

Exercise walk-through

3.1

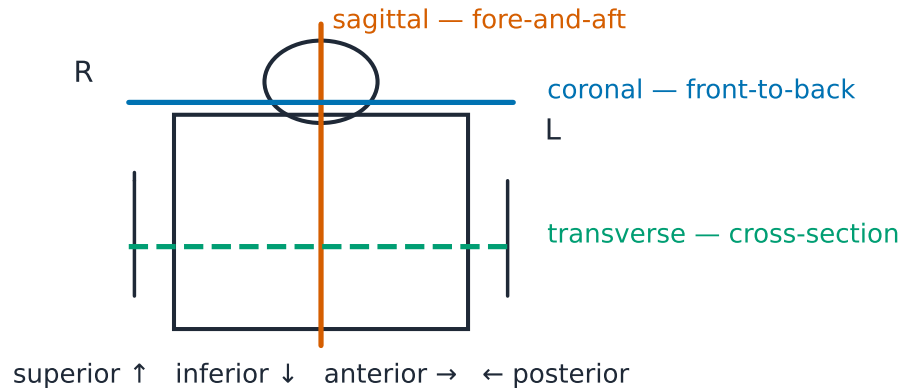
Anatomical language, planes and imaging

University Medicine

Planes: the grammar of anatomy

- 1 **Pairs** Superior/inferior, anterior/posterior, proximal/distal, lateral/medial - each pair replaces a sentence of description.
- 2 **Planes** Sagittal divides right/left; coronal front/back; transverse cuts across - every scan is one of the three.
- 3 **Display** An axial slice shows the patient RIGHT on the image LEFT: one convention, applied consistently, is why readers agree.

Sagittal, coronal, transverse



Sagittal, coronal, transverse - the three planes every scan reads.

Exercises 2.1-2.3

2.1 Name the plane that separates the eyes from the back of the head. [3]

2.2 The knee is ____ to the hip and ____ to the ankle. [3]

2.3 On an axial brain scan, the patient's left occipital lobe appears on which side of the image? [3]

Exercises 2.1-2.3

2.1 Name the plane that separates the eyes from the back of the head. [3]

2.1

- Coronal (front/back division).

2.2 The knee is ____ to the hip and ____ to the ankle. [3]

2.2

- Distal to the hip, proximal to the ankle ✓.

2.3 On an axial brain scan, the patient's left occipital lobe appears on which side of the image? [3]

2.3

- Right of image (patient's left displayed on image right; the convention mirrors patient right to image left).

Exercise 3.1

3.1 A surgeon describes a lesion as "right upper lobe, anterior segment, 3 cm from the pleural surface".

State the plane in which the anterior/posterior distinction is made. Explain the display convention that lets two readers agree on "right" without seeing the patient. Explain why side is always stated first in procedures. [7]

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3.1

- The coronal plane separates anterior from posterior.
- Axial images display as viewed from the feet: patient right = image left, applied consistently.
- Side first because it is the single highest-stakes ambiguity; grammar is the safety system (fictional drain-site vignette).

Exercise 3.2

3.2 A midline sagittal MRI is requested.

State what “midline sagittal” cuts and what remains visible in one half. Explain why sagittal views show the spinal canal end-to-end while coronal views do not. State one structure best seen on each of the three planes. [7]

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3.2

- Midline sagittal cuts the body into equal right and left halves; midline structures (cord, sternum, aorta) visible in both.
- The canal runs superior-inferior in the sagittal plane's long axis; coronal and transverse cut across it.
- Examples: sagittal = spinal canal; coronal = lungs/kidneys paired; transverse = a cross-section level e.g. C7/T1 disc.