

Small Intestine

by Sophia



WHAT'S COVERED

In this lesson, you will learn about the structure as well as the function of the small intestine. Specifically, this lesson will cover:

1. Main Function

The main function of the **small intestine** is to absorb nutrients from our food. As food exits the stomach it enters the small intestine and is pushed through a long tube by **peristalsis** (wave-like muscle contractions).

Digestive enzymes secreted by various sources aid in the breakdown of proteins, fats, nucleic acids, and carbohydrates. These digestive enzymes come from other accessory organs associated with the digestive system and make it easier to break down these nutrients for absorption.

Pancreatic **amylase** is an enzyme that helps to absorb and break down starches, while **lipase** is an enzyme that helps to break down and absorb fats. In summary, these enzymes aid with the breakdown and absorption of these different nutrients as they pass through the lumen of the small intestine.



BIG IDEA

Enzymes are a very important part of our digestive system.



TERMS TO KNOW

Small Intestine

A part of the digestive tract where the majority of nutrients are absorbed.

Peristalsis

Wave-like muscle contractions.

Amylase

An enzyme that breaks down carbohydrates in the digestive system.

Lipase

An enzyme that breaks down fats in the digestive system.

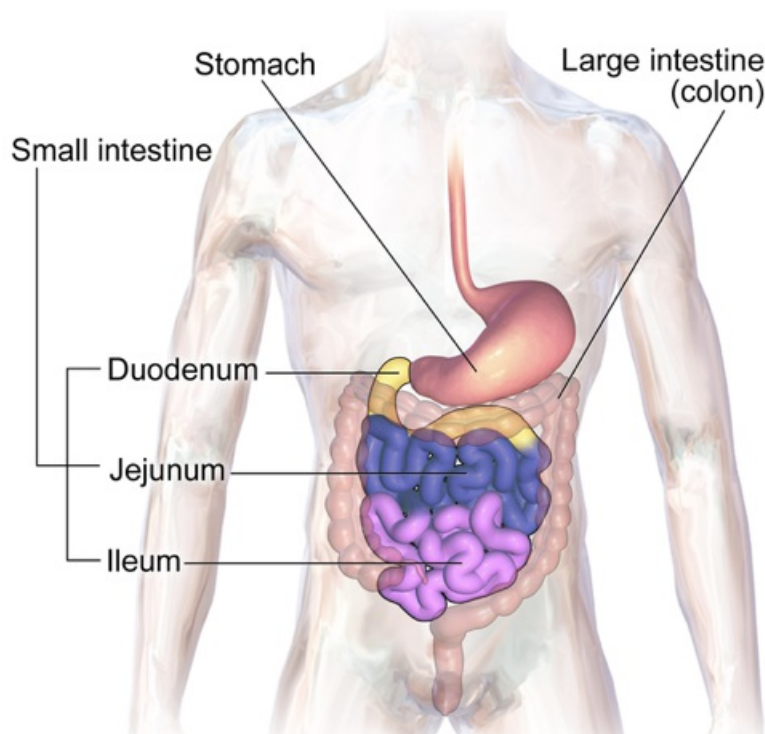
2. Structure

The small intestine is connected to the stomach on one end and the large intestine on the other end. The small intestine is actually rather long, which actually helps to make sure that you have enough space for all of the nutrients to be absorbed.

2a. Sections of the Small Intestine

There are three sections of the small intestine:

- **Duodenum:** Directly connected to the stomach
- **Jejunum:** Middle portion
- **Ileum:** End portion that connects to the large intestine



TERMS TO KNOW

Duodenum

The first section of the small intestine, where most of the digestive enzymes are secreted.

Jejunum

The middle section of the small intestine, where most of the absorption of carbohydrates and proteins occurs.

Ileum

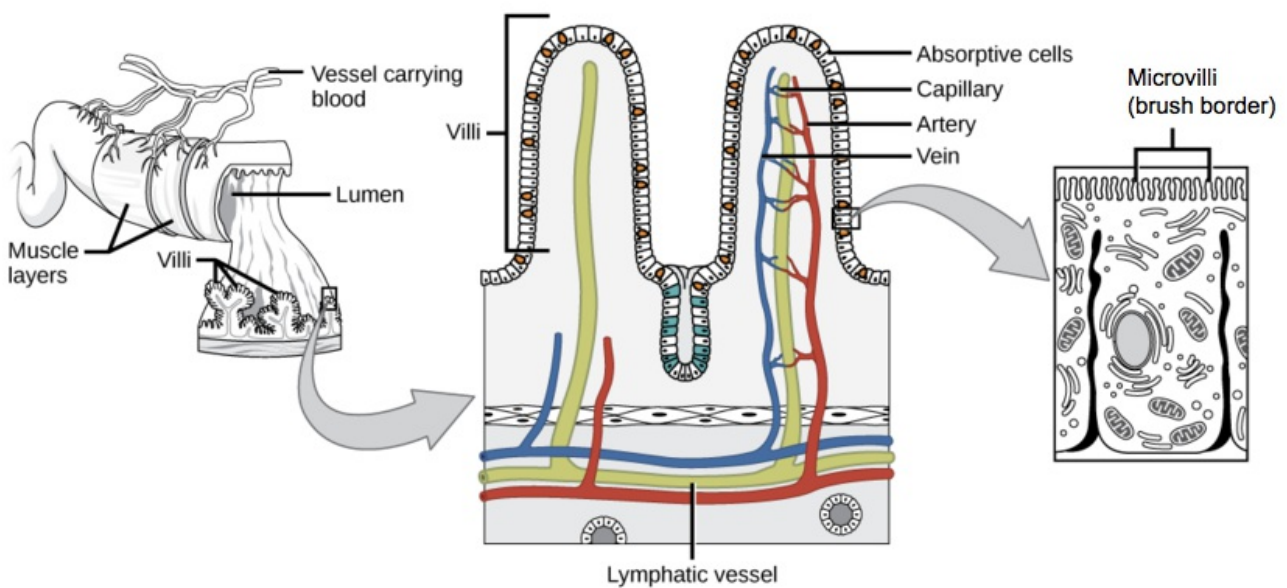
The last section of the small intestine which connects to the large intestine, where most of the lipids are absorbed.

2b. Villi and Microvilli

The lumen is in contact with the layer called the mucosa, which is the first and largest layer of the small intestine. The lining of the mucosa is formed by intestinal folds called **villi** within the lumen of our small intestine.

On each of those intestinal folds, there are cells with little hair-like projections called **microvilli** which increase

the surface area of the mucosa. By increasing the surface area with these intestinal villi, we have a much larger surface area for absorption.



☆ BIG IDEA

Having all of these different folds—villi and microvilli and the intestinal folds—increases the surface area for absorption. This ensures as many vitamins, minerals, and nutrients overall can be absorbed from our food as possible.

📄 TERMS TO KNOW

Villi

Small finger-like projections that line the mucosa and act to increase surface area and absorb nutrients.

Microvilli

Hair-like projections that cover villi and aid in absorption of nutrients.

📋 SUMMARY

This lesson has been an overview of the structure and **function** of the small intestine. The **structure** of the intestine was covered with brief descriptions of how each part contributes, including the three **sections**. The **villi and microvilli** increase the surface area for absorption.

Keep up the learning and have a great day!

Source: THIS WORK IS ADAPTED FROM SOPHIA AUTHOR AMANDA SODERLIND

📖 ATTRIBUTIONS

- [Small Intestine Sections](#) | Author: Wikipedia | License: Creative Commons
- [Villi and Microvilli](#) | Author: Wikipedia | License: Creative Commons



TERMS TO KNOW

Amylase

An enzyme that breaks down carbohydrates in the digestive system.

Duodenum

The first section of the small intestine, where most of the digestive enzymes are secreted.

Ileum

The last section of the small intestine which connects to the large intestine, where most of the lipids are absorbed.

Jejunum

The middle section of the small intestine, where most of the absorption of carbohydrates and proteins occurs.

Lipase

An enzyme that breaks down fats in the digestive system.

Microvilli

Hair-like projections that cover villi and aid in absorption of nutrients.

Peristalsis

Wave-like muscle contractions.

Small Intestine

A part of the digestive tract where the majority of nutrients are absorbed.

Villi

Small finger-like projections that line the mucosa and act to increase surface area and absorb nutrients.