EXTERNAL ANATOMY

We will start out with the external anatomy of the fetal pig. You can locate these parts by matching the numbers on the diagram with the corresponding titles.

1. umbilical arteries
2. allantoic duct
3. umbilical vein
4. umbilical cord
5. scrotum
6. genital papilla (female)
7. anus
8. urogenital opening (female)
9. urogenital opening (male)
10. mammary papillae
11. tip of sternum
THE NECK AND THORACIC CAVITY (RESPIRATORY SYSTEM)

Next, we will go on to the respiratory system of the fetal pig.

1. thymus
2. thyroid
3. pleural membrane
4. diaphragm
5. lungs
6. bronchi
7. trachea
8. esophagus
9. larynx
CIRCULATORY SYSTEM

Now it's time to explore and discover one of the most vital systems in the body, the circulatory system. Here, you will discover the major arteries in the pig's body. You will also discover the various and most important parts of the heart.

THE MAJOR ARTERIES OF THE FETAL PIG

1. right subclavian
2. ductus arteriosus
3. renal
4. dorsal aorta
5. umbilical
6. internal iliac
7. external iliac
8. anterior mesenteric
9. coronary
10. pulmonary
11. aortic arch
12. left subclavian
13. brachiocephalic
14. common carotid
MAJOR VEINS

1. brachiocephalic
2. ductus venosis
3. umbilical
4. renal
5. common iliac
6. superior (anterior) mesenteric
7. inferior mesenteric
8. gastric
9. hepatic portal
10. hepatic
11. posterior vena cava
12. pulmonary
13. anterior vena cava
14. left subclavian
15. external jugular
16. internal jugular
THE HEART

(Please note that some of the structures are internal and are not currently viewable, but the arrows indicate their approximate location.)

1. brachiocephalic artery
2. aorta
3. pulmonary artery
4. right ventricle
5. left ventricle
6. apex
7. right atrium
8. ductus arteriosus
9. left atrium
10. bicuspid valve
11. chordae tendinae
12. papillary muscle
13. tricuspid valve
14. semilunar valve
THE DIGESTIVE SYSTEM

In the following sections, you will explore the world of the digestive system. This includes both the oral cavity and the abdominal organs.

ORAL CAVITY AND PHARYNX

1. hard palate
2. soft palate
3. nasopharynx
4. esophagus
5. glottis
6. epiglottis
7. tongue
ABDOMINAL ORGANS

1. gall bladder
2. diaphragm
3. bile duct
4. duodenum
5. mesentery
6. small intestine
7. anus
8. rectum
9. cecum
10. colon
11. pancreas
12. pyloric sphincter
13. stomach
14. spleen
15. esophagus
16. retracted liver lobes
17. umbilical vein

CROSS SECTION OF THE SMALL INTESTINE

1. villi
THE REPRODUCTIVE SYSTEM

In the following sections, you will explore the male and female reproductive systems.

THE REPRODUCTIVE SYSTEM (MALE)

1. adrenal gland
2. kidney
3. seminal vesicle
4. urinary bladder
5. prostate location
6. urogenital opening
7. penis
8. testis
9. epididymis
10. Cowper's gland
11. urethra
12. inguinal canal
13. vas deferens
14. ureter
15. renal vein
16. renal artery
THE REPRODUCTIVE SYSTEM (FEMALE)

1. renal vein
2. kidney
3. ureter
4. uterine horn
5. urinary bladder
6. urethra
7. cervix
8. urogenital opening
9. urogenital sinus
10. vagina (cut open)
11. body of uterus
12. oviduct
13. ovary
14. renal artery
GLOSSARY OF TERMS

A
Adrenal Gland: produces adrenaline

Allantoic Duct: carries small amounts of nitrogenous waste produced by the kidneys away from the fetus

Anus: an opening located ventral to the tail where feces is excreted

Aorta: large artery that carries blood from the heart to be distributed by branch arteries

Apex: the lower pointed end of the heart

B
Bicuspid Valve: prevents blood in the left ventricle from returning into the left atrium

Bile Duct: transports bile from the liver to the gall bladder

Brachiocephalic Artery: supplies blood to the right forelimb and head

Brachiocephalic Vein: carries blood away from the right forelimb and head

Bronchi: branches from the trachea which lead to the lungs

C
Cecum: an appendage at the end of the large intestine with no apparent function

Cervix: the narrow lower or outer end of the uterus

Chordae Tendinae: open and close valves

Colon: a compact, rounded mass of intestine tightly bound by mesentery

Common Carotid Artery: supplies blood to the head

Common Iliac Veins: carries blood away from the legs

Coronary Artery: branch off from the aorta; supplies the tissue of the heart itself

Cowper's Gland: either of two small glands discharging into the urethra

D
Diaphragm: dome-shaped muscle that contracts to draw air into the lungs; most important organ in respiration

Ductus Arteriosus: in the fetal pig, shunts blood into the dorsal aorta, bypassing the lungs

Ductus Venosus: leads directly into the vena cava; allows some blood rich in oxygen and nutrients to be pumped out of the body without passing through the capillary beds in the kidney

Duodenum: the portion of the small intestine into which the contents of the stomach empties
E
Epididymis: an elongated mass of convoluted efferent tubes at the back of the testes

Epiglottis: flap of tissue that covers the glottis to keep food from entering the trachea

Esophagus: a muscular tube that transports food to the stomach and also serves to aid in mechanical digestion of food

G
Gall Bladder: stores bile that is produced by the liver

Gastric Vein: drains the pyloric region of the stomach before it joins the hepatic portal vein

Genital Papilla: a projection of tissue dorsal to the urogenital opening

Glottis: opening to the trachea

H
Hard Palate: the ridged surface on the roof of the oral cavity

Hepatic Portal Vein: carries blood from the digestive organs and spleen to the liver where nutrients are altered by hepatocytes before entering circulation

Hepatic Vein: carries blood away from the liver

I
Inferior Mesenteric Vein: carries blood away from the colon and rectum

Inguinal Canal: passage where the testes descend into the scrotum

Internal/External Iliac Arteries: supplies blood to the legs

J
Jugular Vein: transports blood away from the cranium

K
Kidney: filters nitrogenous waste from the blood

L
Larynx: the voice box; produces sound as air is forced through it

Left Atrium: pumps oxygenated blood into the left ventricle

Left Subclavian Artery: carries blood to the left forelimb and the left ventral chest wall

Left Subclavian Vein: transports blood away from the left forelimb and the left ventral chest wall

Left Ventricle: pumps blood out of the heart into the aorta

Liver: produces bile, converts food into energy, and filters toxins from the blood

Lungs: respiratory organs that draw in air to be "processed"
**M**
Mammary Papillae: nipples; indicate how many mammary glands there are

Mesentenric Artery: supplies blood to the pancreas and the small intestine

Mesenteries: a mass of sheet-like membranes that hold the small intestines together

**N**
Nasopharynx: the back of the throat, forms the upper part of the pharynx

**O**
Ovary: a female gonad; contains eggs, releases them at maturity, and aids in the production of progesterone and estrogen

Oviduct: a tube that serves exclusively or especially for the passage of eggs from an ovary

**P**
Pancreas: a long, whitish, cauliflower-like organ located dorsal to the stomach; produces digestive enzymes

Papillary Muscle: attached to the chordae tendinae in order for the valves to open and close

Penis: removes urine and semen from the body

Pleural Membrane: protects lungs and keeps moisture from escaping

Prostate Gland: produces fluid for semen

Pulmonary Arteries: carry deoxygenated blood to the lungs

Pulmonary Vein: carries oxygenated blood away from the lungs

Pyloric Sphincter: a hard ring of smooth muscle; creates a boundary between the stomach and the small intestine

**R**
Rectum: tube that transports undigested food from the large intestine out of the body

Renal Arteries: carry blood to the kidneys for filtration

Renal Vein: carries purified blood away from the kidneys

Right Atrium: transports deoxygenated blood to the right ventricle

Right Subclavian Artery: supplies blood to the right forelimb and to the right ventral chest wall

Right Ventricle: pumps deoxygenated blood out of the heart into the pulmonary arteries to the lungs for gas exchange
Scrotum: contains the testes

Semilunar Valve: prevents blood from re entering the ventricles

Seminal Vesicle: produces a mucoid secretion that's released into the semen

Small Intestine: secretes digestive enzymes; where most absorption of digested nutrients occurs

Soft Palate: the soft part of the oral cavity, located posterior to the hard palate

Spleen: destroys old red blood cells in an adult

Sternum: a long vertical bone located in front of the chest cavity which attaches to the collarbone and the first seven pairs of ribs

Stomach: produces acid for chemical digestion

Superior Mesenteric Vein: carries blood away from the small intestine

Testis: produce sperm and testosterone

Thymus: aids in the development of white blood cells

Thyroid: creates hormones to control cell metabolism

Tongue: a muscular structure attached to the ventral posterior of the mouth used for manipulation of food in the mouth

Trachea: cartilaginous-ringed tube where air passes to the lungs from the mouth

Tricuspid Valve: prevents blood in the right ventricle from returning into the right atrium

Umbilical Arteries: carries oxygen-rich blood to the fetus from the placenta

Umbilical Cord: connects the fetus to the mother at the placenta

Umbilical Veins: carries deoxygenated blood from the fetus to the placenta

Ureter: transports nitrogenous waste from the kidneys to the urinary bladder

Urethra: carries urine out of the bladder; carries semen out of the body

Urinary Bladder: stores urine

Urogenital Opening: opening to the urogenital sinus

Urogenital Sinus: the ventral part of the embryonic mammalian cloaca, formed by the growth of a fold dividing the cloaca where the gut and allentosis meet

Uterine Horn: a coiled tube that leads from the ostium to the uterus
**Uterus**: an organ in a female mammal that is for containing and usually for nourishing the unborn fetus

**Vagina**: a canal in a female mammal that leads from the uterus to the external orifice opening into the vestibule between the labia minora

**Vas Deferens**: tubes that store and transport sperm from the testes

**Vena Cava**: returns blood to the right atrium of the heart

**Villi**: hair-like protrusions in the small intestine which absorb nutrients during digestion