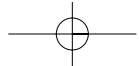
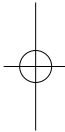
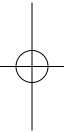
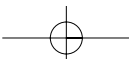
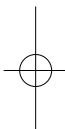
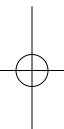
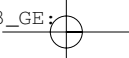


FETAL PIG DISSECTION A LABORATORY GUIDE





FETAL PIG DISSECTION A LABORATORY GUIDE

**CONNIE ALLEN
VALERIE HARPER**

Edison Community College



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PREFACE

A. Preparing the Fetal Pig

1. Obtain disposable gloves, safety glasses, dissecting tray and equipment, and a fetal pig.
2. With safety glasses and gloves on, remove the pig from its bag and lay the pig on a dissecting tray. Keep the preserving solution in the bag.
3. Review the directional terms for the pig in Figure FP.1. Note the differences between four-legged animals and humans.
 - Anterior is toward the cephalic (head) end of the pig.
 - Posterior is toward the caudal (tail) end of the pig.
 - Superior is toward the dorsal (back) surface.
 - Inferior is toward the ventral (belly) surface.
4. Place your pig ventral surface up on the dissecting tray.
5. Identify the gender of your pig. Males have a urogenital opening, the opening for the penis, that is caudal to the umbilical cord. The scrotum (small bulges) is anterior to the anus. Females also have a urogenital opening located anterior to the anus. The opening is enclosed by small folds called labia that form a projection called the genital papilla.
6. Prepare a label for your pig with the names of your group members and the gender of your pig.

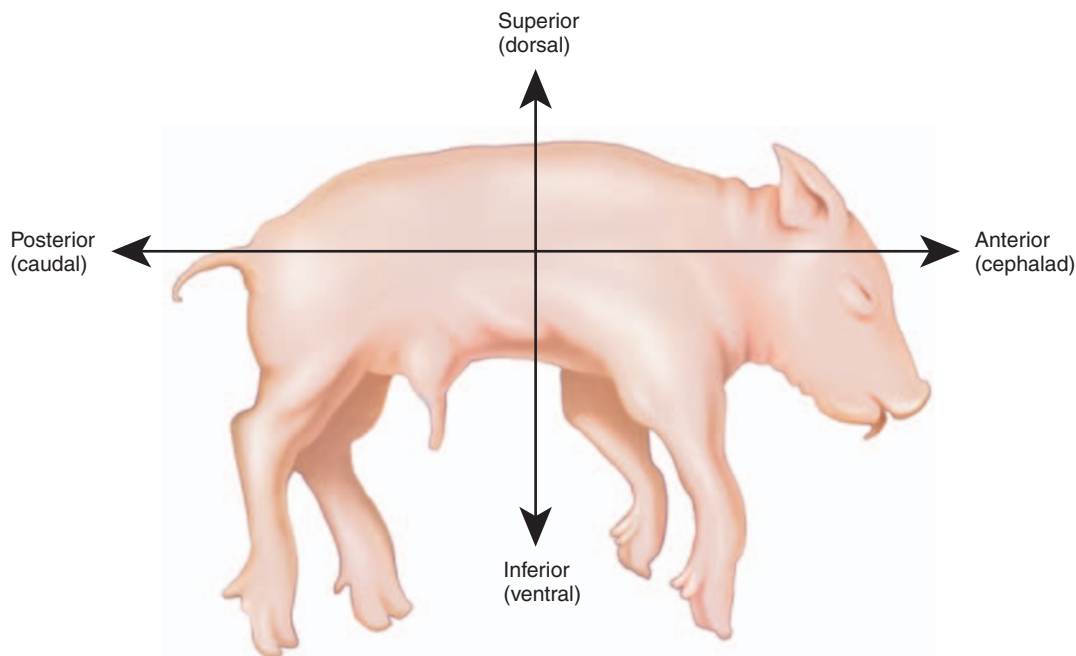


FIGURE FP.1 Directional terminology for the fetal pig.

B. Instructions for Opening the Ventral Body Cavities

1. Referring to Figure FP.2, use scissors to carefully make a longitudinal incision through the abdominal muscles at the midline, just anterior to the umbilical cord. Continue the incision anteriorly, just lateral to the sternum, ending at the lower lip.
2. Cut around each side of the umbilical cord and continue posteriorly to the genital area.
3. Cut horizontal incisions on each side of the diaphragm, leaving the diaphragm intact.
4. Pull open the thoracic and abdominal cavities. Cut away the side flaps to better observe the organs, following your instructor's directions.
5. Dispose of fascia and fat as indicated by your instructor. Attach the label identifying your pig.

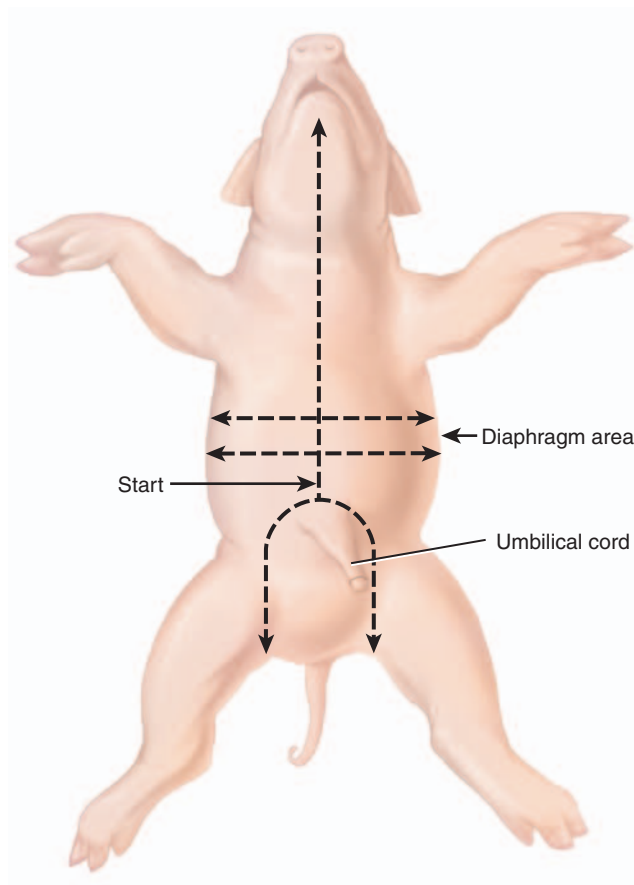


FIGURE FP.2 Incision lines for opening the ventral cavity.

DISSECTION 1: ENDOCRINE ORGANS

The major endocrine organs of the pig have similar locations and structure compared with humans. Assemble your dissection equipment, put on your safety glasses and gloves, and obtain your pig. Position your pig within the dissection tray. Keep the preserving solution in the bag to keep your pig moist and to inhibit bacterial and mold growth.

Procedure

1. Place the pig on its back with the ventral side up. Use Figures F1.1a and F1.1b to help you identify the endocrine organs.
2. There are two main endocrine organs in the thoracic cavity: the thyroid gland and the thymus. The **thyroid gland** is an oval gland lying over the trachea posterior to the larynx. The **thymus** is glandular-looking with small lobules and is located posterior to the larynx on top of the thyroid gland on the trachea, and extending

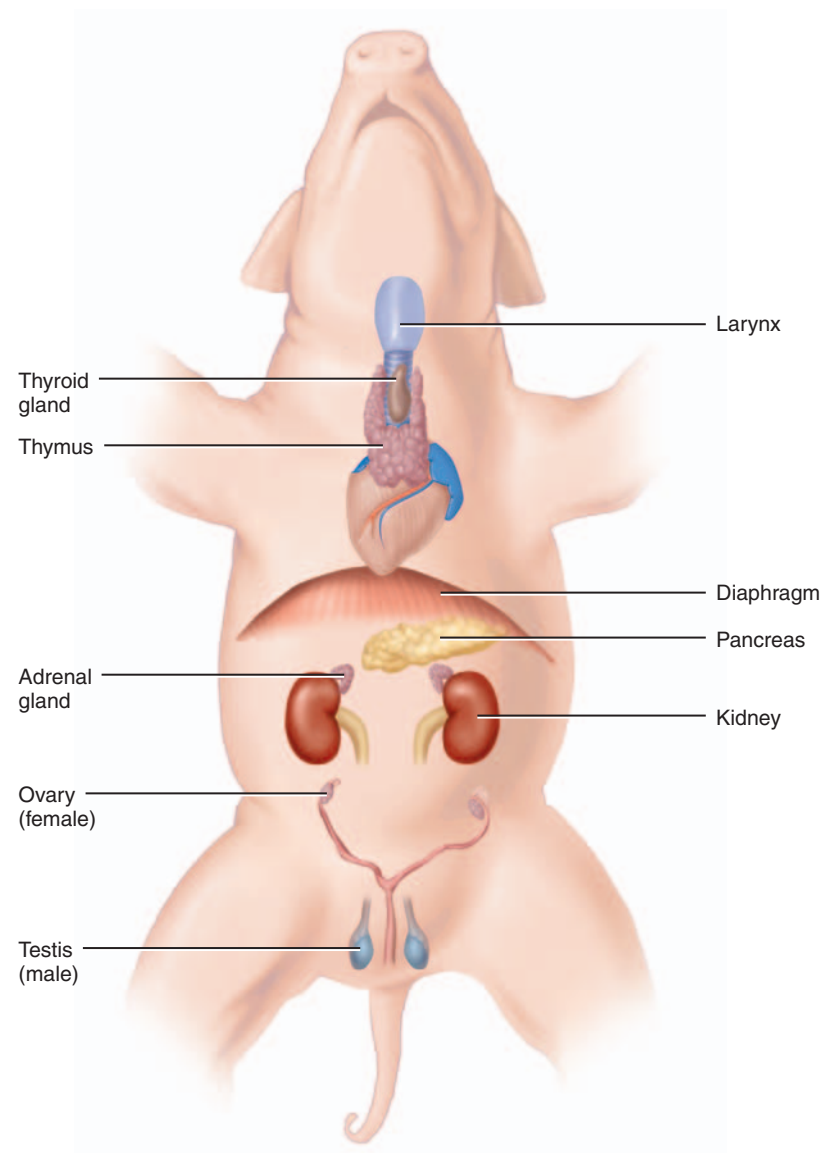


FIGURE F1.1a Endocrine glands in the fetal pig.

- to partially cover the heart. Because the pig is fetal, the thymus gland will be quite large with two definite lobes.
- There are three main endocrine organs in the abdominal cavity: the pancreas, adrenal glands, and female gonads. Locate the diaphragm that separates the thoracic and abdominopelvic cavities. Reflect the stomach and look beneath it for the glandular-looking **pancreas**. It is located close to the curve in the first part of the small intestine (duodenum) and extends to the left toward the spleen.
 - The bean-shaped **adrenal glands** are located near the anterior part of the kidneys. Both the kidneys and adrenal glands are retroperitoneal (located behind the peritoneum).
 - The female gonads are called **ovaries** and are very small, oval organs located posterior to the kidneys.
 - The male gonads, the **testes**, are located outside of the abdominopelvic cavity in the scrotum. Because these pigs are fetal, the scrotum and testes have not descended much and are merely small bulges. Your instructor will tell you whether or not to proceed opening the scrotum to view the testes at this time.
 - Prepare your pig for storage in the plastic bag, following your instructor's directions. Be sure to attach your group's identification tag.
 - Clean your tabletop with disinfectant.
 - Wash your dissection tools, dissection tray, and hands before leaving the lab.

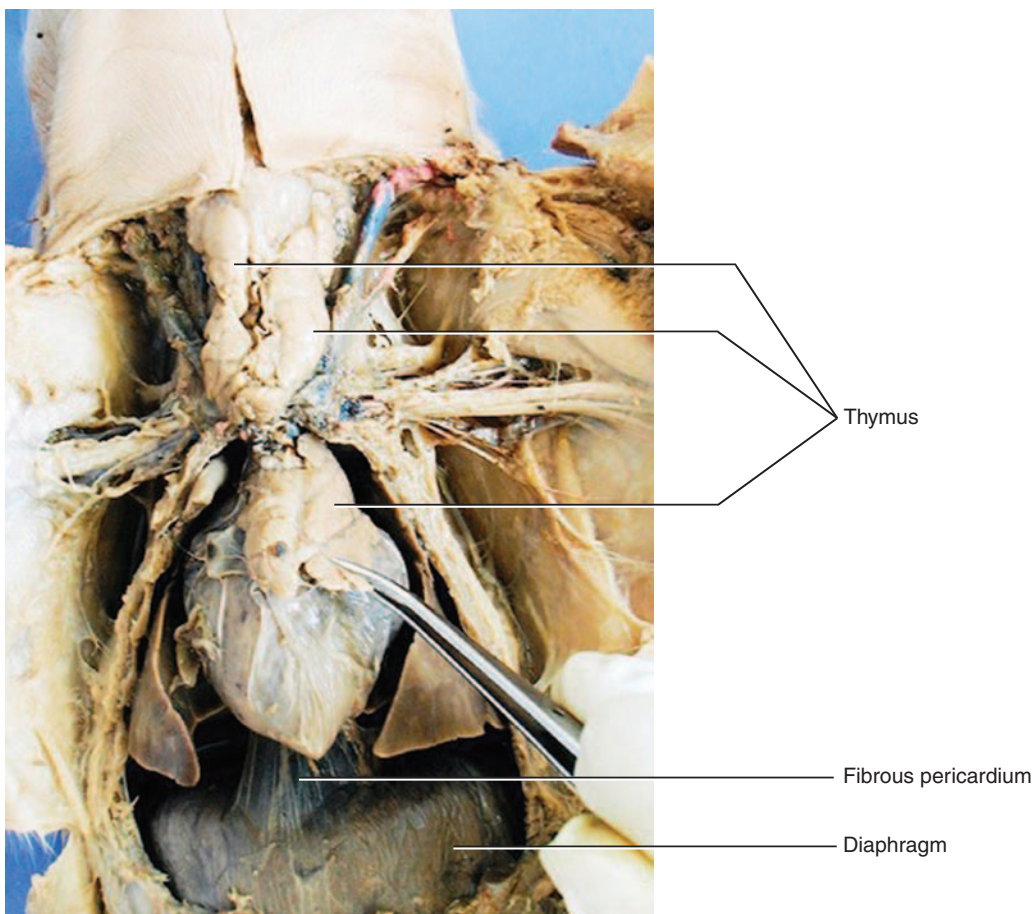


FIGURE F1.1b Thymus gland in the fetal pig.

DISSECTION 2: BLOOD VESSELS AND HEART

Blood leaving the heart travels through arteries to tissues. Blood leaving tissues travels through veins back to the heart.

Double-injected pigs are usually used to identify blood vessels. Arteries are injected with red latex, and veins are injected with blue latex. Blood vessel locations differ slightly from pig to pig. It is important to understand that these slight differences in location are normal and also occur in humans. Assemble your dissection equipment, put on your safety glasses and gloves, and obtain your pig. Position your pig within the dissection tray. Keep any remaining preserving solution in the bag to keep your pig moist and inhibit bacterial and mold growth.

Procedure

A. Dissection of Arteries

- Place your pig in a dissecting tray with the ventral surface up. If you have not opened the ventral body cavities, refer to the instructions in the Preface.
- Identify the following major organs: heart, trachea, lungs, diaphragm, stomach, spleen, pancreas, liver, small intestine, and large intestine.
- Using your scissors, cut open the pericardial sac surrounding the heart to expose the heart. Observe a portion of the fibrous pericardium in Figure F1.1b and locate in your fetal pig.
- Refer to Figure F2.1a to identify the following arteries that are located *above the diaphragm*. Observe the fascia that protects and secures blood vessels. Carefully remove the fascia with blunt instruments to separate blood vessels from other structures.
- Identify the **pulmonary trunk** (usually contains blue latex) exiting from the right ventricle. Identify where the pulmonary trunk connects to the aortic arch by the **ductus arteriosus**. This is also where the pulmonary trunk divides into the **right** and **left pulmonary arteries**. Follow the pulmonary arteries to the lungs.
- Identify the **ascending aorta** as it exits the left ventricle.
- Identify the **aortic arch**. In pigs, there are only two branches of the aortic arch: the **brachiocephalic artery** (first branch) and the **left subclavian artery**. Identify these branches. Compare this branching with the human.
- The brachiocephalic artery divides into the right subclavian artery, the right common carotid, and the left common carotid. Locate the **subclavian artery** as it turns laterally and travels toward the upper extremity. Locate the **right** and **left common carotid arteries** as they travel along the trachea. At the level of the larynx, the common carotid arteries divide to form the external and internal carotid arteries.
- The first major branch off each subclavian artery is the **vertebral artery**. Follow the right and left subclavian arteries to the first rib. As each subclavian artery continues to the axilla, it becomes the **axillary artery**. Follow the axillary artery into the arm, where it becomes the **brachial artery**. Distal to the elbow, the brachial artery divides to form the radial and ulnar arteries.
- Lift up the heart and follow the aortic arch as it descends and forms the **thoracic aorta**. Follow the thoracic aorta and observe where it passes through the diaphragm with the esophagus and inferior vena cava, and becomes the **abdominal aorta**. The abdominal aorta is retroperitoneal. You must move the viscera aside and remove the parietal peritoneum lining the dorsal body wall to observe the aorta.

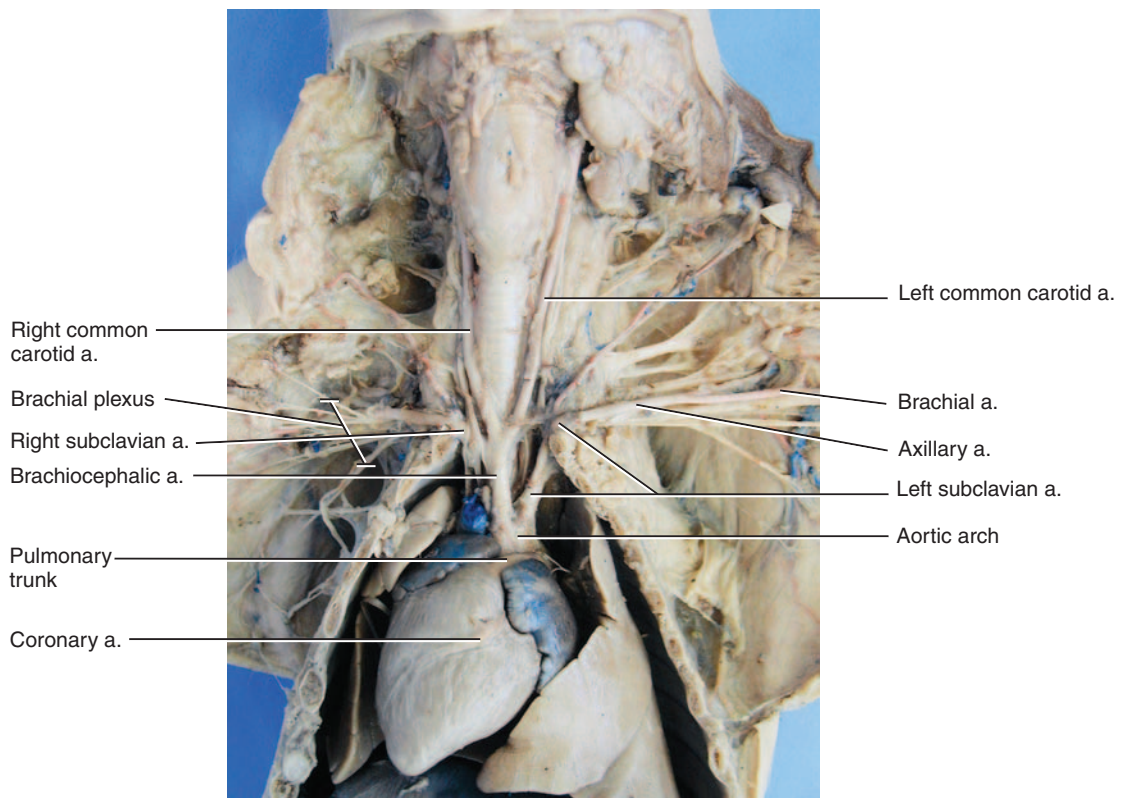
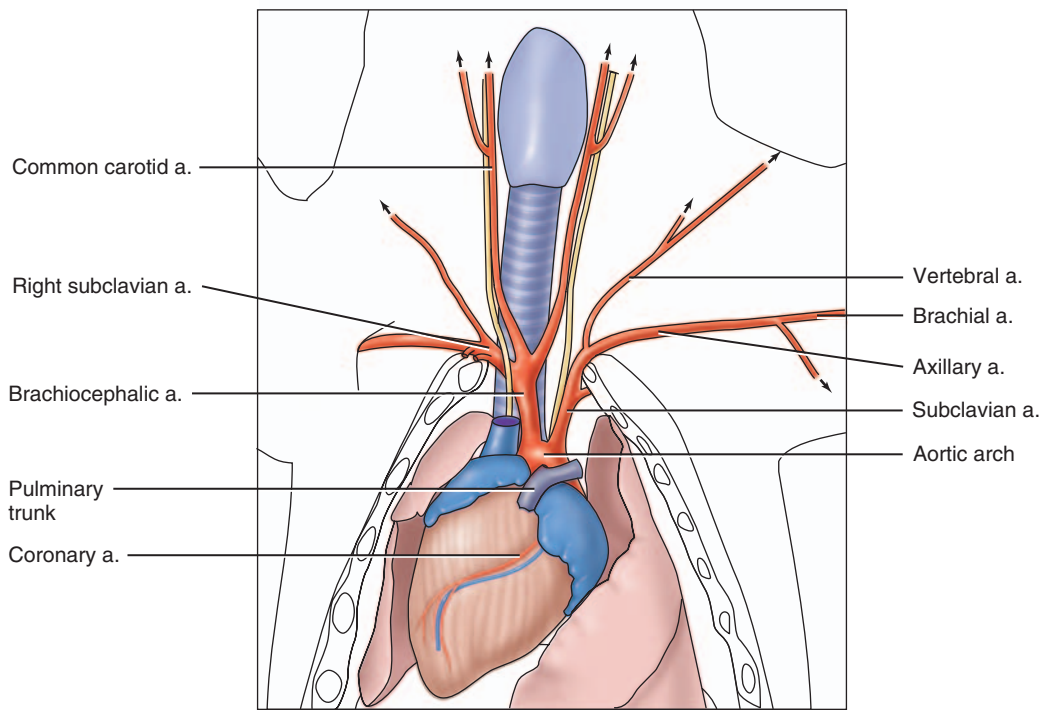


FIGURE F2.1a Arteries above the diaphragm.

8 Fetal Pig Dissection

11. Refer to Figure F2.1b to identify the following arteries that are located *below the diaphragm*.
12. The **celiac trunk** is the first branch off the abdominal aorta and branches into the hepatic artery, the left gastric artery, and the splenic artery.
13. Posterior (caudal) to the celiac trunk is the **superior mesenteric artery**, whose branches can be observed traveling through the mesentery of the small intestine.
14. Follow the abdominal aorta to the level of the kidneys. Remove the parietal peritoneum covering the kidneys to observe the paired **renal arteries**.
15. The gonadal arteries, **testicular arteries** in males and **ovarian arteries** in females, are the next major branches off the abdominal aorta. Follow these arteries to the gonads (testes in males and ovaries in females).
16. The **inferior mesenteric artery** branches off the abdominal aorta posterior (caudal) to the gonadal arteries. Branches of the inferior mesenteric artery travel through the mesentery of the large intestine.
17. The **right and left external iliac arteries** are large branches off the abdominal aorta posterior to the inferior mesenteric arteries.
18. The abdominal aorta ends when it divides into the **right and left umbilical arteries** and a single **middle sacral (caudal) artery**. The **internal iliac arteries** branch off the umbilical arteries. There is no common iliac artery in the pig.
19. Follow one external iliac artery into a thigh where it becomes the **femoral artery**.
20. The femoral artery travels down the thigh and becomes the **popliteal artery** in the popliteal area.

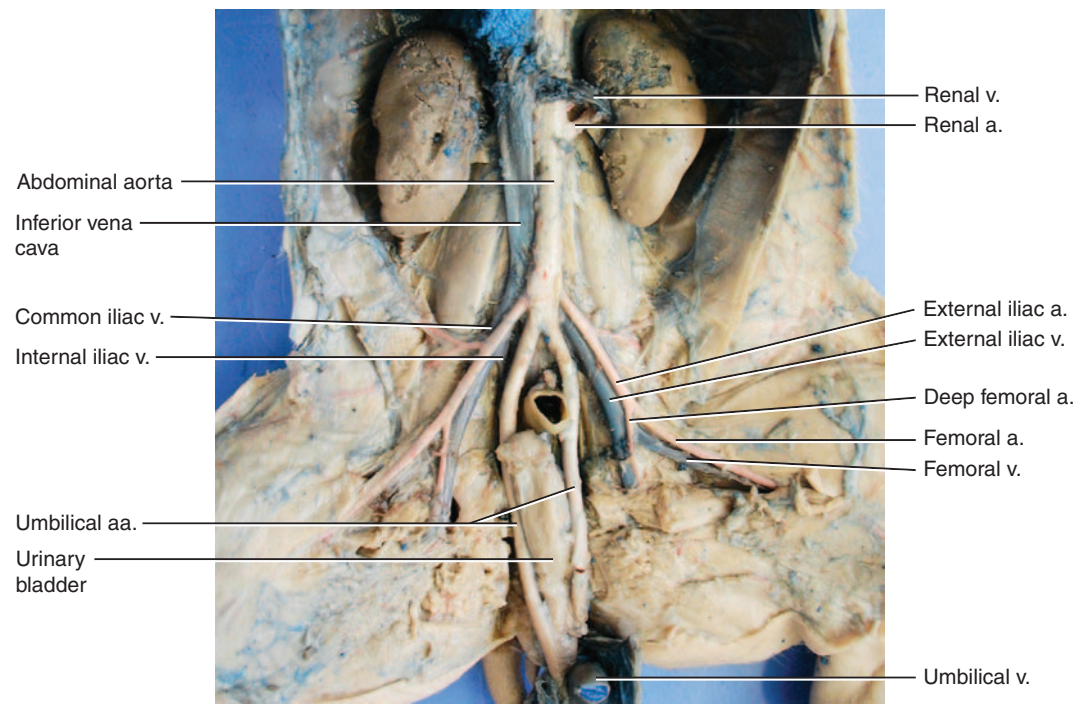
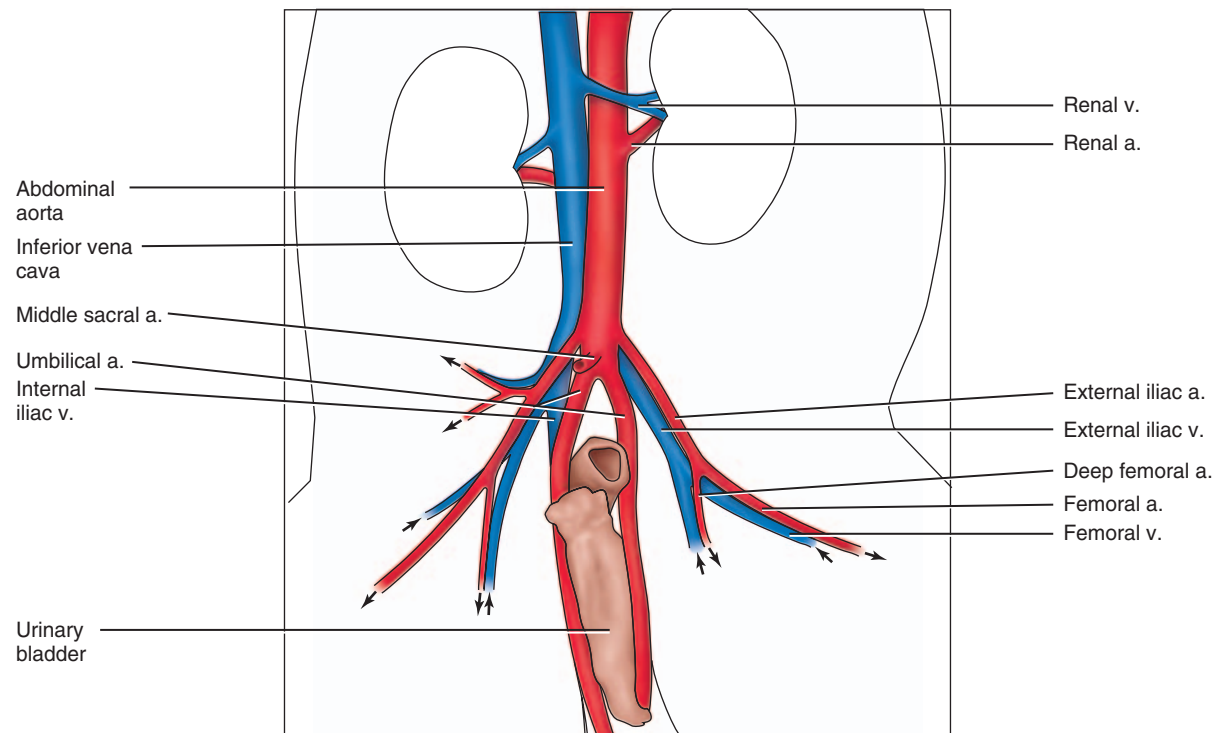


FIGURE F2.1b Arteries and veins below the diaphragm.

B. Dissection of Veins

1. Some veins are superficial (close to the surface), whereas others are deep. Many of the deep veins are adjacent to arteries with the same name.
2. Refer to Figure F2.1b to identify veins located *below the diaphragm*.
3. The large superficial vein traveling along the medial surface of the leg ascending into the thigh is the great saphenous vein. It joins with the popliteal vein to form the **femoral vein**, a deep vein, traveling through the thigh adjacent to the femoral artery.
4. The femoral vein becomes the **external iliac vein** in the groin region. The internal iliac vein joins the external iliac vein to form the **common iliac vein**.
5. The right and left common iliac veins unite to form the **inferior vena cava** (postcava in pig).
6. The **renal veins** and **gonadal veins** carry blood from the kidneys and gonads to the inferior vena cava.
7. The **hepatic portal vein** probably does not contain blue latex and may appear brown from the presence of coagulated blood. The hepatic portal vein receives blood from the digestive organs and carries this blood to the liver. The hepatic portal vein is formed from the gastrosplenic vein and the superior and inferior mesenteric veins.
8. Locate where the **hepatic veins** carry blood into the **inferior vena cava**. The **umbilical vein** can also be found in this area. The umbilical vein drains oxygen and nutrient-rich blood into the **ductus venosus**, which empties into the inferior vena cava.
9. Follow the inferior vena cava through the diaphragm, into the thoracic cavity, and into the right atrium.
10. Refer to Figure F2.2 to identify veins *above the diaphragm*.
11. The radial and ulnar veins merge to form the **brachial vein**. Locate the brachial vein.
12. The brachial vein becomes the **axillary vein** that is adjacent to the axillary artery in the axillary region.
13. In the shoulder area, the axillary vein becomes the **subclavian vein**.
14. Each subclavian vein unites with an external and internal jugular vein to form either the **right** or **left brachiocephalic vein**. The brachiocephalic veins merge to form the **superior vena cava** (precava). Follow the superior vena cava until it enters the right atrium.
15. Blood draining from the face and skull enters the **external jugular vein**. The **internal jugular vein** drains the brain. Identify the external jugular traveling along the lateral surface of the neck. The internal jugular vein that travels along the trachea with the common carotid artery and vagus nerve.
16. Prepare your pig for storage in the plastic bag, following your instructor's directions. Be sure to attach your group's identification tag.
17. Clean your tabletop with disinfectant.
18. Wash your dissection tools, dissection tray, and hands before leaving the lab.

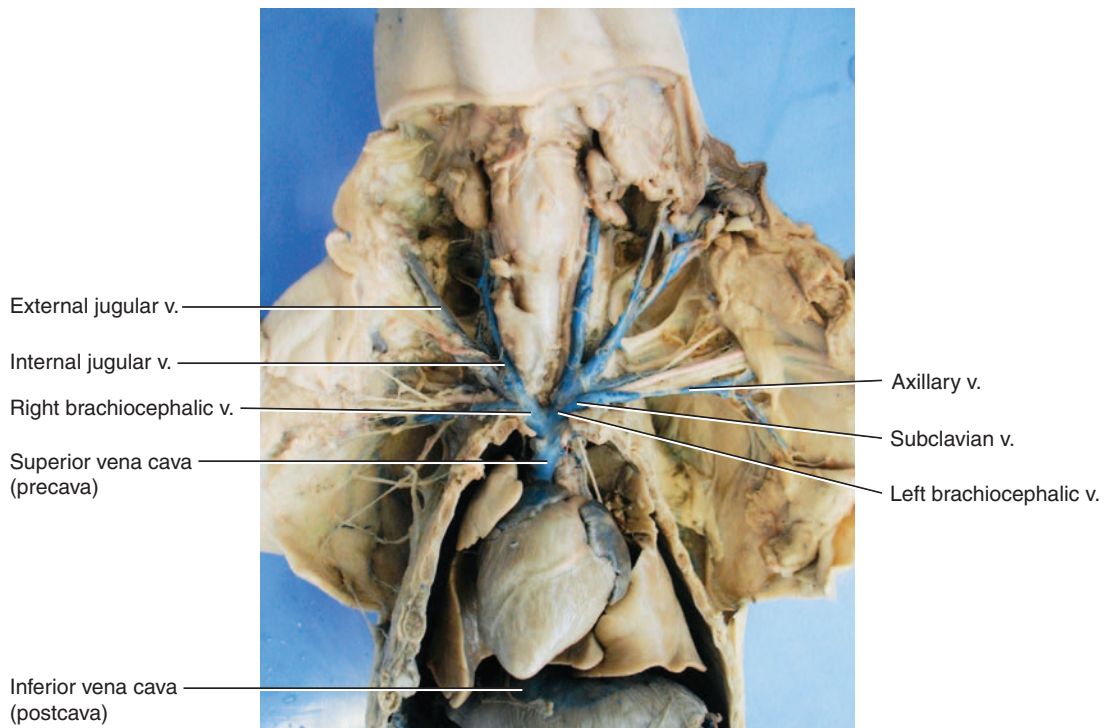
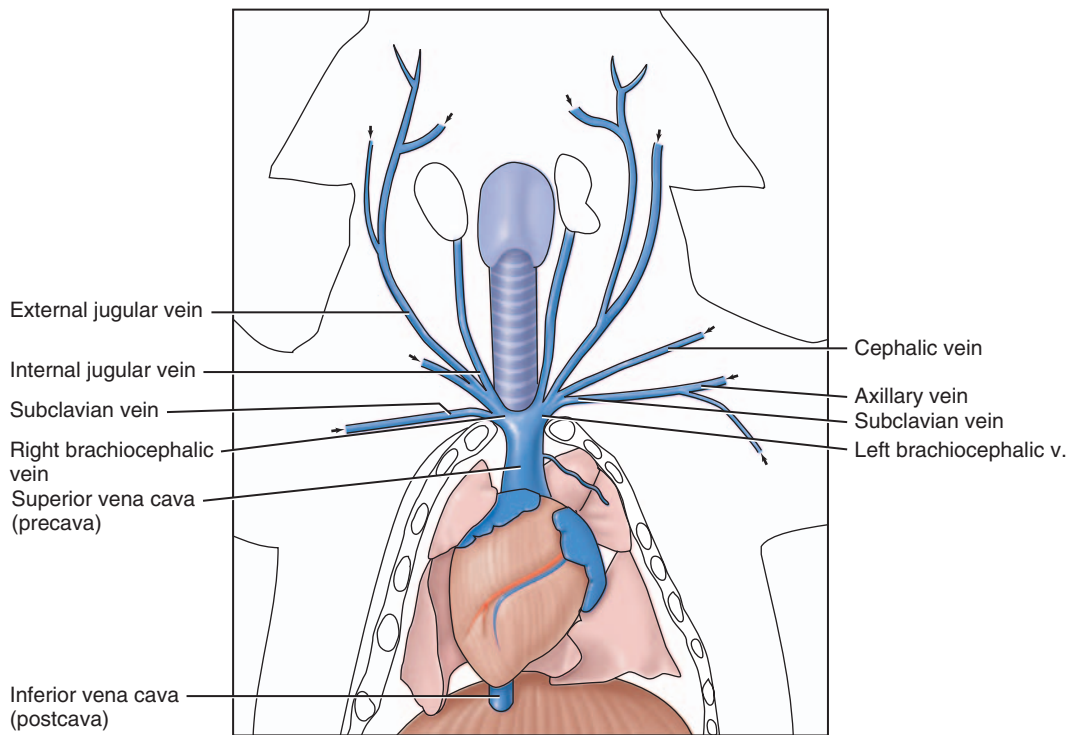


FIGURE F2.2 Veins above the diaphragm.

DISSECTION 3: LYMPHATIC SYSTEM

The lymphatic system of the pig is complementary to the human, with the organs being similar in location and structure. Assemble your dissection equipment, put on your safety glasses and gloves, and obtain your pig. Position your pig within the dissection tray. Keep any remaining preserving solution in the bag to keep your pig moist and inhibit bacterial and mold growth.

Procedure

1. You may have already looked at the lymphatic organs in your previous dissections. If your pig is triple injected with yellow or green latex for the lymphatic system, it will be easier to find the lymphatic organs and very thin vessels.
2. As you dissected the blood vessels, you may have noted small, bean-shaped **lymph nodes** in the cervical, axillary, and inguinal areas. Because these nodes are small, they are easy to miss if you do not know their structure or location.
3. The noncapsulated **thymus** is below the larynx and covers the trachea, thyroid gland, and anterior surface of the heart. See Figure 3.1.
4. The thin, long **spleen** is located in the upper left quadrant posterior and lateral to the stomach, and may be a dark brownish-red color.
5. Prepare your pig for storage in the plastic bag, following your instructor's directions. Be sure to attach your group's identification tag.
6. Clean your laboratory tabletop with disinfectant.
7. Wash your dissection tools, dissection tray, and hands before leaving the lab.

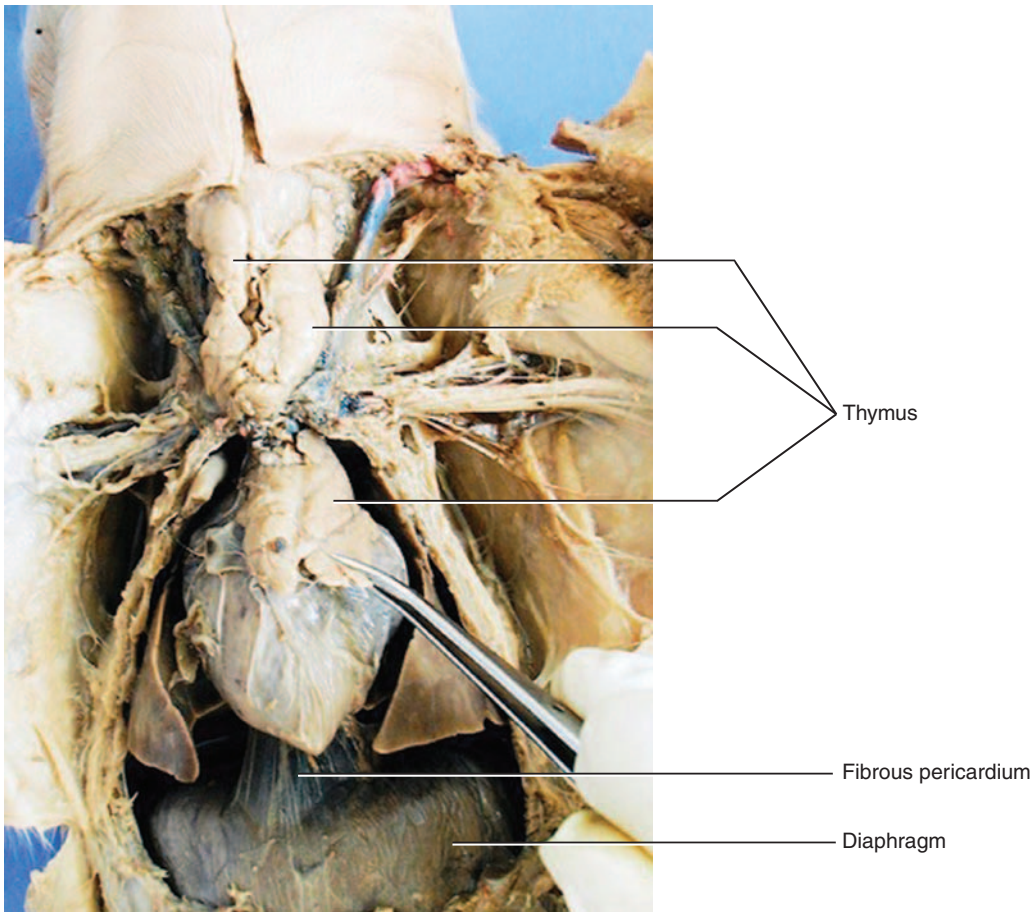


FIGURE F3.1 Thymus gland in the fetal pig.

DISSECTION 4: RESPIRATORY SYSTEM

The respiratory system of the pig is complementary to the human. The structures of the larynx, trachea, lungs, and diaphragm are similar to the human. Assemble your dissection equipment, put on your safety glasses and gloves, and obtain your pig. Position your pig within the dissection tray. Keep any remaining embalming fluid in the bag to keep your pig moist and inhibit bacterial and mold growth.

Procedure

1. Use Figure F4.1 to help you identify the bolded structures listed below in the pig.
2. Observe the **external nares** (choanae), **nasal cavity**, and **oral pharynx**.
3. Locate the **larynx** with the prominent **thyroid cartilage** in the anterior neck region and remove the muscles covering the thyroid cartilage. Use the blunt probe to separate the larynx from the muscles and connective tissue.
4. Your instructor may divide the lab groups to observe two different views of the larynx as listed below:
 - Half of the lab groups will cut the complete larynx away from the laryngopharynx at the hyoid bone, just anterior to the larynx. Pull the larynx toward you, look into the top of the larynx, and identify the following structures: the **epiglottis** (elastic cartilage), **glottis**, **false vocal cords** (anteriorly), and **true vocal cords** (posteriorly).
 - The other half of the lab groups will make a longitudinal cut through the thyroid cartilage, the larynx, and through the anterior part of the trachea. Observe the following structures: the **epiglottis**, **glottis**, **false vocal cords**, and **true vocal cords**.
5. Examine the **trachea**, following it into the thoracic cavity. Feel the **C-shaped tracheal cartilages**. Check to see if the thyroid gland is still present on the trachea, or if it was removed in a previous dissection.
6. Cut the trachea in cross section and pull the cut portion toward you. Carefully separate the connective tissue between the esophagus and the trachea with a blunt probe. Observe the dorsal side of the trachea and identify the **trachealis muscle** that connects the free edges of the tracheal cartilages.
7. If you have already studied the cardiovascular system, ask your instructor for permission to remove the heart and great vessels from the pig.
8. With the heart removed, you can easily identify the **apical bronchus** that branches off the trachea on the right side. The end of the trachea bifurcates into the **right** and **left primary bronchi**.
9. Dissect away lung tissue on the left side to follow the left primary bronchus as it branches into the **secondary bronchi**. If you keep dissecting, you may want to use a dissecting microscope to observe the smaller **tertiary bronchi**.
10. The fetal pig has six lobes of the lung, whereas the human has five lobes.
11. Identify the **hilus** of the lung on its medial border (area where the blood vessels and bronchi enter and leave), along with the **primary bronchus**, **pulmonary artery**, and **pulmonary veins**.
12. Look deep into the thoracic cavity and identify the shiny **parietal pleura** that covers the ribs and intercostal muscles. The **visceral pleura** covers the lungs themselves and also glistens.
13. Observe the muscular **diaphragm** that forms the thoracic cavity floor and its relationship to the lungs and the pleura of the lungs.
14. Prepare your pig for storage in the plastic bag, following your instructor's directions. Be sure to attach your group's identification tag.
15. Clean your tabletop with disinfectant.
16. Wash your dissection tools, dissection tray, and hands before leaving the lab.

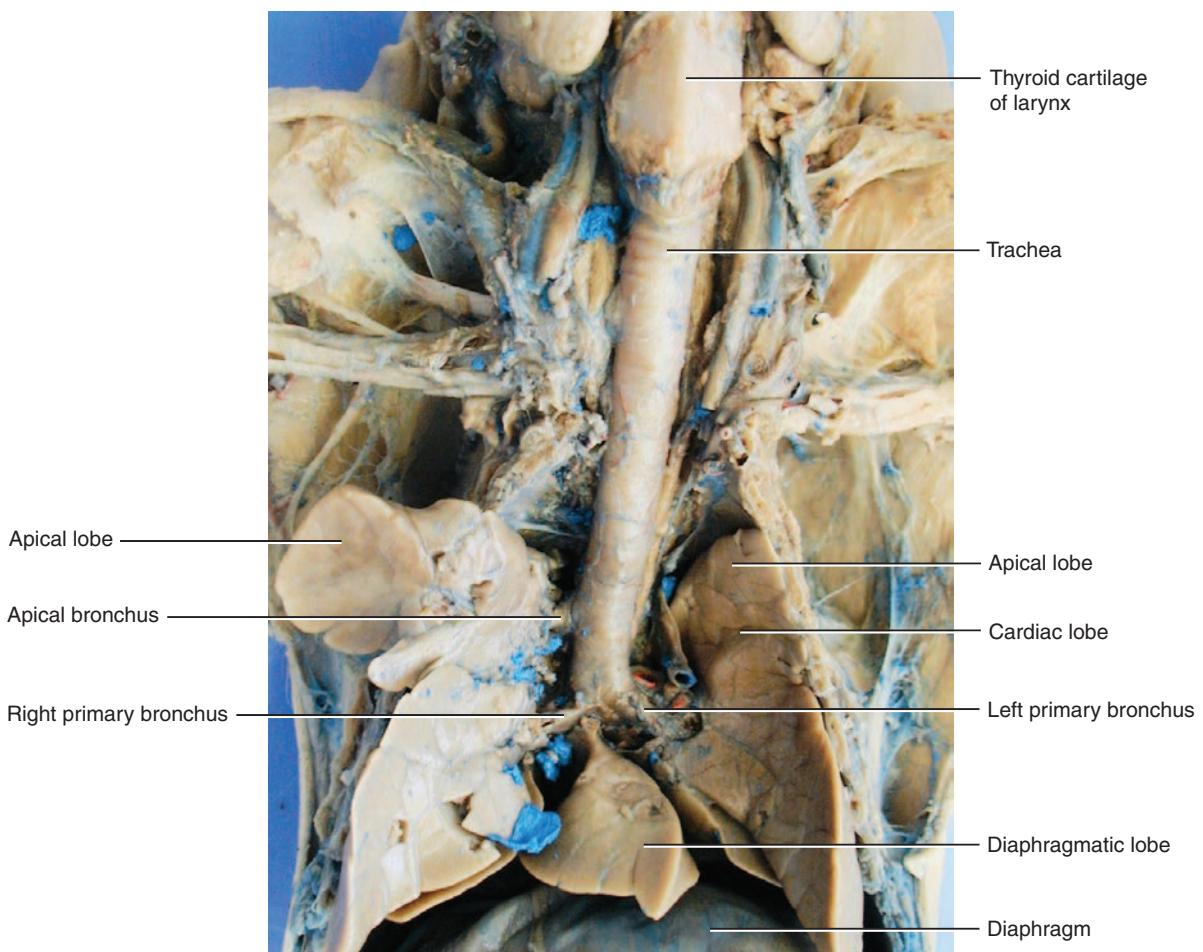
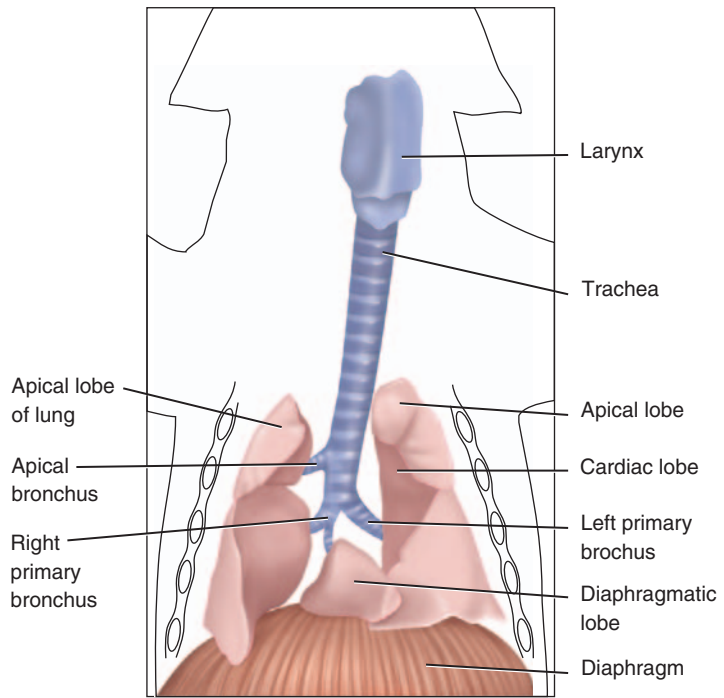


FIGURE F4.1 Respiratory system in the fetal pig.

DISSECTION 5: DIGESTIVE SYSTEM

The pig digestive system and organs are quite similar to that of the human in location and structure. This dissection also clearly demonstrates the location and structure of the mesentery and parts of the peritoneum that are not realistically portrayed in models. Assemble your dissection equipment, put on your safety glasses and gloves, and obtain your pig. Position your pig within the dissection tray. Keep any remaining preserving solution in the bag to keep your pig moist and to inhibit bacterial and mold growth.

Procedure

A. Dissection of the Mouth, Oropharynx, and Salivary Glands

1. To observe the oral cavity structures, you may need to use a bone cutter to cut through the mandible and separate it from the maxilla.
2. Identify the **vestibule, hard palate, soft palate, canine teeth, tongue, lingual frenulum, and oropharynx**. Rub your finger across the tongue and the hard palate. Compare these structures to the human.

3. Using a hand lens or magnifying glass, identify the **papillae** on the tongue.
4. To expose the **salivary glands**, remove the skin on one side of the head inferior to the ear (see Figure F5.1a) and trim away the connective tissue in the area between this and the masseter muscle. Look for tiny **lymph nodes** (bean-shaped) in this area. The **parotid gland** is on the cheek area inferior to the ear. You may be able to identify the **parotid duct** traversing the masseter to enter the oral cavity. The smaller **submandibular gland** is inferior and a little posterior to the parotid gland. The **sublingual gland**, just anterior to the submandibular gland, is the smallest salivary gland and is more difficult to find. The latter is more granular and not as firm.

B. Dissection of the Esophagus and Abdominal Organs

1. If you have dissected the respiratory system, you have previously observed the laryngopharynx, epiglottis, larynx, and trachea. The **laryngopharynx** also leads to the **esophagus** that is posterior to the trachea. Follow the esophagus through the thoracic cavity to the **diaphragm**, locating the **esophageal hiatus**, where the esophagus penetrates through the diaphragm to the abdominal cavity.

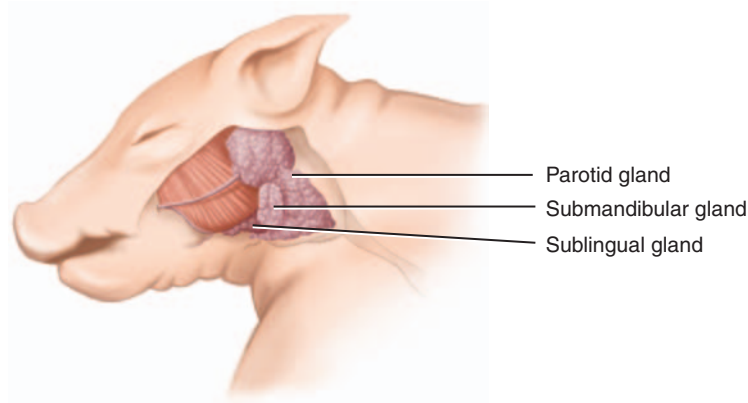


FIGURE F5.1a Salivary glands in the fetal pig.

2. Using Figure F5.1b as a reference, identify the bolded structures.
3. Observe the **parietal peritoneum** that lines the abdominal cavity and the **visceral peritoneum** that covers the exterior of the abdominal organs. The **peritoneal cavity** is the large cavity that is filled with the abdominopelvic organs.
4. The next obvious structure in the abdomen is the large, brown or reddish-brown **liver** on the right side posterior to the diaphragm. Look for the small, green **gallbladder**, embedded in the posterior surface of the liver, and the **cystic duct**. The **falciform ligament** separates the right and left lobes of the liver, and attaches the liver anteriorly to the abdominal wall.
5. To the left of and partially under the liver is the **stomach**. Note the constricted junction of the esophagus and the stomach, the **esophageal sphincter**. Identify the parts of the stomach: the **cardia, fundus, body, pylorus**, and the **pyloric sphincter**. Roll the firm pyloric sphincter between your thumb and index finger. Cut open this area to observe the constriction caused by the sphincter. To the left of the stomach is the long, dark-colored **spleen** that hugs the left abdominal wall (not a digestive organ).
6. Lift the stomach, and reflect it back to reveal the granular **pancreas**. The **head** of the pancreas is in the C-shape of the duodenum, and the **tail** of the pancreas is near the spleen. Look for the **common bile duct** entering the duodenum and follow it toward the liver until you find the junction of the **common hepatic duct** with the **cystic duct** that leads to the gallbladder.
7. The small intestine of the pig has three divisions, as does the human: the **duodenum, jejunum, and ileum**. Note the **mesentery** that attaches the small intestine to the dorsal body wall. If you have a latex-injected pig, look for the branches of the superior mesenteric artery and vein in the mesentery. Follow the small intestine through its entire length. The ileum ends in the posterior right quadrant, where it joins with the spiral-shaped large intestine at the **ileocecal sphincter**. Make an incision in this area to observe the sphincter. Note that the small intestine has a smaller diameter and greater length compared to the large intestine.
8. The spiral-shaped **large intestine** or **colon** is held together with mesentery and looks like a beehive. Just beyond the ileocecal junction is the **cecum**, or blind pouch. The fetal pig does not have an appendix or a sigmoid colon. Identify the **rectum** and **anus**.
9. Prepare your pig for storage in the plastic bag, following your instructor's directions. Be sure to attach your group's identification tag.
10. Clean your laboratory tabletop with disinfectant.
11. Wash your dissection tools, dissection tray, and hands before leaving the lab.

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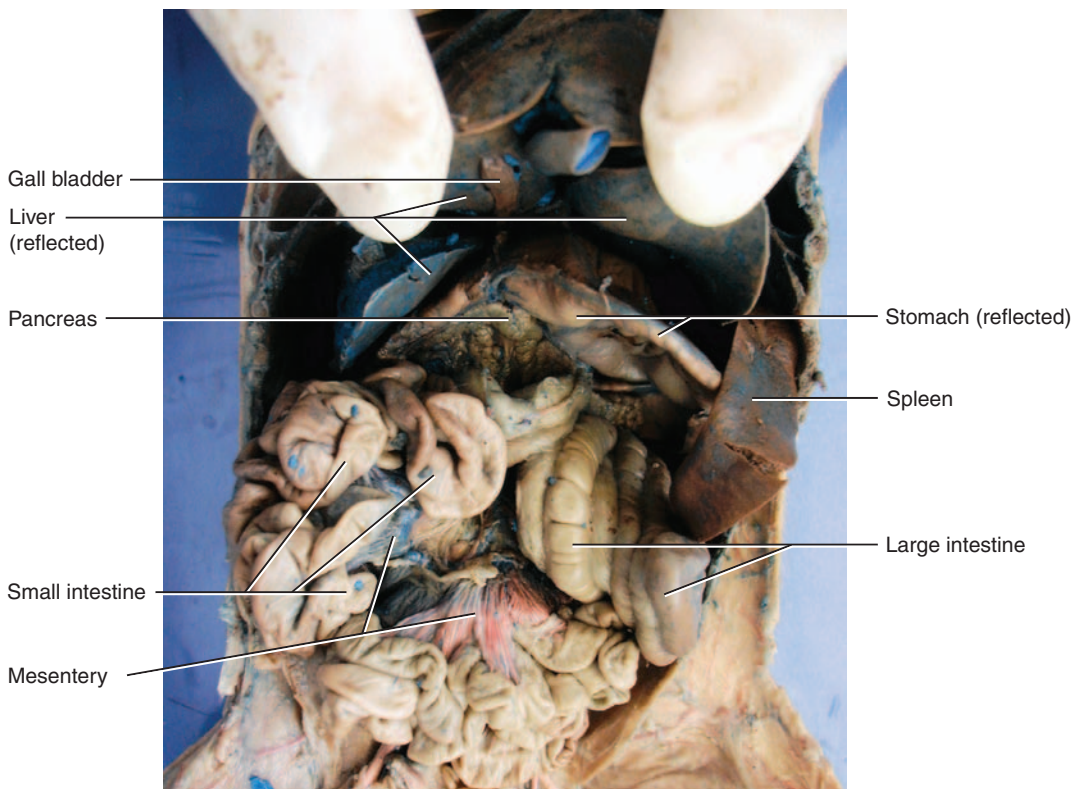
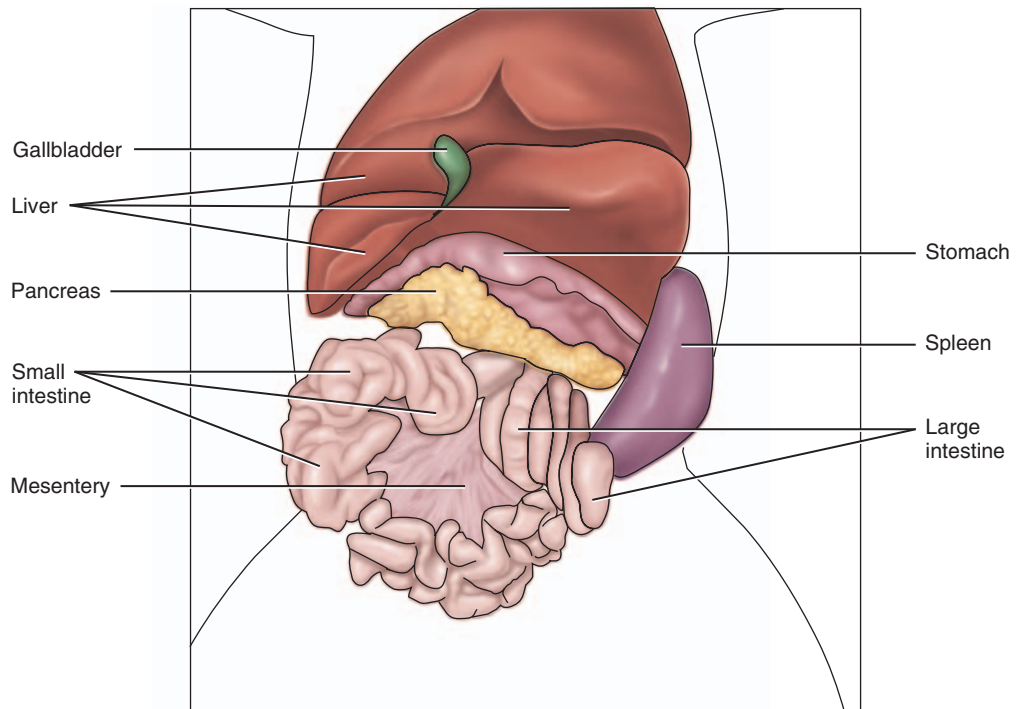


FIGURE 5.1b Digestive organs in the fetal pig.

DISSECTION 6: URINARY AND REPRODUCTIVE SYSTEMS

Typically, the urinary and reproductive systems are studied together because of their close association of structures and their embryologic derivations. The urinary and reproductive systems of the pig are complementary to the human, with the male pig having many similarities with the human. The female pig has more differences compared with the human, because she has litters rather than one offspring during one pregnancy. Assemble your dissection equipment, put on your safety glasses and gloves, and obtain your pig. Position your pig within the dissecting tray. Keep the preserving solution in the bag to keep your pig moist and to inhibit bacterial and mold growth.

Procedure

A. Urinary System Dissection

1. Refer to Figure F6.1a if you have a male pig, or Figure F6.1b if you have a female.
2. Reflect the abdominal viscera observed in the digestive system dissection.
3. Locate the peritoneum lining the dorsal wall posterior to the diaphragm. Look for the bulge of the **kidneys** posterior to the **peritoneum** (retroperitoneal). Remove the peritoneum from the kidneys and carefully remove the **adipose capsule** surrounding the kidneys. Locate the **adrenal glands** that are not attached to the kidneys, but are anterior and medial to them.
4. Locate the **renal hilus** on the medial surface of each kidney and identify the **renal artery** (injected with red latex), the **renal vein** or **veins** (injected with blue latex), and the flattened **ureter** passing through the renal hilus.
5. Follow the renal artery to where it branches off the **abdominal aorta** and the renal vein to where it enters the posterior **vena cava**. Unlike humans, the pig may have two renal veins leaving each kidney.
6. Follow the winding ureters from the kidneys to the long, slender **urinary bladder**, a muscular sac lying in the center of the lower abdomen. On either side of the urinary bladder are the umbilical arteries that are attached to the bladder with thin membranes. Observe the entrance of the **ureters** into the posterior wall of the urinary bladder.
7. The **urethra** will not be dissected out at this time because of its location, but will be located in the reproductive system dissection that follows.

20 Fetal Pig Dissection

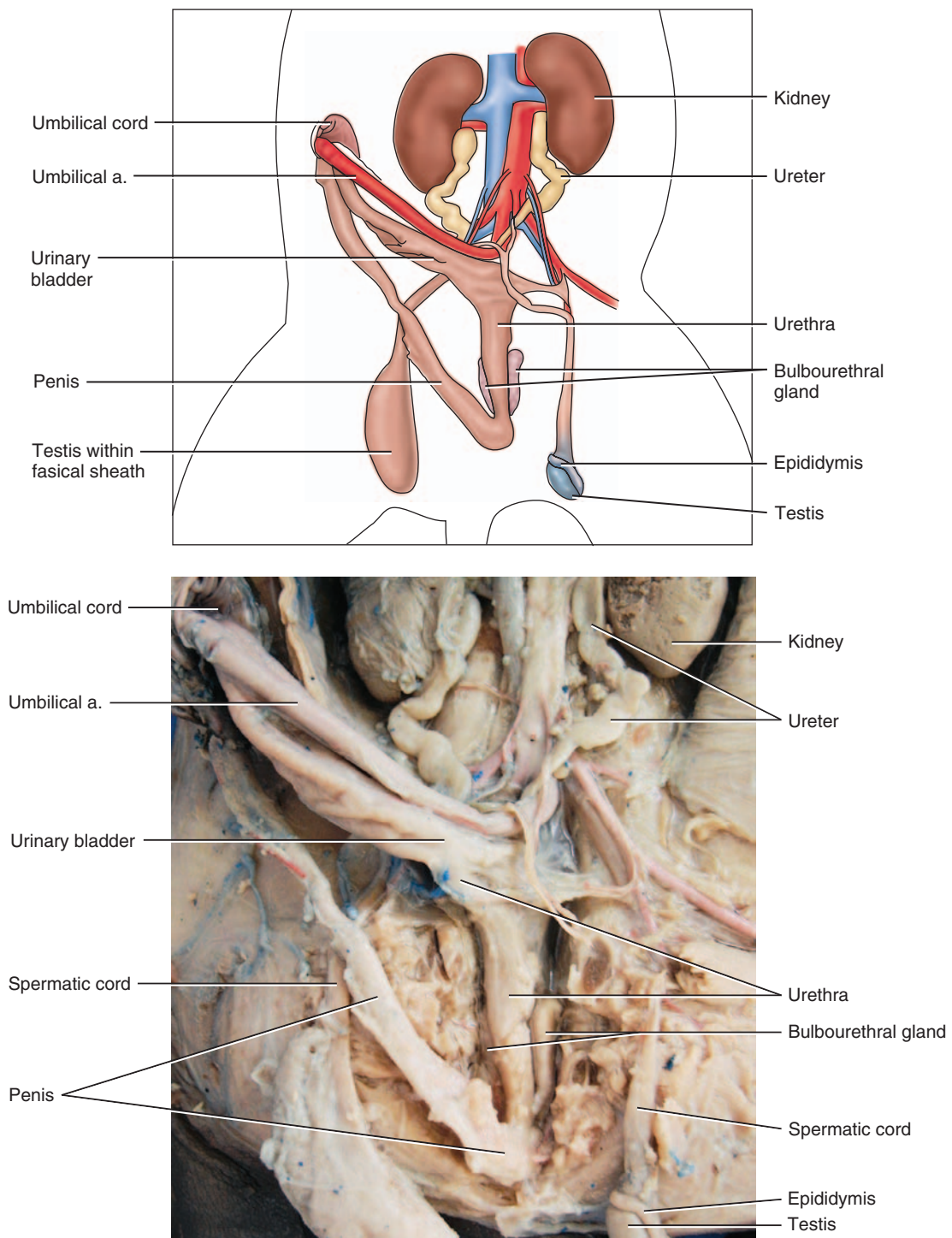


FIGURE F6.1a Urinary organs of the male urogenital system.

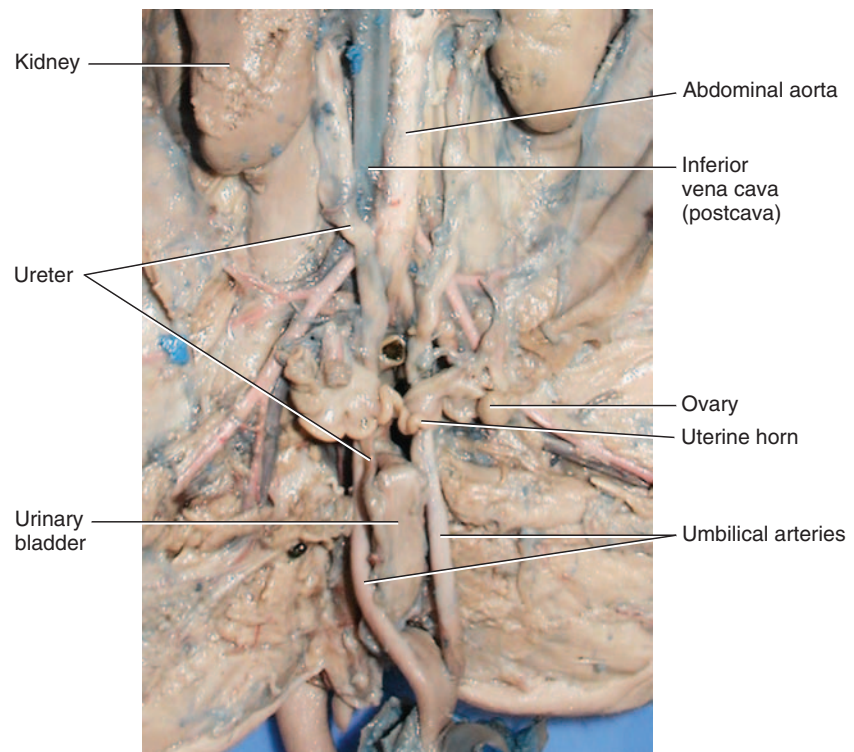
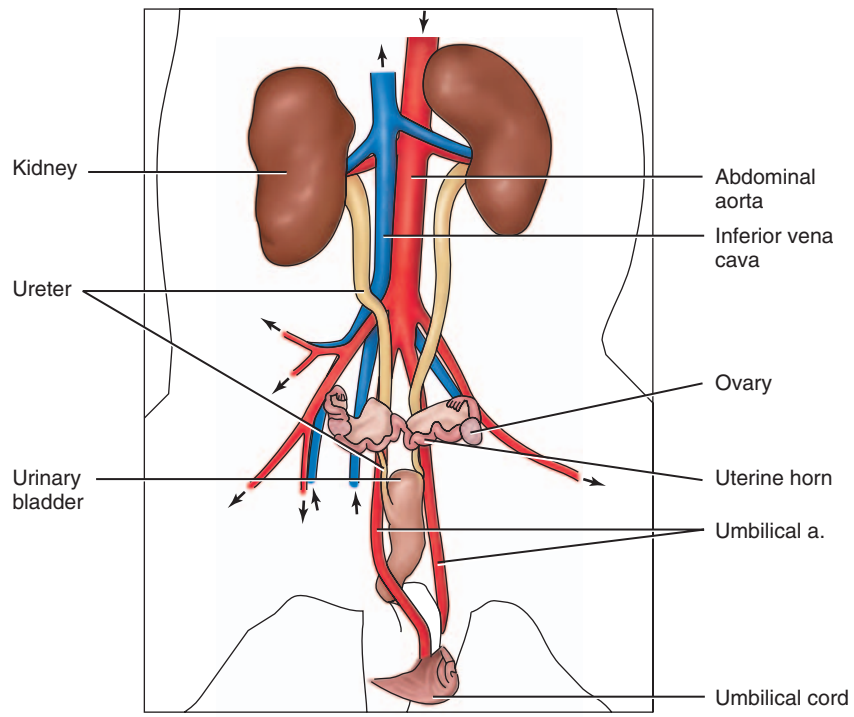


FIGURE F6.1b Urinary organs of the female urogenital system.

B. Male Reproductive System Dissection

- Using Figures F6.1a and F6.2a for reference, identify the bolded male reproductive structures.
- Identify the **scrotum**, swellings ventral to the anus that cover the paired **testes**. In the fetal pig, the scrotum is not very obvious because the testes are still very small.
- Carefully* make a lateral incision in one side of the scrotum and remove the loose fascia and inner fibrous connective tissue to expose one testis.
- Note the **epididymis** on the posterior surface of the testis, and inspect its tiny, coiled tubules. You may want to use a hand lens for this.
- Identify the threadlike **ductus (vas) deferens** that begins at the tail of the epididymis and travels toward the body in the spermatic cord.
- Observe the **spermatic cord** and cut away the connective tissue that encloses it to identify the **ductus (vas) deferens, testicular artery, testicular vein, and autonomic nerves** within it. Follow the thin ductus (vas) deferens through the **inguinal canal** into the pelvic cavity. If the testes have recently descended into the scrotum, the opening into the inguinal canal may be rather large.
- Trace the path of the ductus deferens in the abdominopelvic cavity as it arches and loops around the ureter, and continues downward posterior to the bladder to join the small prostate gland at the **urethra**. Inside the pelvic cavity, note the **testicular blood vessels and autonomic nerves** travel near the ureters toward the kidney, taking a different route from the ductus (vas) deferens. Pull the urinary bladder toward you and lay it down so you can observe the vas deferens entering the back of the urinary bladder.

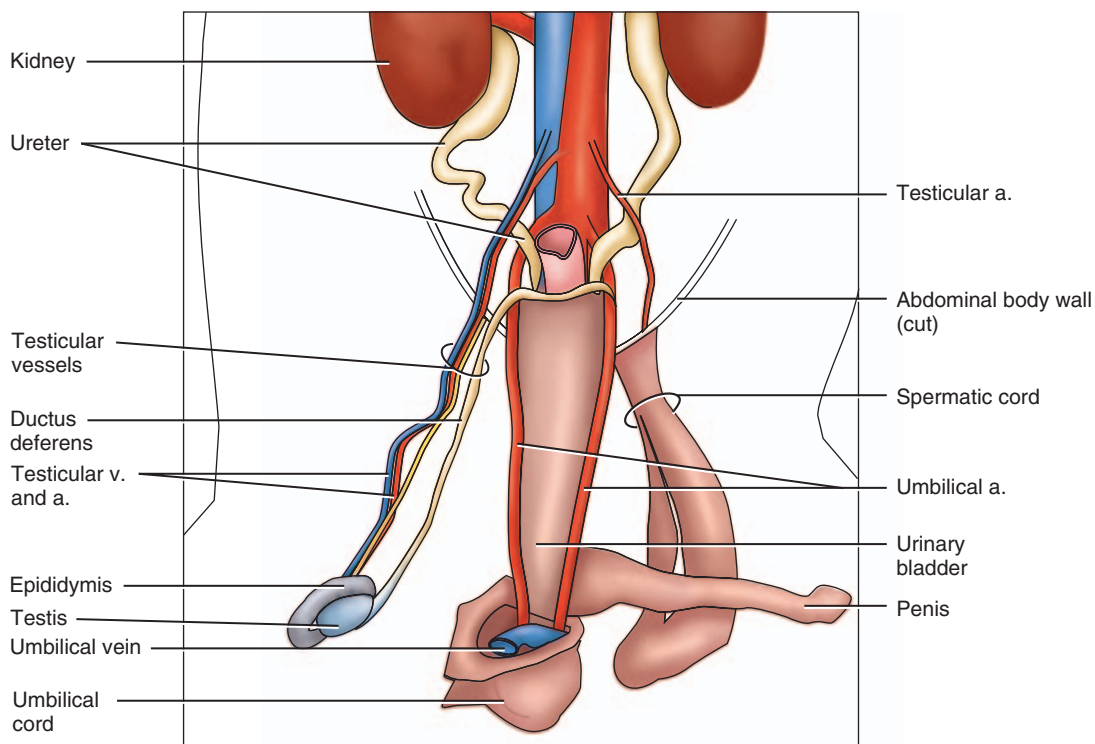


FIGURE F6.2a Reproductive organs of the male urogenital system.

8. To properly observe the accessory sex glands and the urethra, you will need to cut the pig's pelvis. Using a sharp scalpel, make a midline incision to cut through the muscles covering the **pubic symphysis** and then carefully cut through the center of the pubic symphysis cartilage, being careful not to cut into the structures below. Spread the thighs apart and bend the pelvic bones back to expose the prostate gland, paired bulbourethral glands, urethra, and penis.
9. In the fetal pig, the **prostate** is a very small, hard mass surrounding the urethra. The prostate is difficult to see and is located near the junction of the vas deferens and the urethra.
10. Follow the urethra posteriorly, carefully separating it from the connective tissue. Lying on either side of the urethra in the lower pelvis are a pair of narrow glands, the **bulbourethral glands**.
11. Near the anus, the urethra turns ventrally and anteriorly, forming a long, narrow cord, the **penis**. The fetal pig's penis does not resemble the human penis. The pig has a retractable penis that can be traced from its base near the anus to the **external urogenital orifice** near the umbilical cord. If you have trouble finding the penis, start with the external urethral orifice first and work back to find the **penis** and the sheath-like **prepuce** covering it.
12. Observe the dissection of a female pig from another lab group.
13. Clean up—read steps 9–11 of the female pig reproductive system dissection.

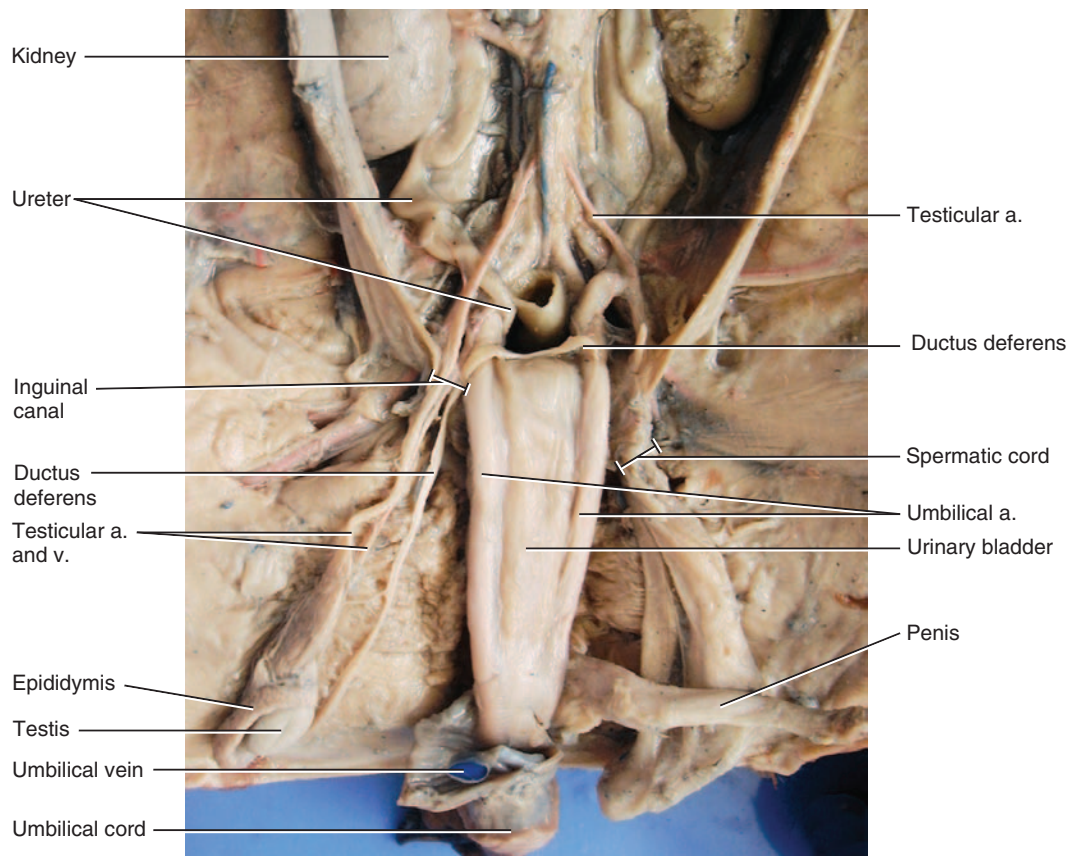


FIGURE F6.2a Reproductive organs of the male urogenital system, *continued*.

C. Female Reproductive System Dissection

- Using Figure F6.2b as a reference, identify the bolded female reproductive structures.
- The pig's uterus is quite different from a human. The uterus in a pig is Y-shaped and is called a bi-partate uterus. The base of the Y is the **body of the uterus**, and the upper two branches are the **uterine horns** where multiple fetuses may be located if your pig is pregnant.
- In the pelvic cavity, locate the small, oval **ovaries** caudal and lateral to the kidneys and the very tiny **uterine tubes** that have miniature **fimbriae** curved over the ovaries. Note the thin mesentery that attaches these structures to the body wall.
- To follow the uterus to the vagina, you will need to cut the pig's pelvis. With a sharp scalpel, make a midline incision through the muscles covering the pubic symphysis and then cut through the center of the pubic symphysis cartilage.
- Spread the thighs and bend the pelvic bones back to expose the **urethra** (ventral) and **vagina** (dorsal).

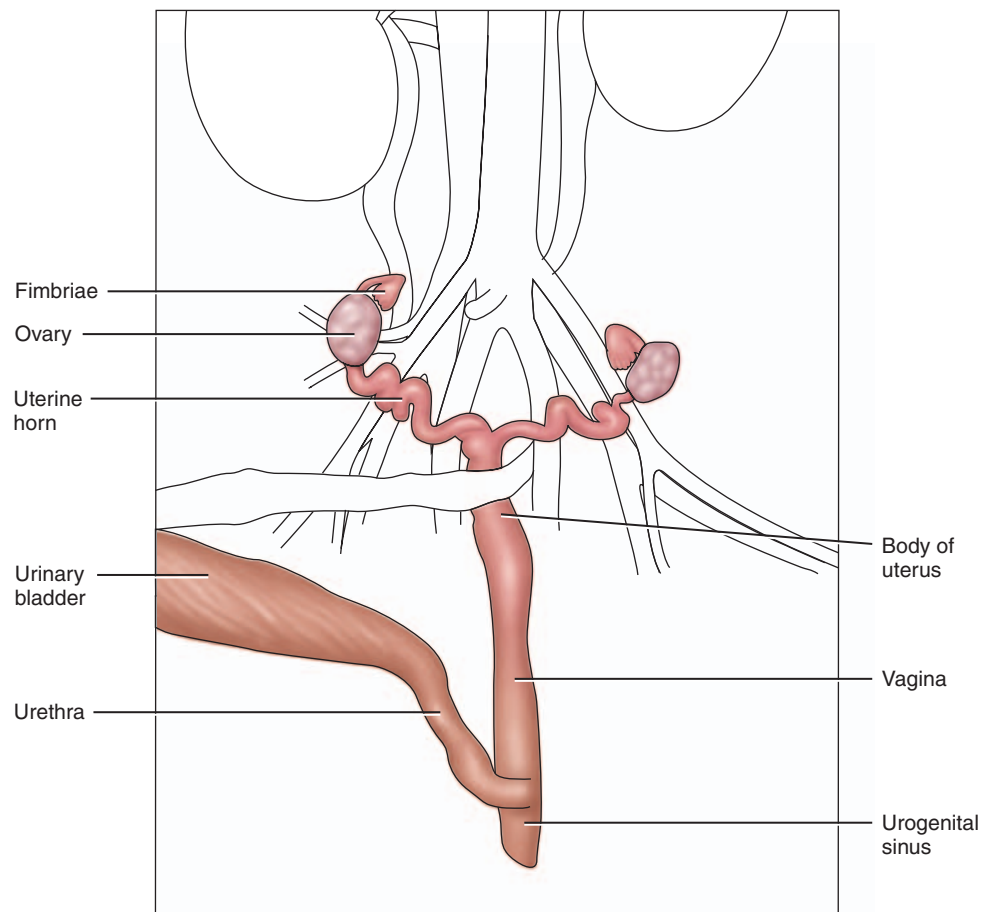


FIGURE F6.2b Reproductive organs of the female urogenital system.

6. The **urinary bladder** and urethra will be ventral to the body of the uterus and the vagina. Using a blunt probe, separate the connective tissue that holds the urethra to the vagina and move the urethra to the side. Locate the posterior union of the urethra with the vagina.
7. Just caudal to the union of the urethra and the vagina is the **urogenital sinus** that opens to the exterior in the **urogenital orifice**. The female pig has the urogenital orifice as one opening for both the urinary and reproductive systems similar to the male pig and human male. The **genital papilla** is a small piece of tissue that forms a canopy over the urogenital orifice.
8. Observe the dissection of a male pig from another lab group.
9. Prepare your pig for storage in the plastic bag, following your instructor's directions.
10. Clean your tabletop with disinfectant.
11. Wash your dissection tools, dissection tray, and hands before leaving the lab.

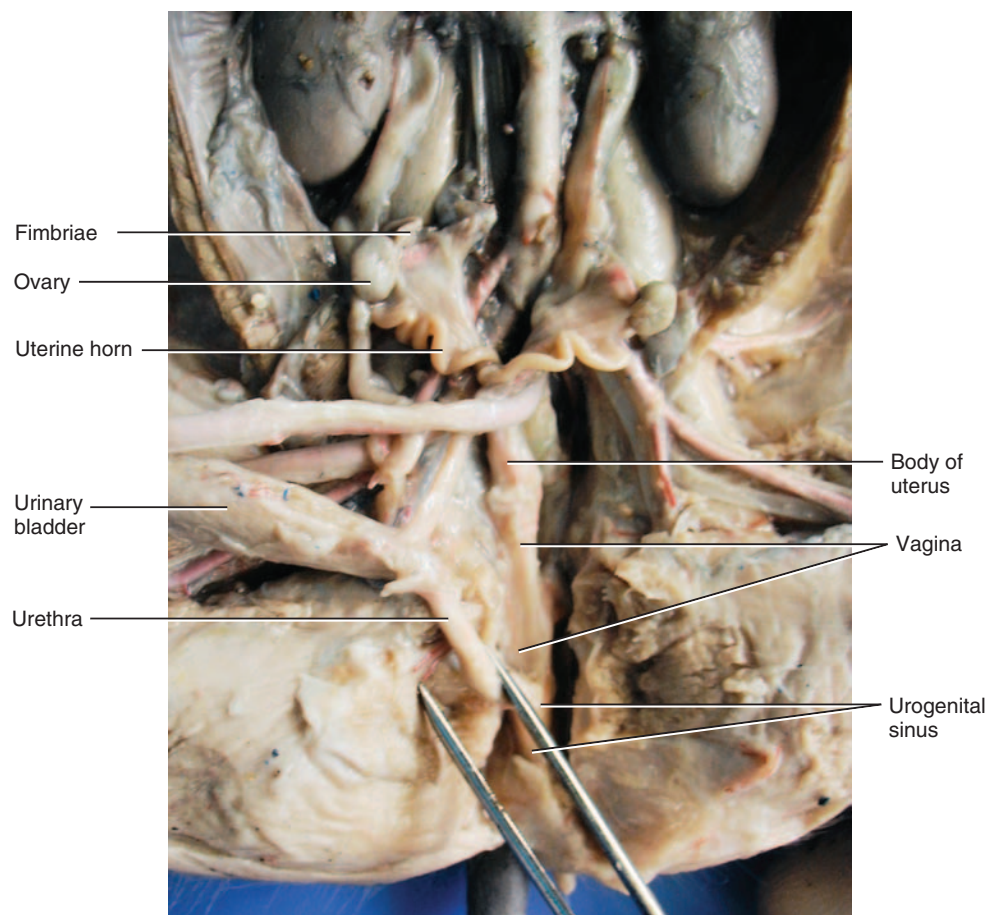


FIGURE F6.2b Reproductive organs of the female urogenital system, *continued*.