

Pancreatic Hormones

by Sophia

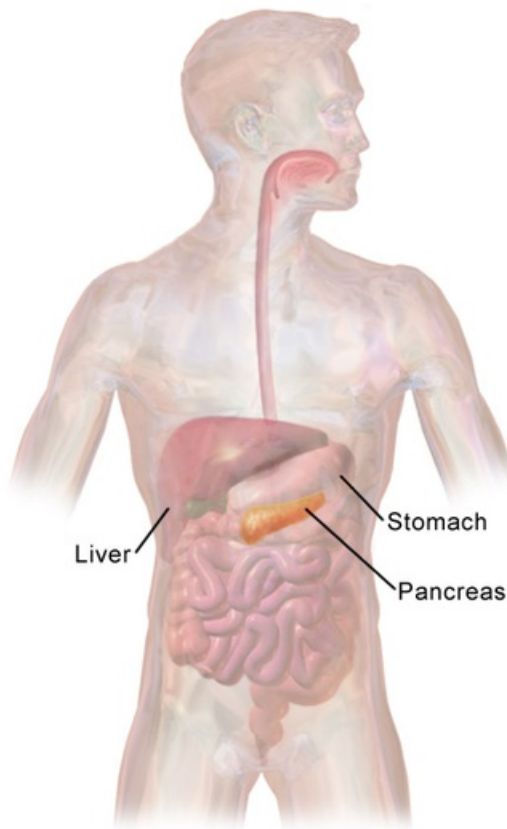


WHAT'S COVERED

In this lesson, you will learn to understand the pancreas and the role it plays in homeostasis. Specifically, this lesson will cover:

1. Pancreas Overview

The main role of the pancreas is to secrete hormones that regulate blood sugar levels, which is a crucial aspect of homeostasis. You need to keep your blood sugar levels within a certain range, and the hormones that are secreted by the pancreas allow us to do this.



Location of the Pancreas

Pancreatic islets are groups of three types of cells within the pancreas that secrete hormones. Those groups

consist of alpha cells, beta cells, and delta cells. Each of these types of cells secretes a different hormone that has a different role in regulating blood sugar levels.



TERM TO KNOW

Pancreatic Islets

Small clusters of cells on the pancreas containing cells that manufacture the hormones insulin and glucagon, along with many secretions for the digestive system; also referred to as the islets of Langerhans.

2. Alpha Cells

Alpha cells secrete **glucagon**, which is a hormone which helps to increase blood sugar levels.

IN CONTEXT

Let's say that you've had a super-busy day and you haven't had breakfast and missed lunch. It's getting later in the day, and you still haven't eaten anything; at this point, your blood sugar levels will start to drop. Alpha cells in the pancreas will then secrete glucagon to raise those blood sugar levels to a homeostatic point.



TERMS TO KNOW

Alpha Cells

Cells of the pancreas that secrete glucagon.

Glucagon

A hormone released by alpha cells in the pancreas which raises blood sugar levels.

3. Beta Cells

Beta cells are a type of cell found within pancreatic islets that secrete **insulin**. Insulin is a hormone that you may be a little bit more familiar with. Insulin helps to decrease blood sugar levels. If blood sugar levels start to get too high, insulin is responsible for lowering them. Somebody who has diabetes has an autoimmune disease causing their beta cells to not properly secrete this insulin. Since their body doesn't secrete insulin, they have to take insulin injections in order to lower their blood sugar levels.

IN CONTEXT

Let's say that you take your little brother or sister or child out trick-or-treating on Halloween and they fall asleep. You decide to go through their candy bag and binge on a bunch of their candy. Your blood sugar levels at that point are just going to skyrocket, and beta cells will secrete insulin, which helps to lower those blood sugar levels to help maintain that homeostatic point.



TERMS TO KNOW

Beta Cells

Cells of the pancreas which secrete insulin.

Insulin

A hormone released by beta cells in the pancreas which lowers blood sugar levels.

4. Delta Cells

Delta cells secrete **somatostatin**. Somatostatin is a hormone that helps to regulate the functioning of these alpha and beta cells.



TERMS TO KNOW

Delta Cells

Cells of the pancreas which secrete somatostatin.

Somatostatin

The exact function of this hormone is not well understood, but it's believed that it may help regulate alpha and beta cell activity along with some digestive functions.



SUMMARY

This lesson has been an overview of the role of **pancreatic hormones**. Specifically, you learned about **alpha**, **beta**, and **delta cells**.

Keep up the learning and have a great day!

Source: THIS WORK IS ADAPTED FROM SOPHIA AUTHOR AMANDA SODERLIND



ATTRIBUTIONS

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TERMS TO KNOW

Alpha Cells

Cells of the pancreas that secrete glucagon.

Beta Cells

Cells of the pancreas which secrete insulin.

Delta Cells

Cells of the pancreas which secrete somatostatin.

Glucagon

A hormone released by alpha cells in the pancreas which raises blood sugar levels.

Insulin

A hormone released by beta cells in the pancreas which lowers blood sugar levels.

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