

DIGESTIVE SYSTEM

The National Junior Swine Association Educational Materials and Resources

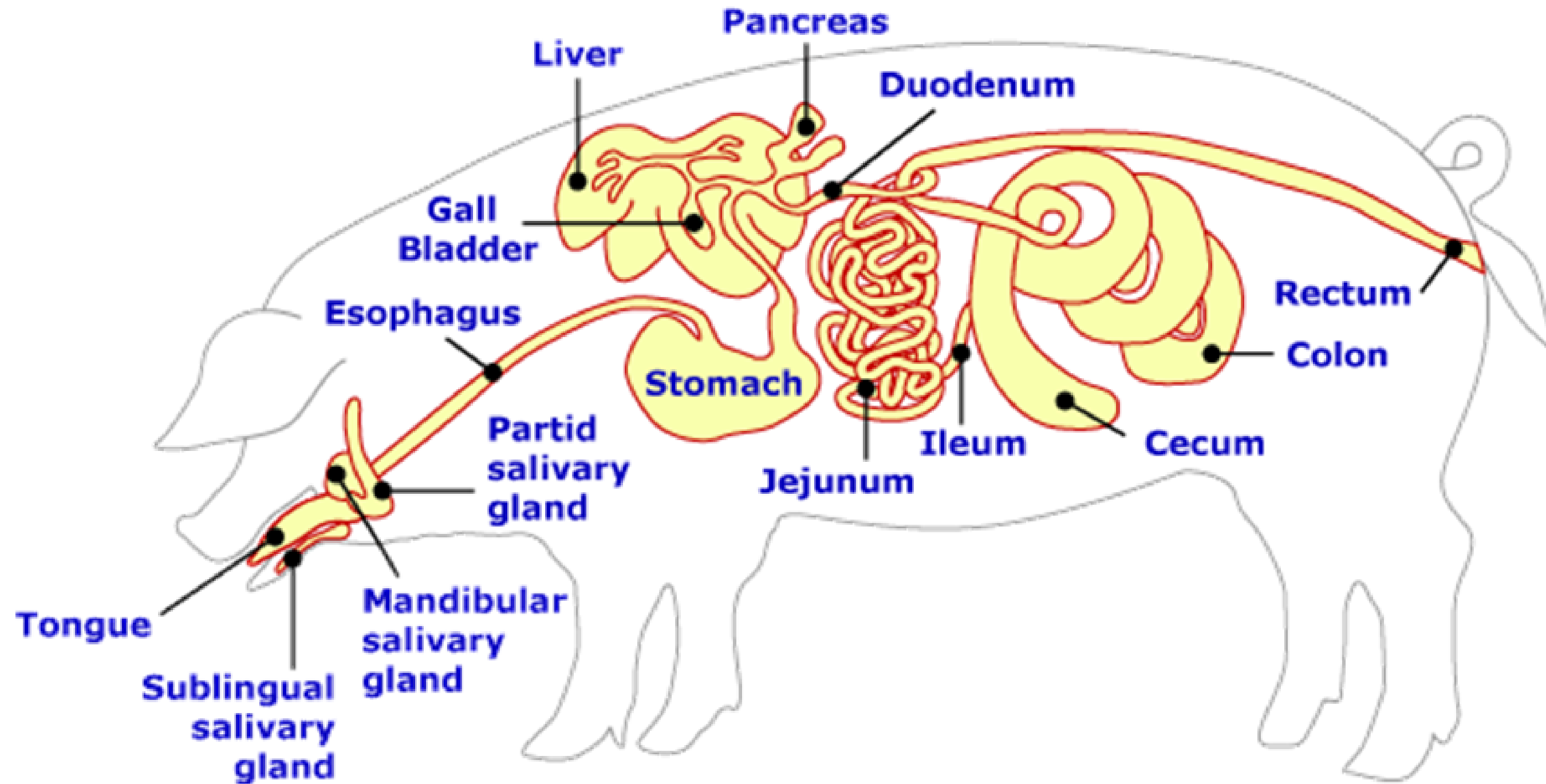
LEARNING OBJECTIVES

- Explain the difference between a monogastric animal and a ruminant animal.
- Identify various parts of the digestive system.
- Explain various functions of parts of the digestive system.

MONOGASTRIC VS. RUMINANT

- A monogastric animal has a single-chambered stomach and a much simpler digestive tract.
 - Swine are monogastric.
- A ruminant animal has a four-chambered stomach with a much more complex digestive tract.
 - Cattle are ruminants.

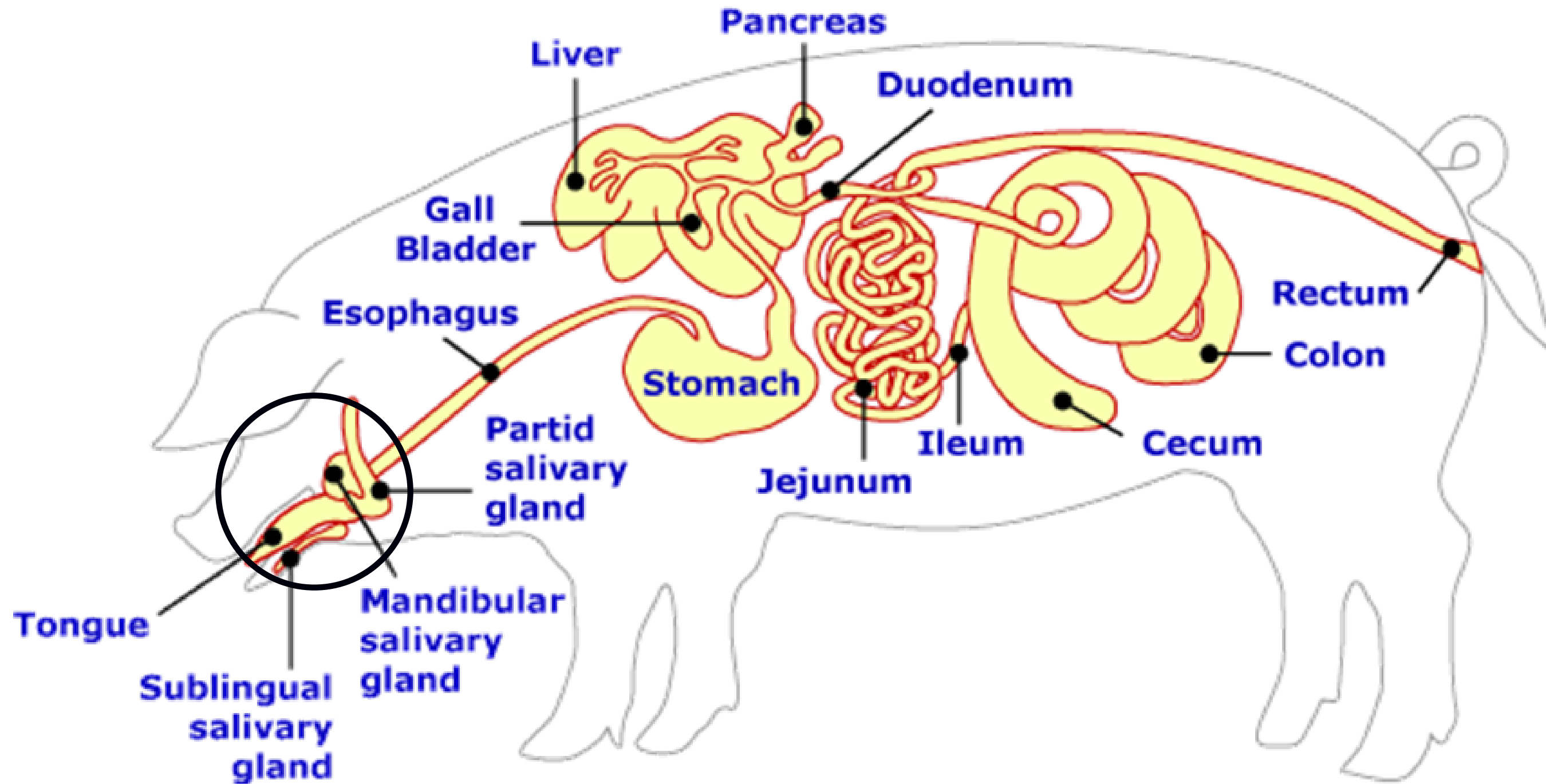
LAYOUT OF THE DIGESTIVE SYSTEM



TONGUE AND SALIVARY GLANDS

- The tongue serves as the first step to generate saliva and it helps push food toward the esophagus.
- Sublingual, mandibular, and parotid salivary glands all work together to create saliva.
- Saliva is a watery, mucus-like secretion of the salivary glands in the mouth that lubricates the food and aids in digestion.
 - It contains an enzyme that helps break down starch.

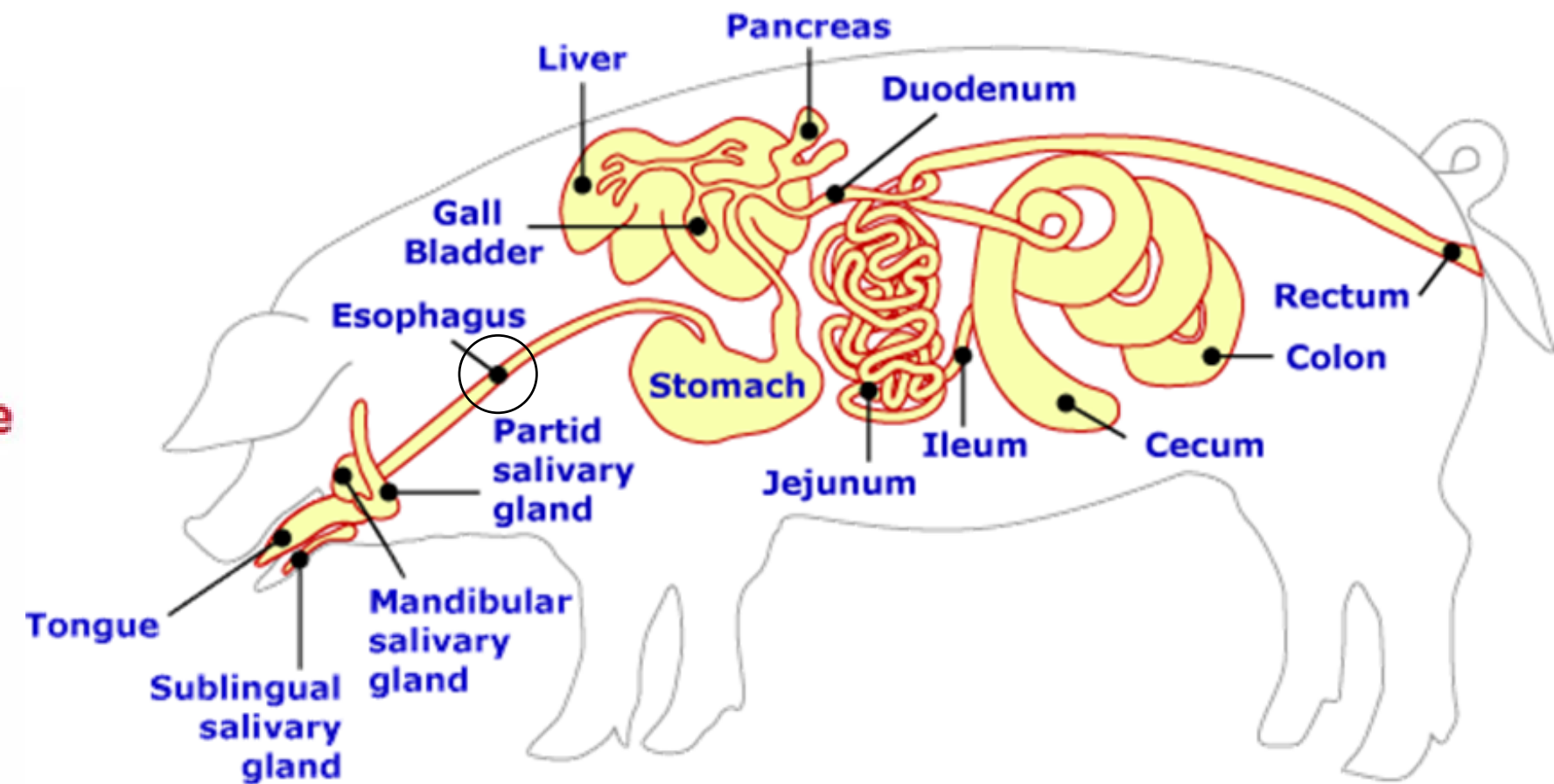
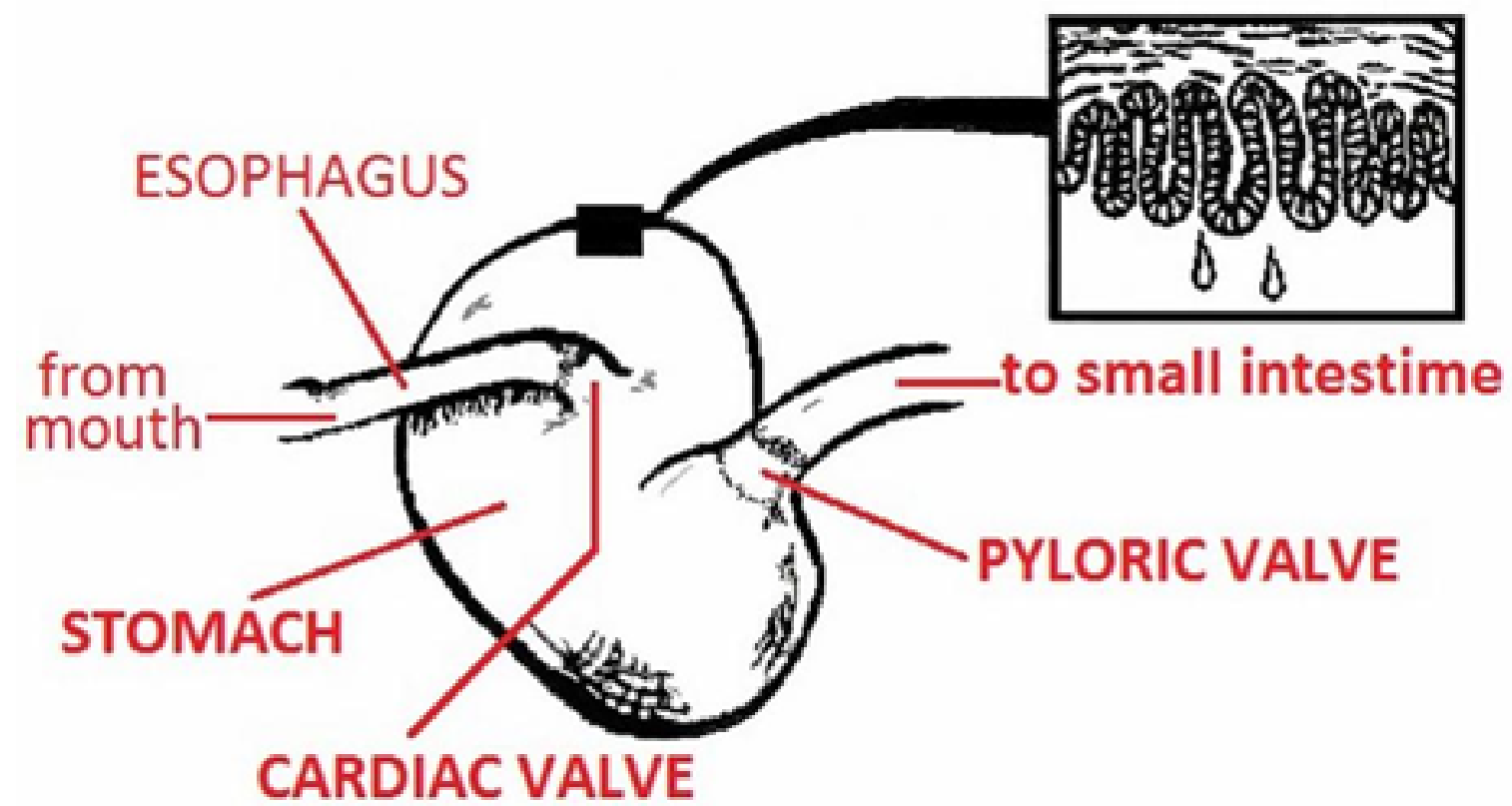
TONGUE AND SALIVARY GLANDS



ESOPHAGUS

- The esophagus is a tube which carries the food from the mouth to the stomach.
- Muscle contractions push the food toward the stomach.
 - Swallowing is the first of these contractions.
- At the end of the esophagus is the cardiac valve, which prevents food from passing from the stomach back into the esophagus.

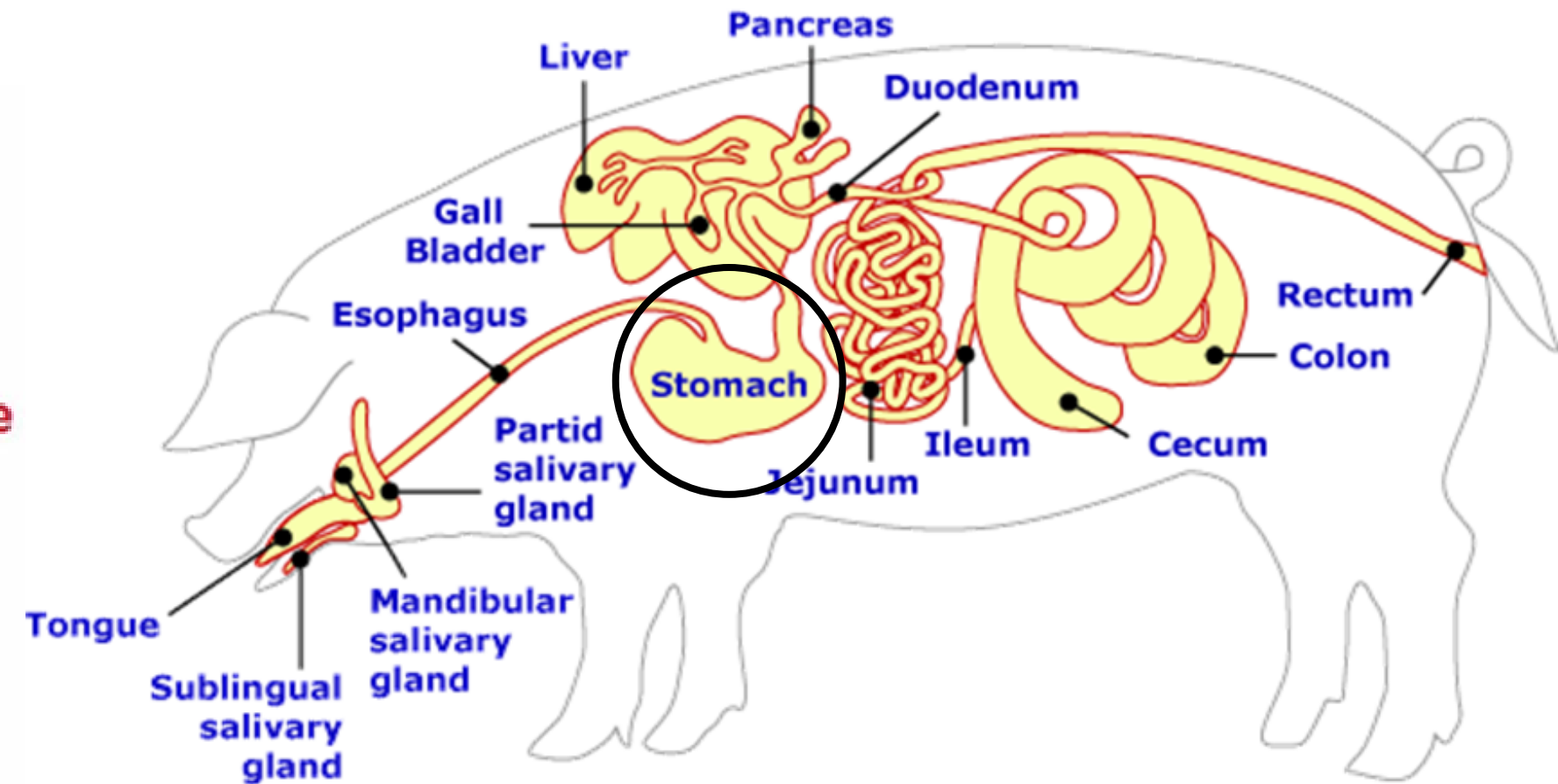
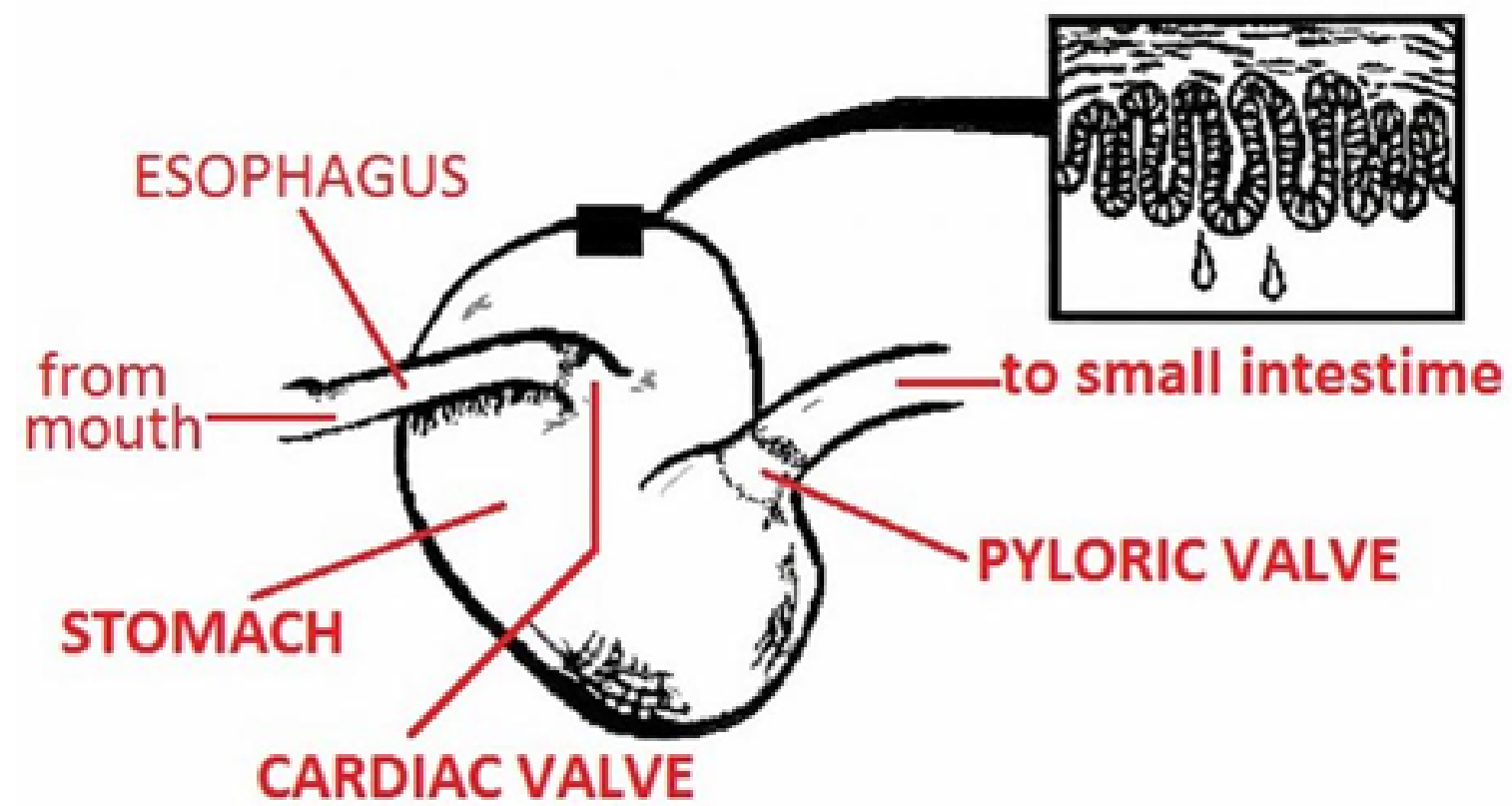
ESOPHAGUS



STOMACH

- The stomach is a reaction chamber where chemicals are added to the food.
- Certain cells along the stomach wall secrete hydrochloric acid and enzymes.
 - These chemicals help break down food into small particles.
- Particles that the stomach cannot absorb into the bloodstream pass in to the small intestine through the pyloric valve.

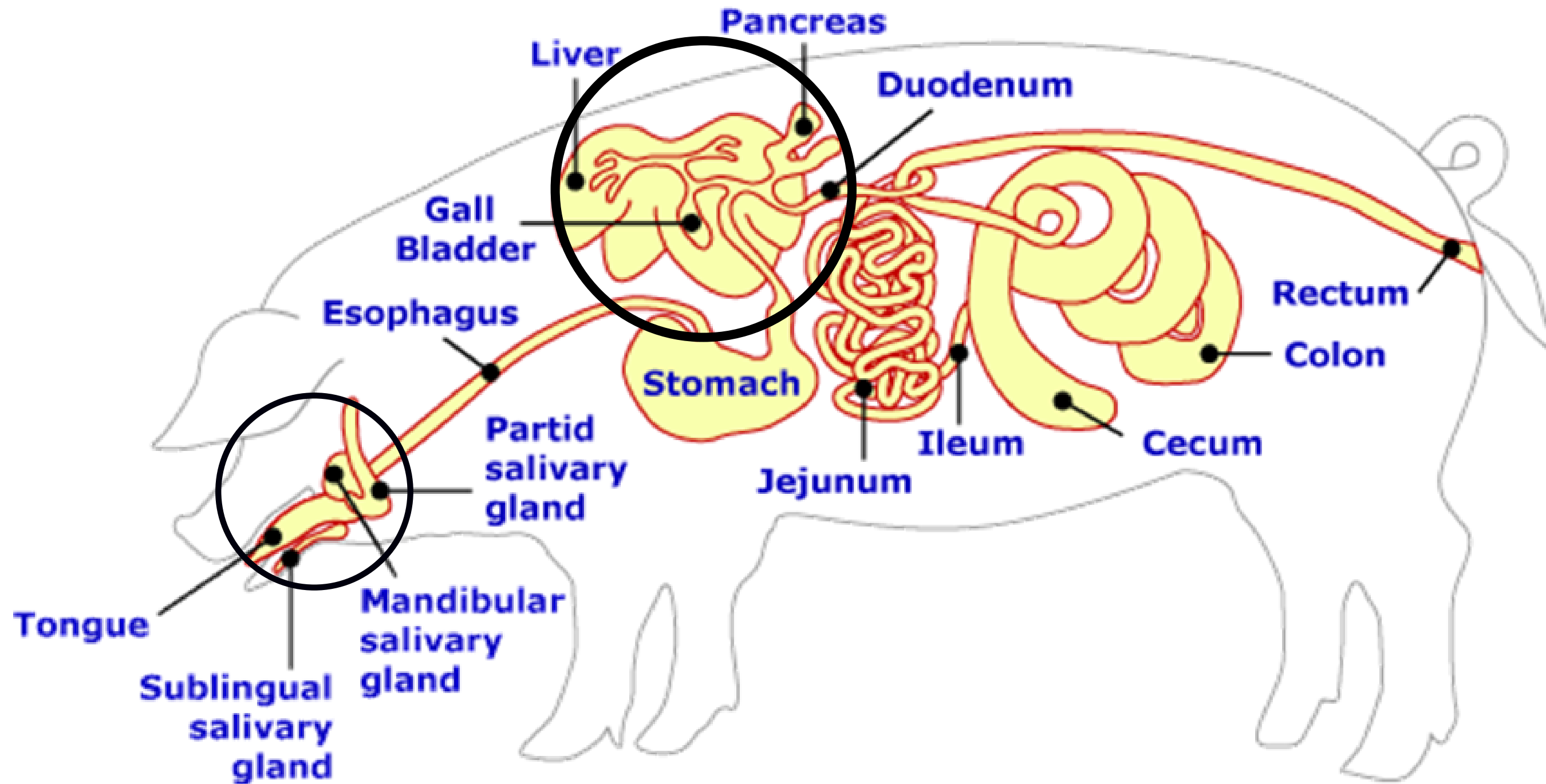
STOMACH



GALL BLADDER, LIVER, PANCREAS, AND DUODENUM

- The gall bladder serves as a storage compartment for bile.
- Bile is secreted by a gland called the liver, and bile assists in the digestion of fats.
- The pancreas is another gland that secretes juices that aid in the digestion of fats, carbohydrates, and proteins.
- These secretions are added in the duodenum, which is the first section of the small intestine.

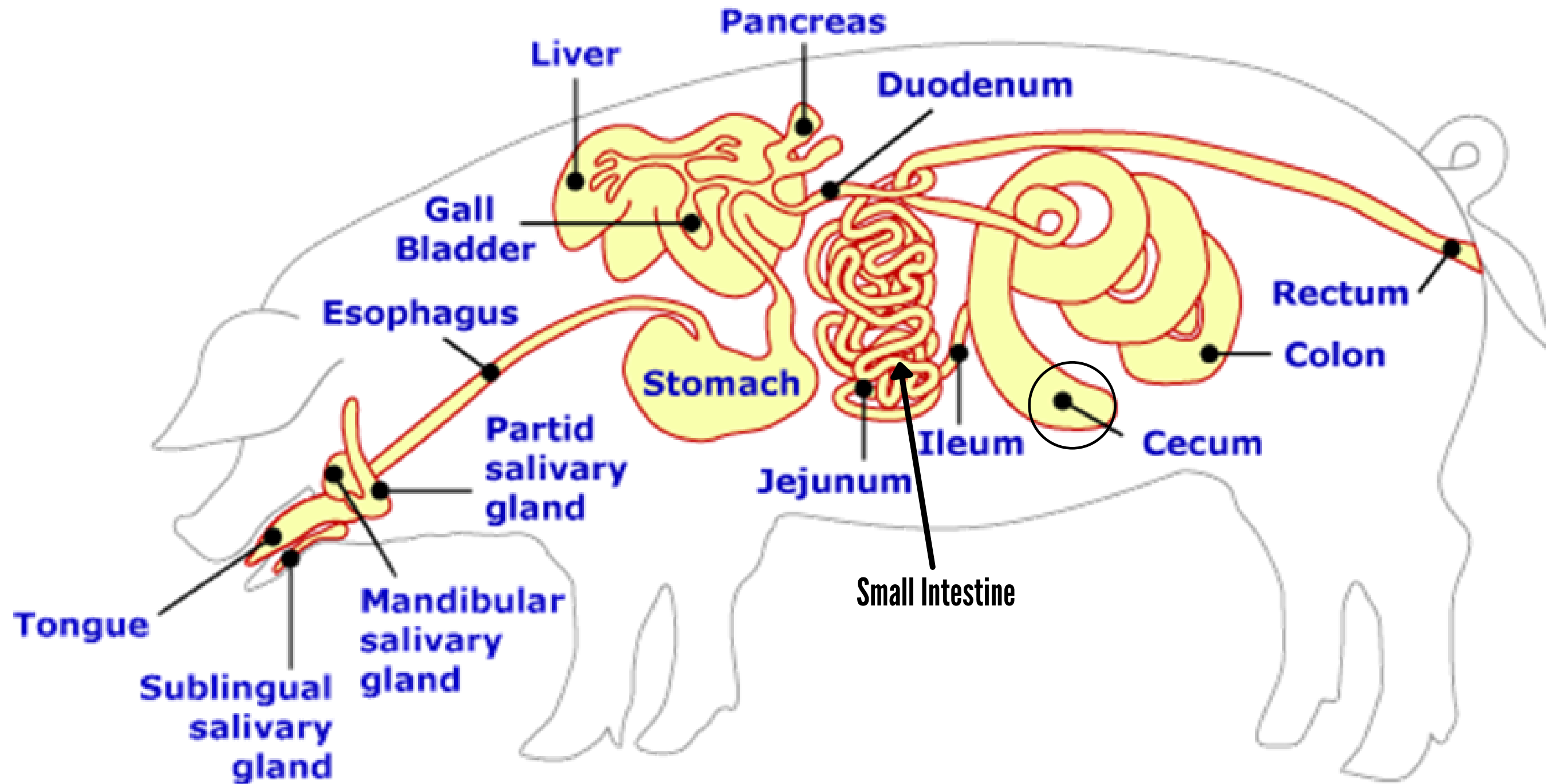
GALL BLADDER, LIVER, PANCREAS, AND DUODENUM



SMALL INTESTINE AND CECUM

- The small intestine assists in the absorption of nutrients.
- It contains two other parts, the jejunum and the ileum.
 - The jejunum is the middle or intermediate part of the small intestine.
 - The ileum is the final portion of the small intestine.
- Between the ileum and the large intestine is a “blind gut” referred to as the cecum.
- There is no primary role for this in swine, but in some monogastric animals, it aids in the digestions of fibrous materials.

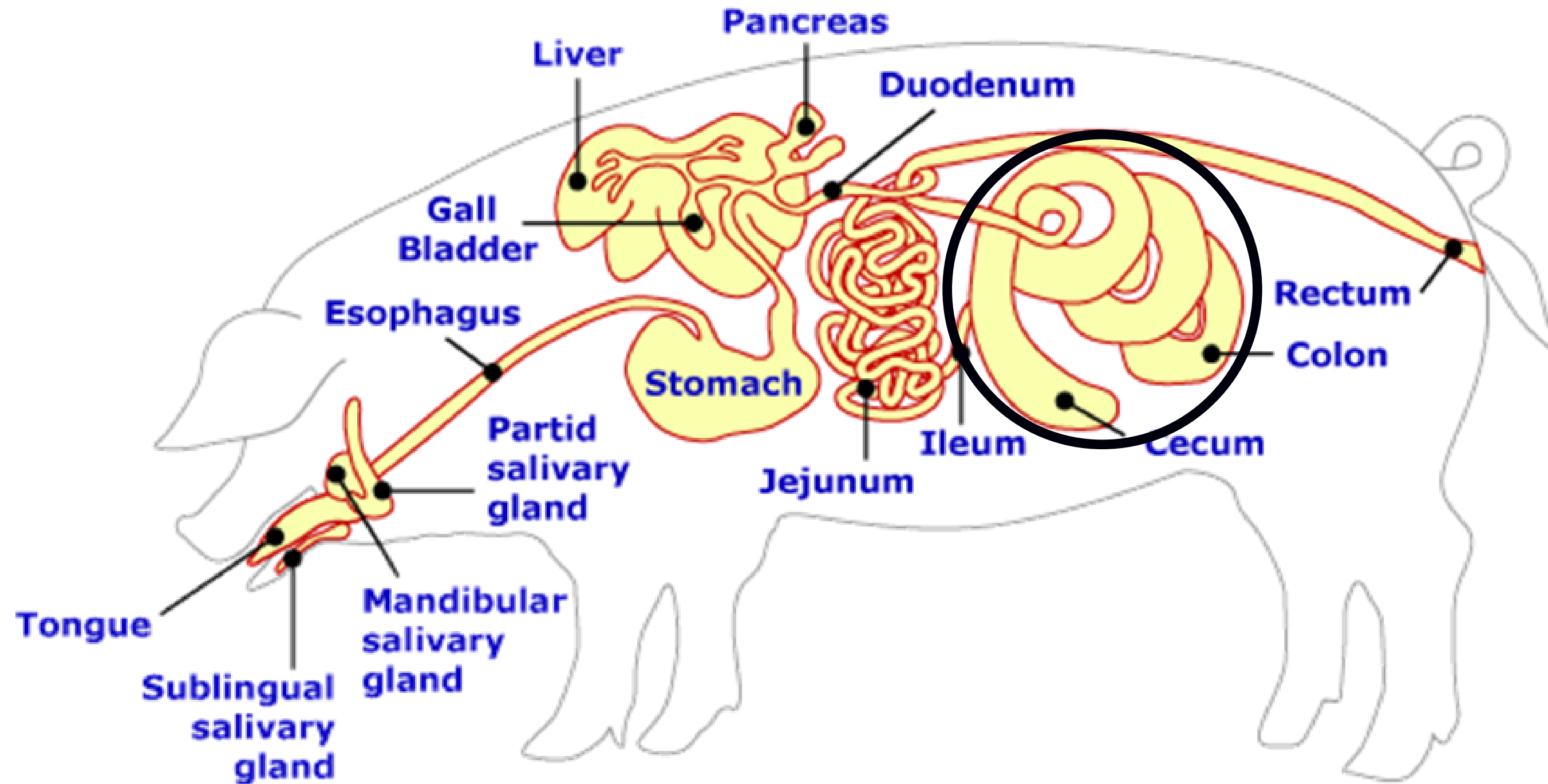
SMALL INTESTINE AND CECUM



LARGE INTESTINE AND COLON

- The large intestine's main function is the absorption of water.
- Mucous is added to the remaining food in order to make passage easier.
- The colon is the largest portion of the large intestine and plays a major role in water absorption and formation of feces.
- Muscle contractions push food through the intestines.

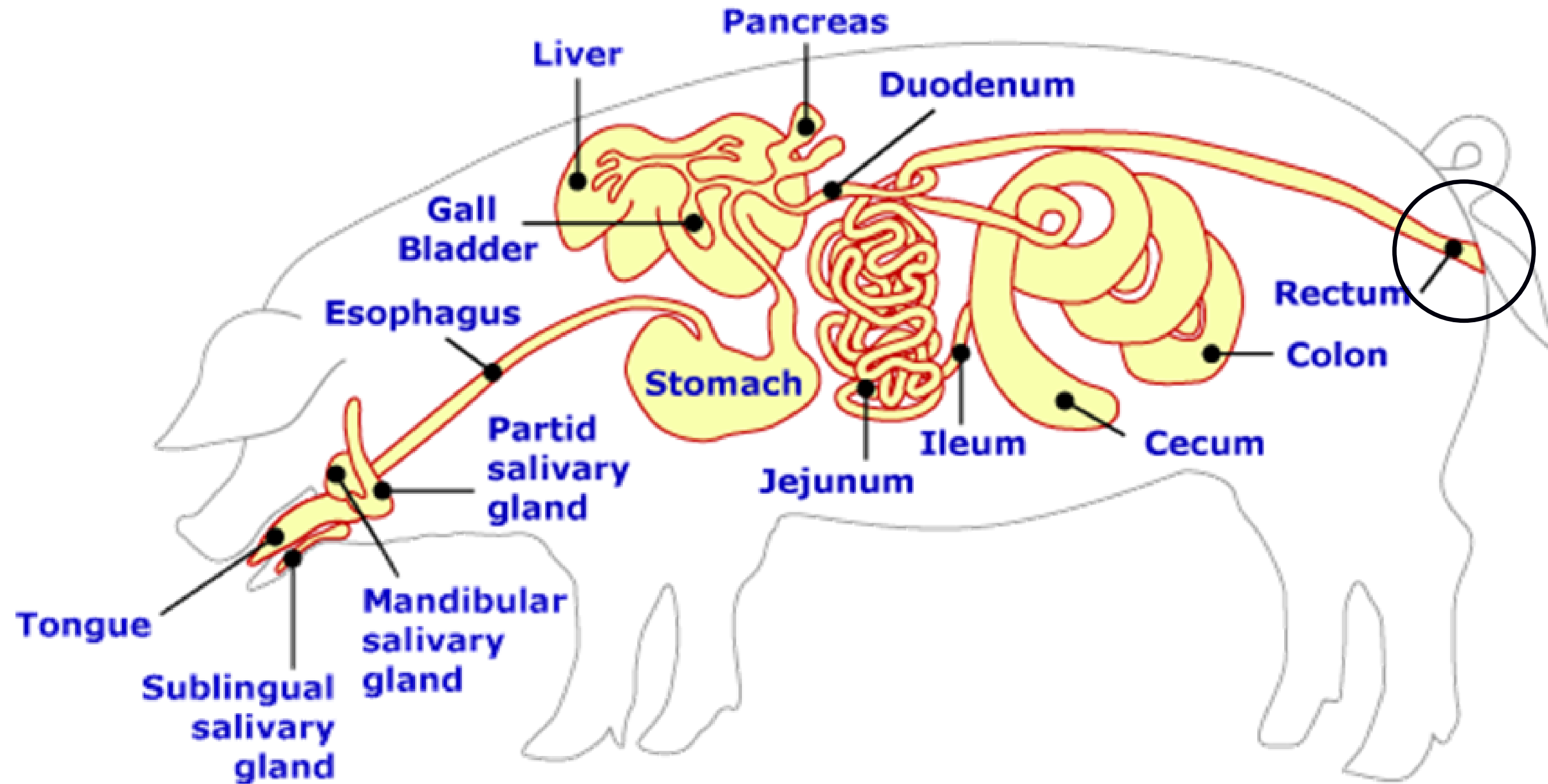
LARGE INTESTINE AND COLON



RECTUM AND ANUS

- The rectum is the final portion of the large intestine.
 - It is a straight tube of the large intestine that forms solid waste.
- The anus is the final part of the digestive tract to excrete undigested food from the body.

RECTUM AND ANUS



DIGESTIVE SYSTEM QUIZ

See what you've learned!

QUESTION 1

Pigs are monogastric animals which means they only have a single-chambered stomach?

True

False

QUESTION 2

The jejunum and ileum are a part of the large intestine?

True

False

QUESTION 3

The straight tube that forms solid waste and prepares waste for excretion is called the _____

Anus

Rectum

Colon

Cecum

QUESTION 4

At the end of the esophagus is the _____ that helps prevent food from reentry into the esophagus.

Cardiac Valve

Pyloric Valve

Cecum

Ileum

QUESTION 5

The main function of the liver is to secrete

Saliva

Bile

Water

Juice

ANSWERS

1. Pigs are monogastric animals which means they only have a single-chambered stomach? **TRUE**
2. The jejunum and ileum are a part of the large intestine? **FALSE**
3. The straight tube that forms solid waste and prepares waste for excretion is called the **RECTUM**
4. At the end of the esophagus is the **CARDIAC VALVE** that helps prevent food from reentry into the esophagus.
5. The main function of the liver is to secrete **BILE**

Congratulations!

**You've completed the "Digestive
System" resource! Great Work!**

**Keep going through the resources to
learn more about swine!**