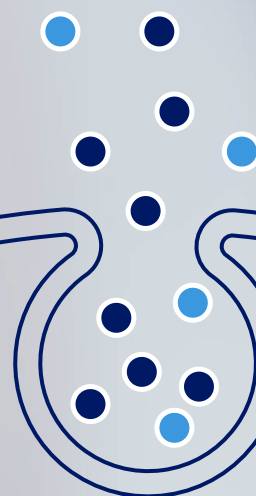
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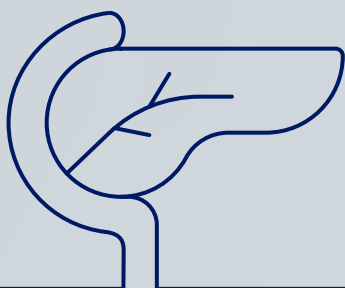
**Your answer is incorrect**

Amylin functions to lower postprandial glucose levels in the blood

Lutz TA. *Appetite* 2022;172:105965; Bower RL, Hay DL. *Br J Pharmacol* 2016;173:1883–98; Hay DL et al. *Pharmacol Rev* 2015;67:564–600.

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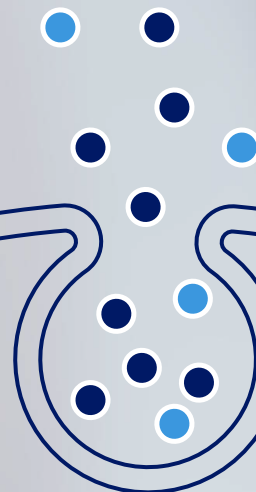
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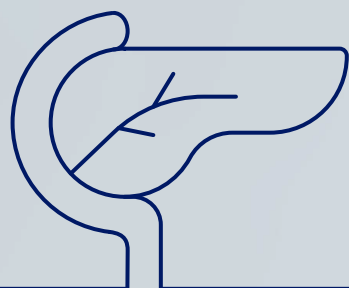


**Your answer is correct!**

Amylin is co-secreted with insulin from pancreatic  $\beta$  cells in response to food intake

Lutz TA. *Appetite* 2022;172:105965; Bower RL, Hay DL. *Br J Pharmacol* 2016;173:1883–98; Hay DL et al. *Pharmacol Rev* 2015;67:564–600.

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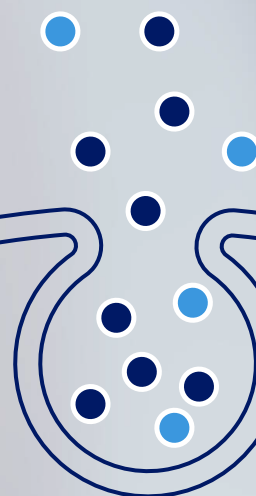
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Amylin is co-secreted with which hormone from pancreatic  $\beta$  cells?

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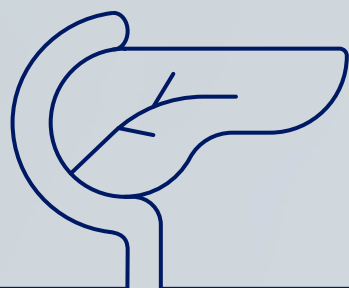
**Your answer is incorrect**

Glucagon is secreted from pancreatic  $\alpha$  cells and amylin functions to lower postprandial glucose levels in the blood

Lutz TA. *Appetite* 2022;172:105965; Bower RL, Hay DL. *Br J Pharmacol* 2016;173:1883–98; Hay DL et al. *Pharmacol Rev* 2015;67:564–600.

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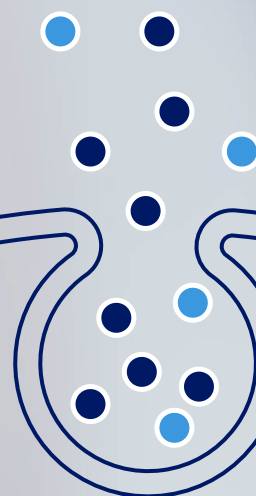
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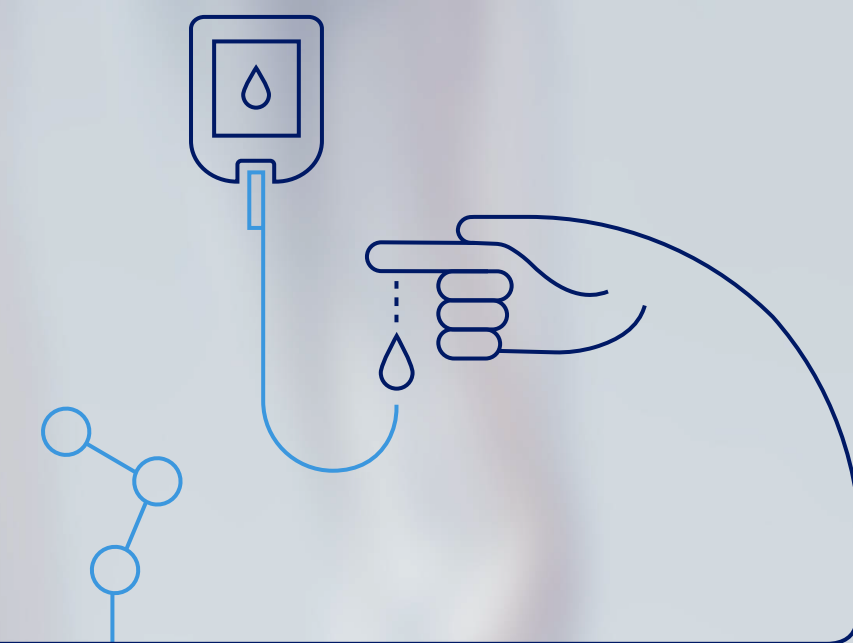
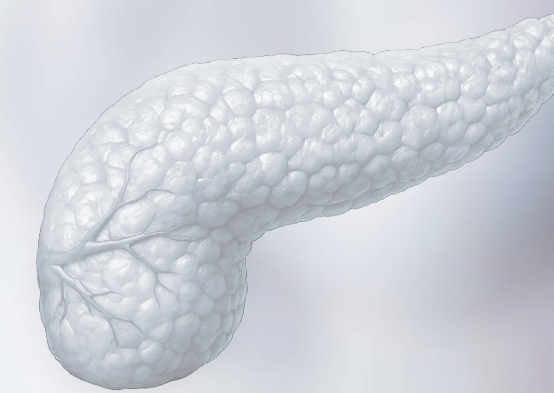
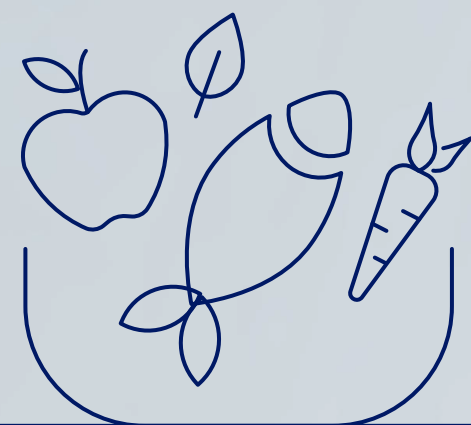




# Question 3

Which of the following statements is **false**?

- A.** Amylin complements the effects of insulin to lower postprandial blood glucose levels
- B.** After a meal, insulin levels rise, promoting tissue uptake of glucose and inhibiting glucose production
- C.** Low blood glucose levels trigger amylin secretion, which stimulates glucose production





# Question 3

Which of the following statements is **false**?

**A.** Amylin complements the effects of insulin to lower postprandial blood glucose levels

**B.** After a meal, insulin levels rise, promoting tissue uptake of glucose and inhibiting glucose production

**C.** Low blood glucose levels trigger amylin secretion, which stimulates glucose production

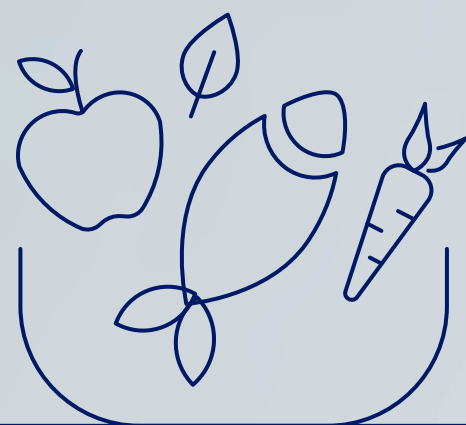
**Your answer is incorrect**

This statement is true; amylin does complement the effects of insulin to lower postprandial blood glucose levels

Weyer C et al. *Curr Pharm Des* 2001;7:1353–73.

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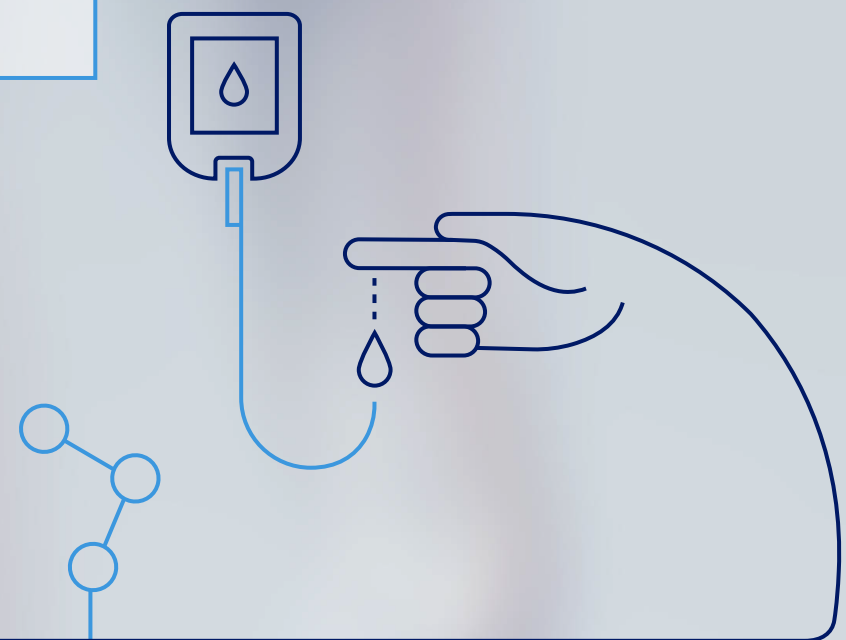
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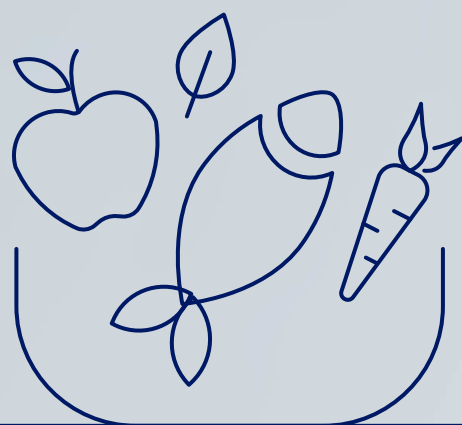
**Your answer is incorrect**

This statement is true; after a meal, insulin levels do rise, promoting tissue uptake of glucose and inhibiting glucose production

Weyer C et al. *Curr Pharm Des* 2001;7:1353–73.

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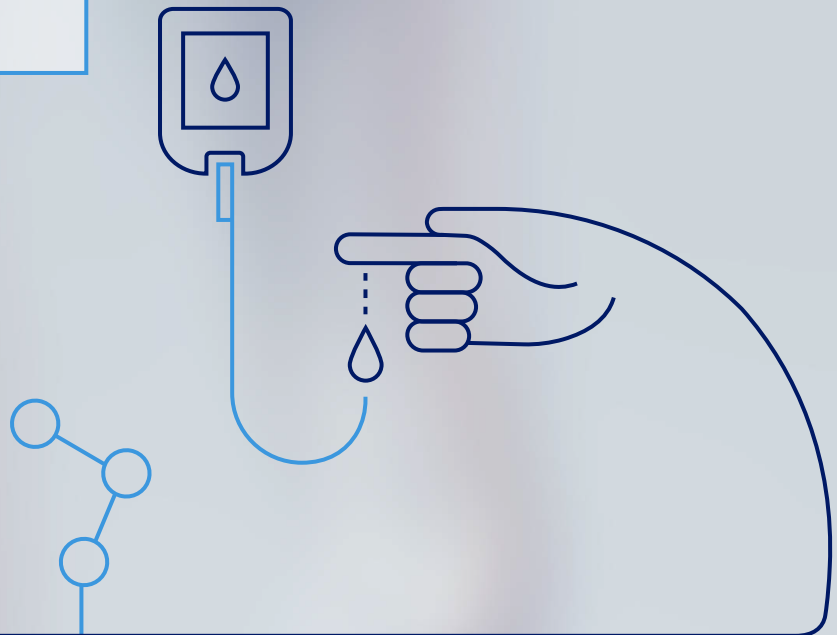
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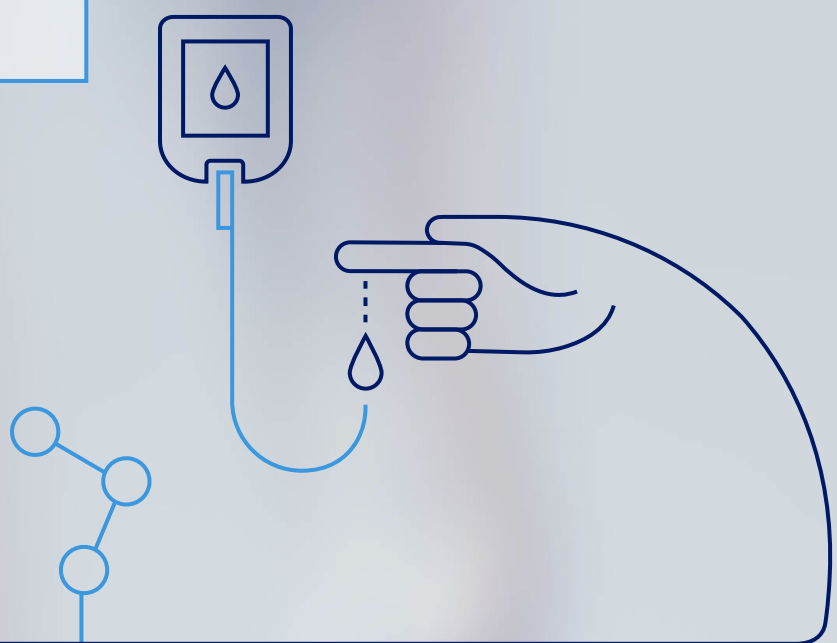
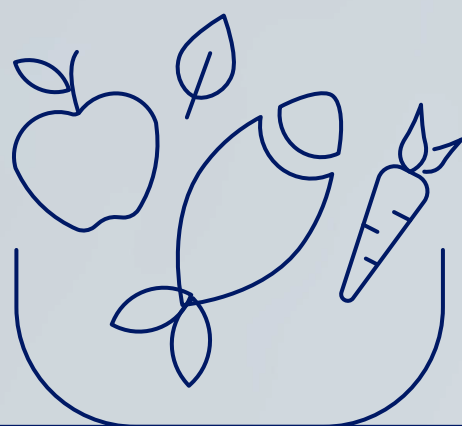
- A. Amylin complements the effects of insulin to lower postprandial blood glucose levels
- B. After a meal, insulin levels rise, promoting tissue uptake of glucose and inhibiting glucose production
- C. Low blood glucose levels trigger amylin secretion, which stimulates glucose production**

**Your answer is correct!**

Low blood glucose levels trigger glucagon secretion, not amylin secretion, which stimulates glucose production in the liver

Weyer C et al. *Curr Pharm Des* 2001;7:1353–73.

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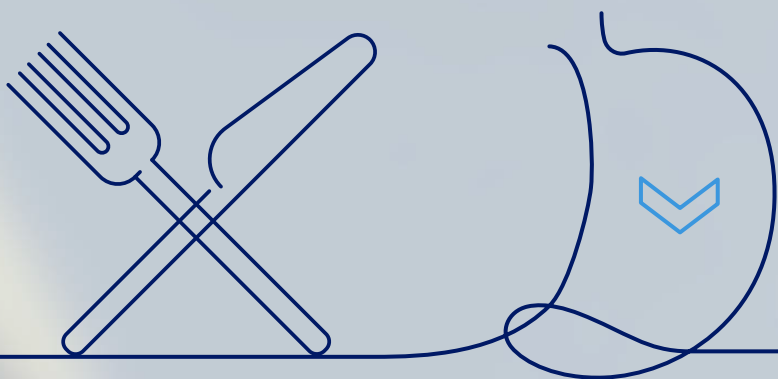
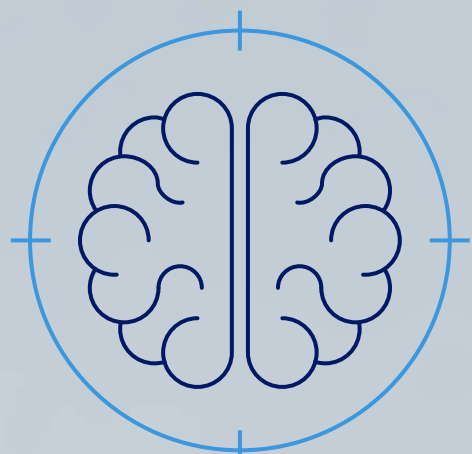


# Question 4

**True or false:** Amylin primarily activates neurons in the area postrema of the brainstem to regulate appetite and gastric emptying.

**A.** True

**B.** False



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A. True

B. False

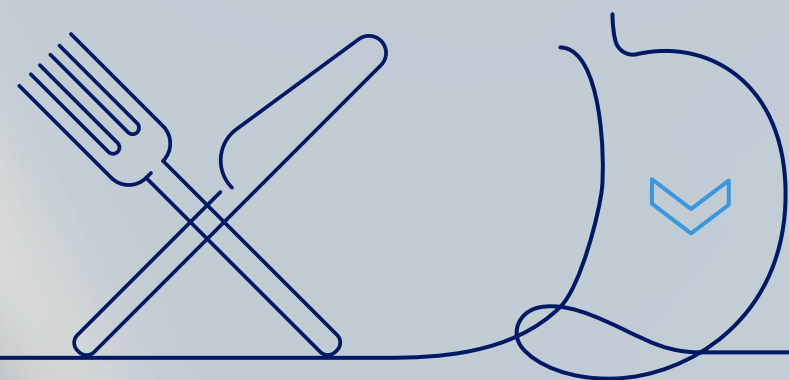
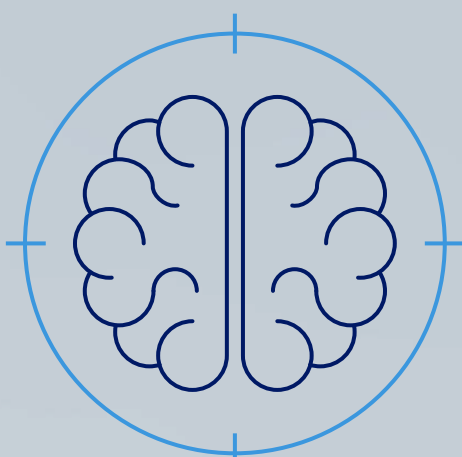


**Your answer is correct!**

The statement is true  
Amylin primarily activates neurons in the **area postrema** of the brainstem to regulate appetite and gastric emptying

Hay DL et al. *Pharmacol Rev* 2015;67:564–600; Lutz TA. *Appetite* 2022;172:105965; Boccia L et al. *Peptides* 2020;132:170366.

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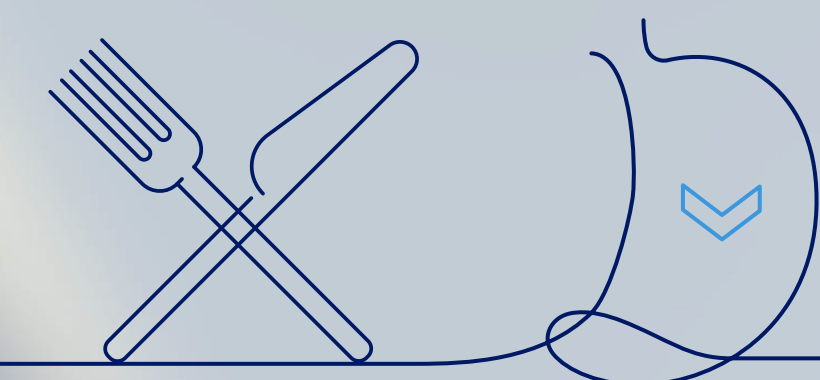
**Your answer is incorrect**

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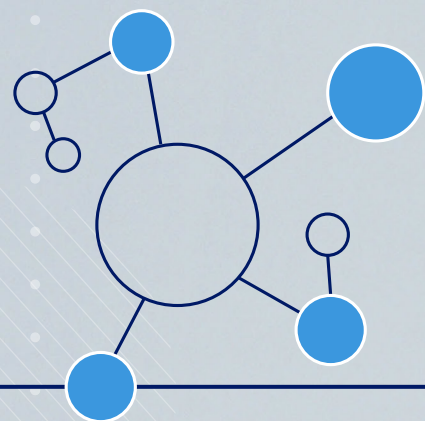




# Question 5

What effect does amylin have on glucagon secretion after a meal?

- A.** It increases glucagon secretion
- B.** It has no effect on glucagon secretion
- C.** It suppresses glucagon secretion
- D.** Amylin and glucagon are co-secreted from pancreatic  $\alpha$  cells





# Question 5

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**Your answer is incorrect**

Amylin does not increase glucagon secretion after a meal

Weyer C et al. *Curr Pharm Des* 2001;7:1353–73; Martin C. *Diabetes Educ* 2006;32:101S–104S; Hay DL et al. *Pharmacol Rev* 2015;67:564–600.

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**Your answer is incorrect**

Amylin does have an effect on glucagon secretion after a meal

Weyer C et al. *Curr Pharm Des* 2001;7:1353–73; Martin C. *Diabetes Educ* 2006;32:101S–104S; Hay DL et al. *Pharmacol Rev* 2015;67:564–600.

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**Your answer is correct!**

Amylin suppresses the postprandial secretion of glucagon from pancreatic  $\alpha$  cells

Weyer C et al. *Curr Pharm Des* 2001;7:1353–73; Martin C. *Diabetes Educ* 2006;32:101S–104S; Hay DL et al. *Pharmacol Rev* 2015;67:564–600.

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- B. It has no effect on glucagon secretion
- C. It suppresses glucagon secretion
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**Your answer is incorrect**

Amylin is not co-secreted with glucagon from pancreatic  $\alpha$  cells

Weyer C et al. *Curr Pharm Des* 2001;7:1353–73; Martin C. *Diabetes Educ* 2006;32:101S–104S; Hay DL et al. *Pharmacol Rev* 2015;67:564–600.

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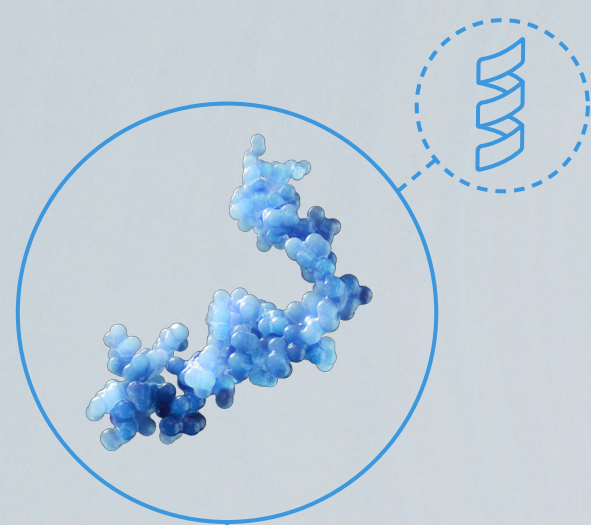


# Question 6

**True or false:** Coadministration of leptin and amylin decreased insulin sensitivity in leptin-resistant diet-induced obese mice, compared with leptin or amylin alone.

**A.** True

**B.** False



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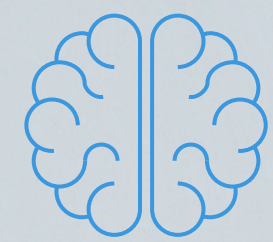
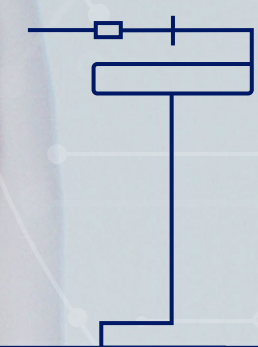
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**True or false:** Coadministration of leptin and amylin decreased insulin sensitivity in leptin-resistant diet-induced obese mice, compared with leptin or amylin alone.

**A. True**

**B. False**

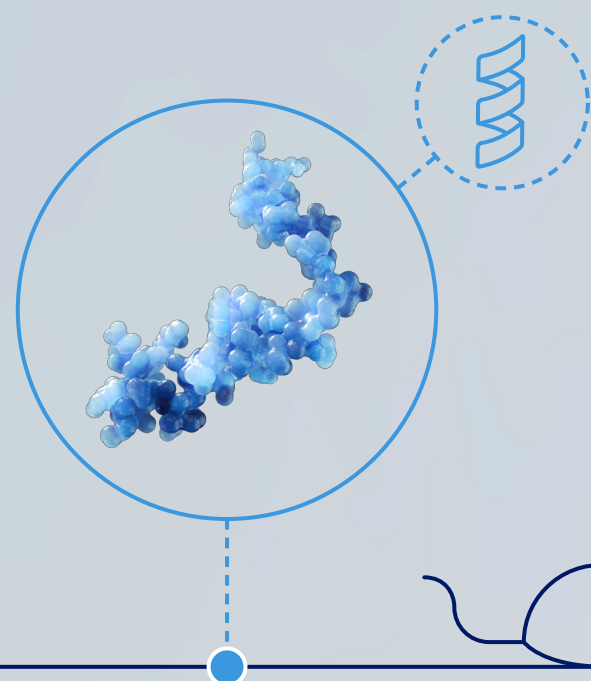
**Your answer is incorrect**

The statement is false  
Coadministration of leptin and amylin **increased** insulin sensitivity in leptin-resistant diet-induced obese mice, compared with leptin or amylin alone

Kusakabe T et al. *Am J Physiol Endocrinol Metab* 2012;302:E924-31.

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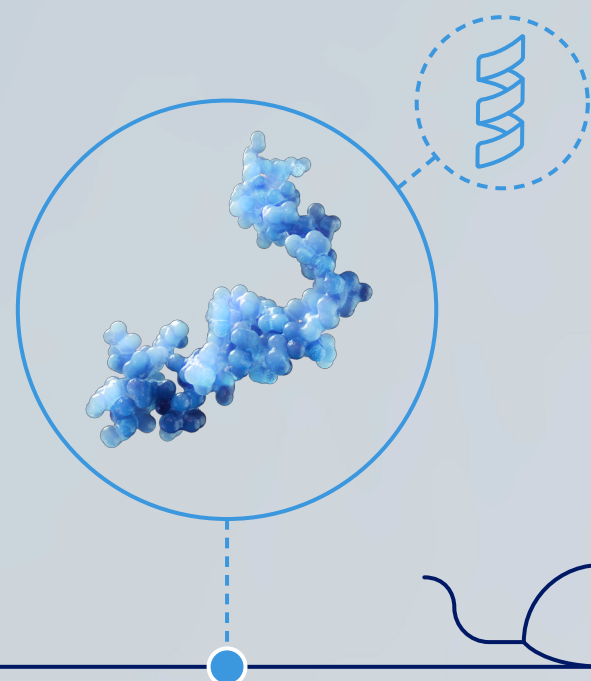


**Your answer is correct!**

The statement is false  
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Kusakabe T et al. *Am J Physiol Endocrinol Metab* 2012;302:E924–31.

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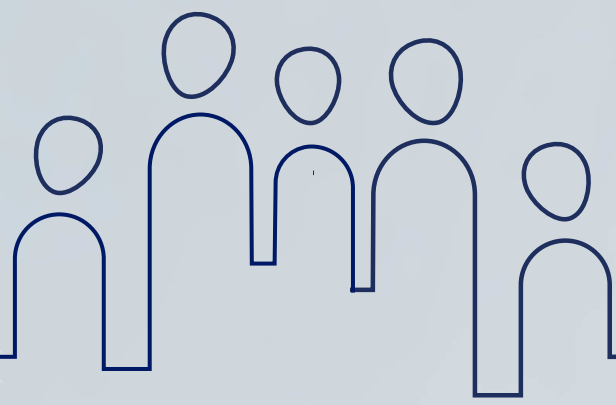
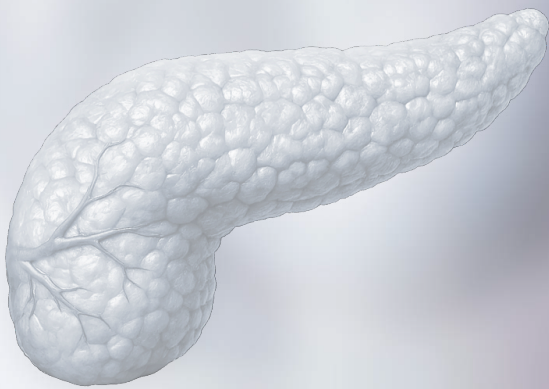


# Question 7

Fill in the blank: In people with \_\_\_\_\_ diabetes, there is a relative deficiency of amylin and insulin, along with an impaired response of these hormones to meals.

**A.** Type 1

**B.** Type 2



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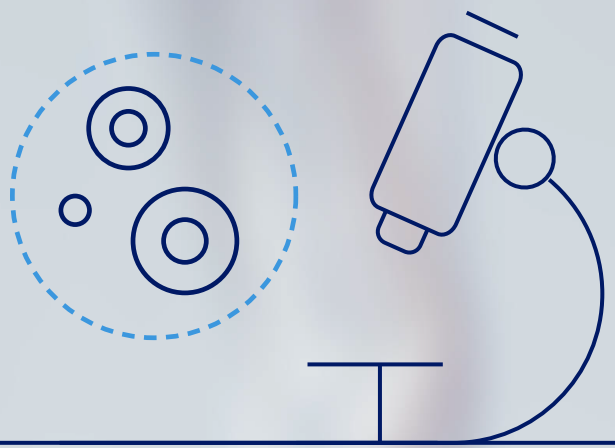
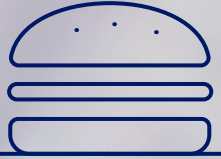
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A. Type 1

B. Type 2



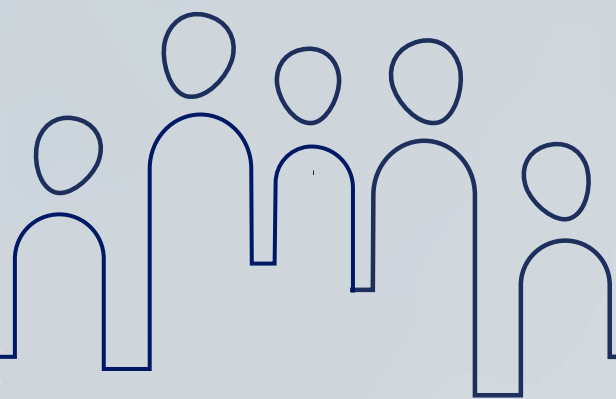
## Your answer is incorrect

In people with type 1 diabetes, there is an absolute deficiency of both amylin and insulin due to the destruction of  $\beta$  cells, in which these hormones are co-localized

Weyer C et al. *Curr Pharm Des* 2001;7:1353–73; Buse JB et al. *Clin Diabetes* 2002;20:137–44.

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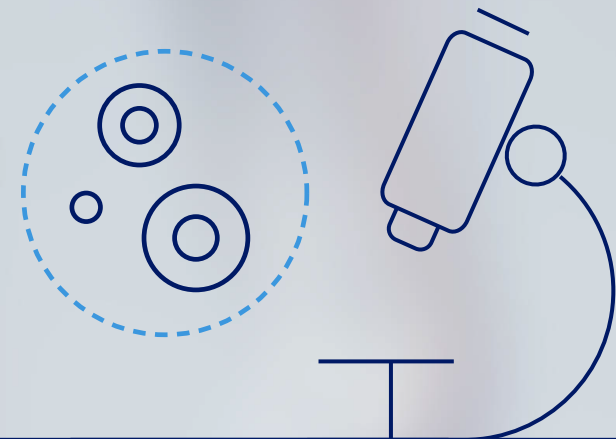
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A. Type 1

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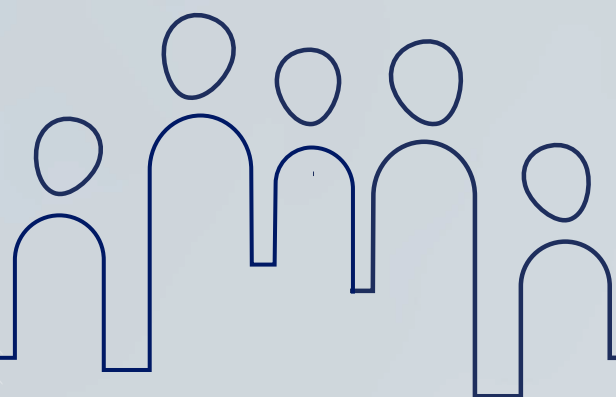


**Your answer is correct!**

In people with type 2 diabetes there is a relative deficiency of both amylin and insulin, and in people with type 1 diabetes there is an absolute deficiency

Weyer C et al. *Curr Pharm Des* 2001;7:1353–73; Buse JB et al. *Clin Diabetes* 2002;20:137–44.

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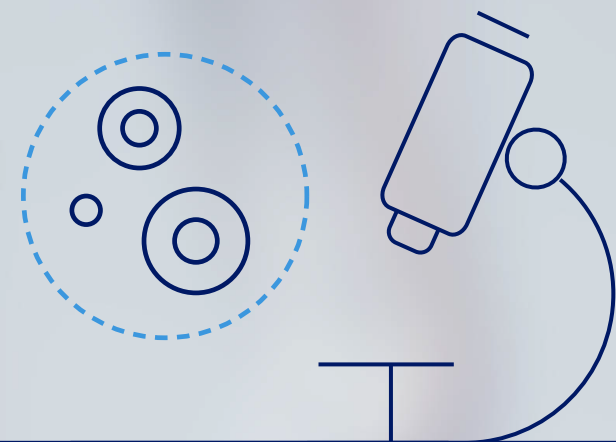
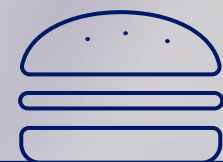
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# Question 8

What are the three key actions of amylin in regulating blood glucose levels?

- A.** Reducing food intake, slowing gastric emptying, and increasing glucose absorption
- B.** Slowing gastric emptying, reducing food intake, and inhibiting glucagon secretion
- C.** Increasing glucagon secretion, promoting gastric emptying, and increasing food intake
- D.** Reducing food intake, promoting gastric emptying, and inhibiting glucagon secretion



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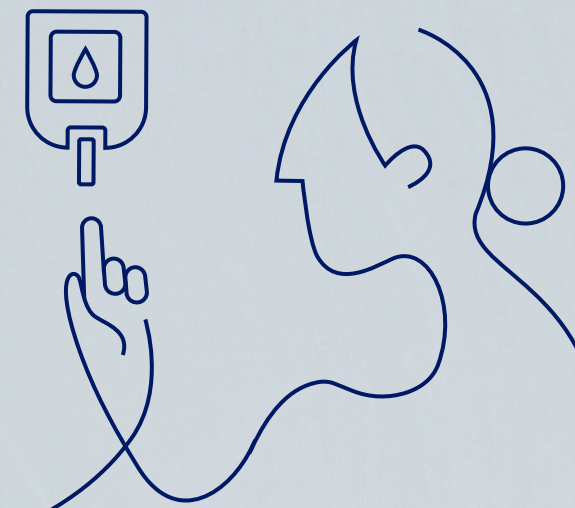
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# Question 8

What are the three key actions of amylin in regulating blood glucose levels?

**A.** Reducing food intake, slowing gastric emptying, and increasing glucose absorption

**B.** Slowing gastric emptying, reducing food intake, and inhibiting glucagon secretion

**C.** Increasing glucagon secretion, promoting gastric emptying, and increasing food intake

**D.** Reducing food intake, promoting gastric emptying, and inhibiting glucagon secretion



**Your answer is incorrect**

Amylin reduces food intake and slows gastric emptying, but does not increase glucose absorption

Weyer C et al. *Curr Pharm Des* 2001;7:1353–73; Martin C. *Diabetes Educ* 2006;32:101S–104S; Hay DL et al. *Pharmacol Rev* 2015;67:564–600.

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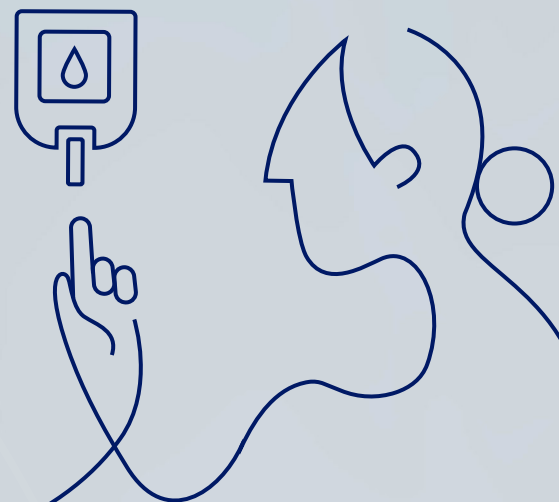
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- A. Reducing food intake, slowing gastric emptying, and increasing glucose absorption
- B. Slowing gastric emptying, reducing food intake, and inhibiting glucagon secretion**
- C. Increasing glucagon secretion, promoting gastric emptying, and increasing food intake
- D. Reducing food intake, promoting gastric emptying, and inhibiting glucagon secretion



**Your answer is correct!**

The three key actions of amylin are slowing gastric emptying, reducing food intake, and inhibiting glucagon secretion

Weyer C et al. *Curr Pharm Des* 2001;7:1353–73; Martin C. *Diabetes Educ* 2006;32:101S–104S; Hay DL et al. *Pharmacol Rev* 2015;67:564–600.

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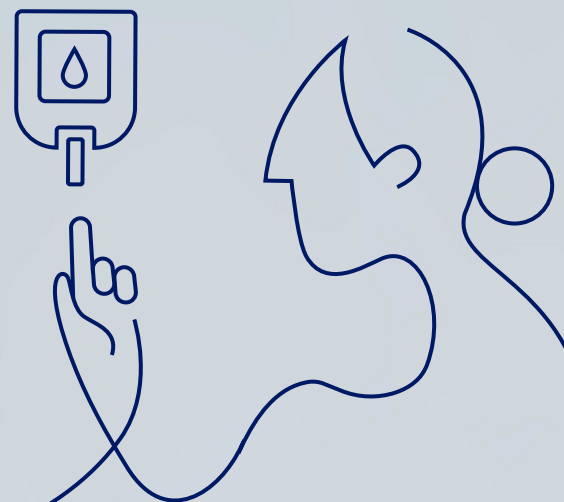
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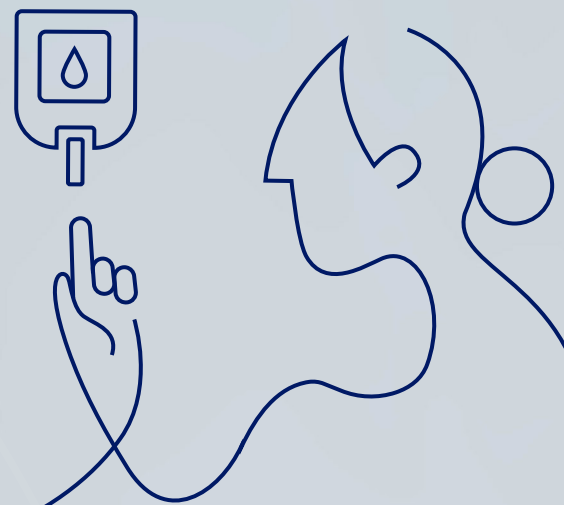
- A. Reducing food intake, slowing gastric emptying, and increasing glucose absorption
- B. Slowing gastric emptying, reducing food intake, and inhibiting glucagon secretion
- C. Increasing glucagon secretion, promoting gastric emptying, and increasing food intake
- D. Reducing food intake, promoting gastric emptying, and inhibiting glucagon secretion

**Your answer is incorrect**

Amylin does not increase glucagon secretion, promote gastric emptying, or increase food intake

Weyer C et al. *Curr Pharm Des* 2001;7:1353–73; Martin C. *Diabetes Educ* 2006;32:101S–104S; Hay DL et al. *Pharmacol Rev* 2015;67:564–600.

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- B. Slowing gastric emptying, reducing food intake, and inhibiting glucagon secretion
- C. Increasing glucagon secretion, promoting gastric emptying, and increasing food intake
- D. Reducing food intake, promoting gastric emptying, and inhibiting glucagon secretion**



**Your answer is incorrect**

Amylin reduces food intake and inhibits glucagon secretion, but does not promote gastric emptying

Weyer C et al. *Curr Pharm Des* 2001;7:1353–73; Martin C. *Diabetes Educ* 2006;32:101S–104S; Hay DL et al. *Pharmacol Rev* 2015;67:564–600.

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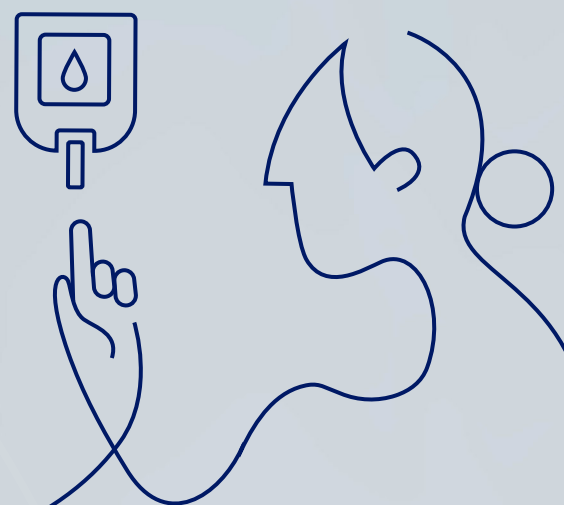
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You have completed the quiz!

Module 5: Effects on glucose metabolism

