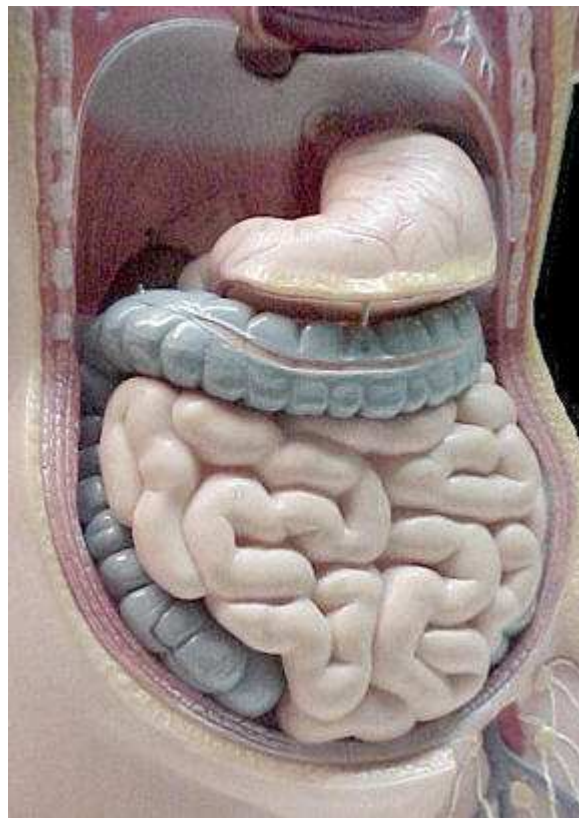




The Open Door Web Site

How Food is Digested

When animals eat their food it goes into their digestive system. Most of the food is broken down and absorbed (taken in) into the blood where it is taken to all parts of the body. The food is used to give us energy to move, breathe, keep warm and many other activities. Food is also required to make us grow and to keep us healthy. Some of the food is not absorbed and is eventually lost from the body. This part of the food is eliminated from the body.



The mammalian digestive system is really a long tube which passes through the body. It starts at the mouth, where the food is ingested (taken in), and ends at the anus.

At the anus the parts of the food which are not useful are egested (moved out) of the body. When food is in this tube it is not really part of the body; it is just passing through it. It is something like travelling through the Alps by car. The car and its passengers are not part of the mountain but just

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passing through it. In the digestive system, the useful food is taken into the body. To take out the useful parts of the food, the digestive system breaks the food down into small pieces. This process is called digestion. The parts of the food which are not useful just pass through the body.

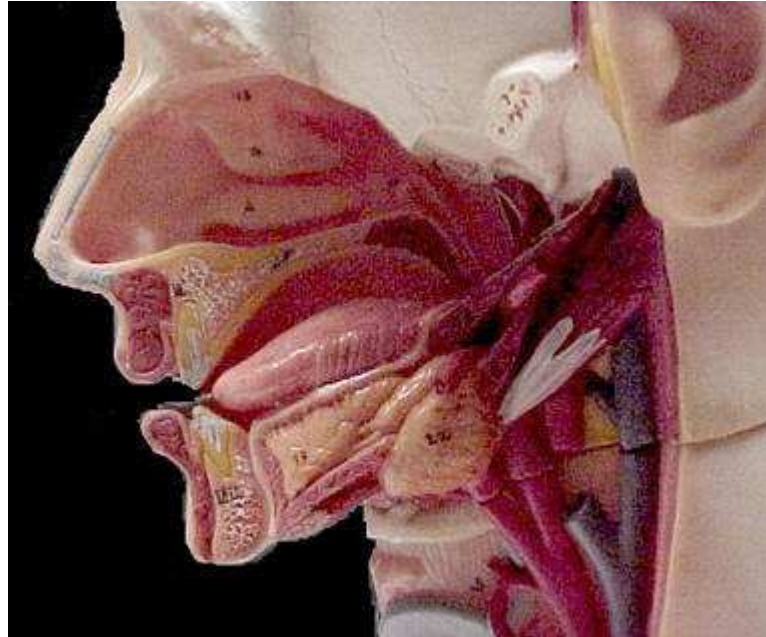
The Mouth

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The food is chewed in the mouth. We have already seen that different mammals have different kinds of teeth depending on the food they eat. As the food is chewed it is mixed with a liquid called saliva. We produce around one and a half cubic decimetres of saliva each day from special glands in our cheeks and under the tongue. When the food has been chewed enough, it is pushed to the back of the mouth by the tongue and swallowed.



Johnny's Fact File No.21

Did you know that humans swallow about 2400 times every day?

The Oesophagus

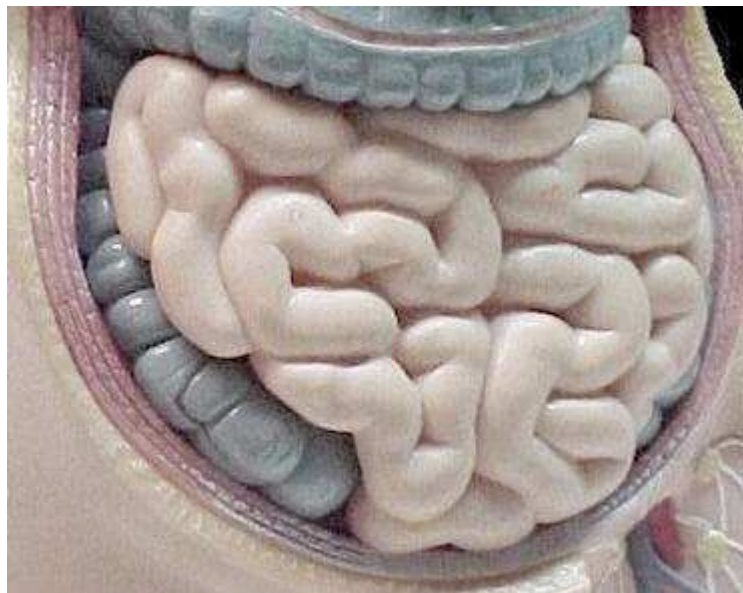
When the food is swallowed it moves from the back of the mouth into the first part of the digestive system, a tube called the oesophagus. The oesophagus moves the food through the chest region of the body which is called the thorax. Solid food passes through the oesophagus to the stomach in 5 seconds. Liquids only take 1 second to reach the stomach.

The Stomach



The stomach is a part of the digestive system which is wider than the rest of the tube. It is shaped like a bag and it is used to store food. It is able to hold one and a half dm^3 of food comfortably. The food stays in the stomach for about two and a half hours. While it is there it is mixed with juices, produced by the stomach wall, which break it down into much smaller pieces. Some of these pieces are so small that they start to dissolve in the juices. The semi-liquid food now passes into the small intestine.

The Small Intestine



This part of the digestive system is a long, coiled tube, about 4 metres long. The food is mixed with more juices which come from the liver and the pancreas. These juices

turn the food into even smaller pieces. A lot of the food is now so small that it is in solution. The useful parts of the dissolved food are absorbed (taken in) through the wall of the long tube. There are structures shaped like fingers which stick out from the wall of the small intestine. In the small intestine of a rat there are about 140 000 of these structures called villi (singular : villus). The villi increase the surface area of the gut wall so that more food can be absorbed. The parts of the food which are not absorbed stay in the tube and move into the next part of the digestive system, the large intestine.

The Large Intestine



The tube which is called the large intestine is wider than the small intestine but not as long. It measures one and a half metres in length. Food can stay in the large intestine for a long time, up to 96 hours! It is here that a lot of the water contained in the food is absorbed into the body. This leaves the remaining parts of the food in a more solid condition.

The Rectum and the Anus

The solid parts of the food which have not been absorbed are stored in the rectum. When the rectum is full, the remains of the food are passed out of the body through the anus.

You now have a general knowledge of what happens to the

food in the digestive system. All mammals have a similar digestive system but there are some differences. For example, there is a part of the digestive system which is called the appendix. It is found between the small intestine and the large intestine. The appendix is important in herbivores because it helps them digest plant food. Therefore it is quite large in an animal such as the rabbit. It is less important, however, in the human and is much smaller because of this. Sometimes a human appendix can be swollen and can cause a lot of pain. If this happens there has to be an operation to remove it. A person who has had his appendix taken out can continue to eat the same things as usual. This proves that the appendix is not essential in humans.

- [The Digestive System of Other Animals](#)
- [The foods which give us energy](#)
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