DIGESTIVE SYSTEM

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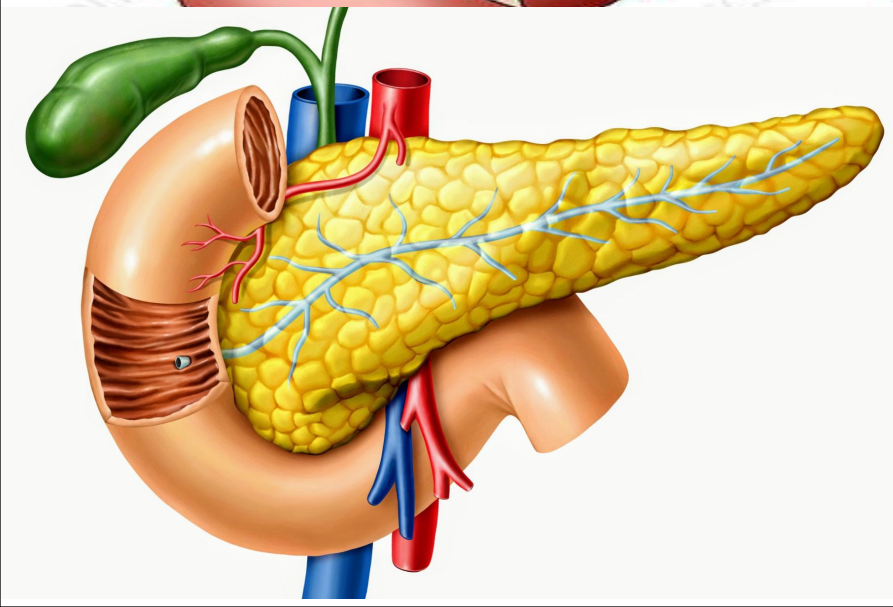
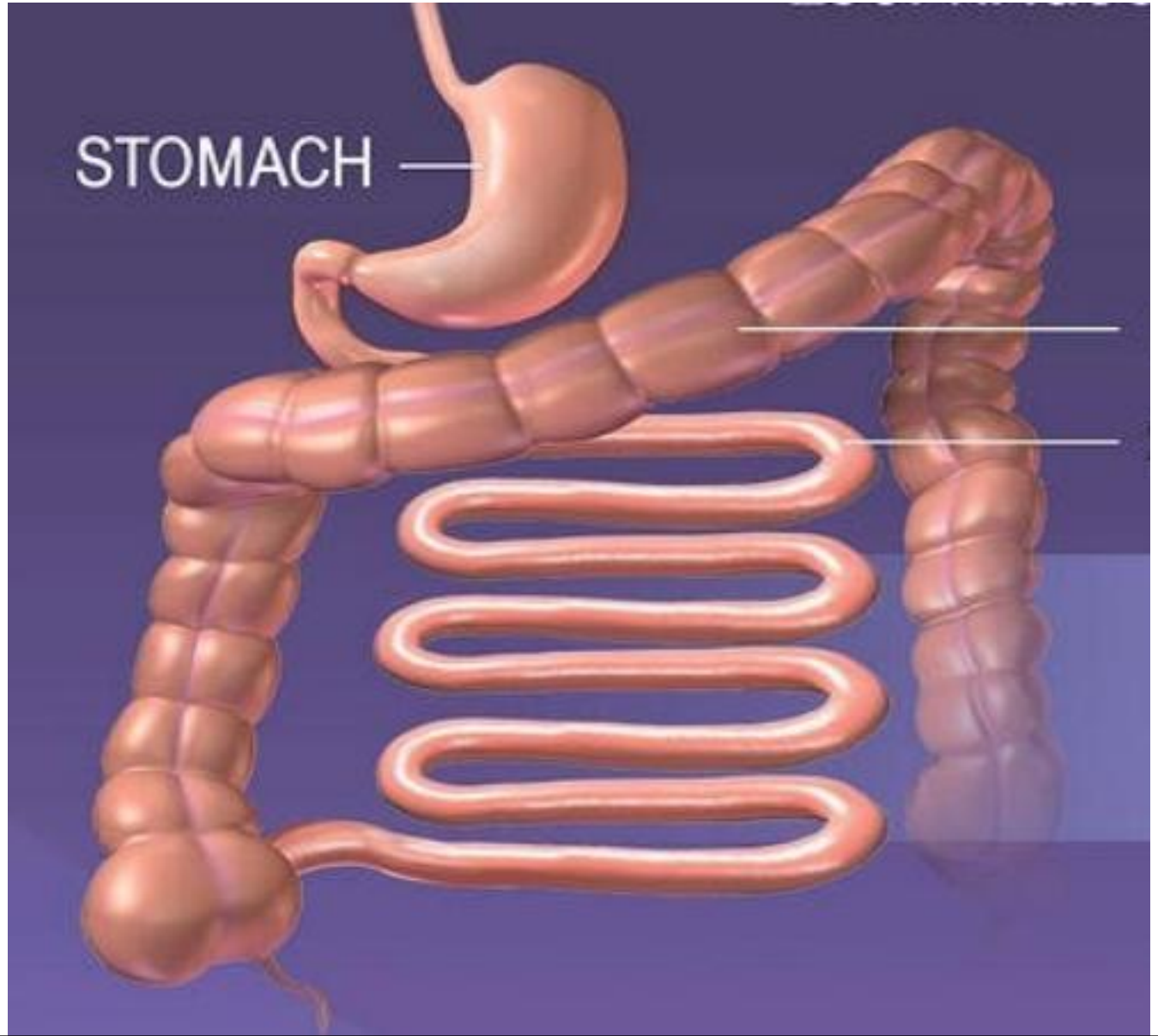
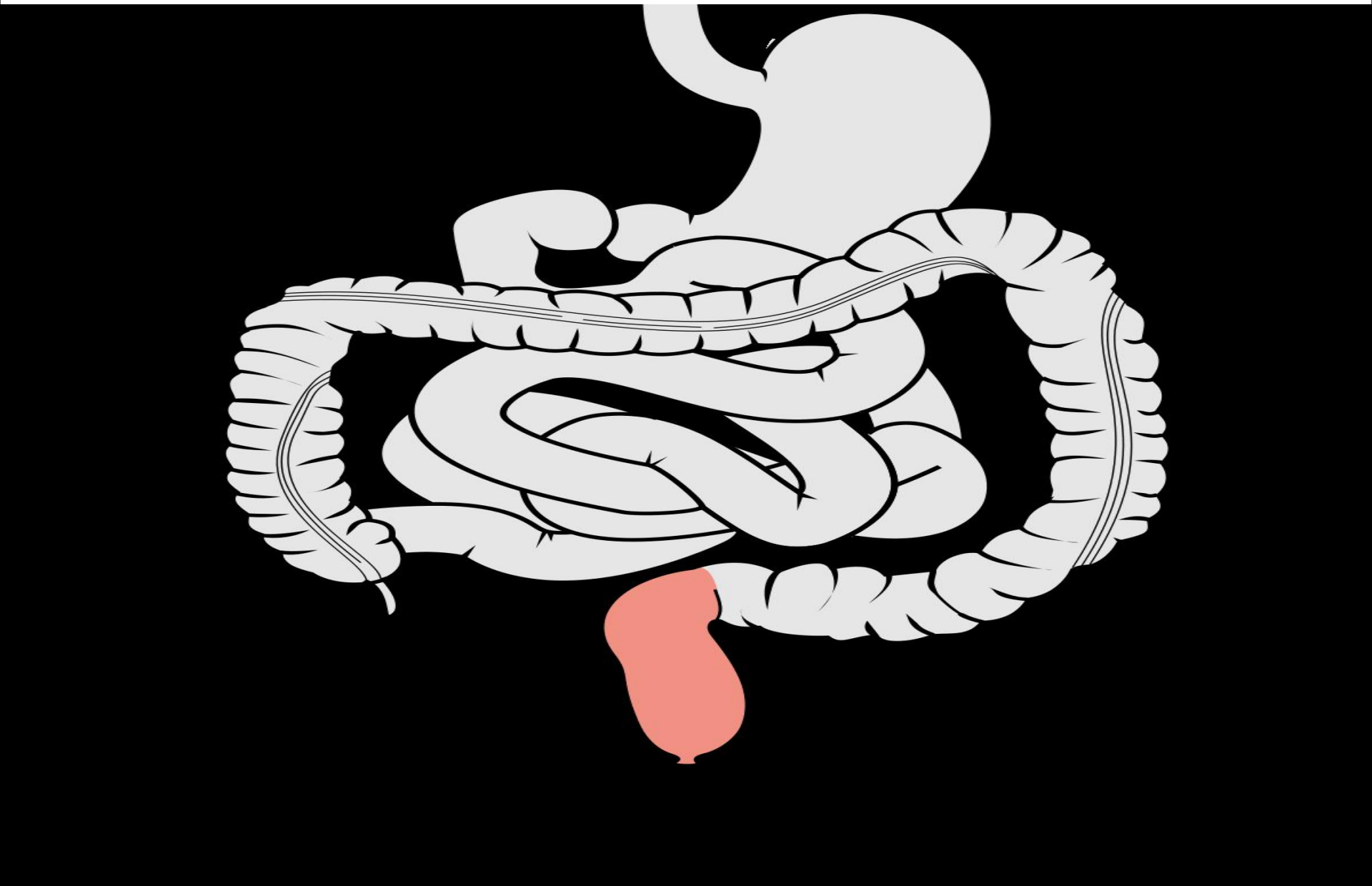


THE ALIMENTARY CANAL / GUT



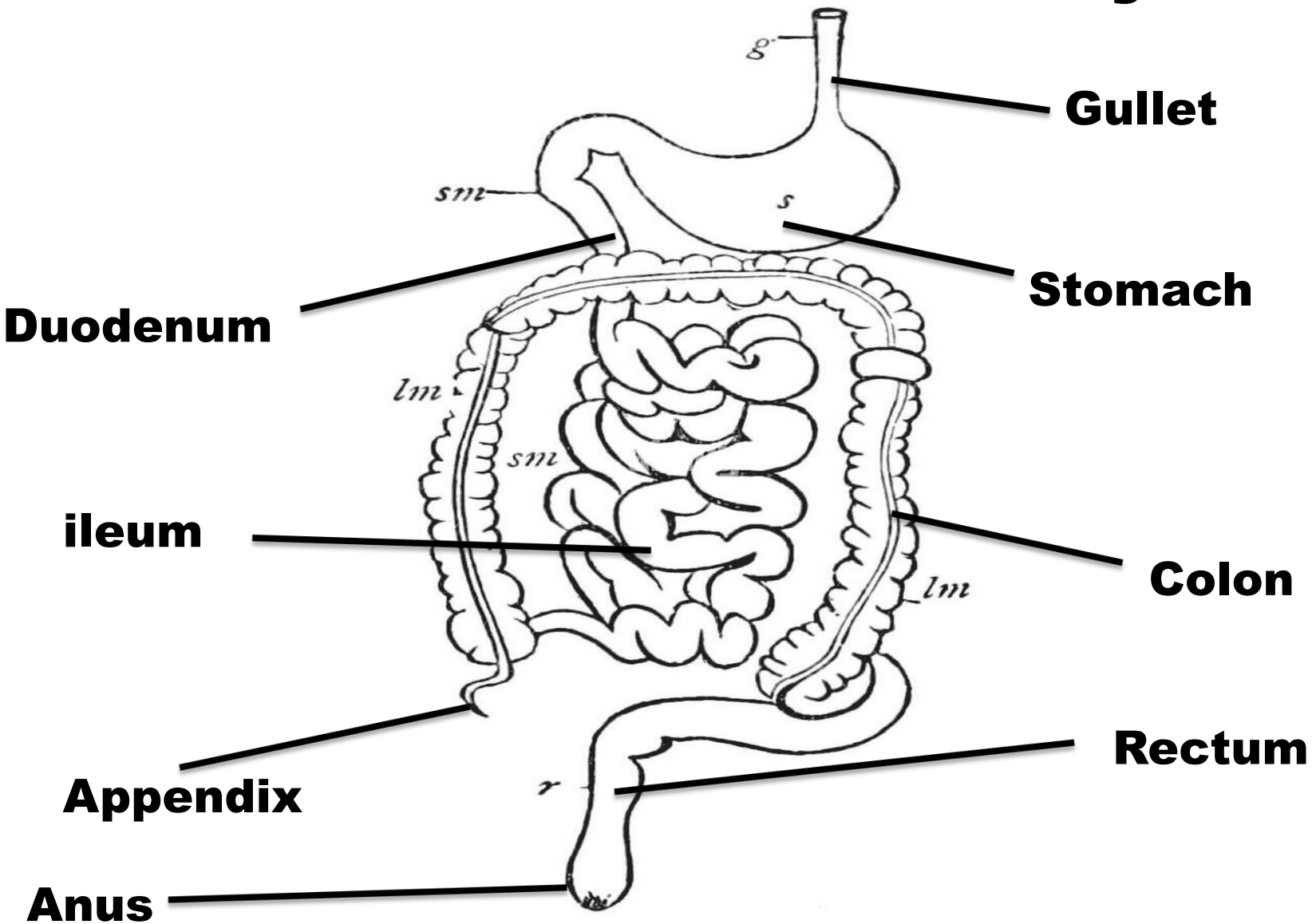
The alimentary canal is a tube that runs from the mouth to the anus



Parts that make up the alimentary canal

- Mouth
- Gullet
- Stomach
- Duodenum
- Ileum
- Colon
- Rectum
- Appendix
- Anus

Structure of the alimentary canal

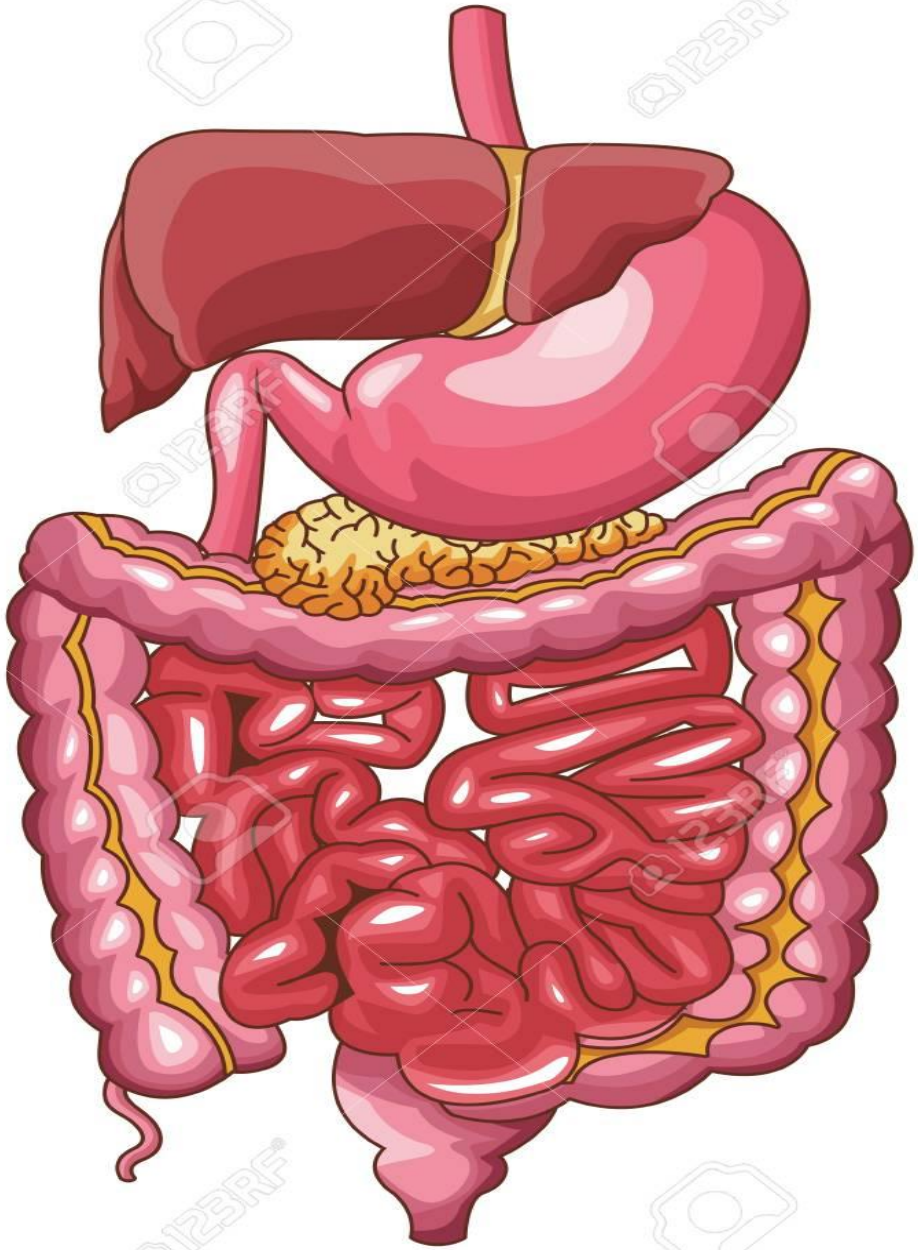


The alimentary canal

Begins **Mouth**

Ends **Anus**

DIGESTIVE SYSTEM



DIGESTIVE SYSTEM

This is a system that deals with the break down of food into simple soluble particles that can be absorbed into the blood stream

Parts that make up the digestive

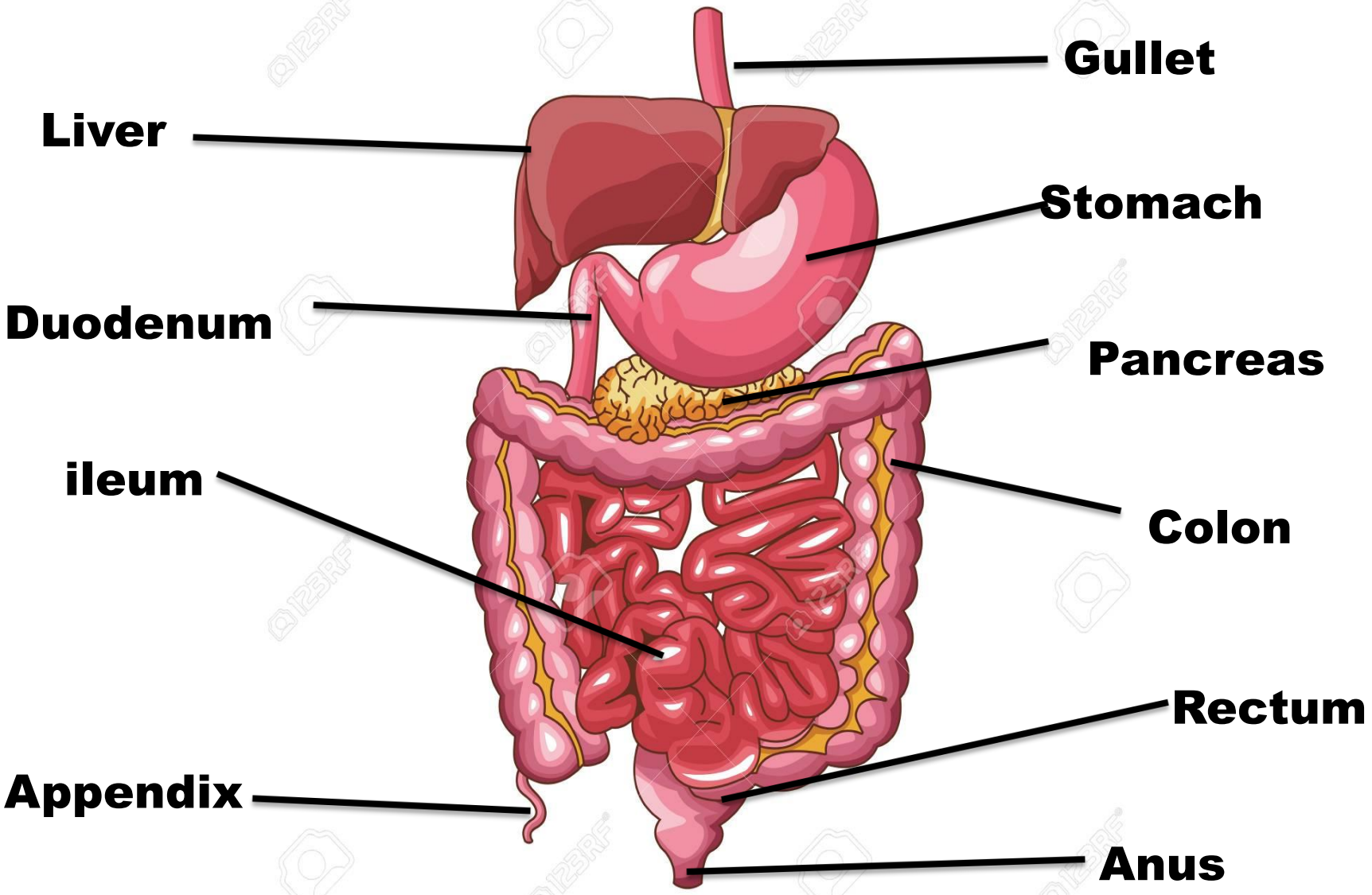
- Salivary glands
- Teeth
- Tongue
- Gullet
- Stomach
- Liver
- Gall bladder
- pancreas
- Duodenum
- Ileum
- Colon
- Rectum
- Appendix
- Anus

In other words the digestive system is made up of the alimentary canal and other parts called accessory organs

NB

The alimentary canal is just part of the digestive system

Structure of the digestive system



ACTIVITY

- What is alimentary canal?

- Name any two organs that are part of the digestive system but not part if the alimentary canal

- Where does the alimentary canal:

i) Begin

ii) End

- Apart from the digestive system, write down any other two systems that make up an organism

DIGESTIVE SYSTEM

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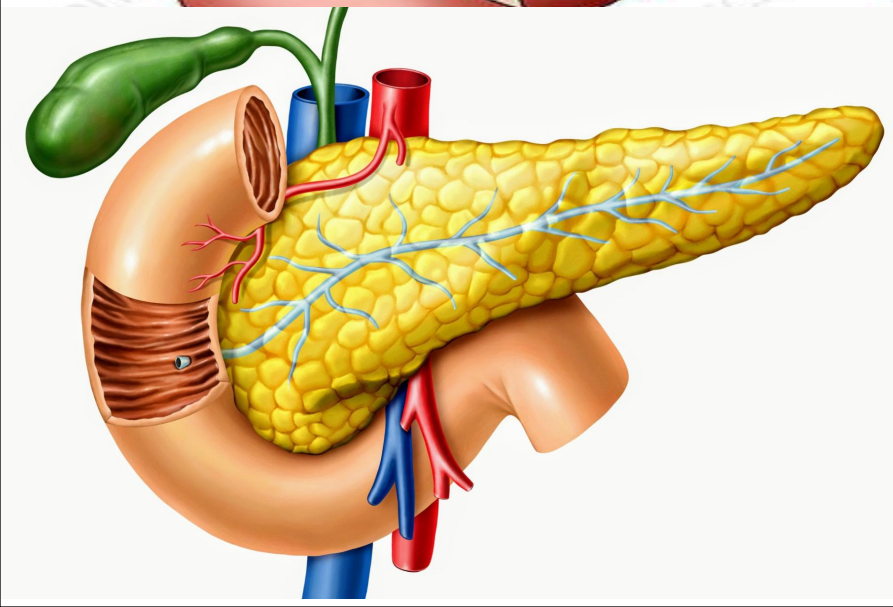
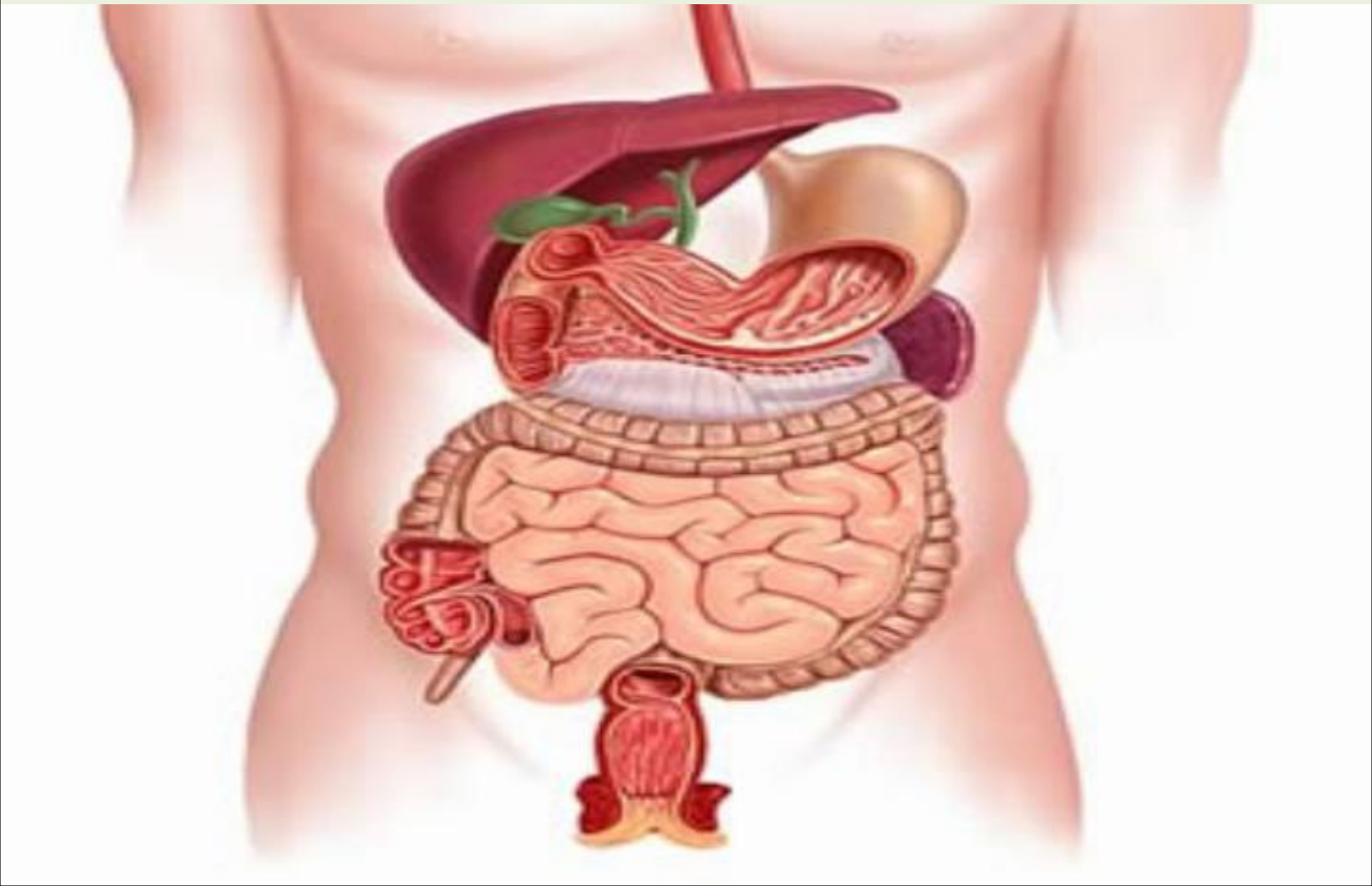
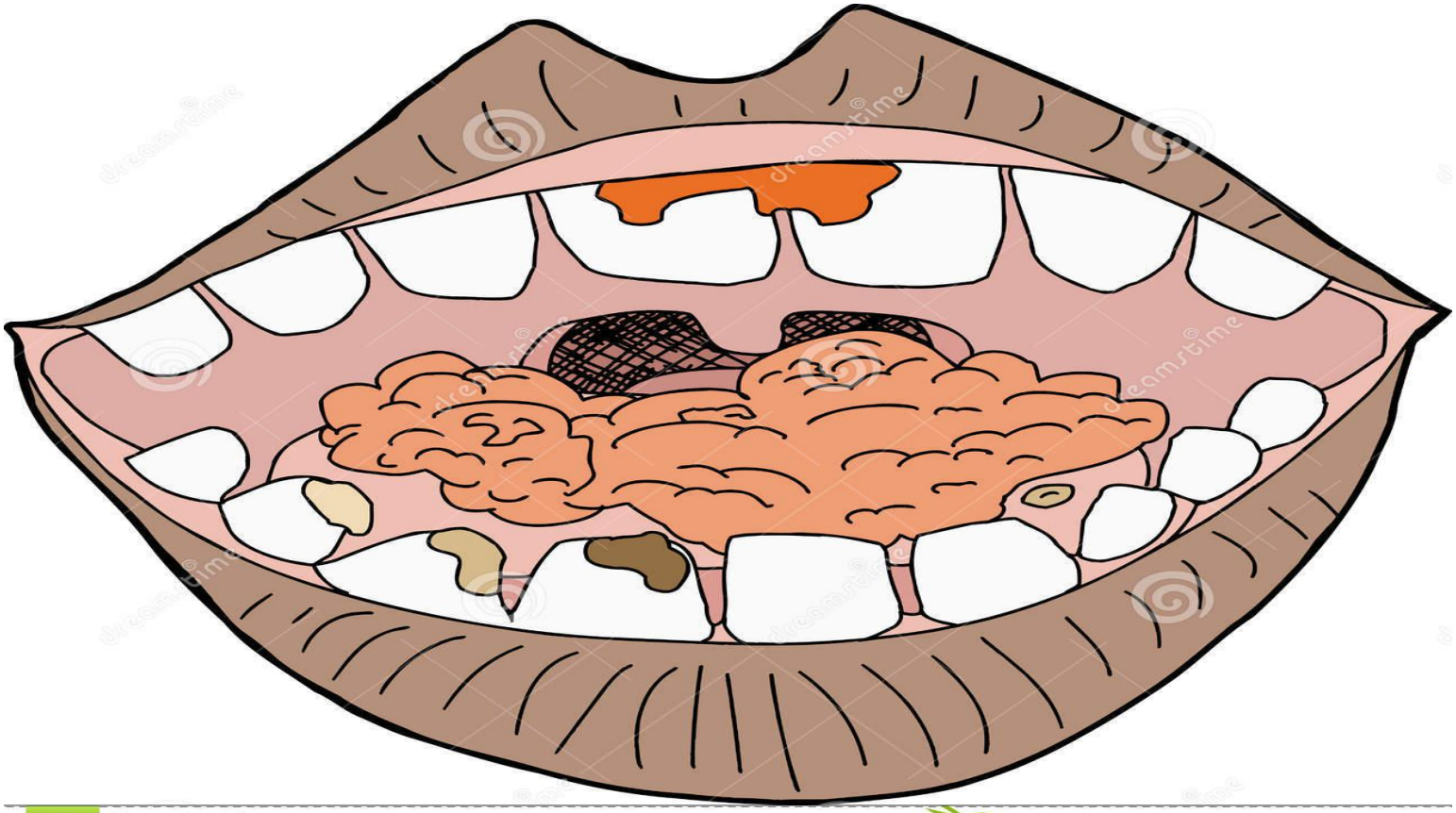


FUNCTION OF THE DIFFERENT PARTS



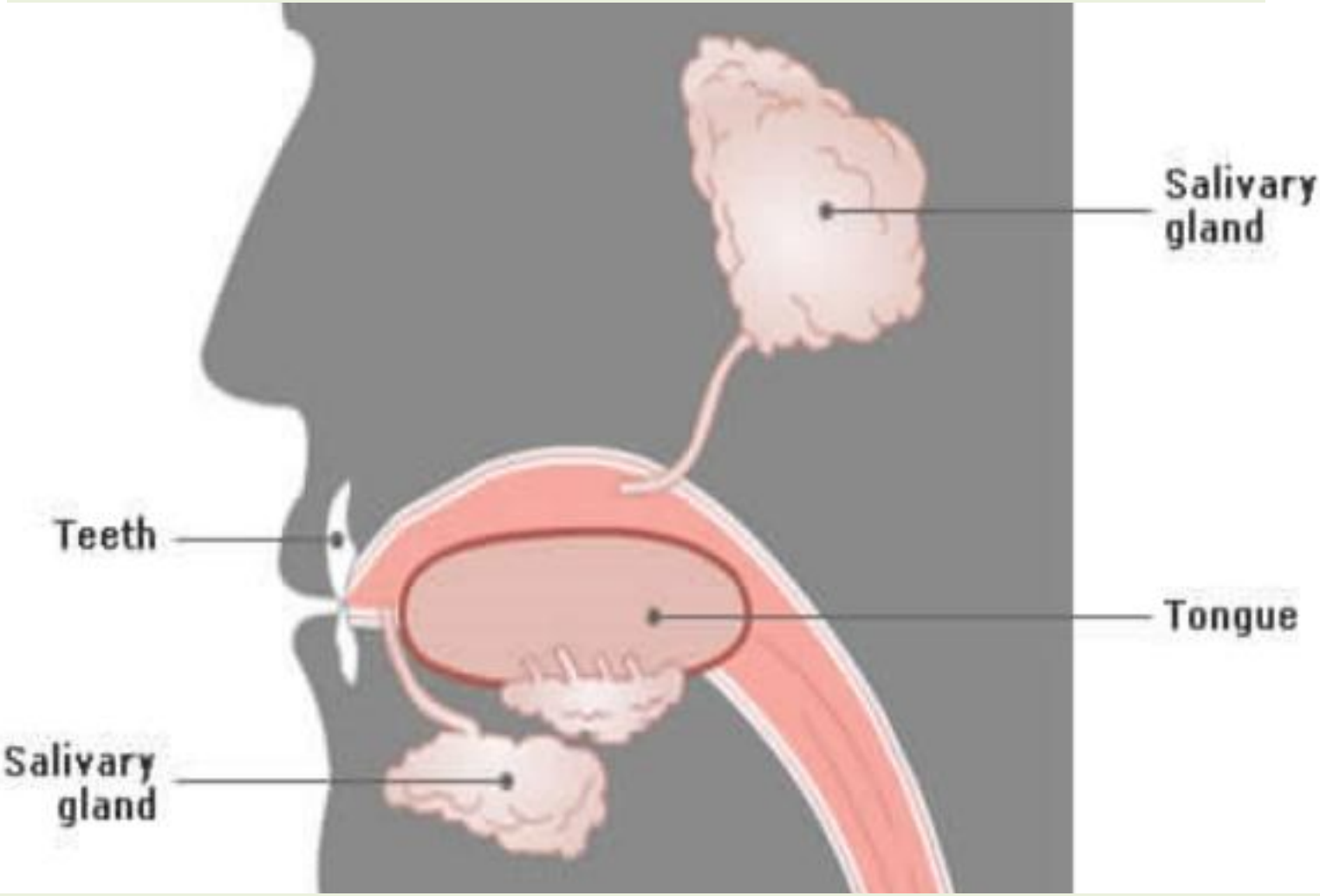
Teeth

Teeth help to break down food into smaller particles



Teeth

Salivary glands



Salivary glands produce saliva

Salivary glands

They produce saliva

Components of saliva

- **Water**
- **Ptyalin (salivary amylase)**
- **Mineral salts**
- **Mucus**

How is saliva useful in digestion?

Saliva contains salivary amylase that helps to digest starch

Saliva also helps to lubricate food to ease swallowing

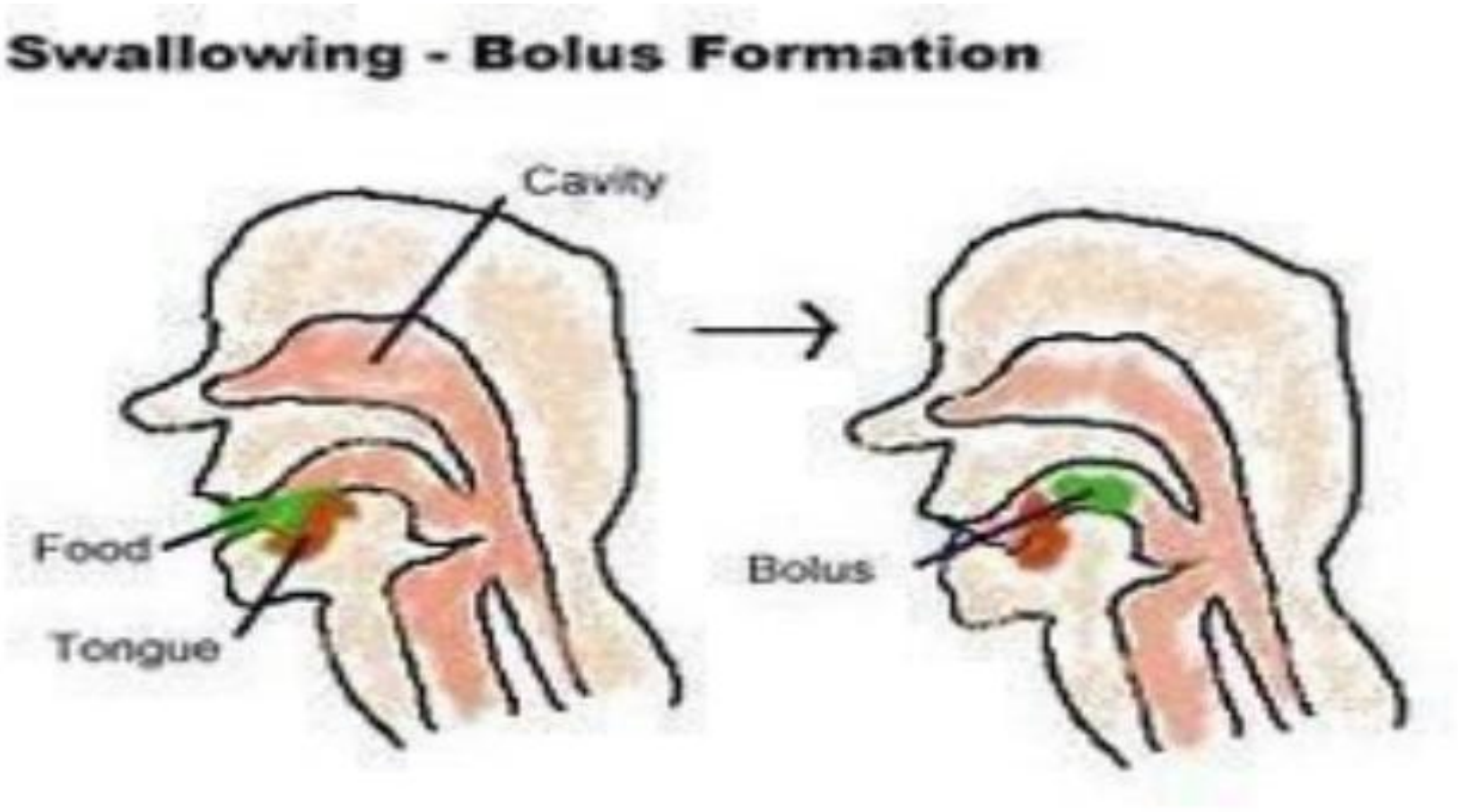
NB

Chemical digestion of starch starts in the mouth

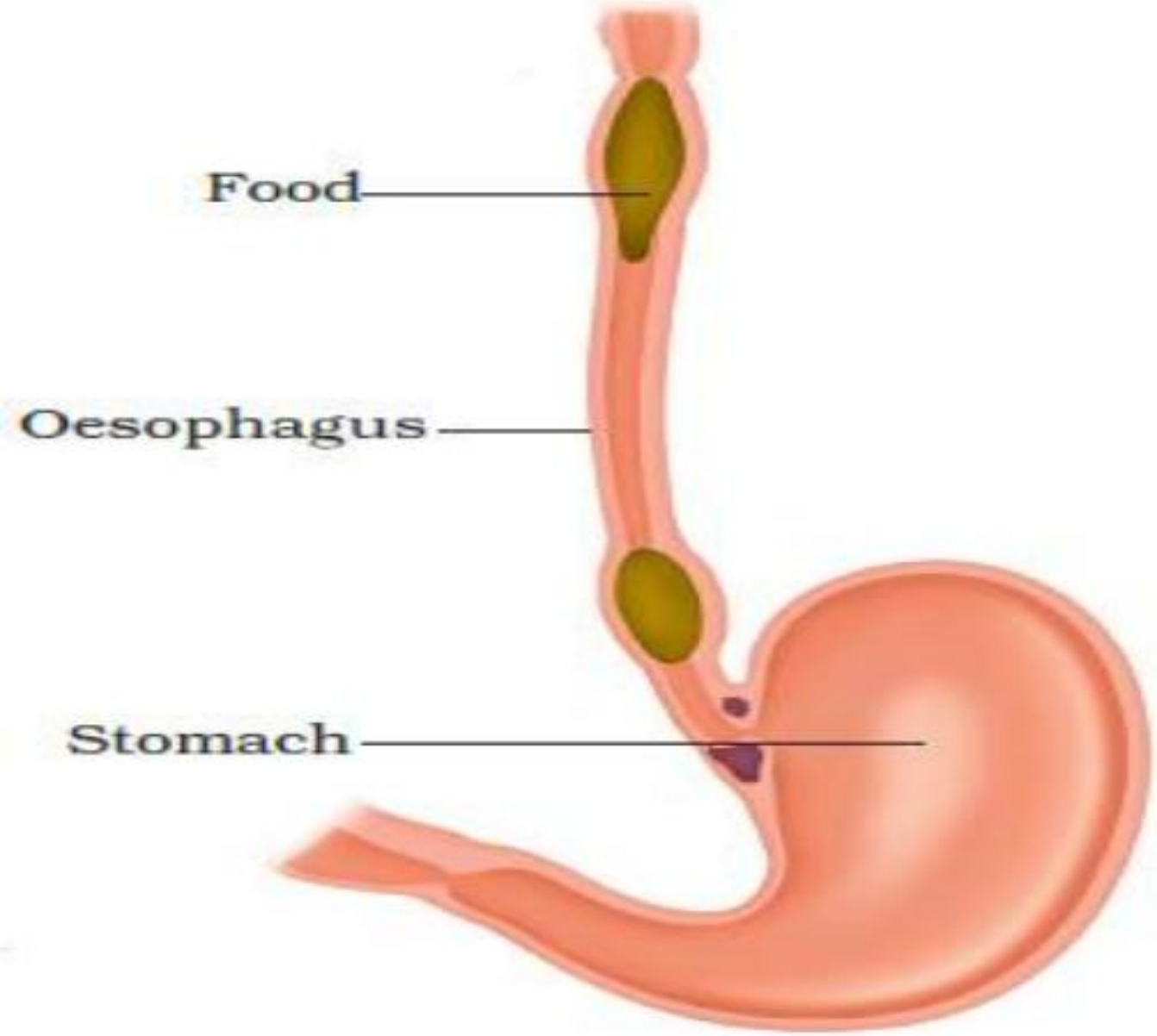
The tongue

Tongue

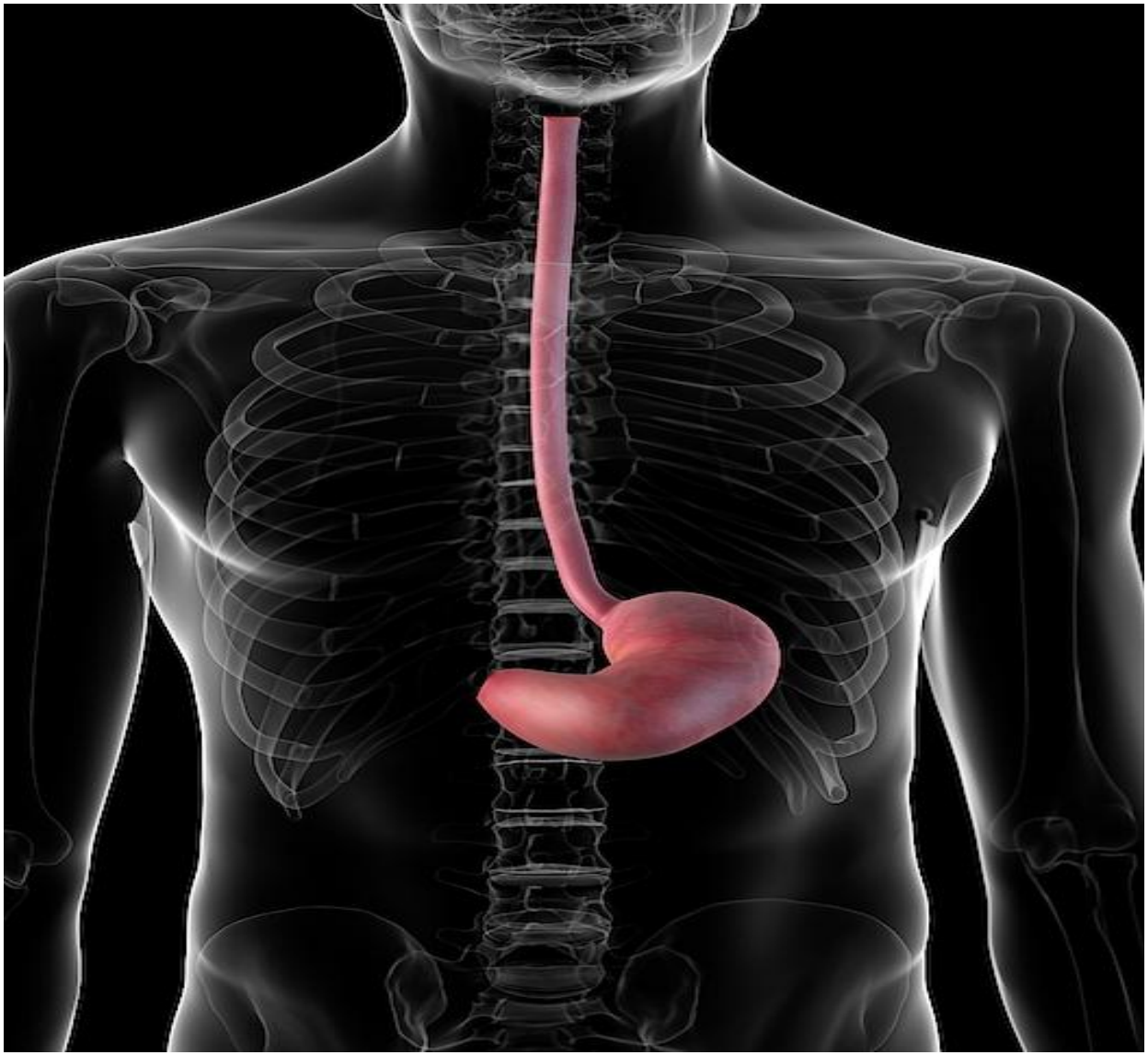
The tongue rolls food into a bolus



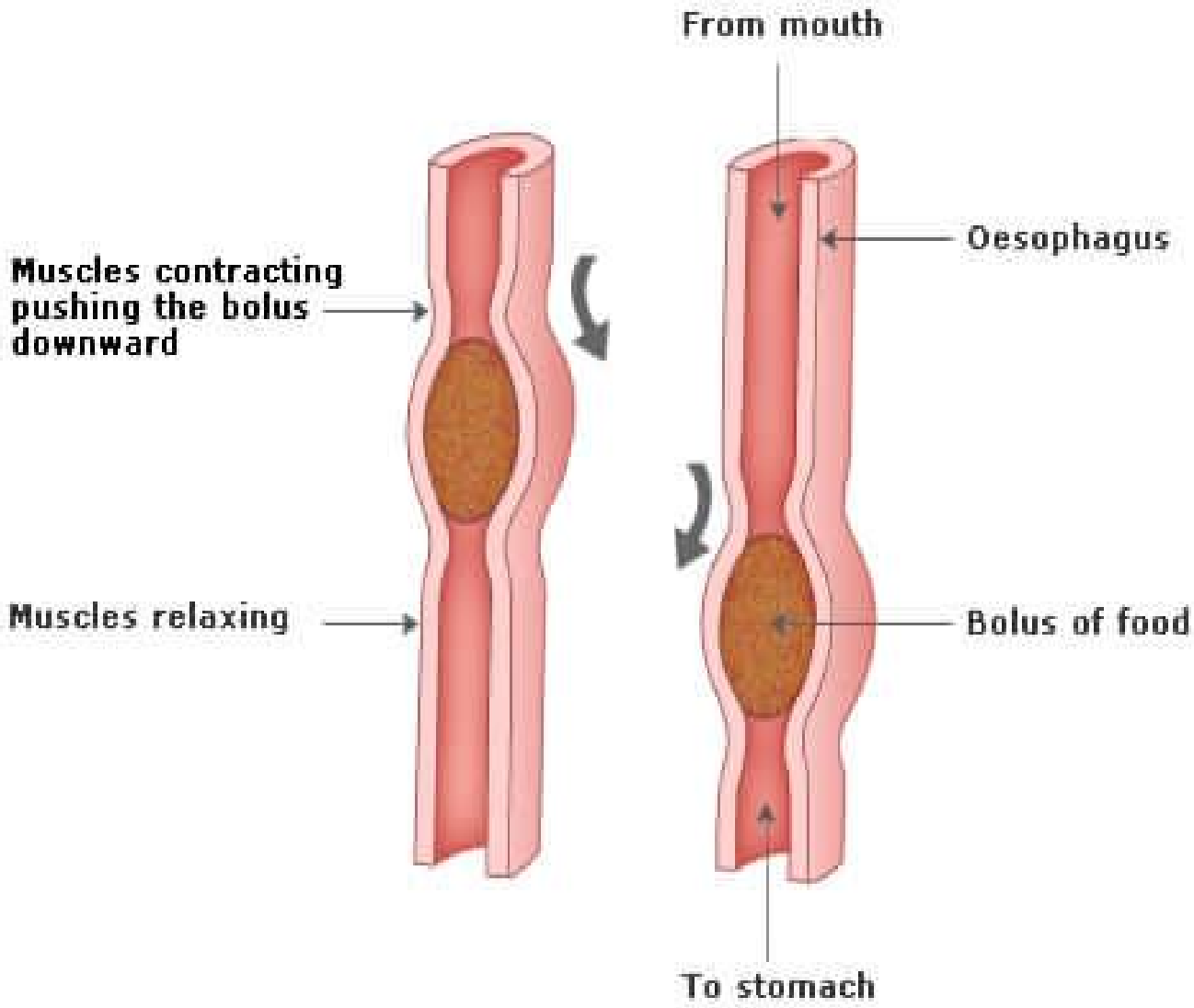
Gullet / oesophagus



The gullet is a passage of food from the mouth to the stomach

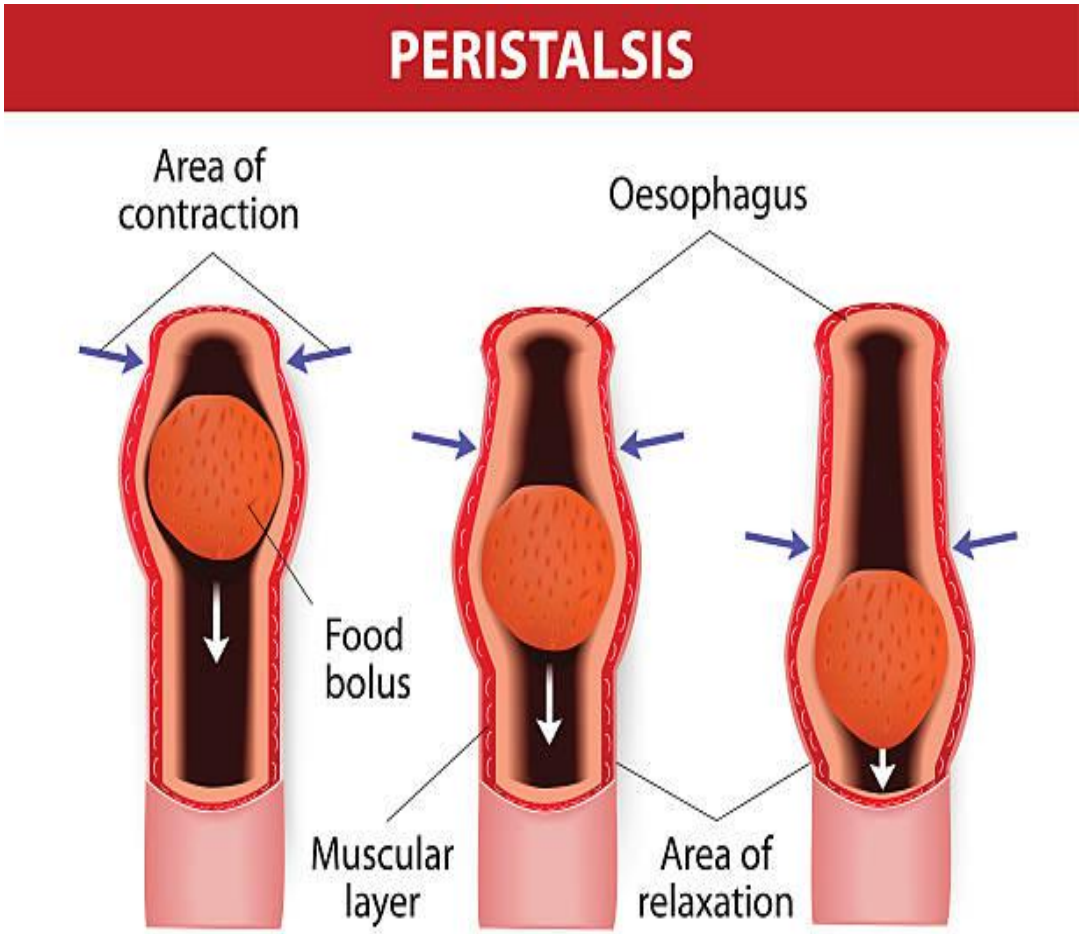


Food moves through the gulled by peristalsis



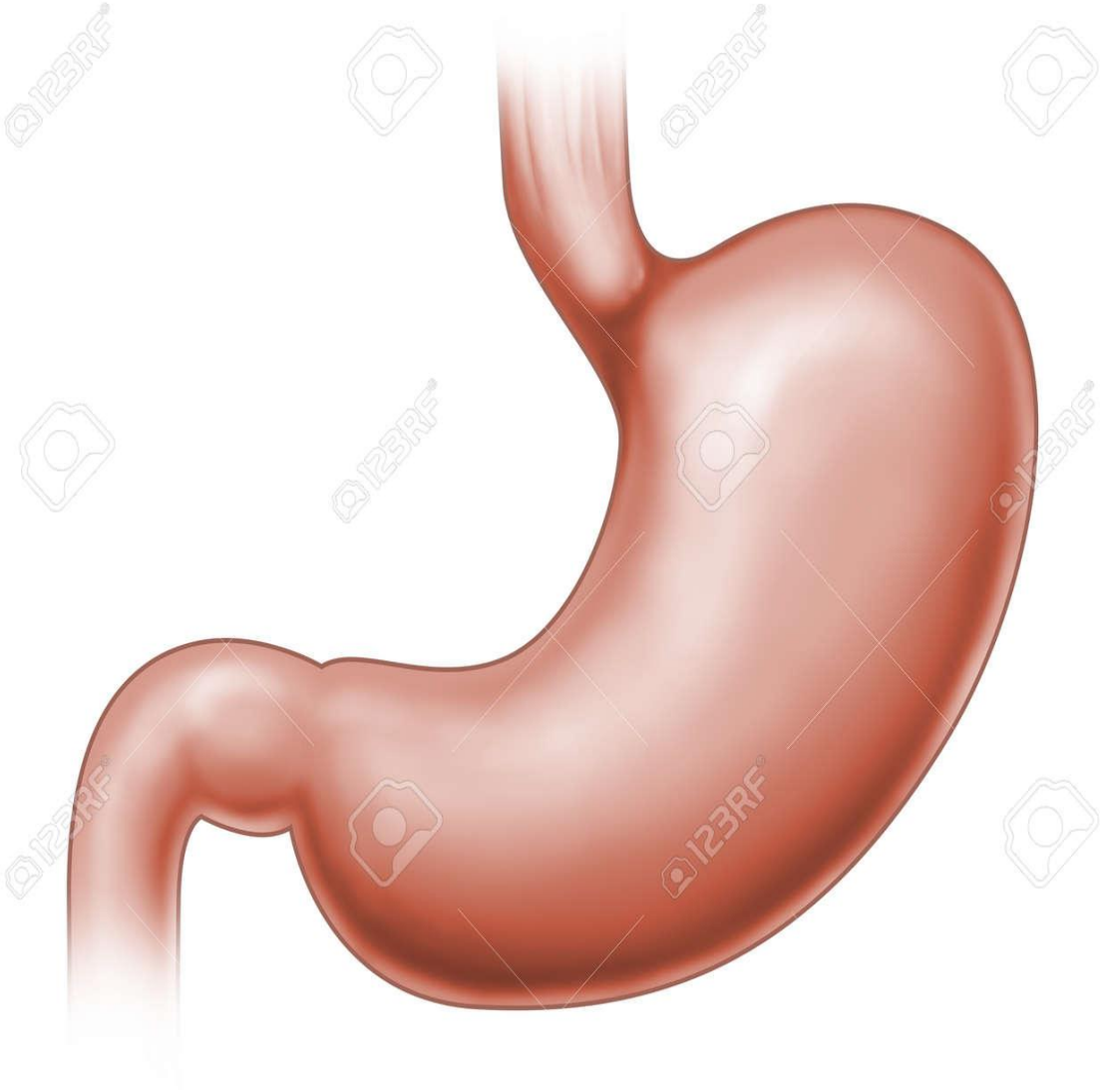
PERISTALSIS

This is the wave like movement of food through the alimentary canal

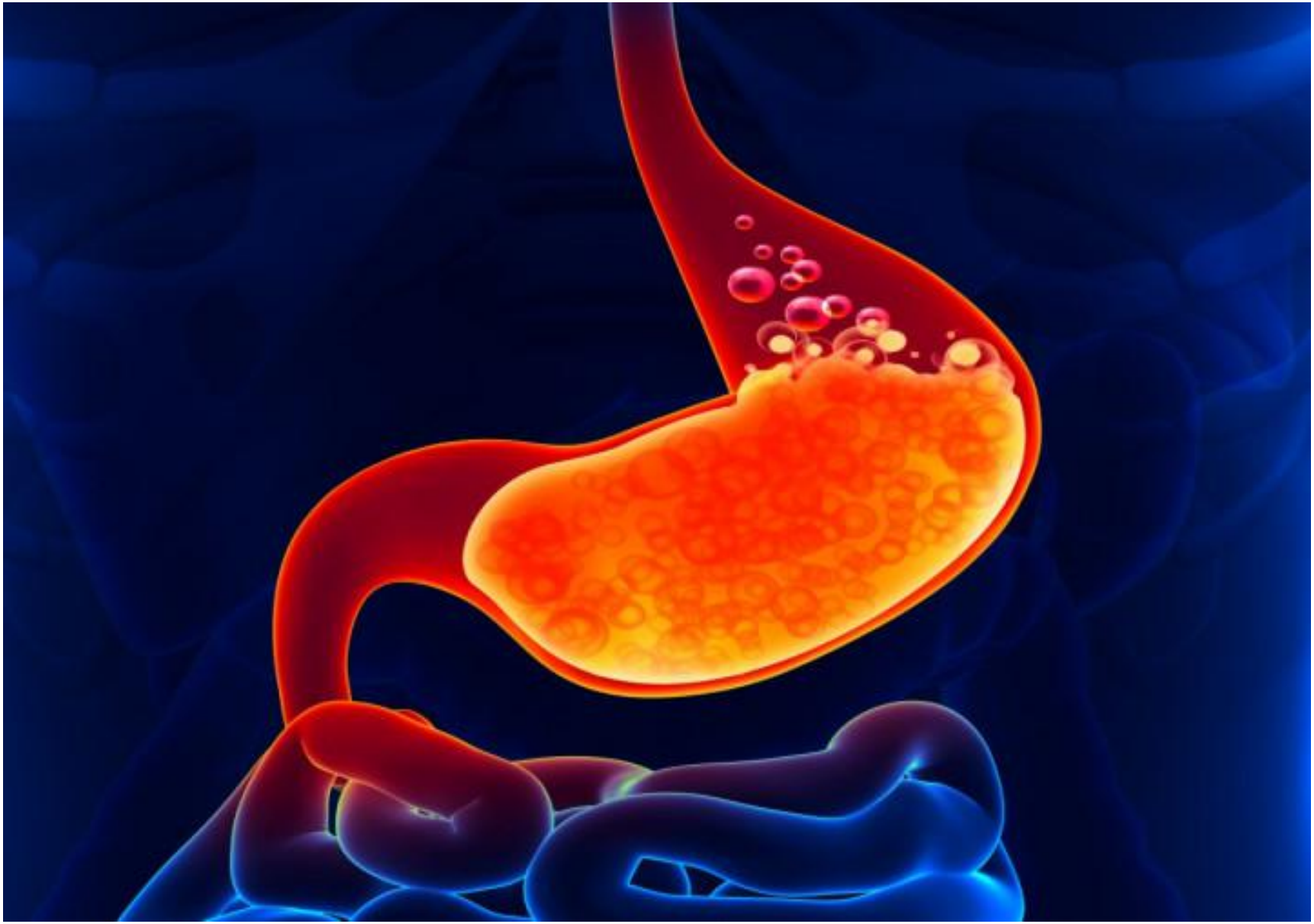


Stomach

Stomach



The walls of the stomach produce gastric juice

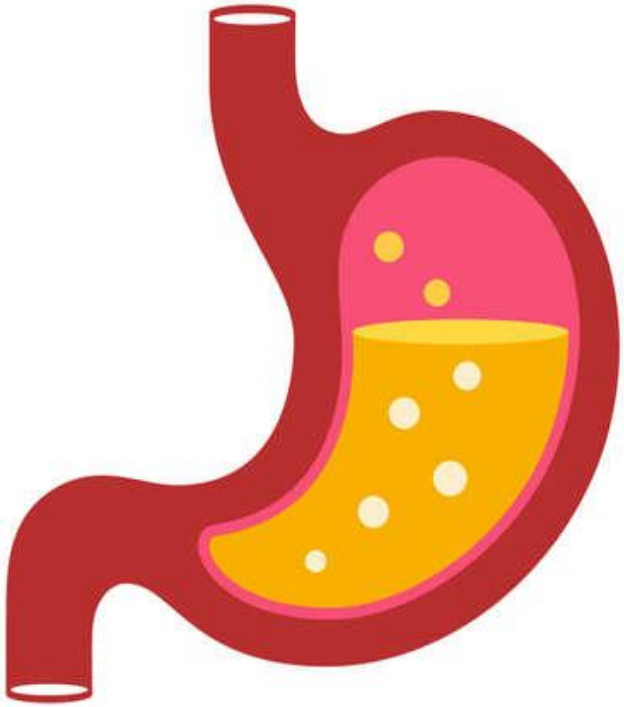


Components of gastric juice

- **Pepsin**
- **Rennin**
- **Hydrochloric acid**
- **Mucus**

Rennin clots milk proteins in babies (coagulates milk proteins)

Hydrochloric acid



Hydrochloric acid kills germs that may have escaped with food

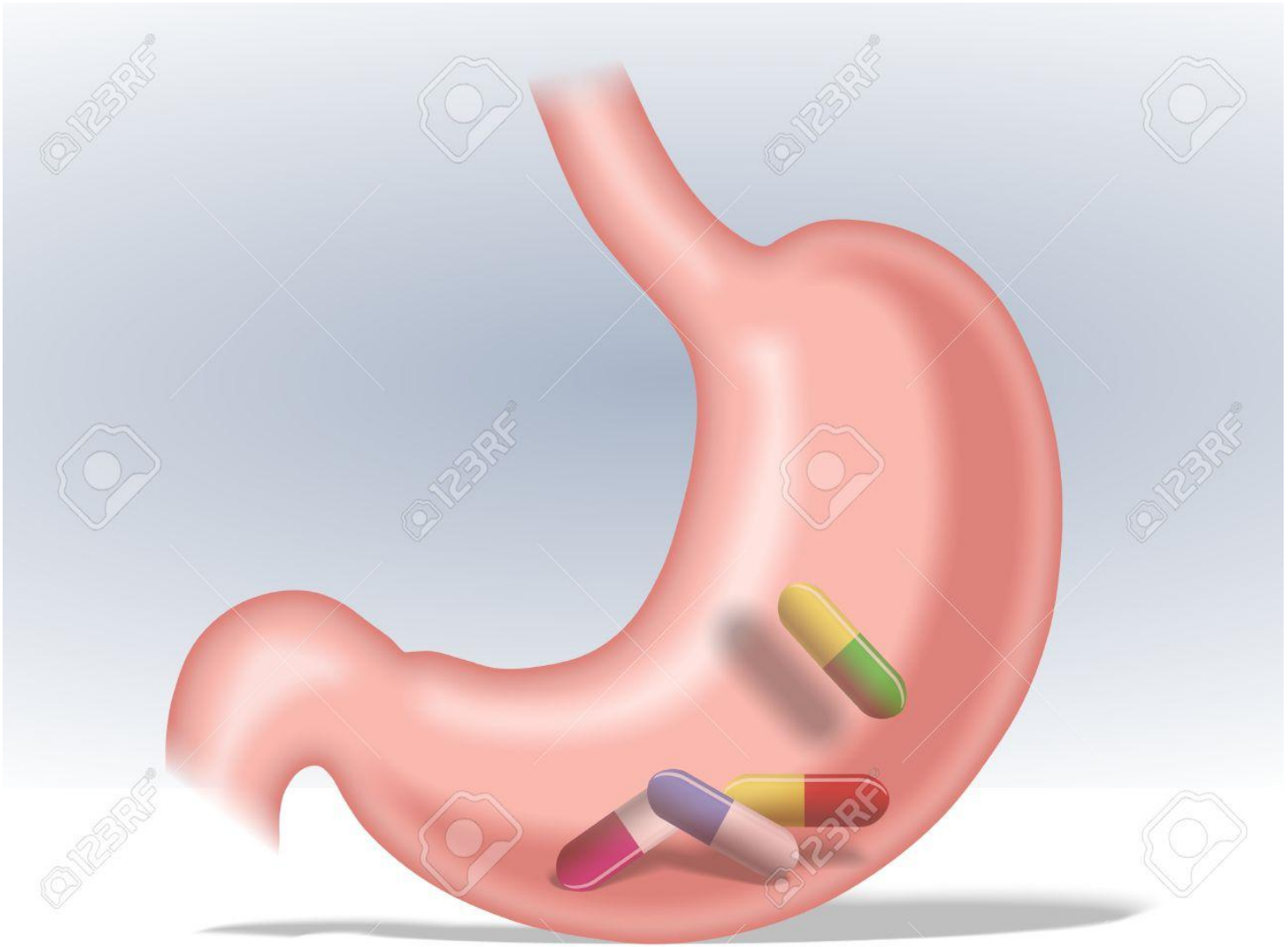
Hydrochloric acid also creates acidic conditions for the proper working of pepsin and rennin

What is absorbed in the stomach?

Medicine

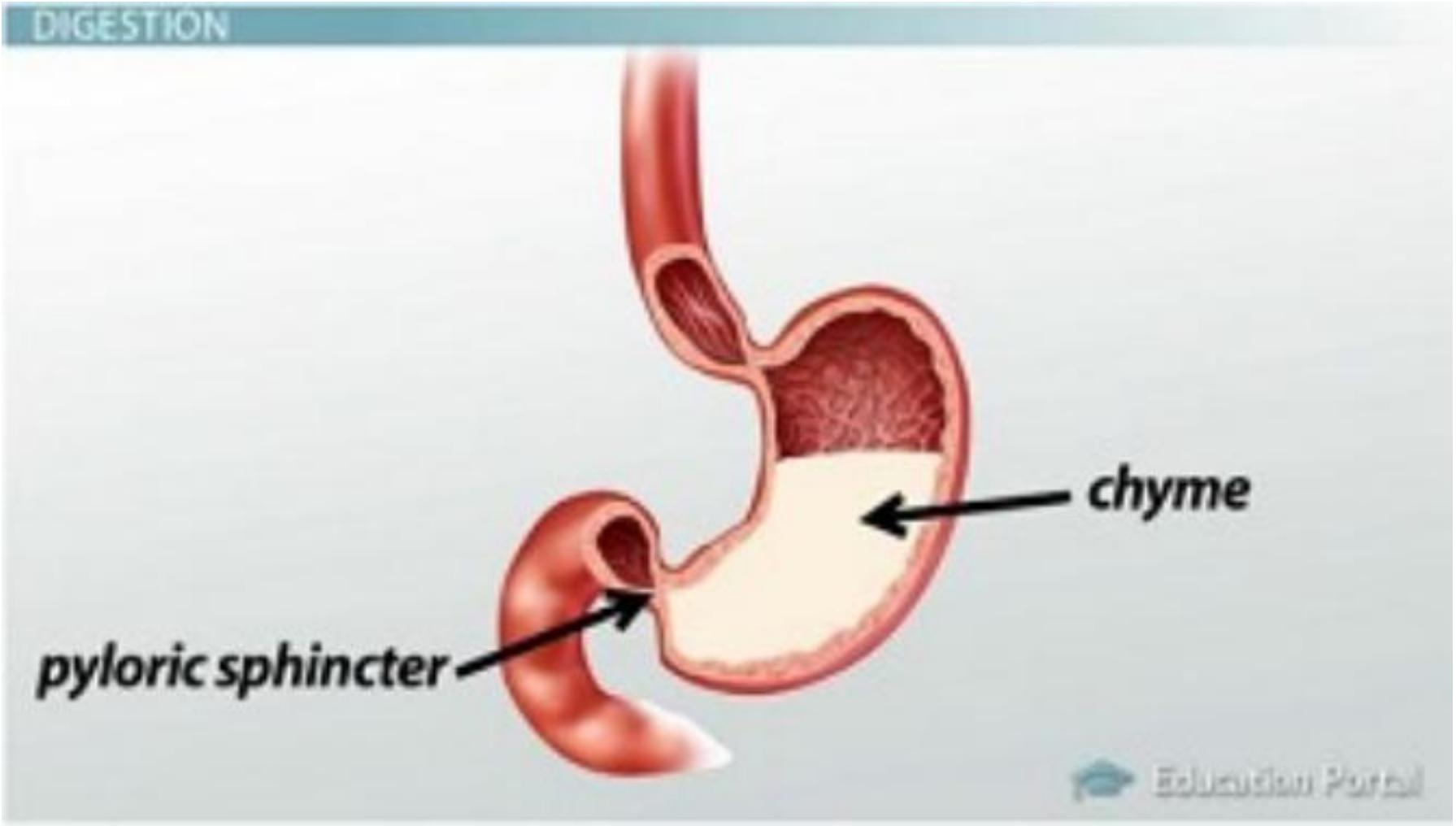
Alcohol

Medicine



Alcohol

Food in the stomach is churned to form chyme



Chyme is a mixture of partially digested food mixed with digestive juices

Chemical digestion of proteins starts in the stomach

ACTIVITY

- What is meant by peristalsis?

- Give the role of the tongue during digestion
- Write down any two components of gastric juice

- Where does chemical digestion of each of the following start

i) Carbohydrates

ii) Proteins

DIGESTIVE SYSTEM

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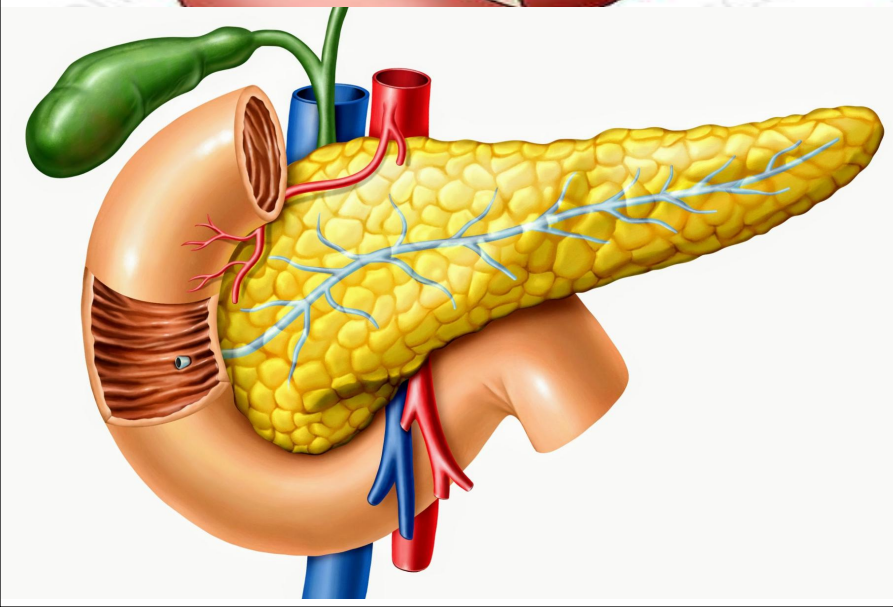
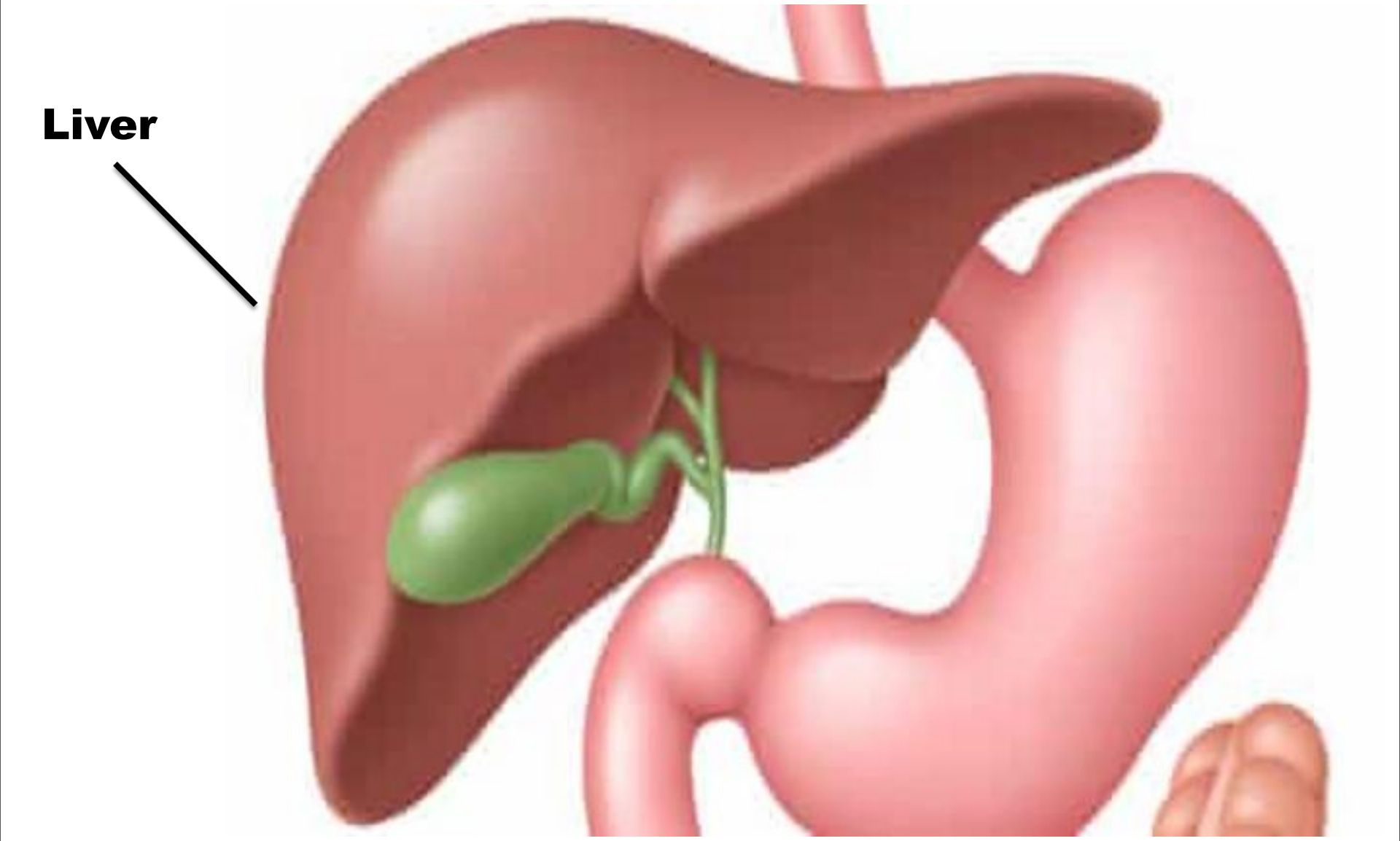
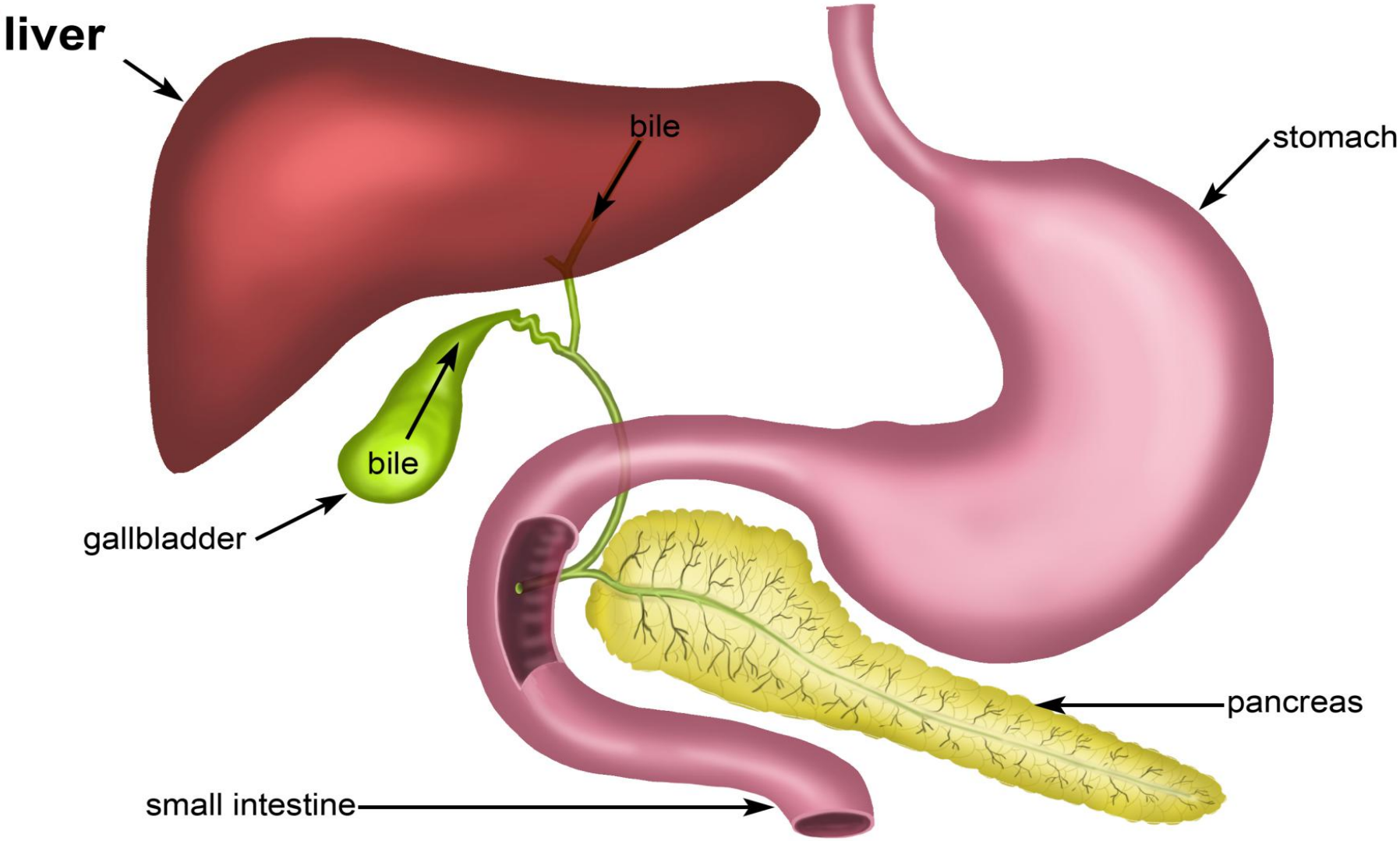


Liver

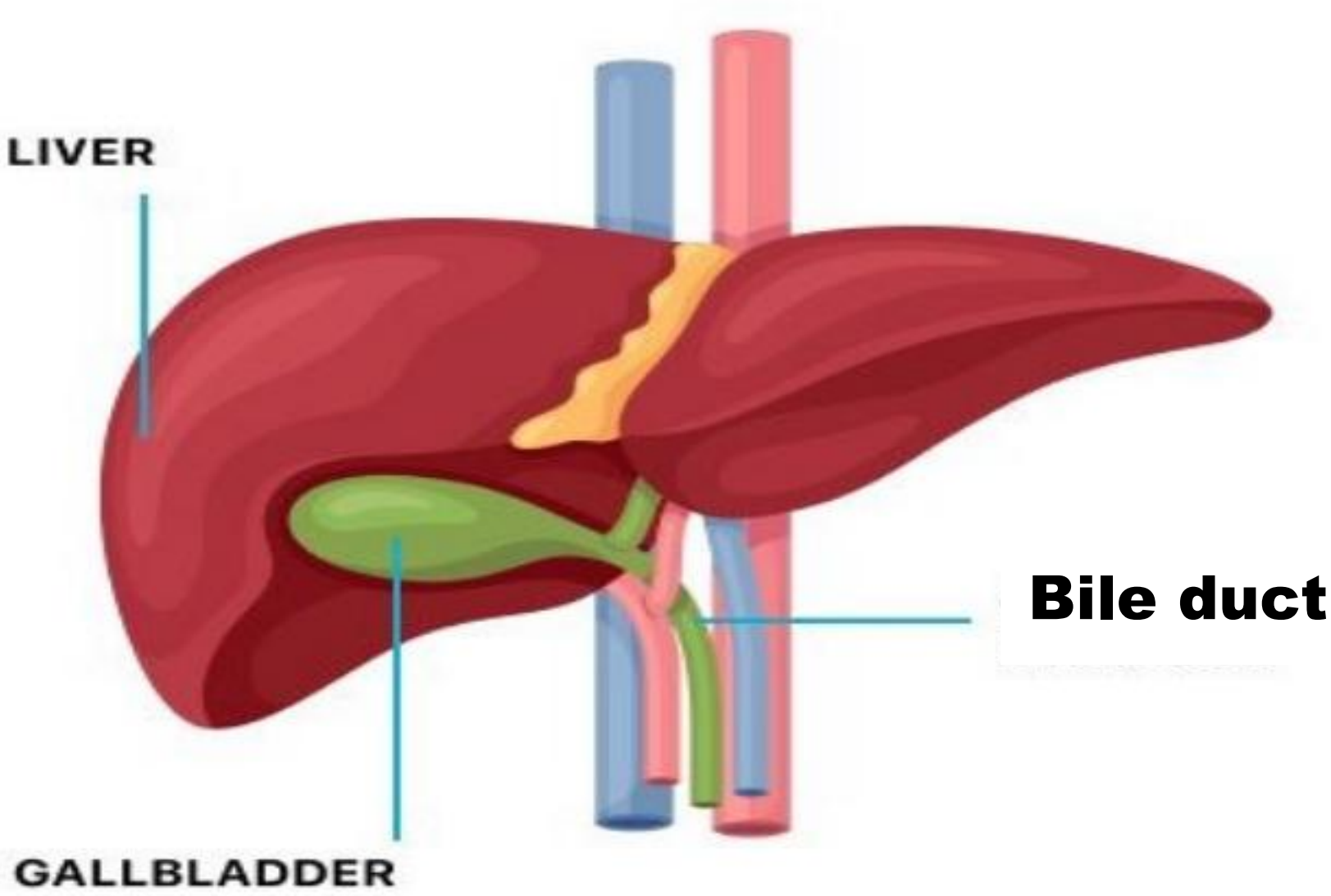


The liver produces bile

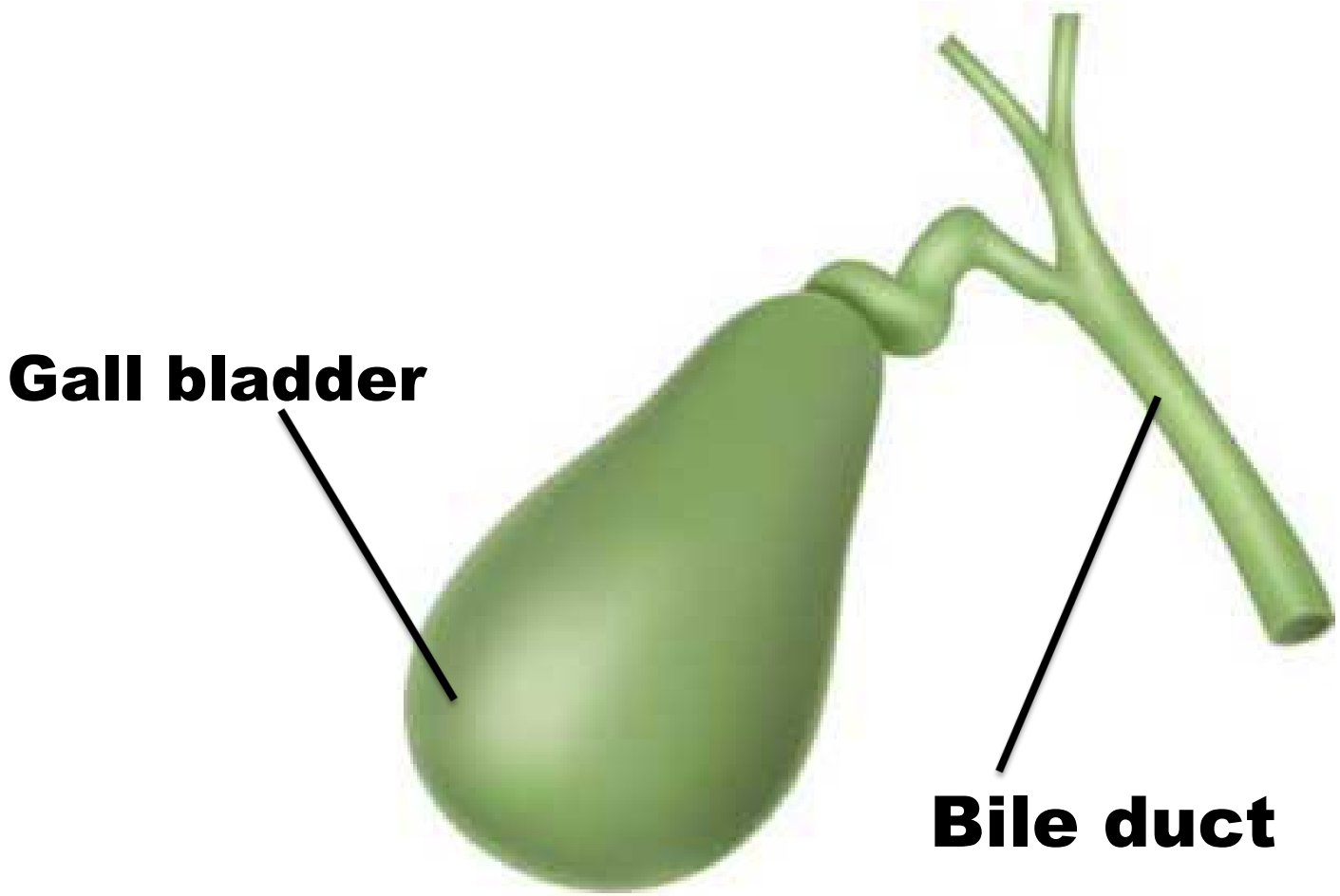


The liver is the largest internal organ

Gall bladder



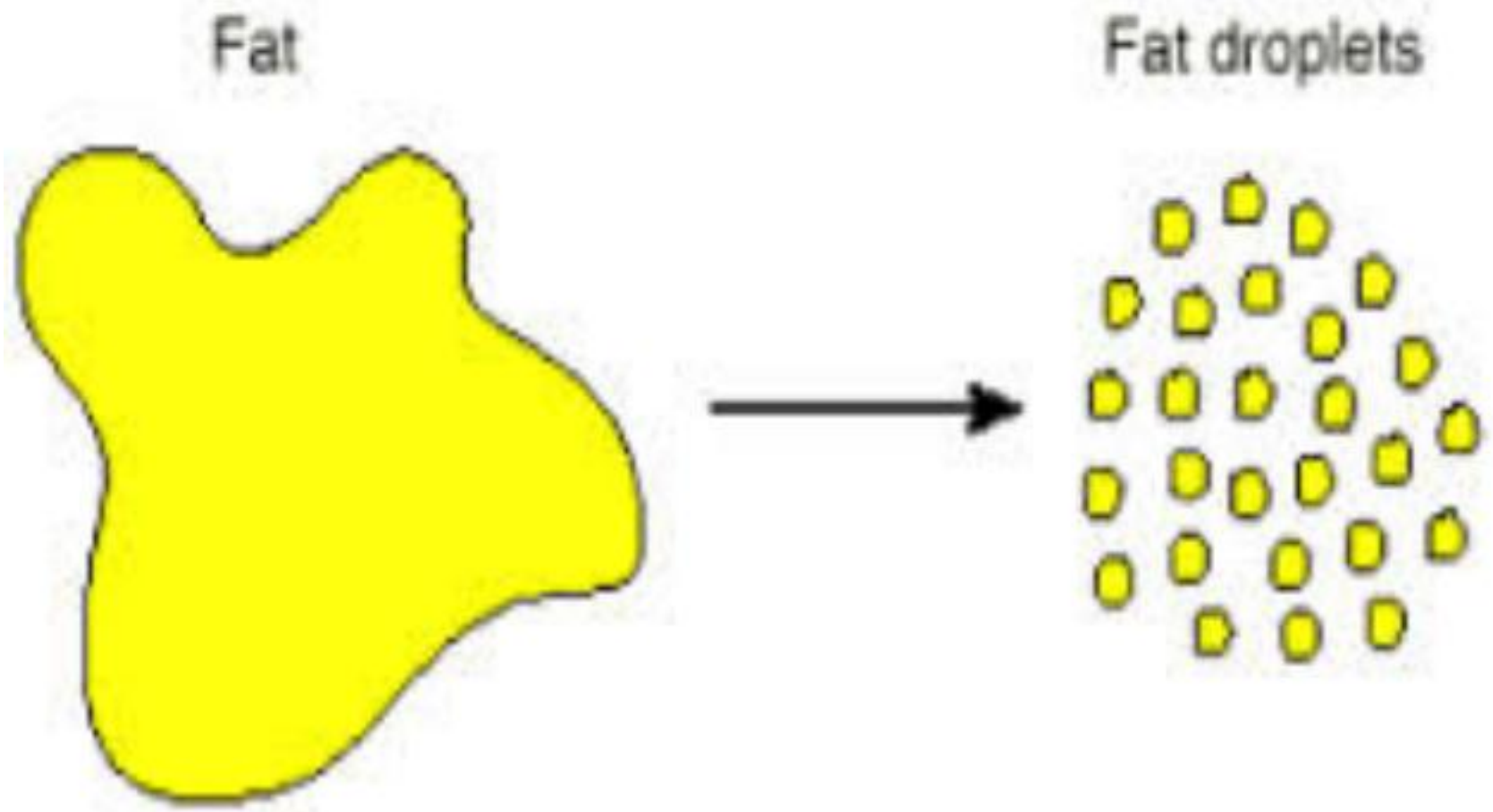
Gall bladder



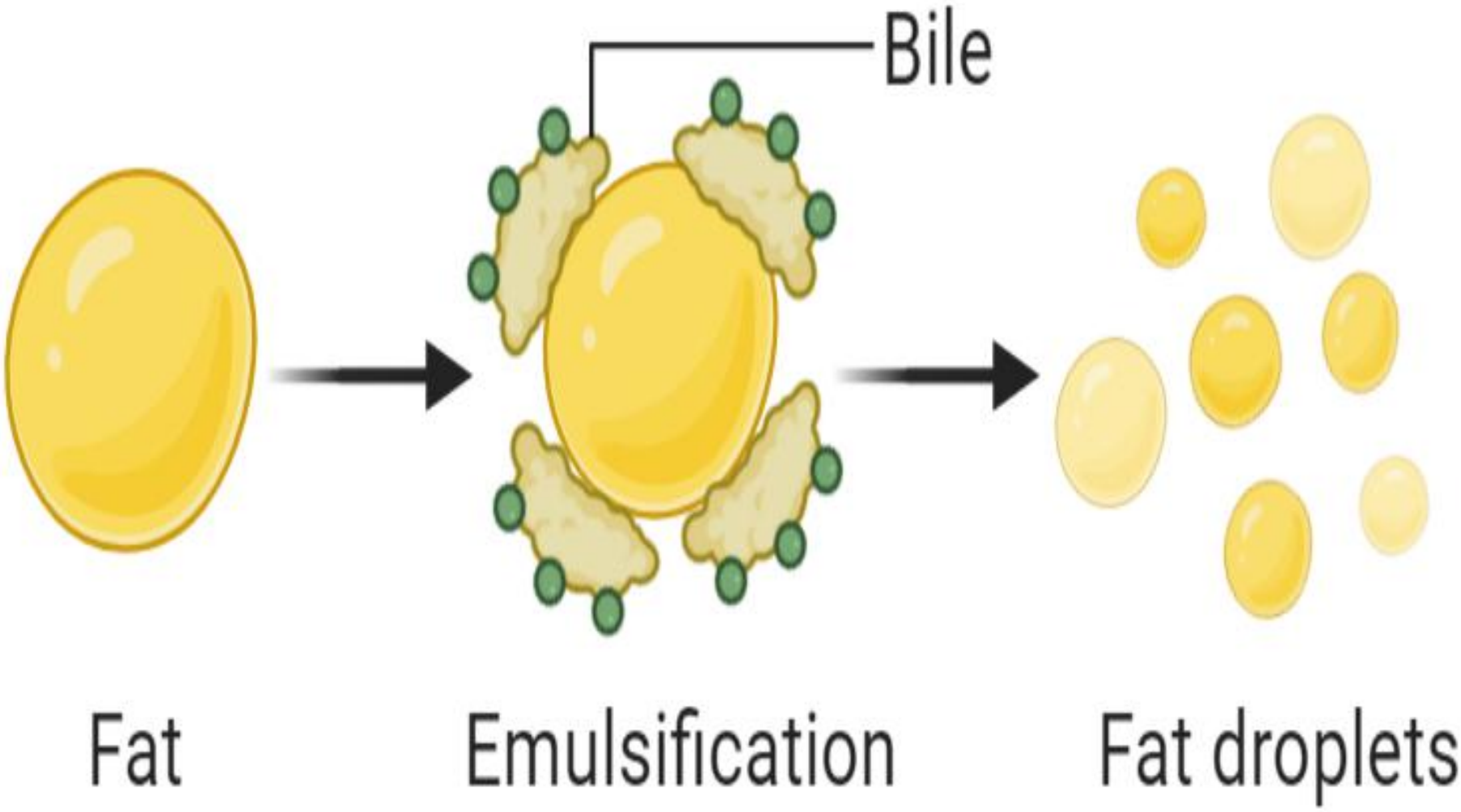
The gall bladder stores bile

Bile

Bile salts help in the emulsification of fats



Bile salts help to break down fats

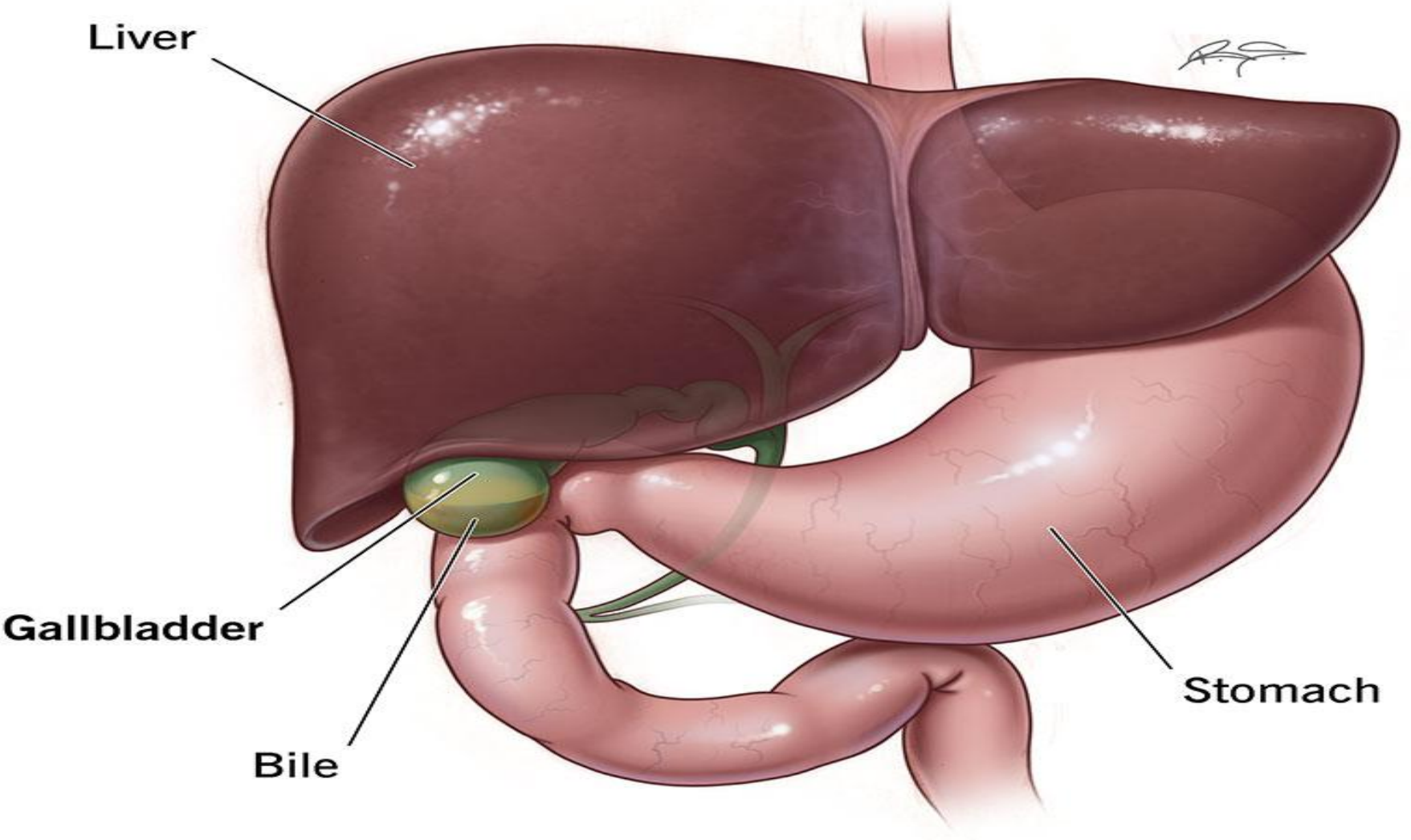


Components of bile

- **Water**
- **Bile salts**

Bile is released into the duodenum through the bile duct

Activity



ACTIVITY

- Name the organ that produces bile
- Give a functional difference between the gall bladder and the urinary bladder
- Write down any one component of bile
- Name the largest internal organ
- Why is the left kidney slightly higher than the right one?

DIGESTIVE SYSTEM

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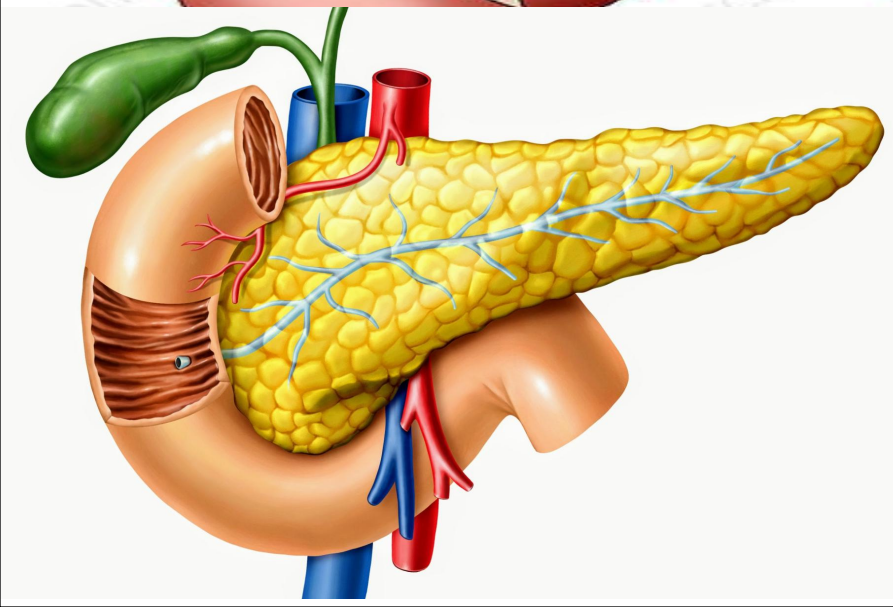
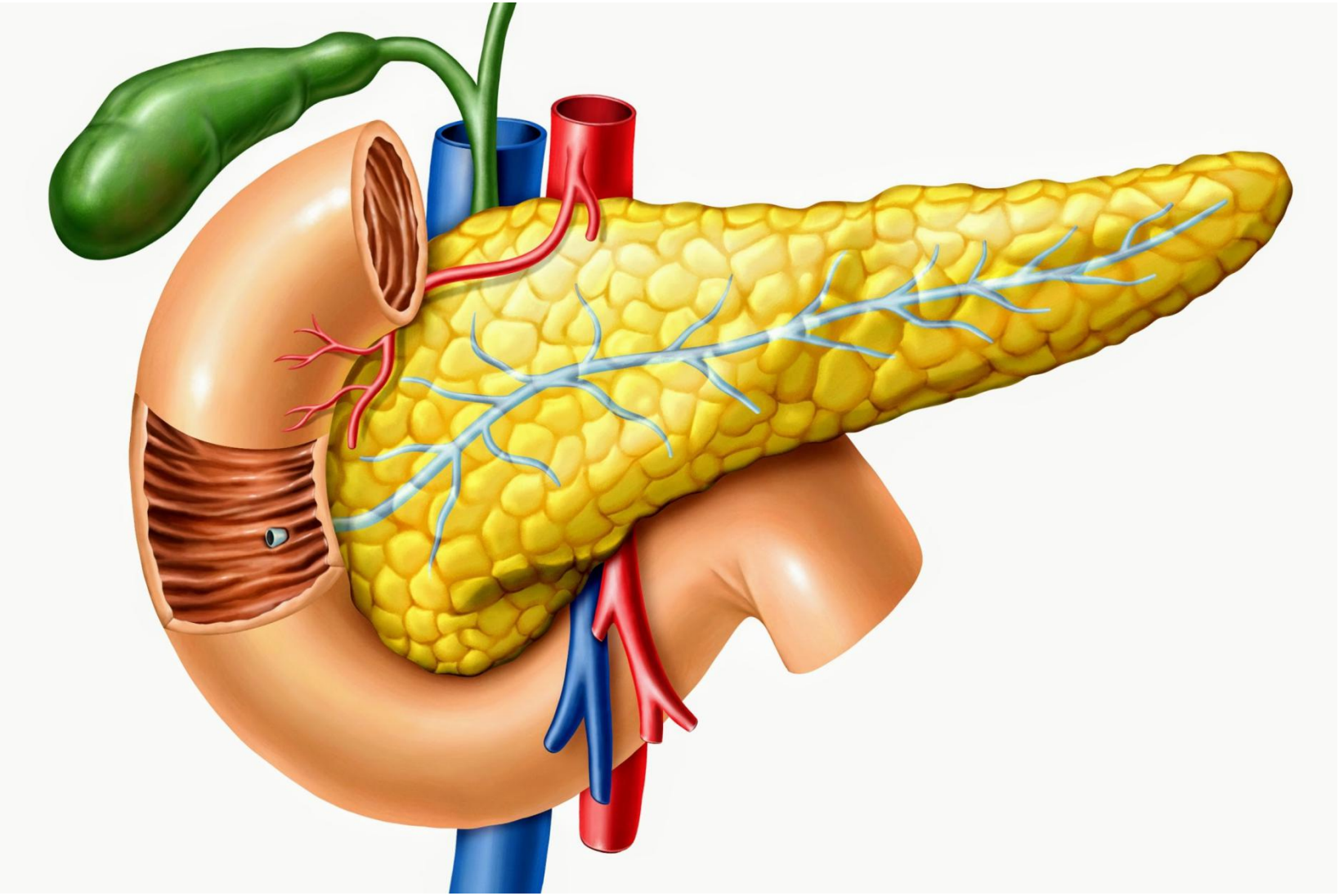
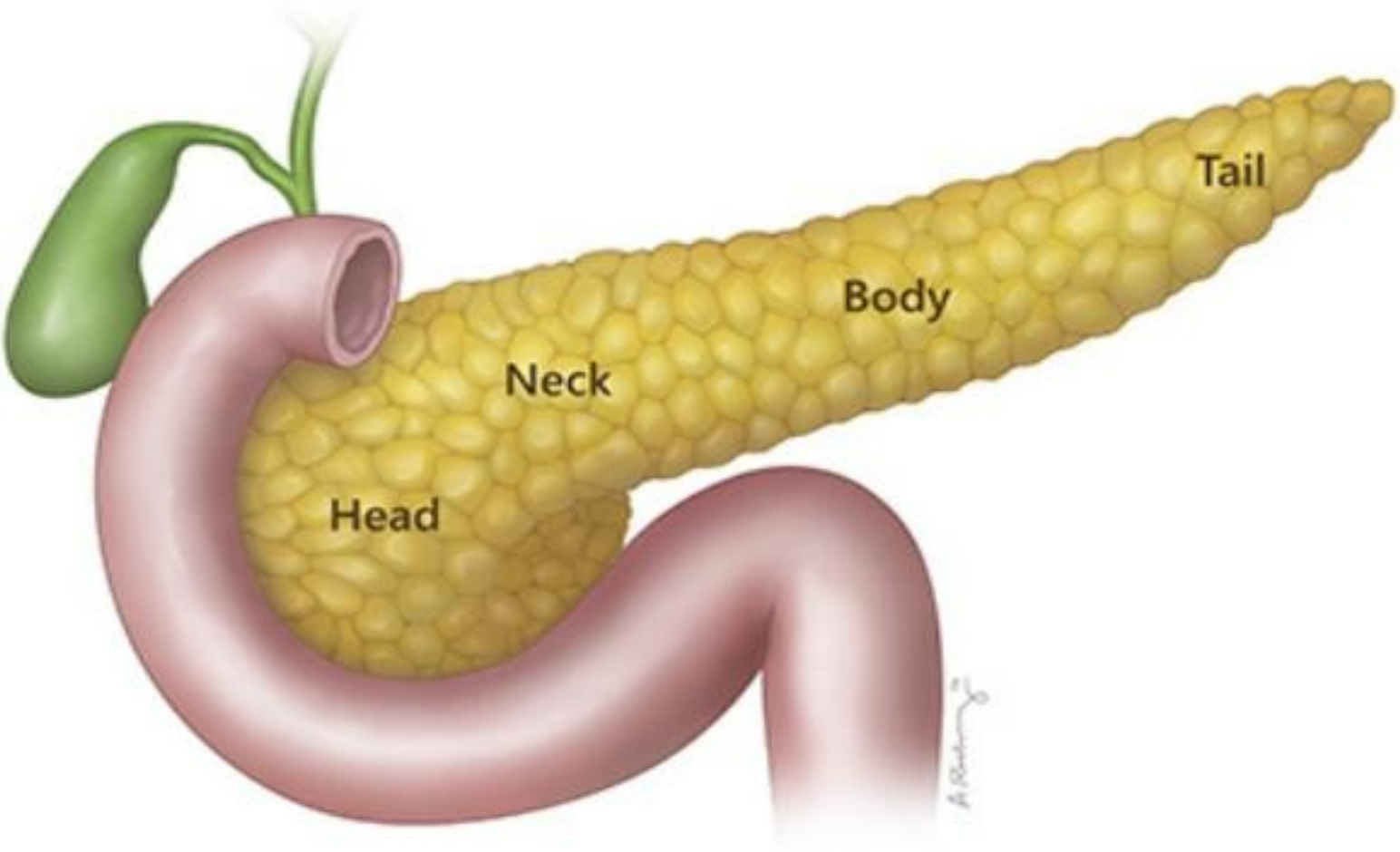


Pancreas



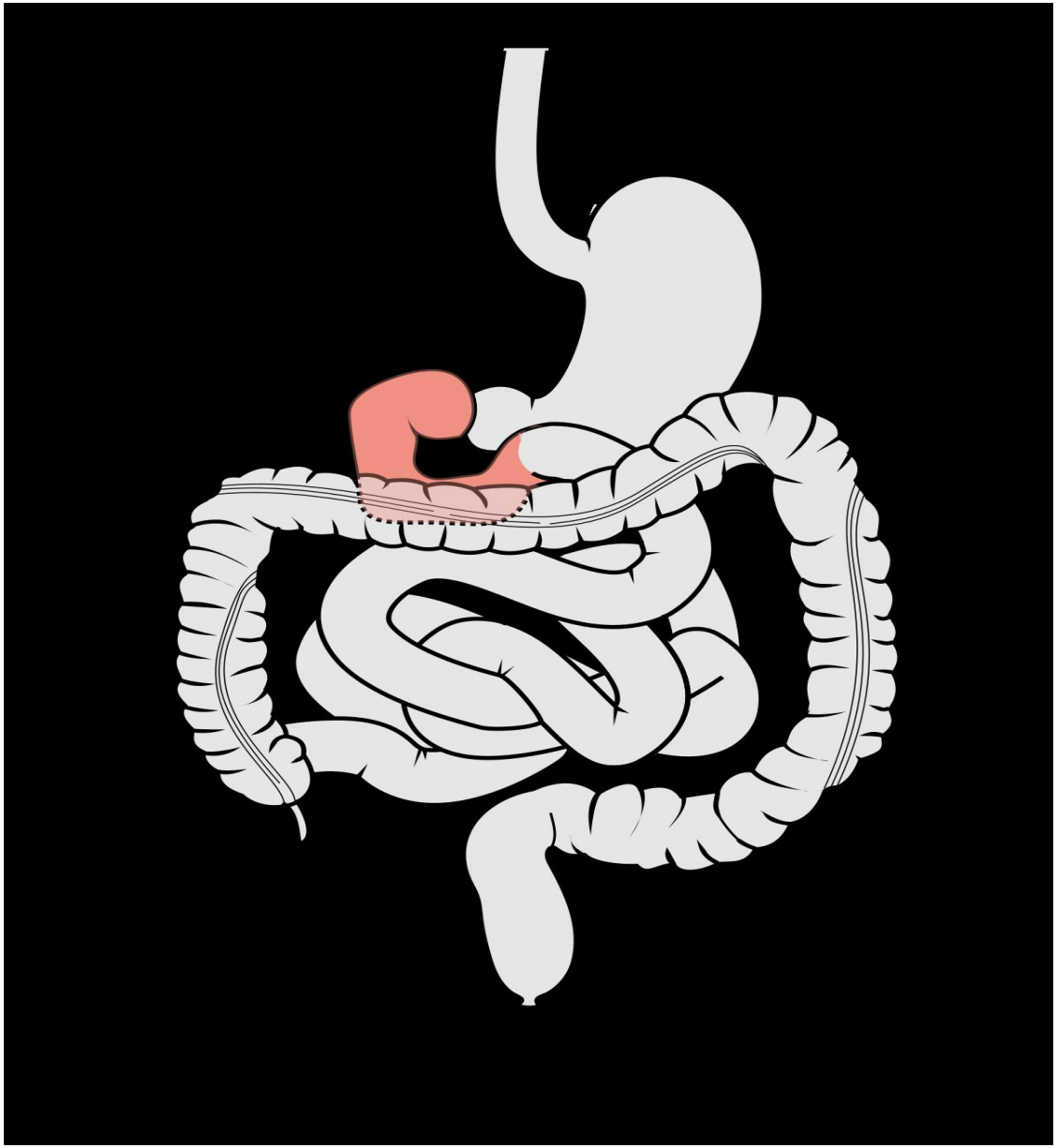
The pancreas produces pancreatic juice



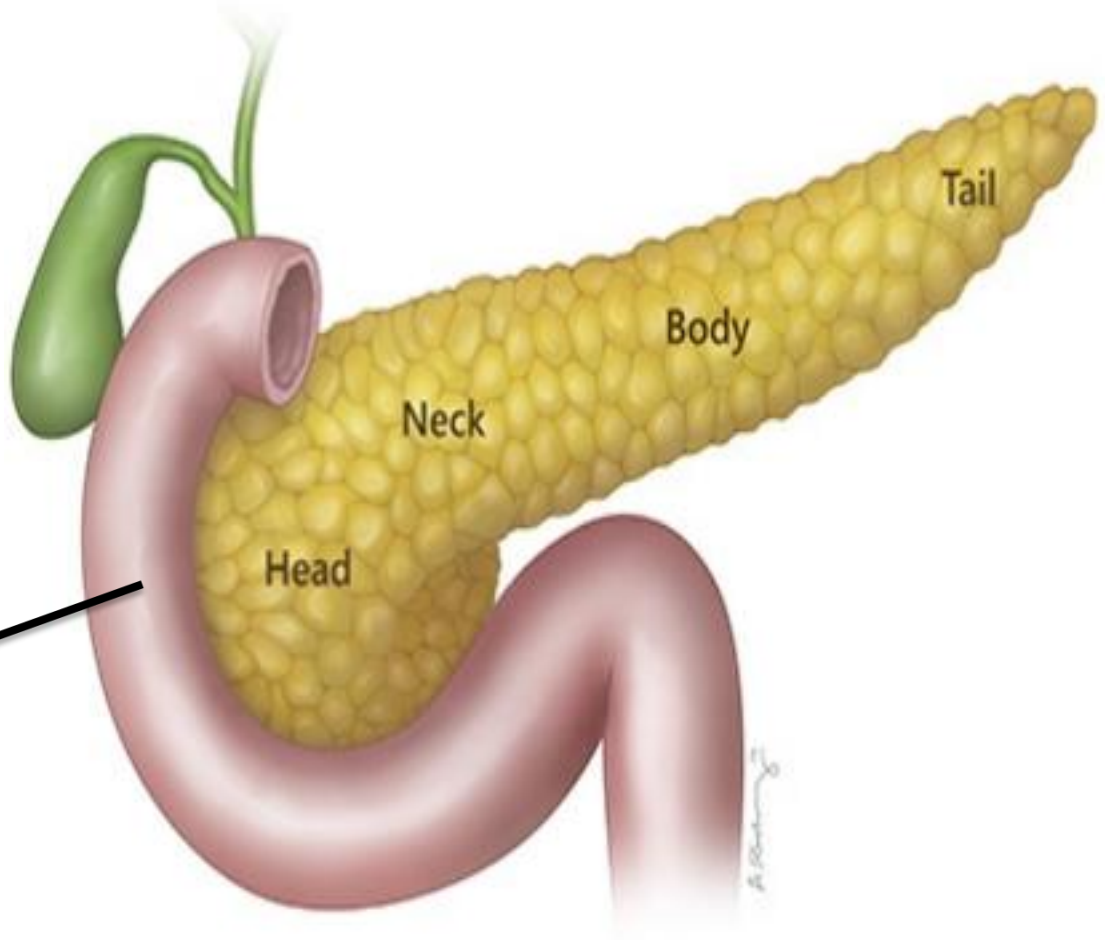
Components of pancreatic juice

- **Pancreatic amylase**
- **Lipase**
- **Trypsin**
- **Water**

Duodenum



The duodenum is the first part of the small intestines



Duodenum

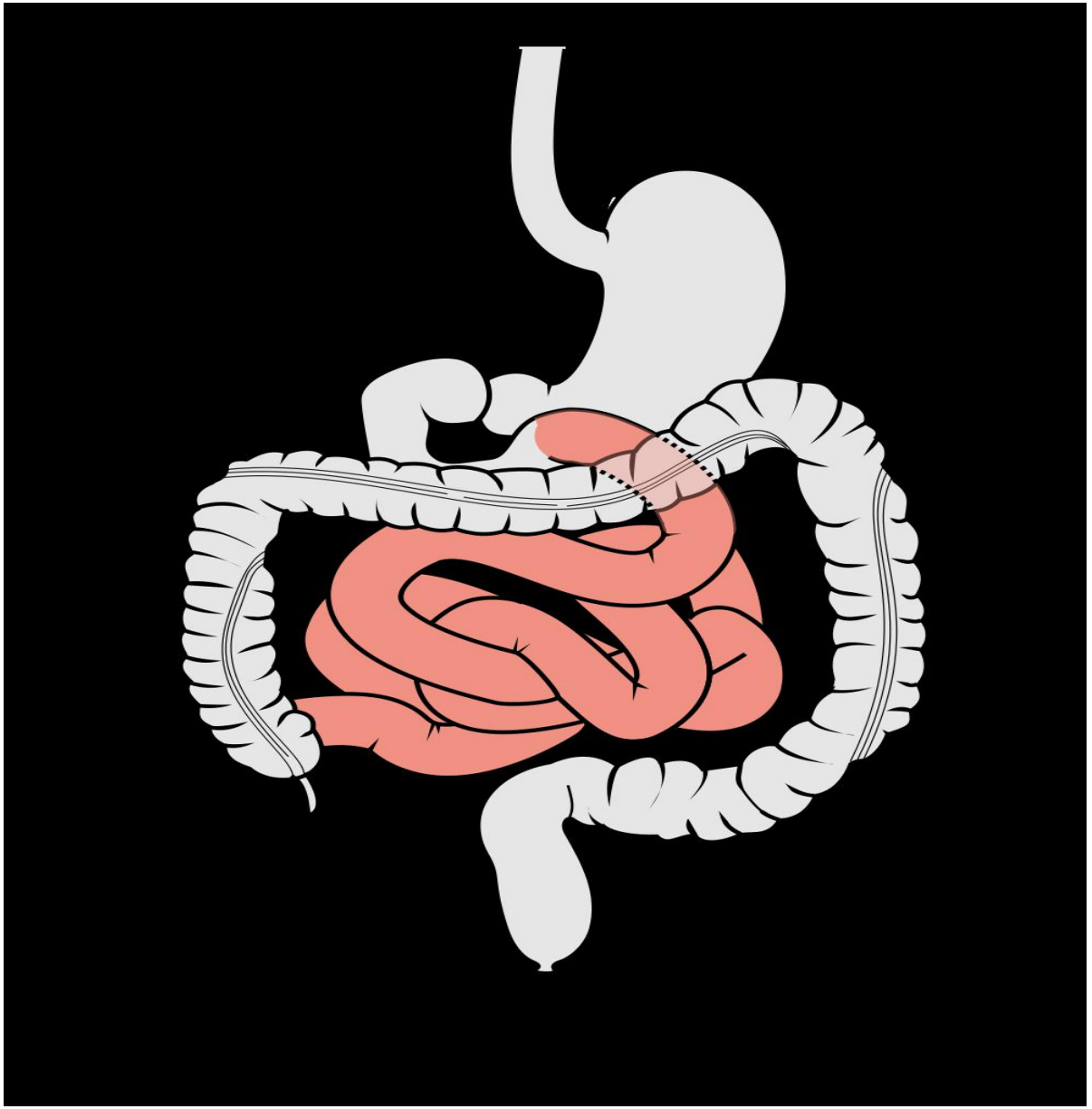
NB

Chemical digestion of fats starts in the duodenum

check point

Give a difference between duodenum and diaphragm

ileum

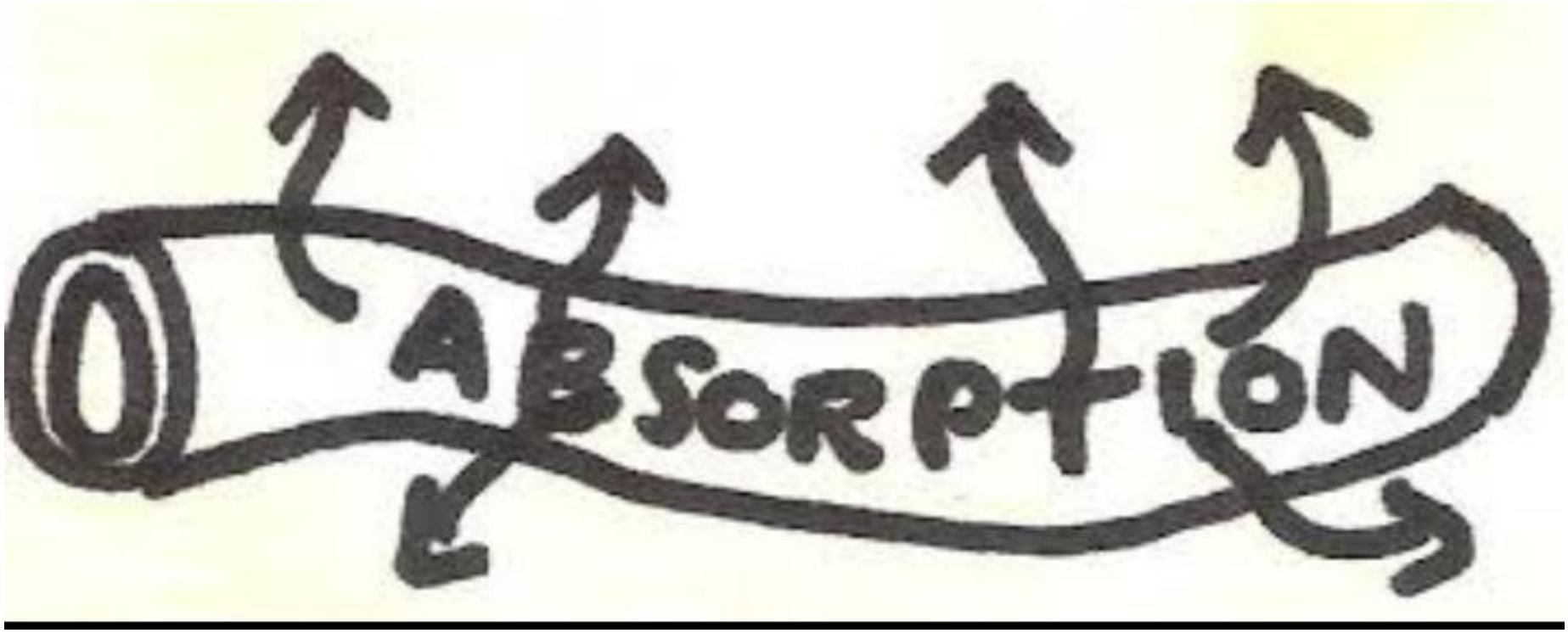


ileum

The duodenum and the ileum form the small intestines

Ileum

This is where absorption of food takes place



Where does digestion of food:

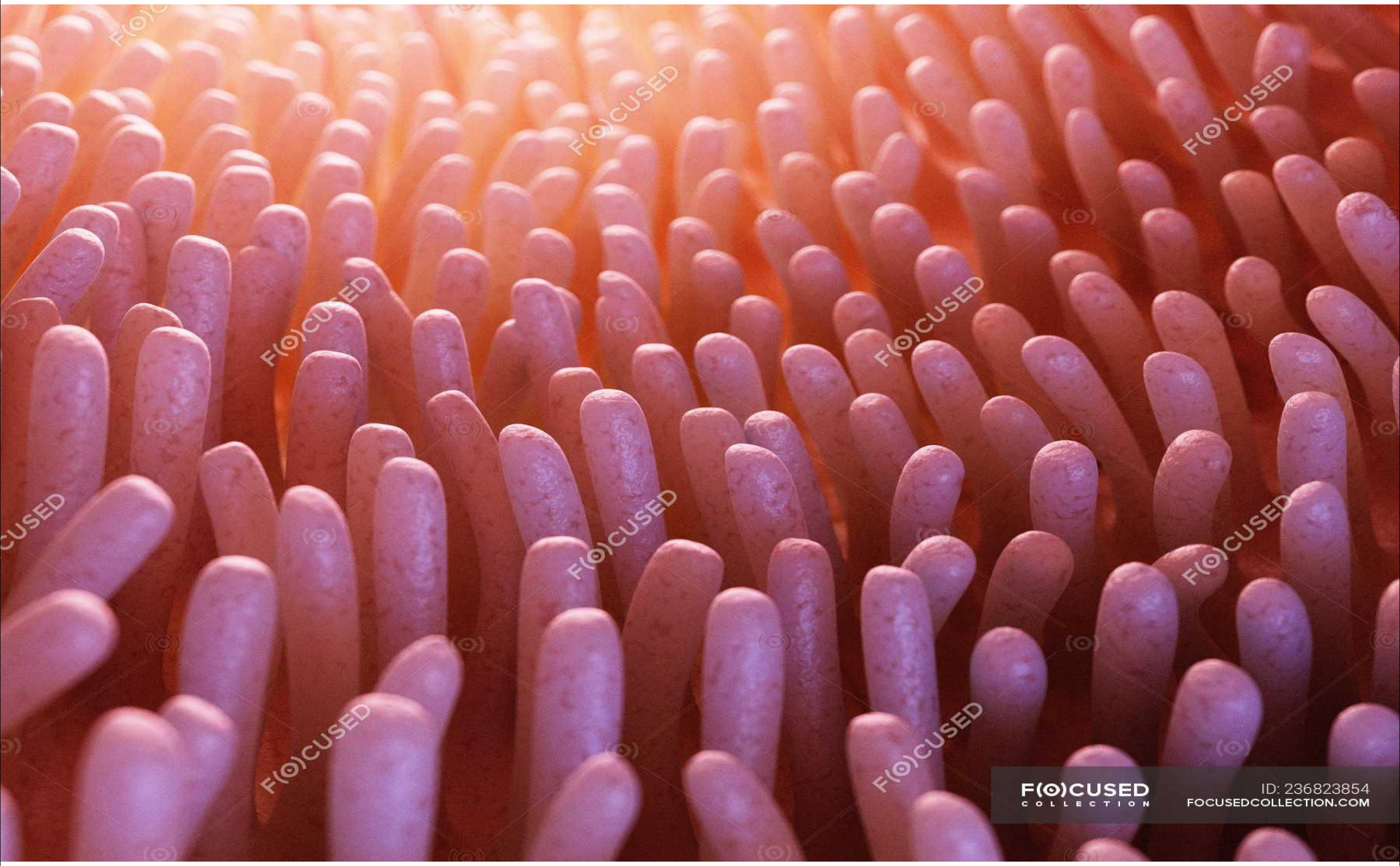
Begin **Mouth**

End **ileum**

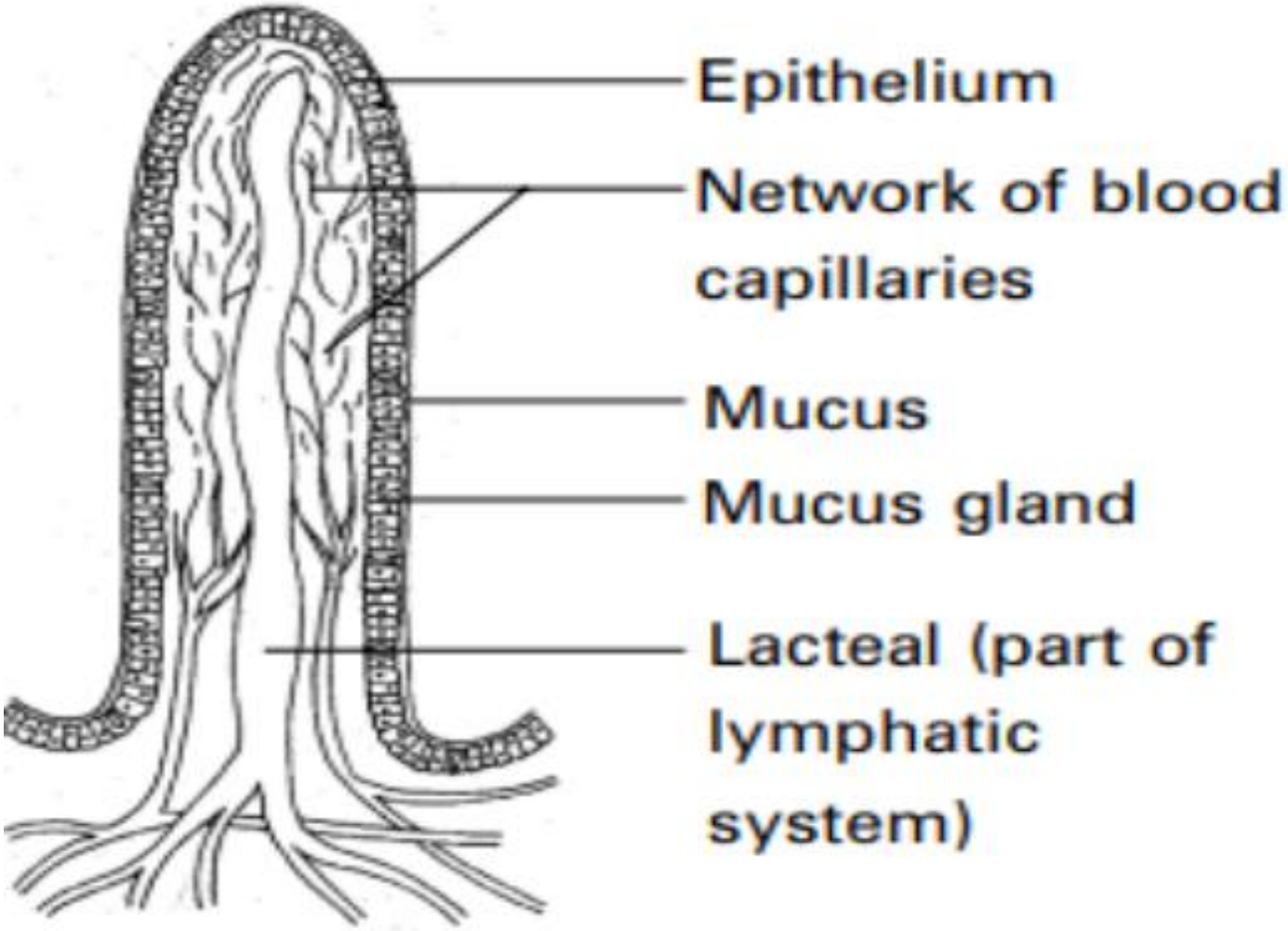
Adaptations of the ileum to its function of absorbing food

- **The ileum is long enough to increase the surface area for food absorption**
- **The ileum contains villi that help in food absorption**
- **The ileum has enzymes that complete the process of digestion**

Villi



Villi



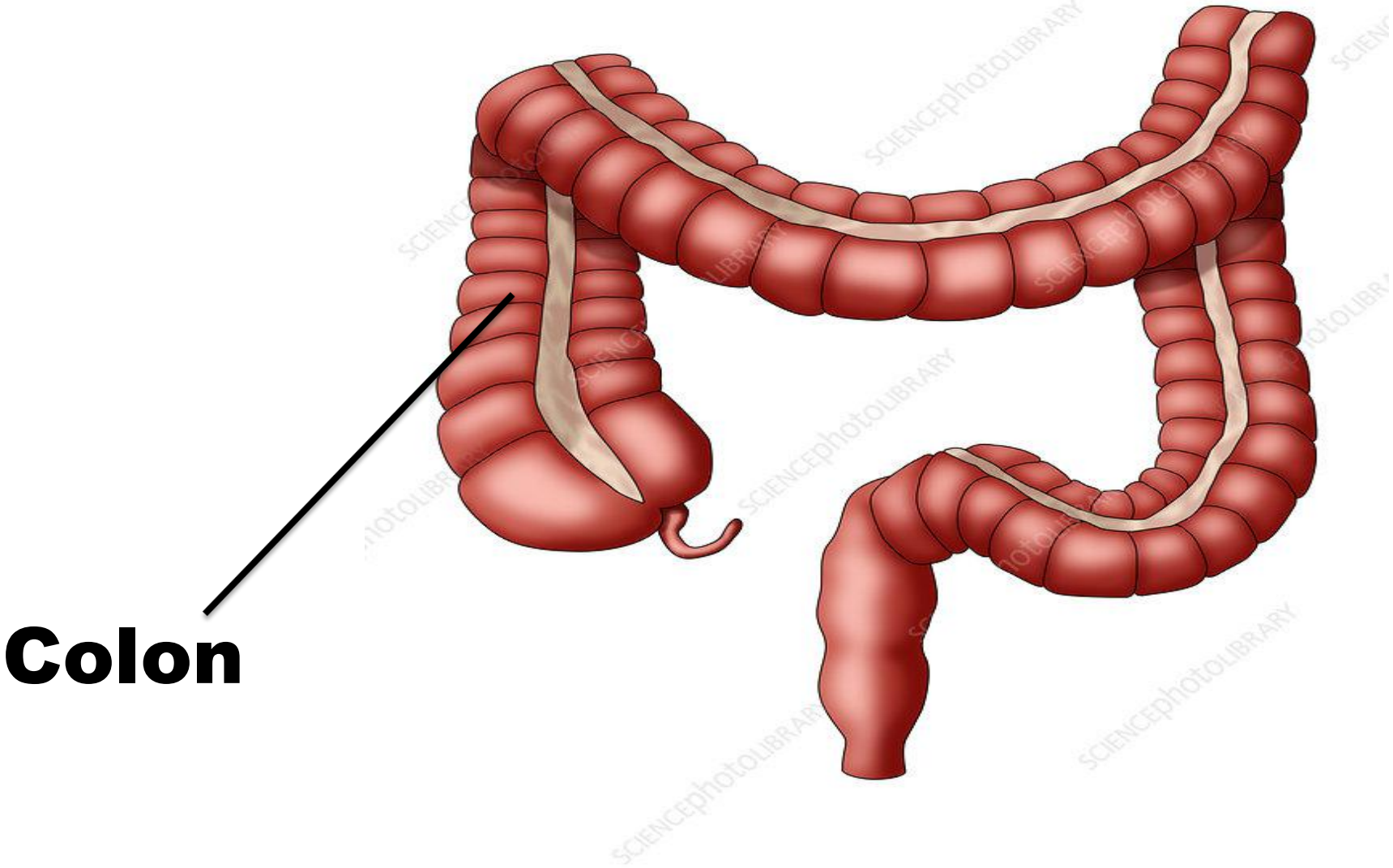
Schematic diagram of a villus

Adaptations of the villi to their function

- The villi are many in number to increase the surface area for food absorption
- The villi have thin walls for easy diffusion of digested food
- The villi contain microvilli that also increase the surface area for food absorption
- They are surrounded by blood capillaries for easy exchange of materials

Villi are many in number to increase the surface area for food absorption

Colon



Colon

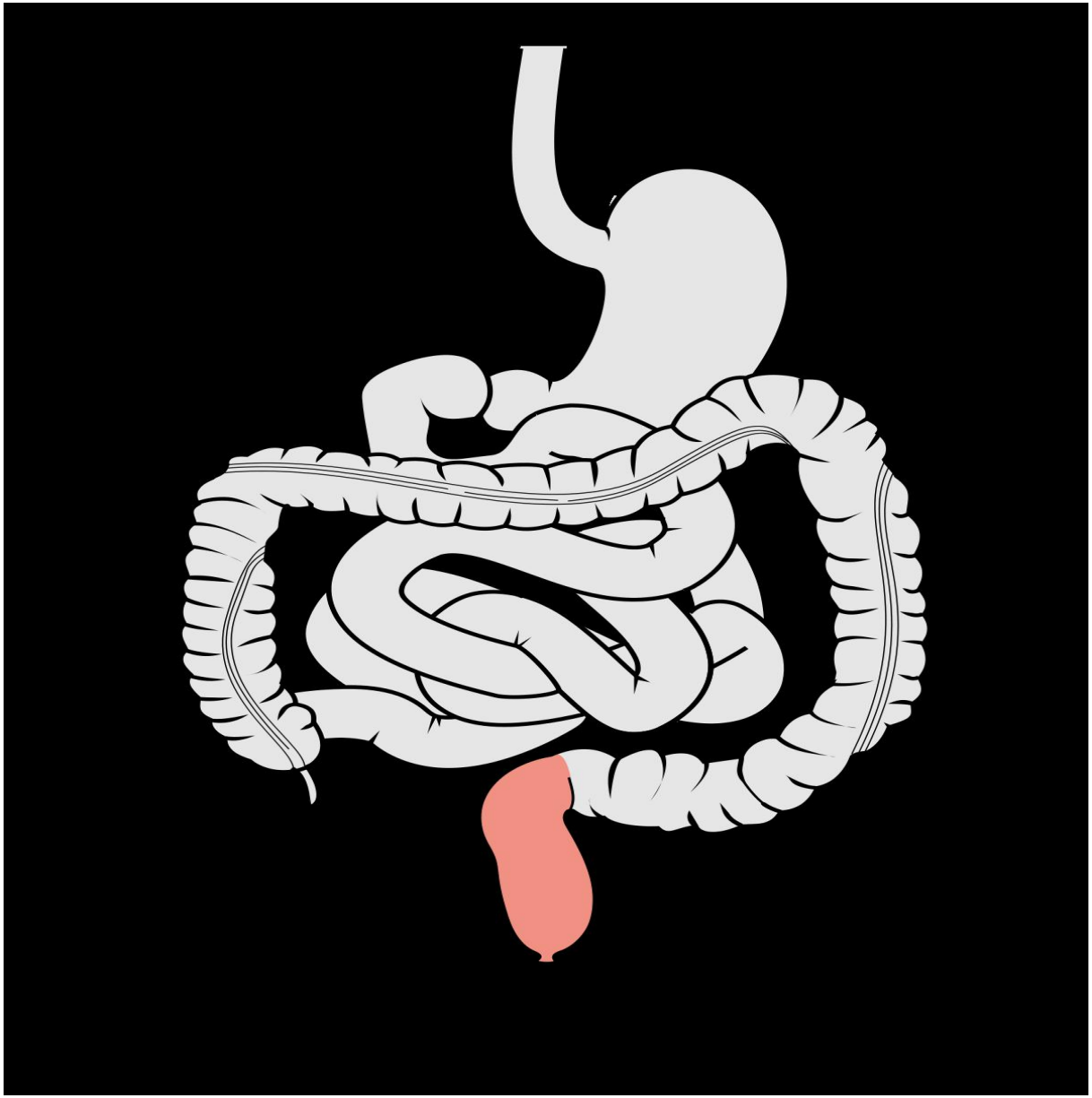
Colon


F(o)CUSED
F(o)CUSED COLLECTION
ID: 160566636
FOCUSEDCOLLECTION.COM

This is where reabsorption of water takes place

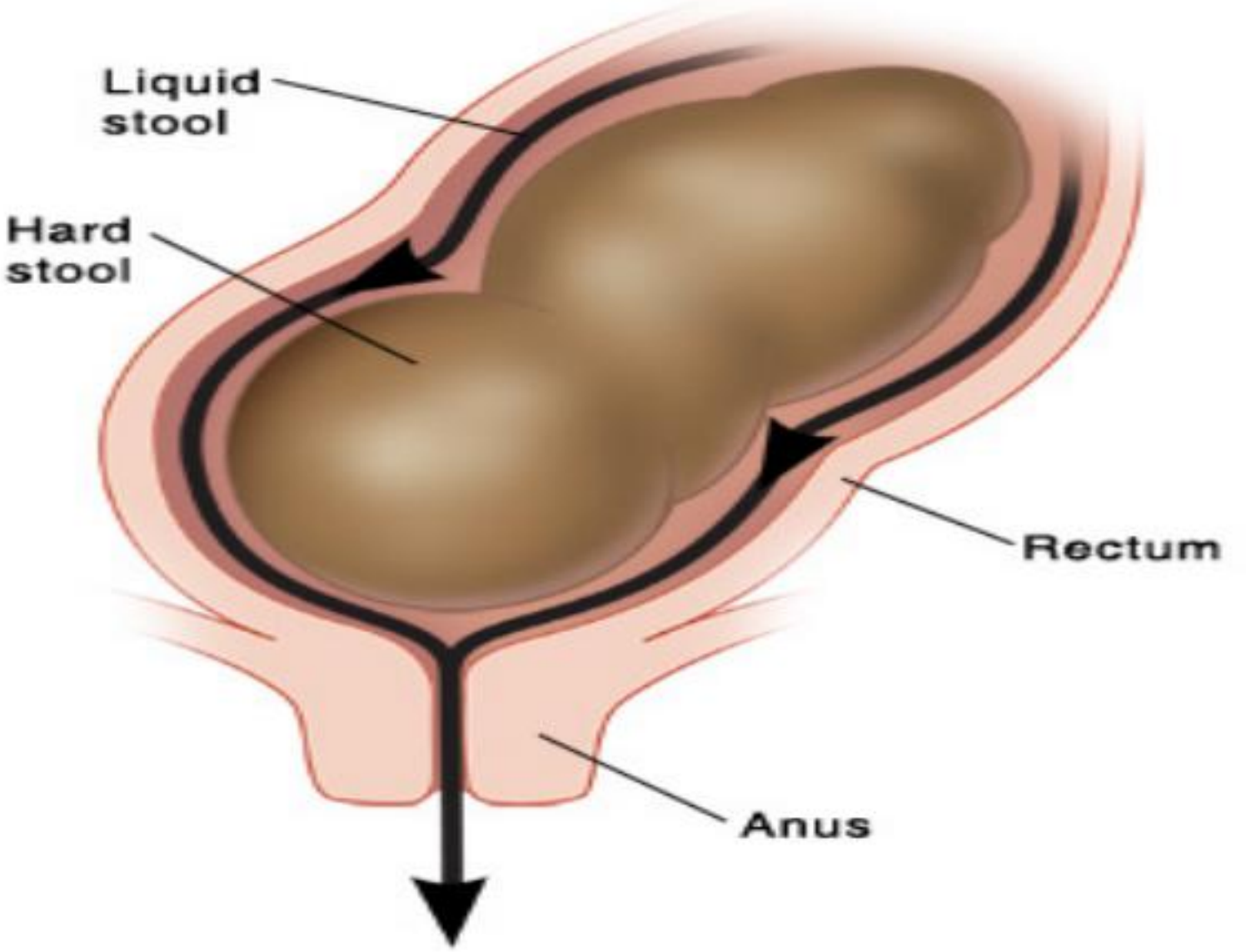
The colon and the rectum form the large intestines

Rectum



The rectum stores stool for sometime

The longer stool stays in the rectum, the harder it becomes



Anus

It is an outlet for stool

ACTIVITY

- Where in the body do each of the following end?

i) Digestion

ii) Alimentary canal

- What name is given to the first part if the small intestines?

- What is meant by emulsification of fats?

- Besides killing germs on food, how else is hydrochloric acid useful?

- Write down any two adaptation of the ileum to its function

DIGESTION

This is the process by which food is broken down into simple soluble particles that can be absorbed into the blood stream

TYPES OF DIGESTION

Mechanical digestion

Chemical digestion

MECHANICAL DIGESTION

This is the physical break down of food by teeth and churning.

Where does mechanical digestion occur?

Mouth

Stomach

CHEMICAL DIGESTION

This is the break down of food by enzymes and bile salts

Where does chemical digestion occur?

- **In the mouth by the action of the salivary amylase (ptyalin)**
- **In the stomach (pepsin and rennin)**
- **In the duodenum (bile, pancreatic enzymes) and then in the ileum.**

DIGESTIVE SYSTEM

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