

Slide 11

Body Planes and Sections

- A **sagittal** section divides the body (or organ) into left and right parts
- A median, **or midsagittal**, section divides the body (or organ) into equal left and right parts
- A **frontal or coronal** section divides the body (or organ) into anterior and posterior parts
- A **transverse**, or cross, section divides the body (or organ) into superior and inferior parts

Slide 12

Body Planes and Sections

Slide 13

Planes and Sections of the Brain

(3-D anatomical relationships revealed)

- **Transverse Plane**
- **Frontal Plane**
- **Midsagittal Plane**

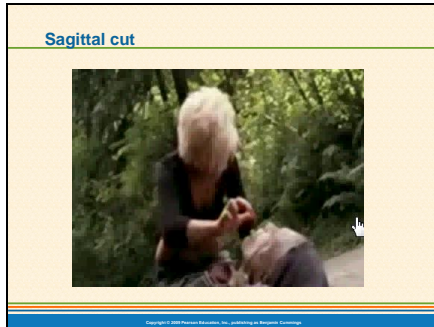
Slide 14

Frontal section:

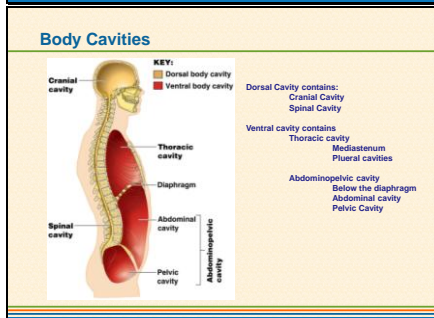
Slide 15

Transverse Cut

Slide 16



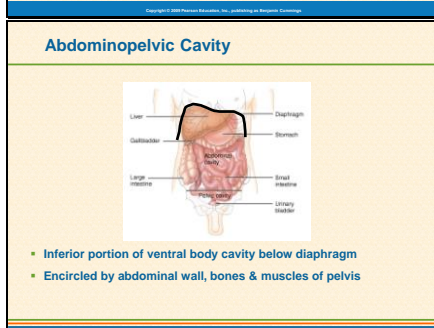
Slide 17



Slide 18

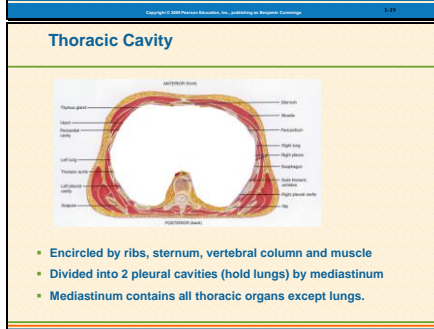
- Body Cavities**
- **Dorsal** body cavity
 - **Cranial** cavity houses the brain
 - **Spinal** cavity houses the spinal cord
 - **Ventral** body cavity
 - **Thoracic** cavity houses heart, lungs and others
 - **Abdominopelvic** cavity houses digestive system and most urinary system organs

Slide 19



- Inferior portion of ventral body cavity below diaphragm
- Encircled by abdominal wall, bones & muscles of pelvis

Slide 20



- Encircled by ribs, sternum, vertebral column and muscle
- Divided into 2 pleural cavities (hold lungs) by mediastinum
- Mediastinum contains all thoracic organs except lungs.

Slide 21

Mediastinum

ANTERIOR

Heart

PERICARDIAL CAVITY

Right lung

Aorta

POSTERIOR

Stomach

Left lung

Esophagus

Vertical column (Baritone)

LEFT PLEURAL CAVITY

RIGHT PLEURAL CAVITY

■ Midline wall of tissue that contains heart and great vessels, esophagus, trachea and thymus.

Slide 22

Abdominopelvic Quadrants

Right upper quadrant

Left upper quadrant

Right lower quadrant

Left lower quadrant

(a)

This is a very simple format and one I will not use.

I have it here only because it is in your text and so that you know there are other systems.

The system we will use is shown on the next slide

Slide 23

Abdominopelvic Regions

Right hypochondriac region

Epigastric region

Left hypochondriac region

Right lumbar region

Umbilical region

Left lumbar region

Right iliac region

Hypogastric region

Left iliac region

(b)

I expect you to know the names of the regions and their relationship to one another.

I do not expect you to identify the organs in each region.

Slide 24

A closer look at Medical Imaging

- Allows visualization of structures without surgery
- Useful for confirmation of diagnosis
- Examples of imaging techniques
 - X-rays
 - C.T. scan
 - Ultrasound
 - MRI
 - Pet Scan

Slide 25

Conventional Radiography

Left clavicle

Rib

Left lung

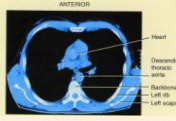
Heart

Diaphragm

- A single burst of xrays
- Produces 2-D image on film
- Known as radiography or x-ray
- Poor resolution of soft tissues
- Major use is osteology

Slide 26

Computed Tomography (CT Scan)

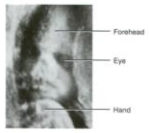


- Moving x-ray beam
- Image produced on a video monitor of a cross-section through body
- Computer generated image reveals more soft tissue detail
 - kidney & gallstones
- Multiple scans used to build 3D views

Copyright © 2007 Pearson Education, Inc., publishing as Benjamin Cummings. 1-26

Slide 27

Ultrasound (US)

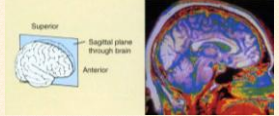


- High-frequency sound waves emitted by hand-held device
- Safe, noninvasive & painless
- Image or sonogram is displayed on video monitor
- Used for fetal ultrasound and examination of pelvic & abdominal organs, heart and blood flow through blood vessels

Copyright © 2007 Pearson Education, Inc., publishing as Benjamin Cummings. 1-27

Slide 28

Magnetic Resonance Imaging (MRI)




- Body exposed to high-energy magnetic field
- Protons align themselves relative to magnetic field
- Pulse of radio-waves used to generate an image on video monitor
- Can not be used on patients with metal in their body
- Reveals fine detail within soft tissues

Copyright © 2007 Pearson Education, Inc., publishing as Benjamin Cummings. 1-28

Slide 29

Positron Emission Tomography(PET)



- Substance that emits positively charged particles is injected into body
- Collision with negatively charged electrons in tissues releases gamma rays
- Camera detects gamma rays & computer generates image displayed on monitor

Copyright © 2007 Pearson Education, Inc., publishing as Benjamin Cummings. 1-29

Slide 30

Did you get it?

- Some sample questions:
 - Describe the anatomical position
 - What are the major body cavities and what do they contain.
 - What plane would separate the left from the right? The front from the back? The top from the bottom?
 - How would you describe something that is toward the head on the torso? Toward the torso on a limb?
 - What technique uses sound-waves to help visualize a body part

Copyright © 2007 Pearson Education, Inc., publishing as Benjamin Cummings. 1-30

Slide 31

The End.

These presentations and the related notes pages are intended to serve as your study guides.

They contain a condensed version of what is in your text.

They are not intended to replace your text.

Copyright 2012 Pearson Education, Inc., publishing as Pearson Education, Inc.
