BLY 129

REVISION

DISSECTION OF MAMMALS

Parts of the Thoraxic Region

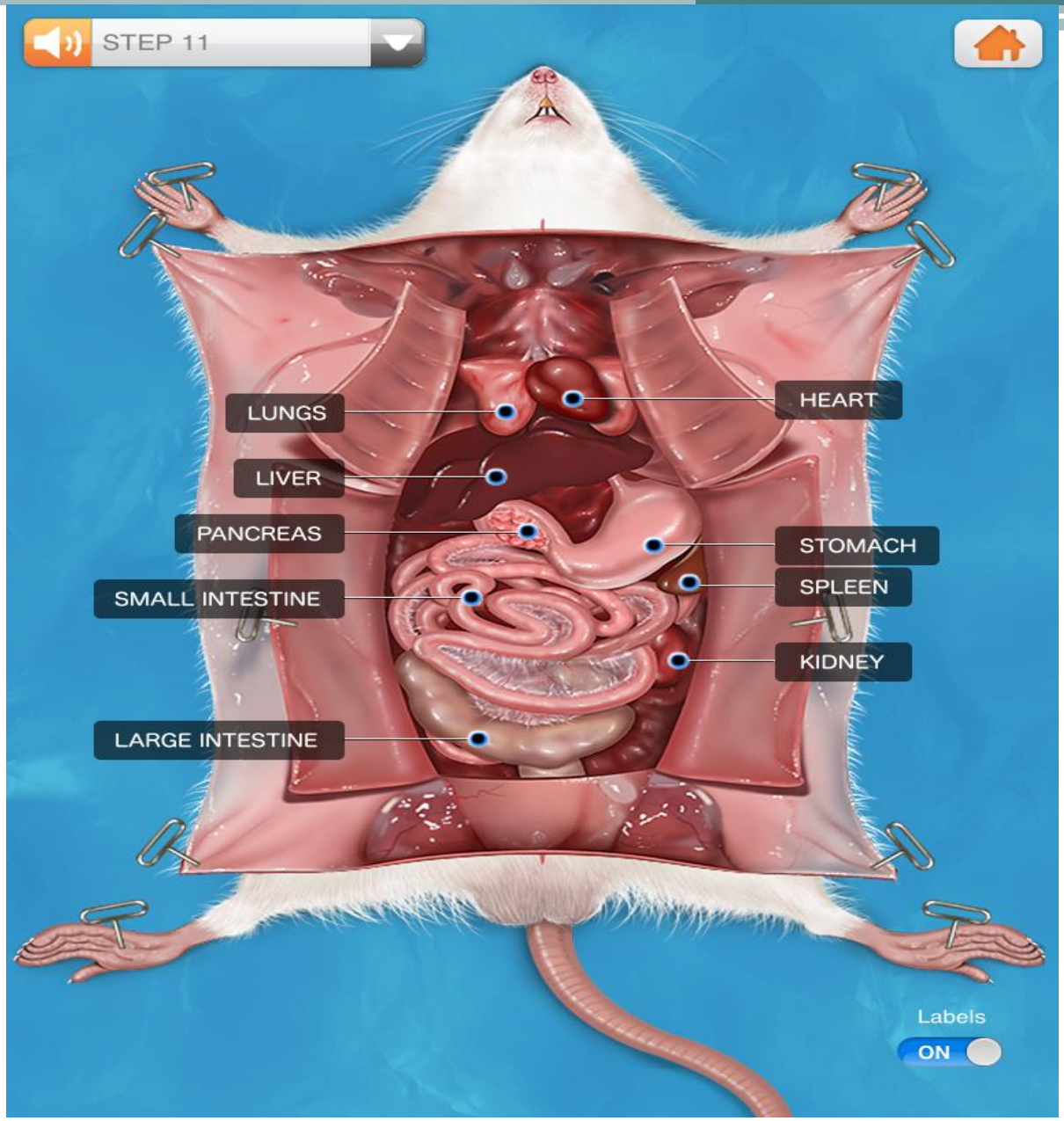
1. Diaphragm
2. Heart
3. Thymus gland
4. Branchial tubes
5. Lungs
6. Ribs and Sternum

Parts of the Abdominal Region

1. Coelom
2. Peritoneum
3. Oesophagus
4. Stomach
5. Cardiac sphincter
6. Pyloric sphincher
7. Spleen
8. Pancreas

9. Small intestine
10. Colon
11. Cecum
12. Rectum
13. Kidney
14. Cortex
15. Urethra
16. Adrenal glands

17. Testis
18. Scrotum
19. Epididymus
20. Vas deferens
21. Vagina
22. Fallopian tube
23. Ovaries
24. Oviduct


STEP 11
LUNGS
HEART
LIVER
PANCREAS
STOMACH
SMALL INTESTINE
SPLEEN
KIDNEY
LARGE INTESTINE
Labels
ON

Tutorial

1. What are the internal features of a dissected rat?
2. Explain briefly the functions of each of these parts.

EXTERNAL MORPHOLOGY OF MAMMALS

Orientation:

Dorsal - the back or upper surface
Ventral - the belly or lower surface
Lateral - the side
Anterior - the front or head end
Posterior - the hind or tail end
Medial - toward the midline of the animal
Proximal - closer to the midline of the body
Distal - farther from the midline of the body
Superficial - near the surface
Deep - a distance below the surface

Some External Features

1. Hair - this is a characteristic of mammals in general.
2. Body regions - The rat's body consists of several regions: the head, trunk, appendages, and tail.

The tail is used for balance and support, particularly when the animal is sitting erect and using the forelimbs in a manner more or less similar to the way the arms are used by humans. Notice that the appendages are adapted for walking.

3. Vibrissae - These are groups of very long hairs found just behind the nose and above the eyes. They are tactile organs very useful to a nocturnal animal.

4. Ear - The long flexible fold of the ear is called the 'pinna'.

5. Eyes - Notice that the eyes are placed anteriorly in the skull. The central area through which light enters the eye is the '"pupil"'. It is surrounded by a circular structure called the '"iris"'. In most animals, the iris is pigmented. By its contraction, the iris can regulate the size of the pupil and, therefore, the amount of light that enters the eye.

6. External nares - Look for this pair of openings near the tip of the snout. Air can be drawn through these openings into the respiratory system.

7. Mouth and incisors

8. External reproductive structures and openings - Determine the sex of your rat In the male, the scrotal sac projects posteriorly between the thighs beyond the base of the tail. Within this pouch lie the '"testes"'.

In the female, the vaginal opening is seen between the anus (at the base of the tail) and the opening of the urethra. The mammary glands are usually six pairs– three in the thoracic region and three in the abdominal region. They will be small and difficult to see in both immature females and in males.

- 9. Opening of the digestive and excretory systems - The posterior opening of the digestive system is the anus, found at the base of the tail. The excretory system opens via the urethra. In the male, the urethra runs through the penis. The urethral opening of the female is anterior to the vaginal opening and the anus.

ANIMAL PRESERVATION

1. Wet preservation: preservatives used include 70% ethanol, 10-40% Formalin.
2. Dry preservation:

Inject preservative peritonially.

Taxidermy: is the act of collecting, selecting, identifying organisms and preparing the animals in a life-like form. The flesh and bones are replaced with materials that do not spoil easily.

- Materials required include: cotton wool, animal , dissecting set, needle and syringe, needle and thread, formalin, powder, wire, camphor, insecticide, scissors, tag.
- Stuffing: the removal of water and replacing with a chemical.
- Alcohol (ethanol) is used to dehydrate while formalin hardens the specimen.

EMBALMING

- Embalming is the art and science of preserving a animal remains by treating as if they were in their life-like forms. Chemicals are used to forestall decomposition of tissues.
- Embalming may be done for religious purposes, public display at funeral, medical purposes, scientific/ research purposes.
- Three major goals of embalming are sanitation, presentation and preservation or restoration.

- Chemicals used include: 30-35% formaldehyde , 56% EtOH, glutaraldehyde (and additives), phenol, methanol /methylated spirit.
- Hypodermic embalming involves the use of syringe and needle to inject preservative into the specimen.

Tutorial

1. Distinguish between wet and dry preservation methods.
2. What are the common preservatives used for embalming and how are they used.
3. What is the purpose of embalming?