

What am I made of... and why do I get sick?



XP.

Organ Systems of the Body Digestive System



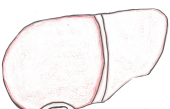
Mouth

Location
The mouth is the first point where food enters into the body, it is where food starts its journey through the digestive system.

Function
The mouth has many functions, including chewing your food. The mouth chews by crushing food into smaller pieces using the teeth making it easier to swallow. The tongue helps moisten food by mixing it with saliva. Saliva has enzymes in it which starts digestion of food straight away. It is important to chew food properly and not too quickly, as sometimes, if you swallow too fast your food can go down into your trachea and you don't want it to go there. If food goes into there you have to get the food out by coughing, so that it does not enter the lungs, or you can choke.

Tonsillitis and Mouth Cancer
Tonsillitis is an infection of the tonsils usually caused by a virus. It causes a painful swelling of the tonsils, at the back of the mouth, and you may have difficulty swallowing. You might also have headaches and a feeling of tiredness. Oral cancer is another disease which affects the mouth. It is when a tumour develops on the surface of the tongue, mouth, lips or gums. Both alcohol and tobacco are carcinogenic which means they contain chemicals that can damage the DNA in cells and lead to cancer.

Bailey Cheadle and Brandon Hall



Liver

Location
The liver is located directly under the diaphragm it is protected by the rib cage. The Liver weighs about 1.5kg and is the second largest organ in the human body.

Function
The liver has many functions, these include: organising the products of food and digestion from the stomach and intestines, controlling and storing glucose, making proteins and cholesterol for use in the body and removing toxic chemicals. One of the key roles during digestion is to break down fats. The liver produces bile which helps break down fats, bile is stored in the gallbladder.

Liver Disease
A variety of things can affect the liver such as cirrhosis, when normal liver cells are replaced by scar tissues as a result of liver disease. There are many types of liver disease but it is also an organ which has remarkable properties to regrow and repair. Cirrhosis is a condition in which the liver becomes scarred and damaged, it can be the result of inflammation, infection and toxic substances such as drugs and alcohol. In the UK the commonest cause of cirrhosis is from alcohol misuse, in Asia it is from viral infection (Hepatitis).

Emily Greenwood and Lauren Empson



Small Intestine

Location
The small intestine is located beneath the stomach in the abdomen and it performs some of the final roles in the digestive process. The small intestine is a long and narrow tube about 7 meters long.

Function
The small intestine's function is to break down and absorb nutrients from food which have been turned into a thick liquid called 'chyme'. Around 90% percent of the nutrients in food are absorbed into the body by the small intestine, the other 10% is absorbed in the stomach and large intestine. To help it do this, it is covered in tiny bumps called 'villi' which are just one cell thick and it has lots of tiny blood vessels to carry the nutrients away to the liver.

Coeliac Disease
Coeliac disease is a non-communicable disease, meaning you can't catch it from somebody else. Coeliac disease is when your small intestine is hypersensitive to gluten; a protein found in rye, wheat and barley. The small intestine is covered with extremely small structures called villi. Villi are tiny finger shaped bumps and are a good example of a specialised cell. Their shape means that the small intestine has a very big surface area which means it can absorb as many nutrients as possible. If gluten makes contact with the small intestine, after eating food that contains it, your immune system attacks the villi. This leads to damage to the surface of the intestine which makes it difficult to absorb nutrients properly. Coeliac disease can be made better by having a gluten free diet.

Elliott Crawley and Joe Smith

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Oesophagus

Location
The Oesophagus begins inside the throat and ends at the stomach. The oesophagus runs down through the chest between your backbone and your heart/lungs.

Function
It's the long tube that carries food from the throat to the stomach after you swallow.

Oesophageal Cancer
Oesophageal cancer is one condition that affects the oesophagus. It is when a portion of the oesophagus overgrows and can cause a narrowing of the tube which can mean you have problems swallowing. You should go to your doctor if you have problems swallowing food over a long period of time.

James Herriot



Stomach

Location
The Stomach is a rounded and roughly a crescent shaped organ. It is located in the left of the upper abdomen, just below the heart. The stomach is the third step in the digestive system.

Function
One of the main functions of the stomach is to store food so it all doesn't go down at once. It's a large bag which stores food and drink and churns it into a thick liquid with the help of the gastric acid. By turning the contents into a thick liquid, it becomes easier for them to travel through the small and large intestines.

Norovirus
A disease which affects the stomach is norovirus. This illness causes vomiting, diarrhoea, a fever, aching limbs, feeling ill in general, stomach cramps and headaches. Although this sounds like a horrible thing it only lasts for two to three days. It's important that anyone with this illness must stay hydrated and drink plenty of water otherwise they will become dehydrated. Even though this should clear up by three days it is highly communicable and can be spread easily from person to person by contact. As this is a viral illness, it is not treated with antibiotics.

Amy Dunne and Amy Gadd



Pancreas

Location
The pancreas is located behind the stomach and towards the left of the abdomen. The pancreas, which is 15cm long, is connected to the duodenum - the first section of the small intestine.

Function
The pancreas produces pancreatic juice that has digestive enzymes in it. These enzymes break down the carbohydrates, protein, and fat in your food. The enzymes produced by the glands in the pancreas enter the duodenum through a small hole. Bile from the gallbladder also passes through this hole and the liquids mix with the food as it enters the small intestine to take part in digestion.

Diabetes
There are different diseases and conditions that affect the pancreas. One of the main types is Type 1 diabetes. Type 1 diabetes is where your pancreas stops producing insulin (a chemical messenger which helps to control blood sugar). This means that your body can't regulate its blood sugar properly and this can have a big effect on the way the rest of your body works. It is quite a common condition with around 4 million people in the UK who have type 1 or 2 diabetes. As your pancreas doesn't produce insulin, people with Type 1 diabetes have to take insulin injections to stay healthy. Type 2 diabetes happens when the cells around the body do not respond to the insulin made by the pancreas. 90% of people with diabetes have this type.

Benjamin Wheatcroft and Jacob Coates



Large Intestine

Location
The large intestine is located around the edge of the abdomen. The large intestine usually measures to about 1.5 metres in length.

Function
The large intestine absorbs water back into the body after most of the nutrients have been removed by the small intestine. Nutrients and vitamins released by gut bacteria are also absorbed by the large intestine. Any waste that can't be used is then stored in the rectum until you go to the toilet.

Diarrhoea
Diarrhoea is when the stools or faeces become watery, it can be caused by inflammation or infection of the intestine. It usually only lasts a few days but can last longer. Diarrhoea is usually caused by a virus or bacteria that infects the gut. Some people call it instant flu or stomach flu. Diarrhoea may also follow constipation especially for people who have irritable bowel syndrome. To avoid getting diarrhoea, wash your hands frequently after going to the toilet and avoid handling and eating raw or uncooked meats.

Alex Mason and Rylie Manion