

WCSU BIO 106
NVCC BIO 212

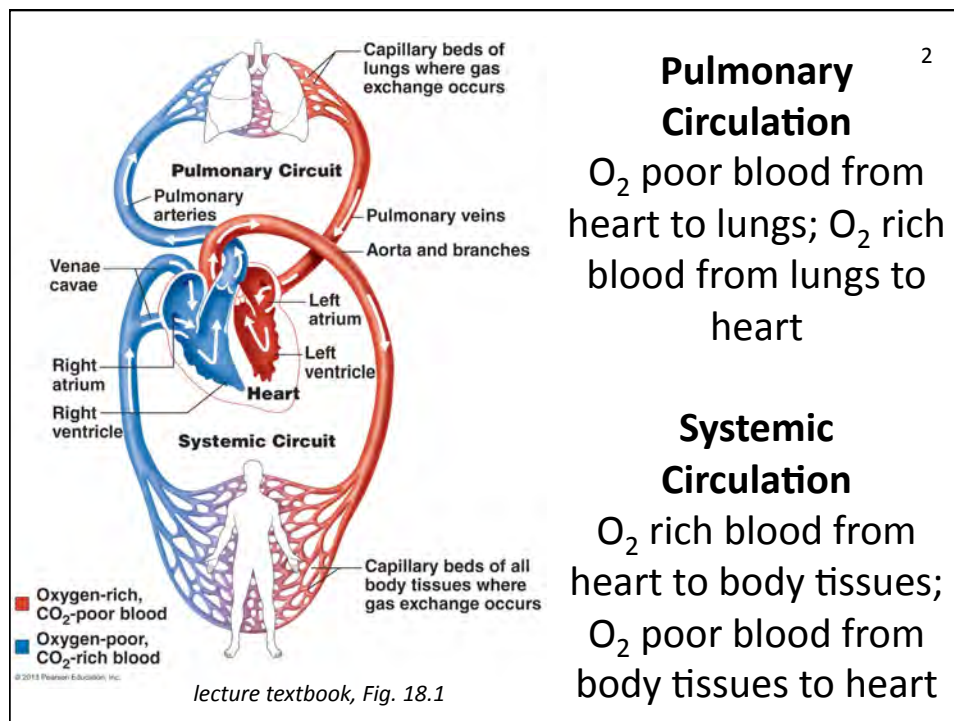
BLOOD VESSELS LAB and ASSIGNMENT

Courtesy of:
Dr. Susan Maskel
Professor of Biology
Western Connecticut State University
Danbury, CT 06810

Source materials:

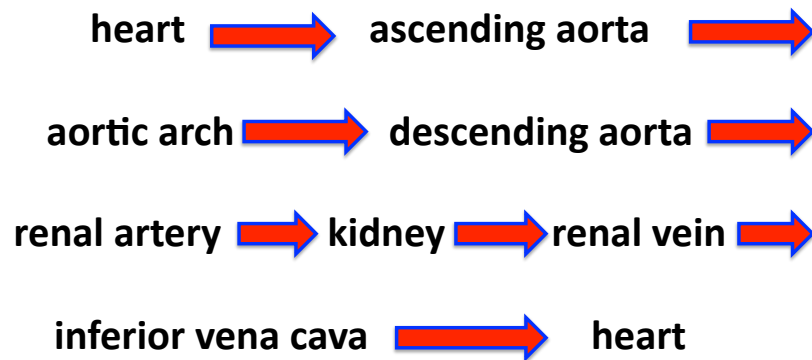
UCONN site: http://www.pnb.uconn.edu/PNB_Base/catlas/cardiovascular/uharteries.html

Elaine Marieb Lab workbooks and others, as indicated.



Example: Systemic Circulation

3

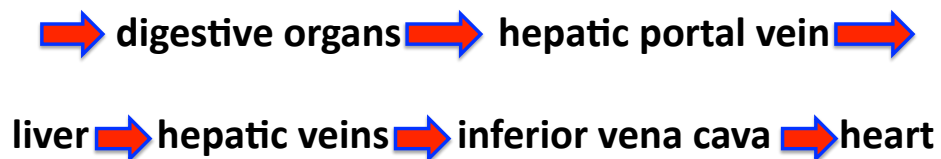


Exception: Hepatic Portal Circulation

4

Blood from digestive system picks up
nutrients, toxins.

Liver monitors nutrients, toxins.
Blood from digestive organs goes to liver
before returning to heart.



Cat Dissection

5

Use only side sinks for cats

Sink in back of room: people only!!!!

1 cat per 2 students

Use same bag & preservative unless leaking

2 tags – in pencil (not pen) – your name, your lab partner's name; 1 tag on paw; 1 tag on outside of bag

about 1/8 cup preservative in bag when stored

NO CAT PARTS IN SINK! (if cat parts are found in sink, extra credit will no longer be given on lab quizzes & exams)

rinse cat trays when finished

clean your station with desk wash when finished



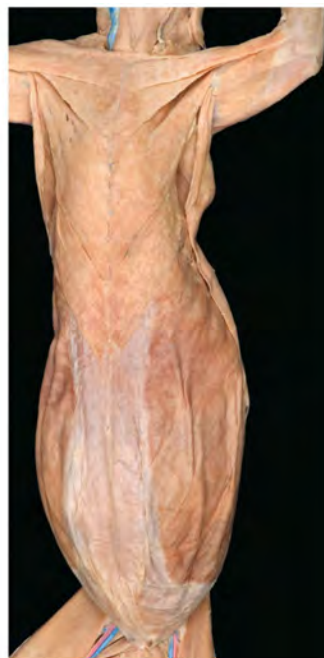
page
700



page
700



page
412



6

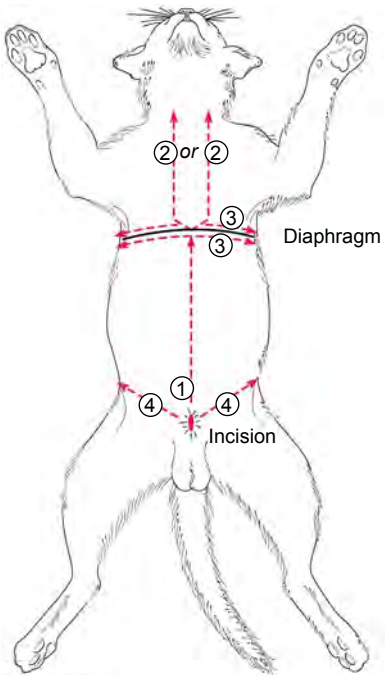
The cat you receive should look very much like this cat.

7

page 721

page 721

page 427



Diaphragm

Incision

Cut open your cat as indicated in this diagram.

The diagram shows a dorsal view of a cat with four numbered incision sites: 1 at the midline of the abdomen, 2 and 3 at the top of the thorax, and 4 at the lower corners of the abdomen. A dashed line labeled 'Diaphragm' is shown between the thorax and abdomen. A dashed line labeled 'Incision' is shown at the bottom of the abdomen. Three small book covers are shown on the left side of the diagram, each with a page number: 'Human Anatomy & Physiology Laboratory Manual' (page 721), another 'Human Anatomy & Physiology Laboratory Manual' (page 721), and a book with 'INTEGRATE' on the cover (page 427).

In order to find the blood vessels, you need to cut⁸ away fat and other connective tissues.

Blunt probes: most useful dissecting tool; use for separating



Forceps: use for grasping & pulling tissue




Scalpels: cut tissues held by forceps



page 726

page 726

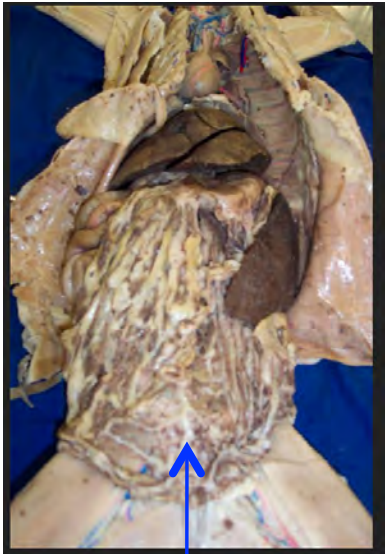
page 432



This is what an⁹ excellent dissection looks like EXCEPT:

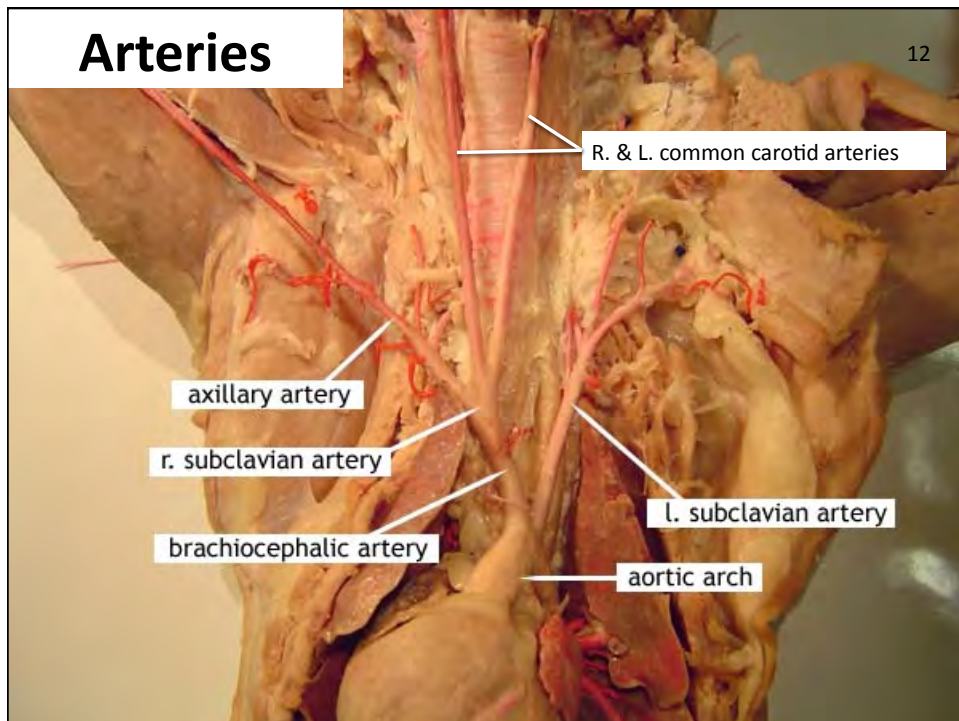
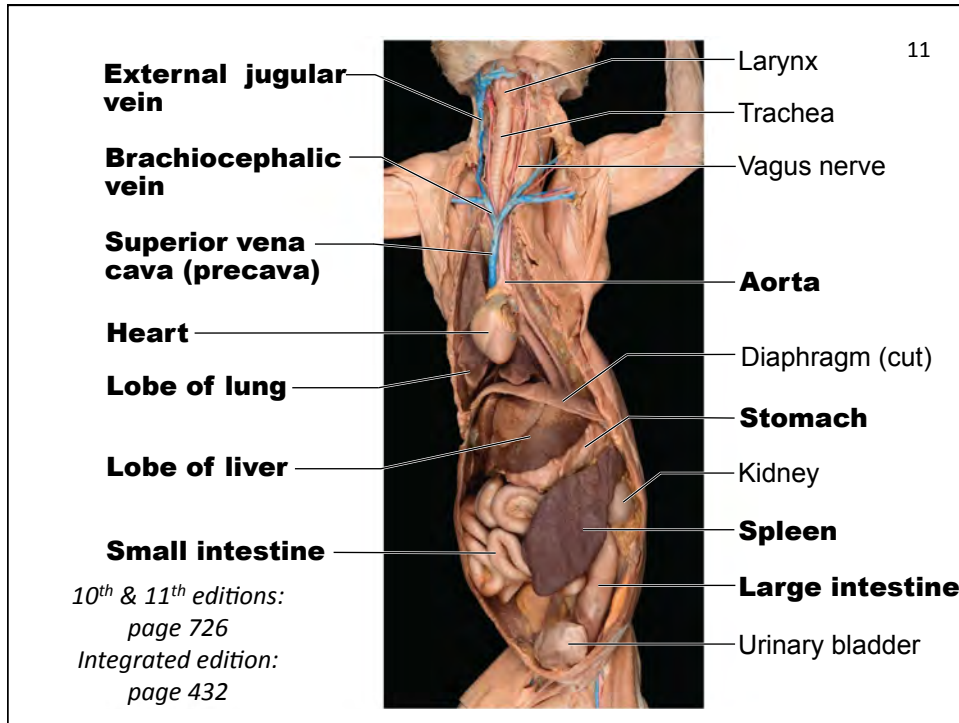
- (1) do not cut off the body wall. Just move it to the side, and
- (2) see next page.

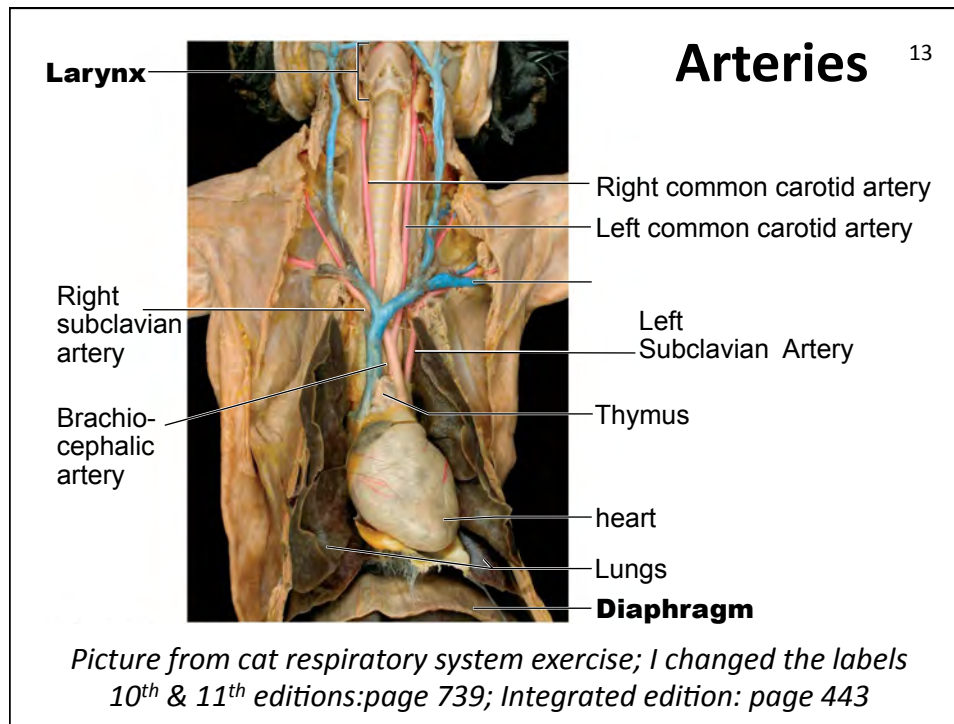
This picture did not come from your labbook



greater omentum

Try not to cut out the greater omentum (an apron-like layer over the abdominal organs); just push it to the side¹⁰





To find the arteries in the abdominopelvic cavity:¹⁴

find descending aorta in chest

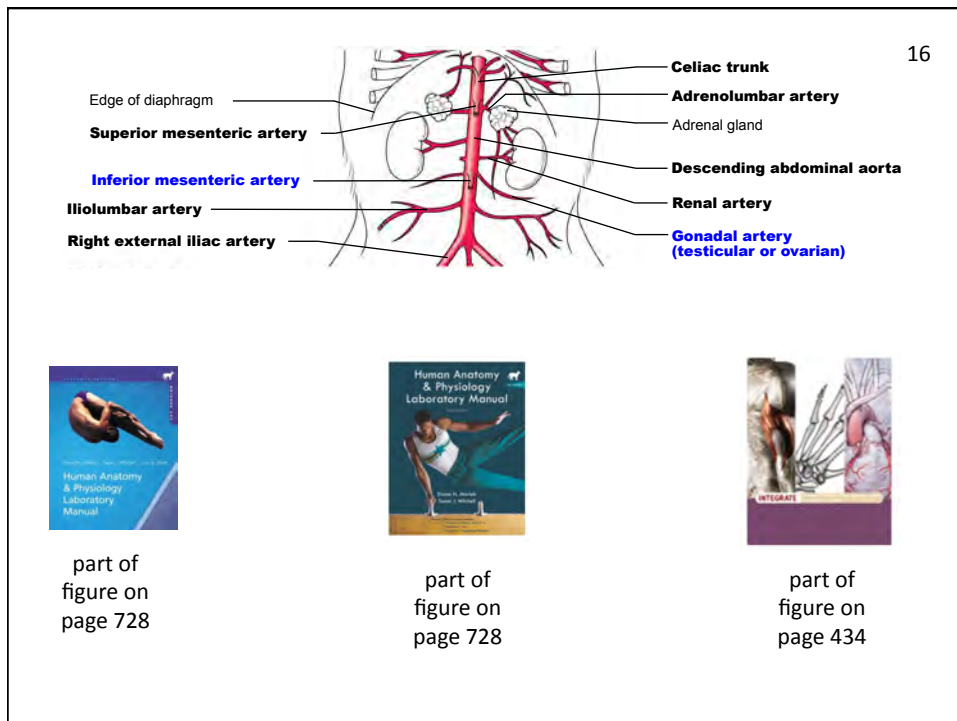
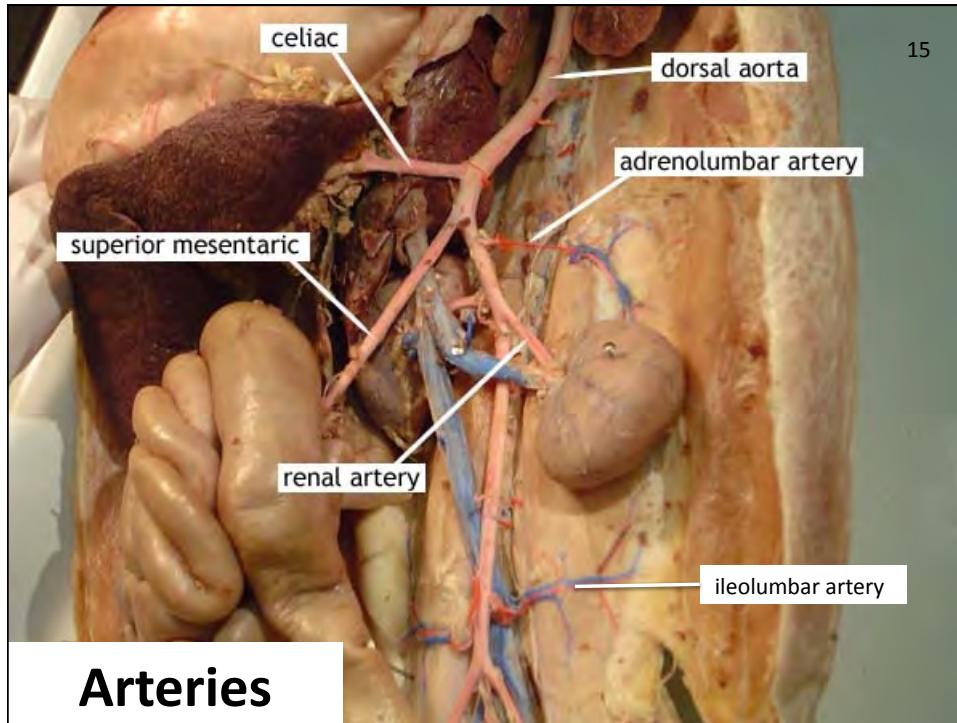
follow descending aorta down to diaphragm

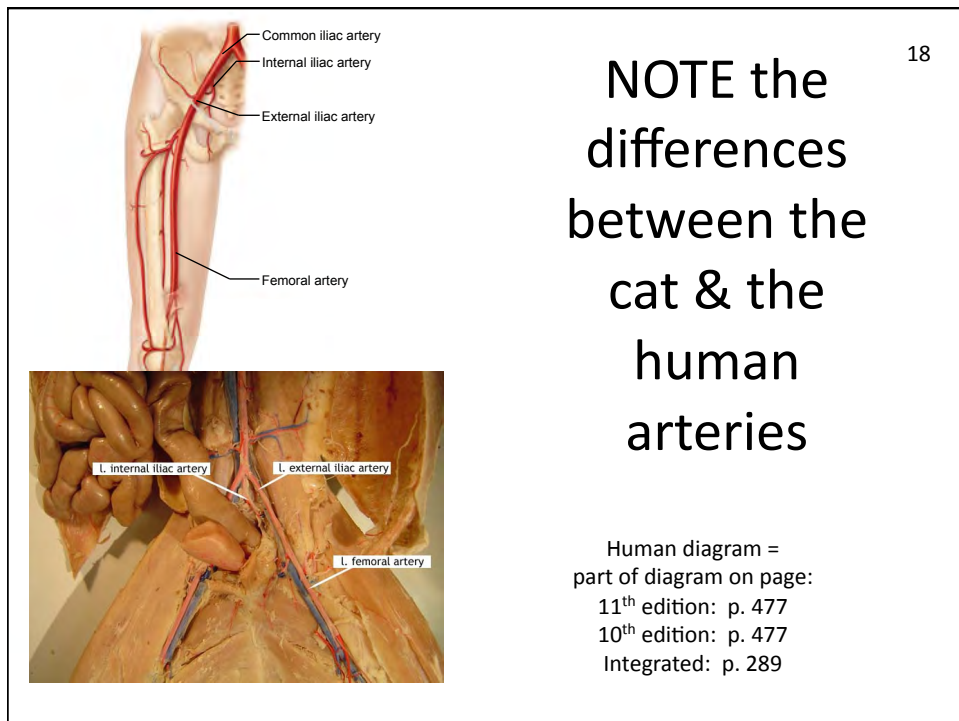
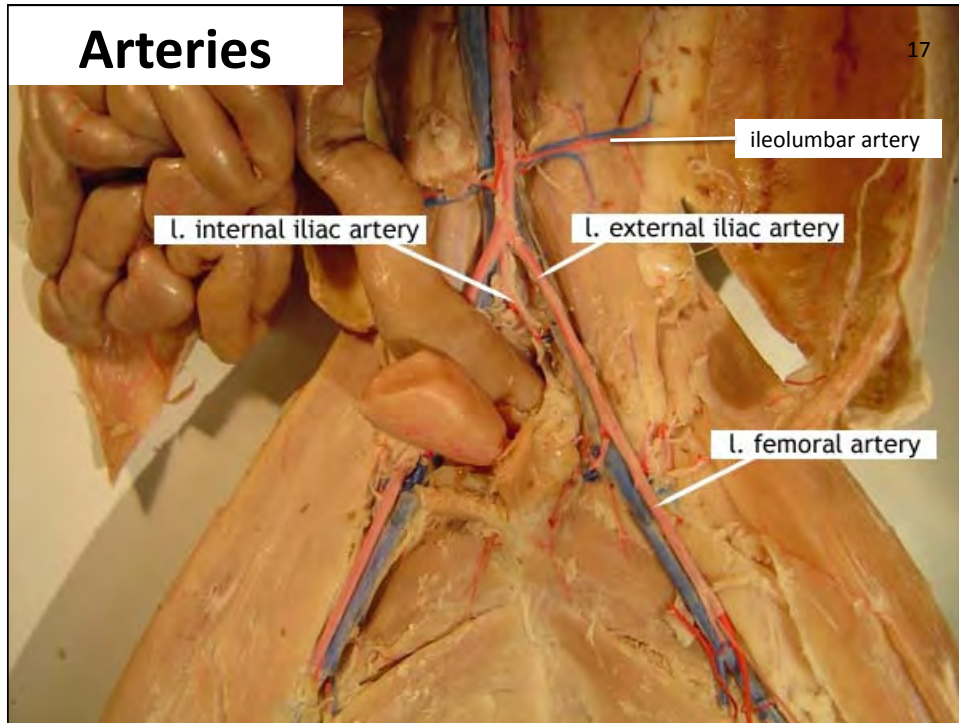
clear off area caudal to diaphragm

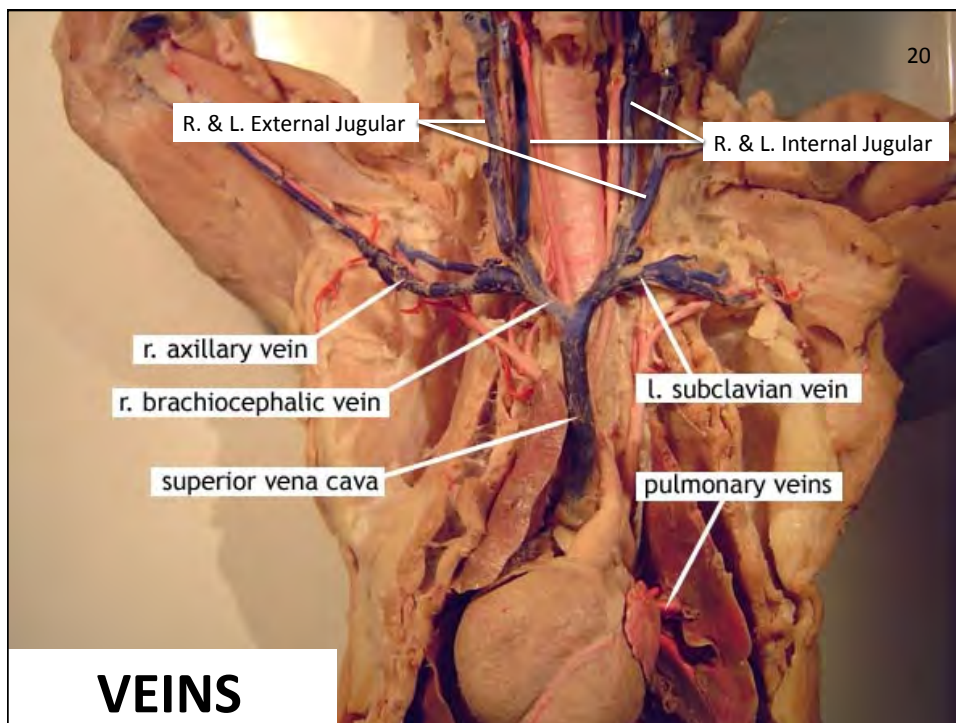
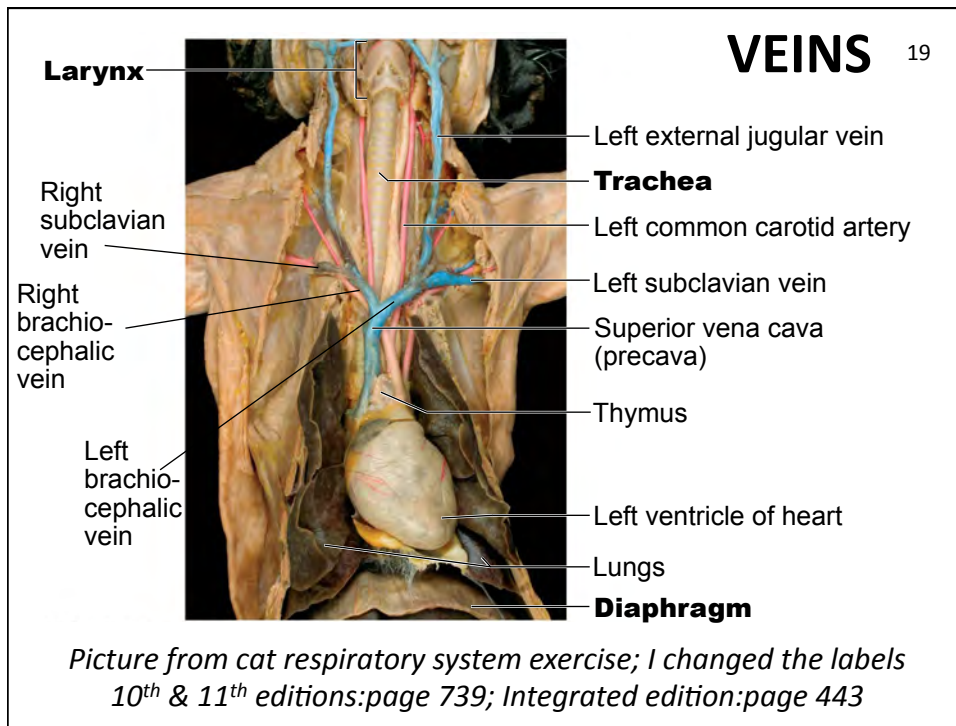
push abdominal organs to cat's right

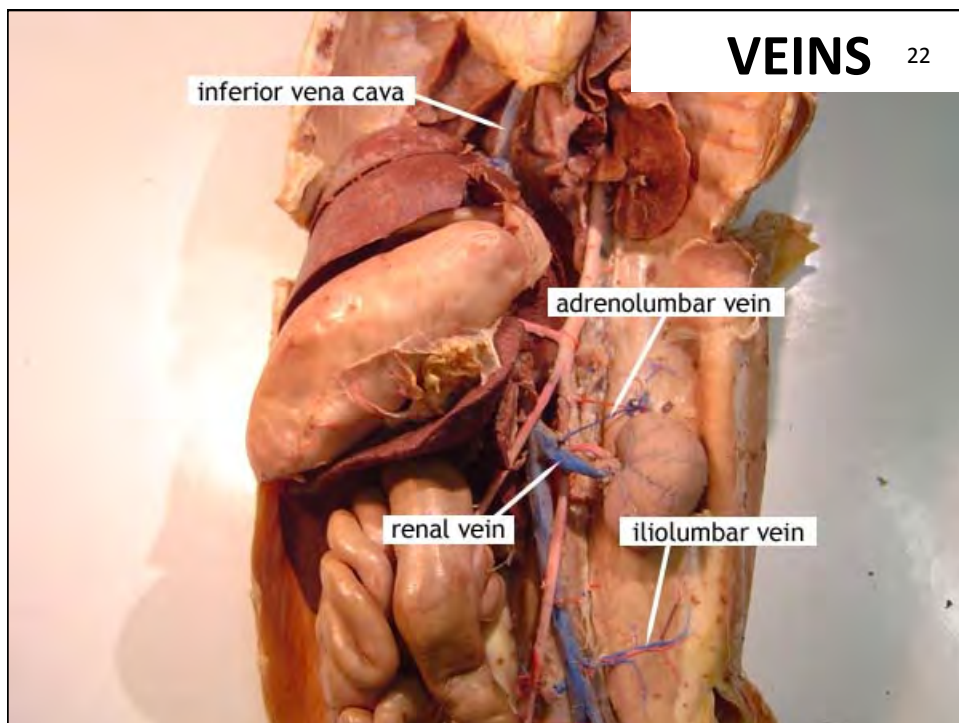
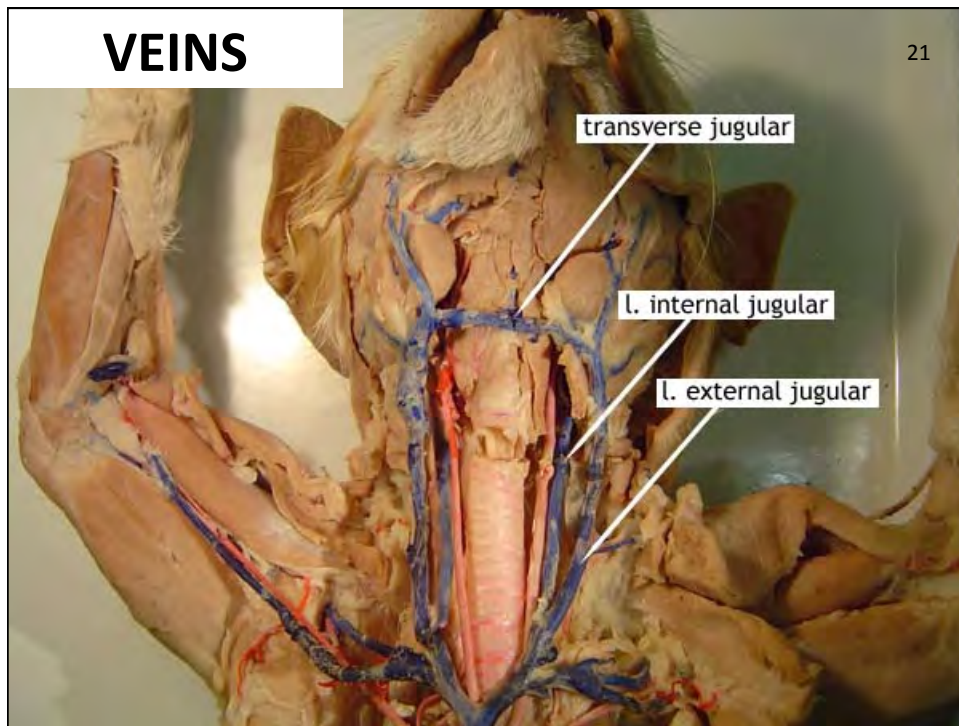
first branch off aorta on right = celiac trunk

second branch off aorta on right = superior mesenteric artery









23

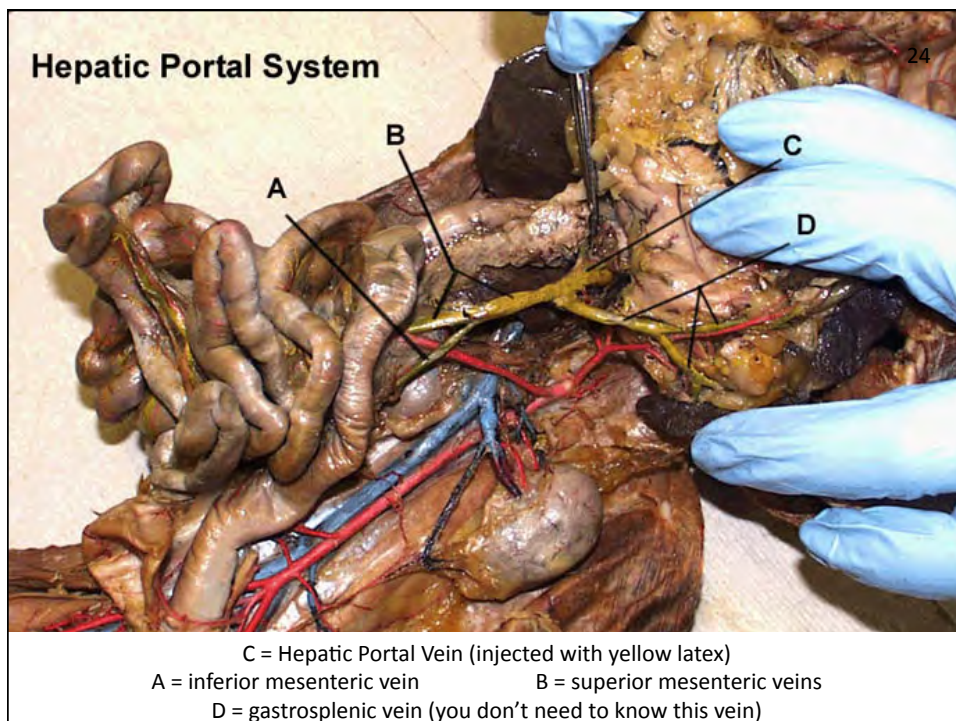
To find hepatic veins

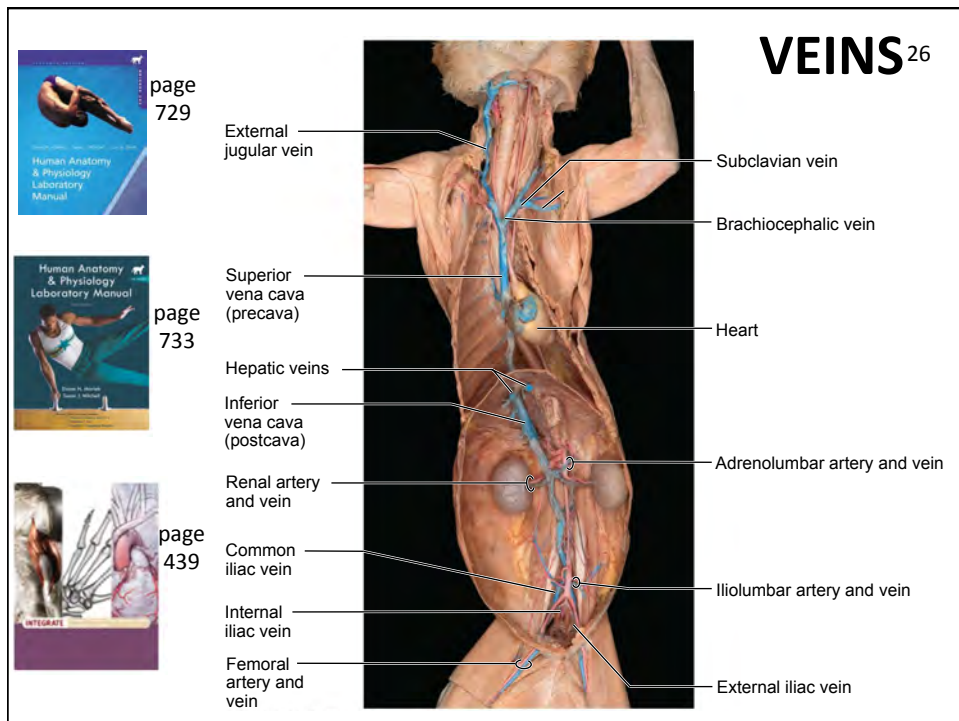
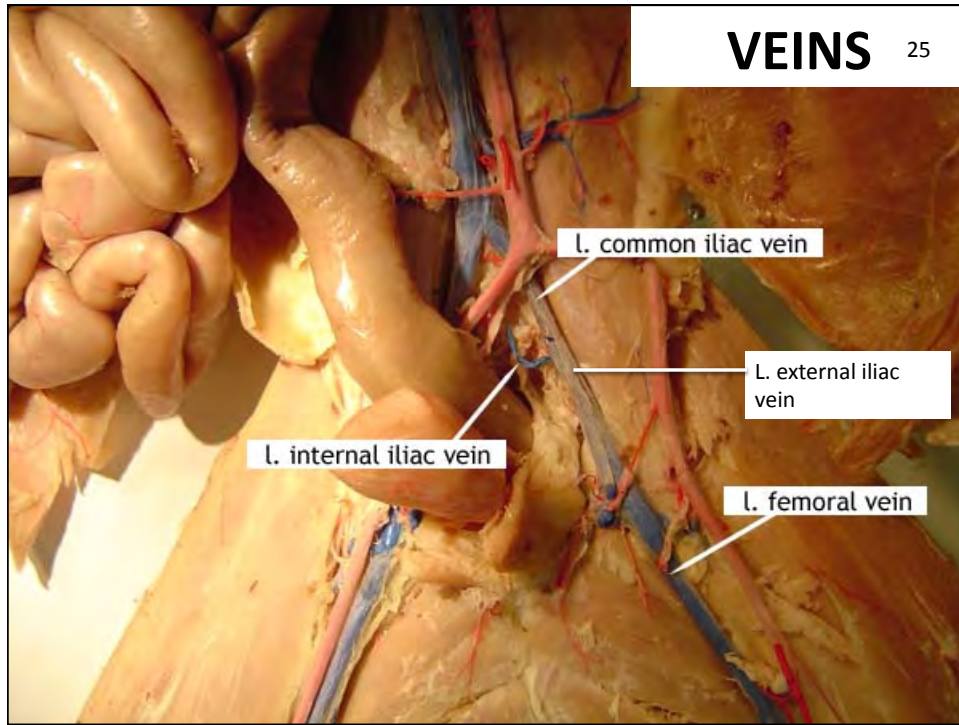
Find where inferior vena cava passes by liver
Using scalpel, scrape away liver tissue in that area
Hepatic veins will appear

To find hepatic portal vein

Remove peritoneum between first part of small intestine
(duodenum) and liver.
Hepatic portal vein should appear brown

*Copyright protected 2000, Susan Caley Opsal.
This image may be copied and used for educational purposes.
http://www2.ivcc.edu/caley/108/lab_images/portal.html*





27

NOTE the similarities between the cat & human veins

upper diagram (human):
11th edition: part of diagram on page 479
10th edition: part of diagram on page 479
Integrated: part of diagram on page 291

lower diagram (cat):
11th edition: part of diagram on page 731
10th edition: part of diagram on page 730
Integrated: part of diagram on page 436

28

Figure 19.21b from lecture textbook (minus what you don't need to know)

Arteries of the head and trunk

- Internal carotid artery
- External carotid artery
- Common carotid arteries
- Brachiocephalic trunk
- Subclavian artery
- Aortic arch
- Ascending aorta
- Coronary artery
- Celiac trunk
- Abdominal aorta
- Superior mesenteric artery
- Renal artery
- Gonadal artery
- Inferior mesenteric artery
- Common iliac artery
- Internal iliac artery

Arteries that supply the upper limb

- Subclavian artery
- Axillary artery
- Brachial artery
- Radial artery
- Ulnar artery

Arteries that supply the lower limb

- External iliac artery
- Femoral artery

(b) Illustration, anterior view

Figure 19.26b from lecture textbook (minus what you don't need to know)

Veins of the head and trunk

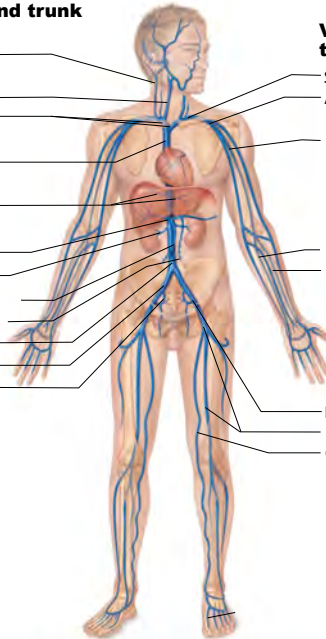
- External jugular vein
- Internal jugular vein
- Right and left brachiocephalic veins
- Superior vena cava
- Hepatic veins
- Hepatic portal vein
- Renal vein
- Superior mesenteric vein
- Inferior mesenteric vein
- Inferior vena cava
- Common iliac vein
- Internal iliac vein

Veins that drain the upper limb

- Subclavian vein
- Axillary vein
- Brachial vein

Veins that drain the lower limb

- Ulnar vein
- Radial vein
- External iliac vein
- Femoral vein
- Great saphenous vein



(b) Illustration, anterior view. The vessels of the pulmonary circulation are not shown.