

## This factsheet is an Introduction to the Digestive System and Function

### Introduction

The digestive system is a tube which runs from the mouth to the back passage and contains various accessory organs, including the salivary glands, liver, gallbladder and pancreas. These produce digestive enzymes and substances that help digestion (breaking food down to smaller molecules). The tube is made up of the mouth, oesophagus, stomach, small intestine and large intestine which leads into the back passage and is about 9 metres in length. Food takes around 2 hours to pass through the stomach, 2 hours to pass through the small intestine and 24 hours through the large intestine. Approximately 7 litres of fluid is secreted by the digestive system and its accessory organs each day. It is important to note that the words 'intestine' and 'bowel' are interchangeable.

There are many different elements which contribute to a functioning and effective digestive system. These include ingestion (putting food in your mouth), mechanical digestion (chewing and food being churned inside the digestive tract), chemical digestion (digestive enzymes and substances breaking food down), absorption (molecules passing from digestive system into the body) and the ability to make and pass stool. When the system works correctly, food is broken down so that nutrients can be absorbed and unwanted products excreted. When one or more of the functions of the digestive system fail, symptoms and disease can develop. These are discussed in the factsheets on the Core website.

### Mouth

This is the beginning of the digestive tract. Food is put into the mouth and broken down by chewing. This is called mechanical digestion. Various enzymes are secreted to help this breakdown, including 'salivary amylase' which is involved in digestion of carbohydrates to smaller chains and simple sugars. This is called chemical digestion.

### Oesophagus

Ingested food is swallowed and transported from the mouth to the stomach by the oesophagus.

### Stomach

Churning and mixing motions occur here due to muscle contractions, continuing the process of mechanical digestion. In addition, chemical digestion occurs in the stomach. The food is mixed with gastric juices and many digestive enzymes to help break down carbohydrates, proteins and fats. Hydrochloric acid is also released which provides an acidic environment to help enzymes work and also kills some unwanted bacteria.

### Small intestine

The main function of the small intestine is absorption of nutrients and minerals. About 90% of digestion and absorption occurs here including the digestion of proteins, fats and carbohydrates. Food is moved through the small intestine by coordinated contractions (called peristalsis) of the intestine wall which occur in a wave pattern travelling down from one section to the next. The contractions occur behind the ball of food (bolus), forcing it through the digestive system.

### Large intestine

The main function of the large intestine is to remove water from its contents. This hardens the stool so it can be excreted from the body through the back passage.

### Accessory organs

The liver has many functions which include help with digesting food, storing fuel for the body (glycogen), helping the blood to clot and removing or processing alcohol, toxins and medications from the body. The liver makes bile which passes from the liver (stored in the gallbladder) to the intestine which aids in fat digestion. The pancreas

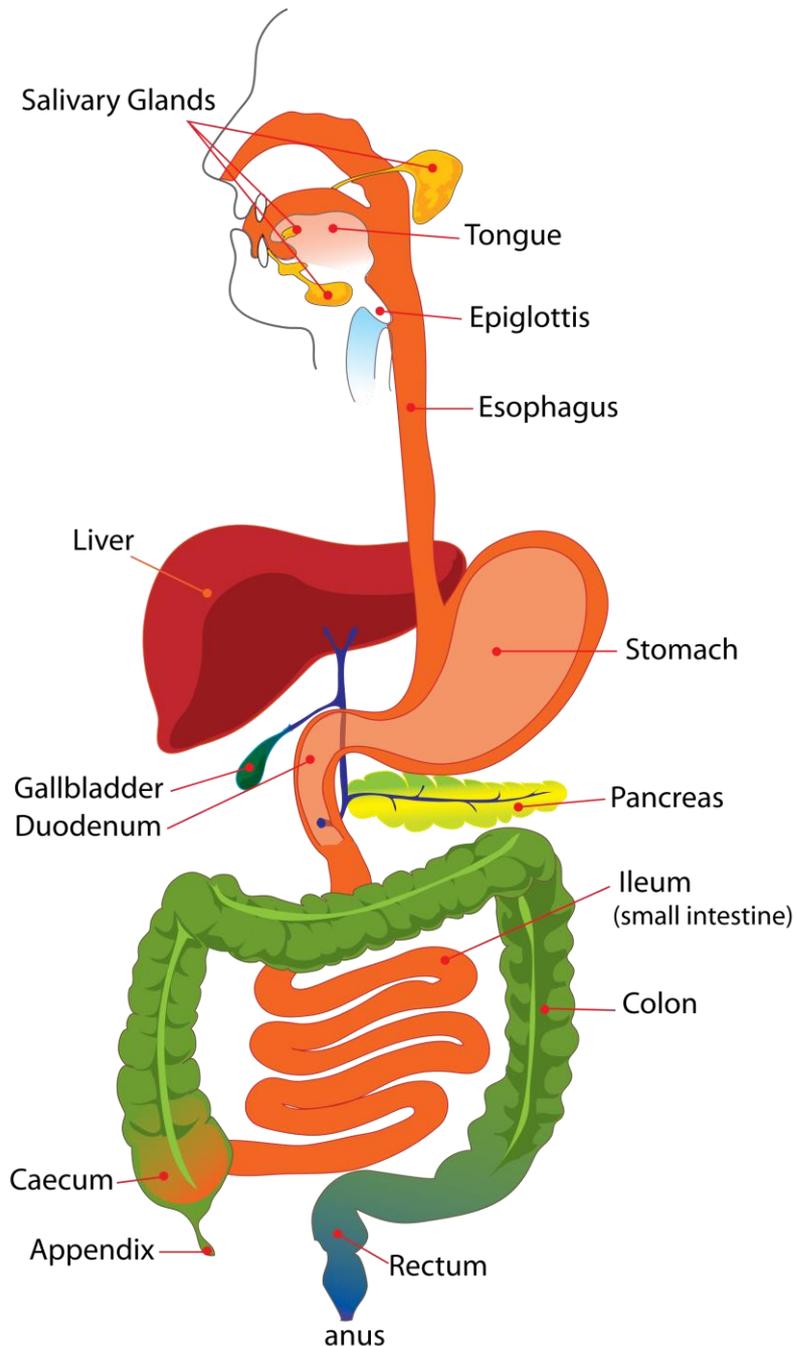
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has two main functions which are production of digestive enzymes and making hormones which help control blood sugar levels.



<http://healthfavo.com/digestive-system-for-kids.html>

For more information about research in this area please contact Core.

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