

Information about

# The Digestive System

## What is the Digestive System?

The digestive system (gut) is a tube that goes from the mouth through the chest and abdomen to the back passage (anus). It is divided into several sections, each of which has a specialised function. Two other organs are closely involved in digestion, the liver and pancreas. They are attached to the gut by small tubes. These tubes carry the bile and enzymes made by the liver and pancreas to mix with food and break it into particles that can be absorbed.

Food, fluid and waste products are pushed along the gut by muscular contractions in the wall which are called 'peristalsis'. The time taken for food to go from the mouth to the anus varies from 12 to 48 hours, depending on the type of food eaten.

## The parts of the gut

### 1. The Mouth

This is the beginning of the digestive process, where food is chewed and broken down into pieces that can be swallowed. Some people have difficulty chewing and swallowing food because of the poor state of their teeth or because they have a very dry mouth that doesn't produce saliva. Some people have difficulty swallowing because of problems at the back of the mouth cavity, such as weakness of the swallowing muscles.

### 2. The Oesophagus

The oesophagus is the tube that connects the mouth to the stomach. Muscle contractions in the oesophagus push food gently down into the stomach. There is a little valve between the oesophagus and the stomach called the 'lower oesophageal valve.' It prevents reflux (backwards movement) of acid and food back up into the oesophagus.

### 3. The Stomach

The stomach has several functions. It produces acid which can kill bacteria which can be swallowed in the food or saliva. The thick muscular walls of the stomach contract to break up solid food and mix solids, liquids, stomach acid and saliva in order to aid digestion. The stomach also makes substances which help absorb iron and vitamins.

### 4. The Duodenum

The duodenum is the first part of the small intestine. It receives bile from the liver and enzymes from the pancreas through small ducts or tubes.

### 5. The Pancreas

This organ makes special enzymes, which are substances that break food down into digestible particles. It also makes the hormone insulin, which controls blood sugar.



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## 6. Liver and Gall Bladder

The liver produces bile, a fluid that helps to digest fats. Bile is first stored in the gall bladder until it is needed after meals. It is then released into a tube called the 'bile duct' and travels down into the duodenum.

## 7. The Small Intestine

The small bowel is five metres in length in an adult and half that length for a baby. It is made up of many folds; if all the folds were flattened out, the surface area would equal that of a doubles tennis court. This creates a large surface area to allow large amounts of nutrients to pass across the lining of the small intestine into the blood stream, which then distributes them throughout the body.

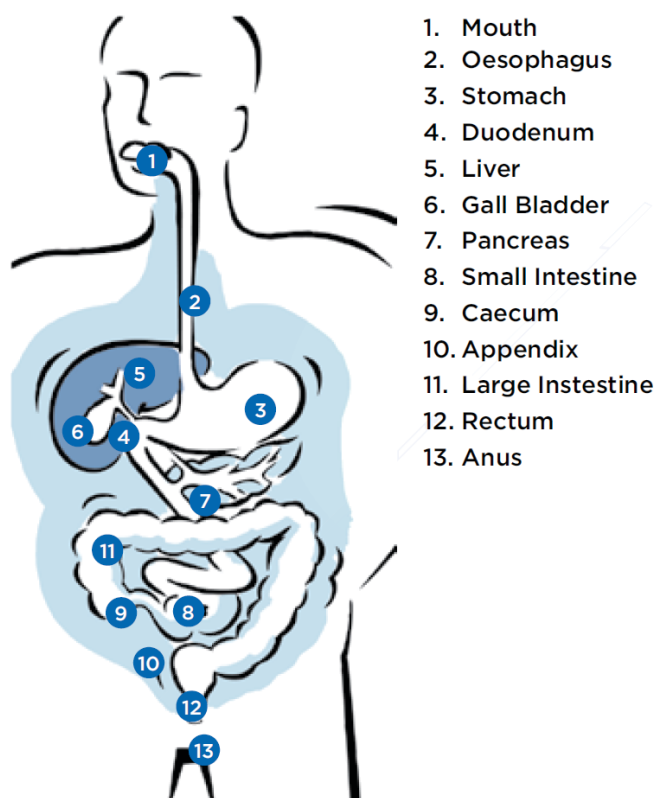
## 8. The Large Intestine or Colon

The colon is like a waste treatment works. It contains numerous bacteria which help in this process. In fact, the weight of the bacteria in an adult colon is greater than the weight of any organ in the body. After all the nutrients are absorbed in the small intestine, the leftover liquid waste passes from the small intestine into the large intestine. The large intestine then processes this liquid waste into solid bowel motions. This is done by absorption of fluid through the large intestine surface into the blood stream. Peristalsis pushes the motion down into the rectum or back passage where it is stored until it is time to empty the bowels.

## 9. The Anus

The anus is the opening at the end of the digestive tract. It is made up of muscular bands (called a sphincter) which closes off the rectum. When it is time for a person to empty their bowels the sphincter muscle relaxes and allows the motion to pass through.

A high fibre diet including wholemeal cereals, vegetables and fruit is important for healthy digestion. Ideally you should have 30g of fibre per day. A good balanced diet high in fibre has been shown to reduce the risk of bowel cancer, diverticular disease and heart disease. It also helps constipation. It is important to drink six to eight glasses of water, juices or tea per day. Regular exercise can help a sluggish gut.



## Digestive Health Foundation

This information leaflet has been designed by the Digestive Health Foundation as an aid to people who are looking for information on the digestive system. This is not meant to replace personal advice from your medical practitioner.

The Digestive Health Foundation (DHF) is an educational body committed to promoting better health for all Australians by promoting education and community health programs related to the digestive system.

The DHF is the educational arm of the Gastroenterological Society of Australia (GESA). GESA is the professional body representing the specialty of gastrointestinal and liver disease. Members of the Society are drawn from physicians, surgeons, scientists and other medical specialties with an interest in gastrointestinal (GI) disorders. GI disorders are the most common health related problems affecting the community.

Research and education into gastrointestinal disease are essential to contain the effects of these disorders on all Australians.

For further information on a wide variety of gastrointestinal conditions is available on our website.

# dhf

Digestive Health Foundation

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This leaflet is promoted as a public service by the Digestive Health Foundation. It cannot be comprehensive and is intended as a guide only. The information given here is current at the time of printing but may change in the future. If you have further questions you should raise them with your own doctor.