

1.7 | Anatomical Terminology

To communicate effectively with one another, researchers and clinicians have developed a set of precise terms to describe anatomy. These terms concern the relative positions of body parts, relate to imaginary planes along which cuts may be made, and describe body regions.

Use of such terms assumes that the body is in the **anatomical position**. This means that the body is standing erect, face forward, with the upper limbs at the sides and the palms forward. Note that the terms “right” and “left” refer to the right and left of the body in anatomical position.

Relative Positions

Terms of relative position describe the location of one body part with respect to another. They include the following (many of these terms are illustrated in fig. 1.14):

1. **Superior** means that a body part is above another part. (The thoracic cavity is superior to the abdominopelvic cavity.)
2. **Inferior** means that a body part is below another body part. (The neck is inferior to the head.)
3. **Anterior** (*ventral*) means toward the front. (The eyes are anterior to the brain.)
4. **Posterior** (*dorsal*) means toward the back. (The pharynx is posterior to the oral cavity.)
5. **Medial** refers to an imaginary midline dividing the body into equal right and left halves. A body part is medial if it is closer to midline than another part. (The nose is medial to the eyes.)
6. **Lateral** means toward the side, away from midline. (The ears are lateral to the eyes.)

7. **Bilateral** refers to paired structures, one of which is on each side. (The lungs are bilateral.)
8. **Ipsilateral** refers to structures on the same side. (The right lung and the right kidney are ipsilateral.)
9. **Contralateral** refers to structures on the opposite side. (A patient with a fractured bone in the right leg would have to bear weight on the contralateral—in this case, left—lower limb.)
10. **Proximal** describes a body part that is closer to a point of attachment to the trunk than another body part. (The elbow is proximal to the wrist.) *Proximal* may also refer to another reference point, such as the proximal tubules, which are closer to the filtering structures in the kidney.
11. **Distal** is the opposite of proximal. It means that a particular body part is farther from a point of attachment to the trunk than another body part is. (The fingers are distal to the wrist.) Distal may also refer to another reference point, such as decreased blood flow distal to blockage of a coronary artery.

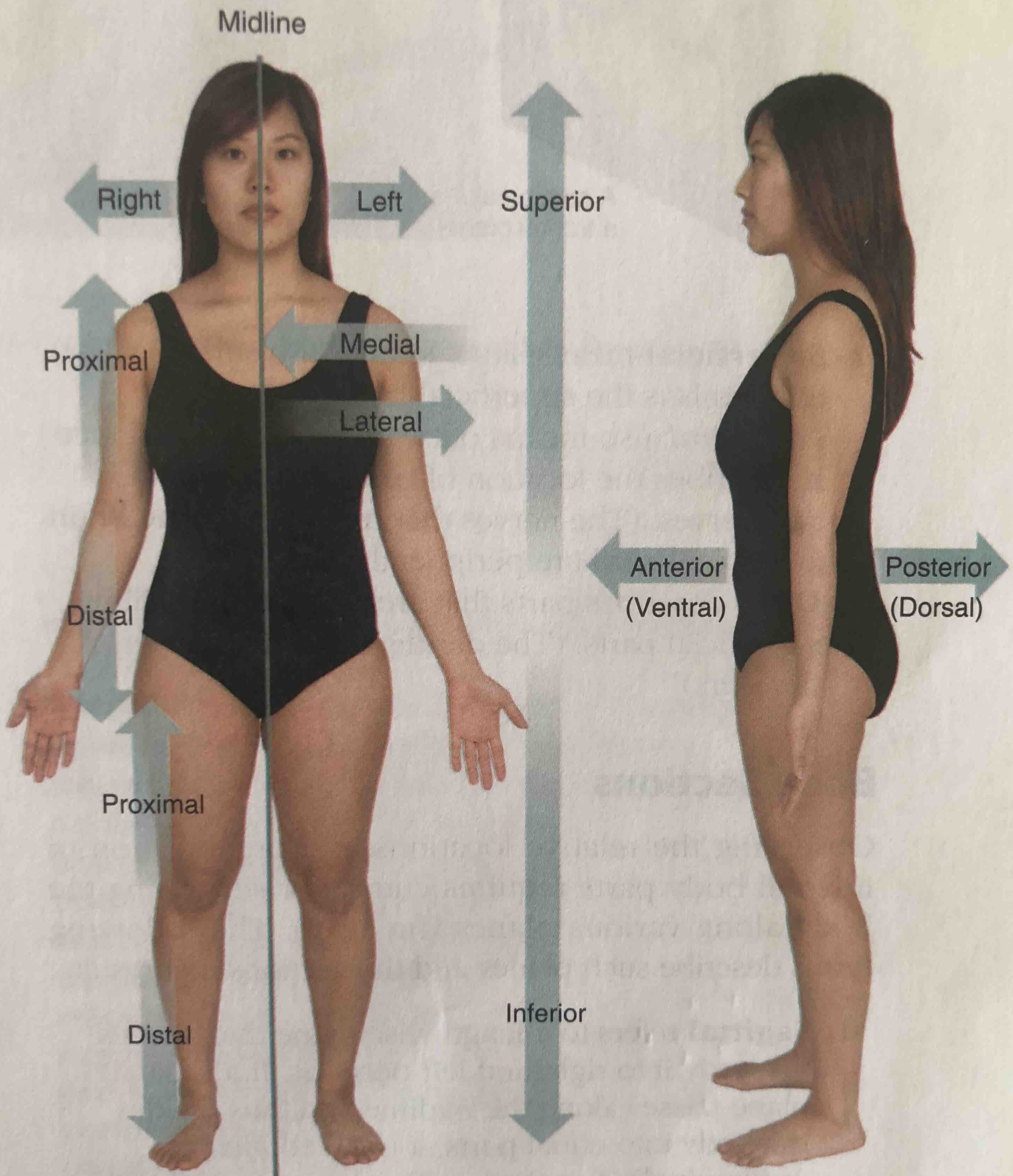


FIGURE 1.14 **AP|R** Relative positional terms describe a body part's location with respect to other body parts.



Which is more lateral, the hand or the hip?

Answer can be found in Appendix F on page 582.

12. **Superficial** means situated near the surface. (The epidermis is the superficial layer of the skin.)
Peripheral also means outward or near the surface. It describes the location of certain blood vessels and nerves. (The nerves that branch from the brain and spinal cord are peripheral nerves.)
13. **Deep** describes parts that are more internal than superficial parts. (The dermis is the deep layer of the skin.)

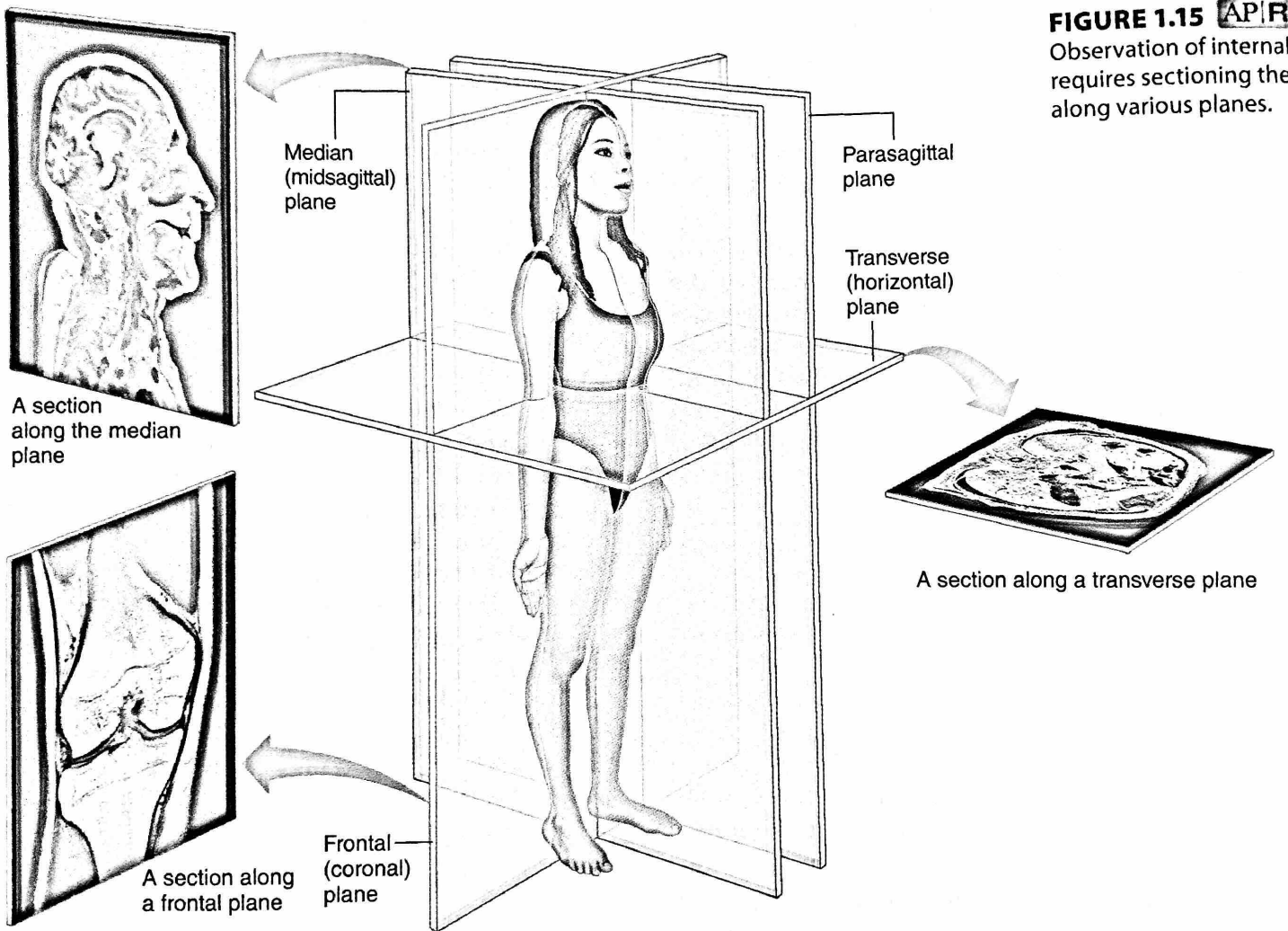


FIGURE 1.15 **APIR**

Observation of internal parts requires sectioning the body along various planes.

Body Sections

Observing the relative locations and organization of internal body parts requires cutting or sectioning the body along various planes (fig. 1.15). The following terms describe such planes and the sections that result:

1. **Sagittal** refers to a lengthwise plane that divides the body into right and left portions. If a sagittal plane passes along the midline and thus divides the body into equal parts, it is called *median* (midsagittal). A sagittal section lateral to midline is called *parasagittal*.
2. **Transverse** (*horizontal*) refers to a plane that divides the body into superior and inferior portions.
3. **Frontal** (*coronal*) refers to a plane that divides the body into anterior and posterior portions.

Sometimes, a cylindrical organ such as a long bone is sectioned. In this case, a cut across the structure is called a *cross section*, an angular cut is an *oblique section*, and a lengthwise cut is a *longitudinal section* (fig. 1.16). Clinical Application 1.1 discusses using computerized tomography to view body sections.

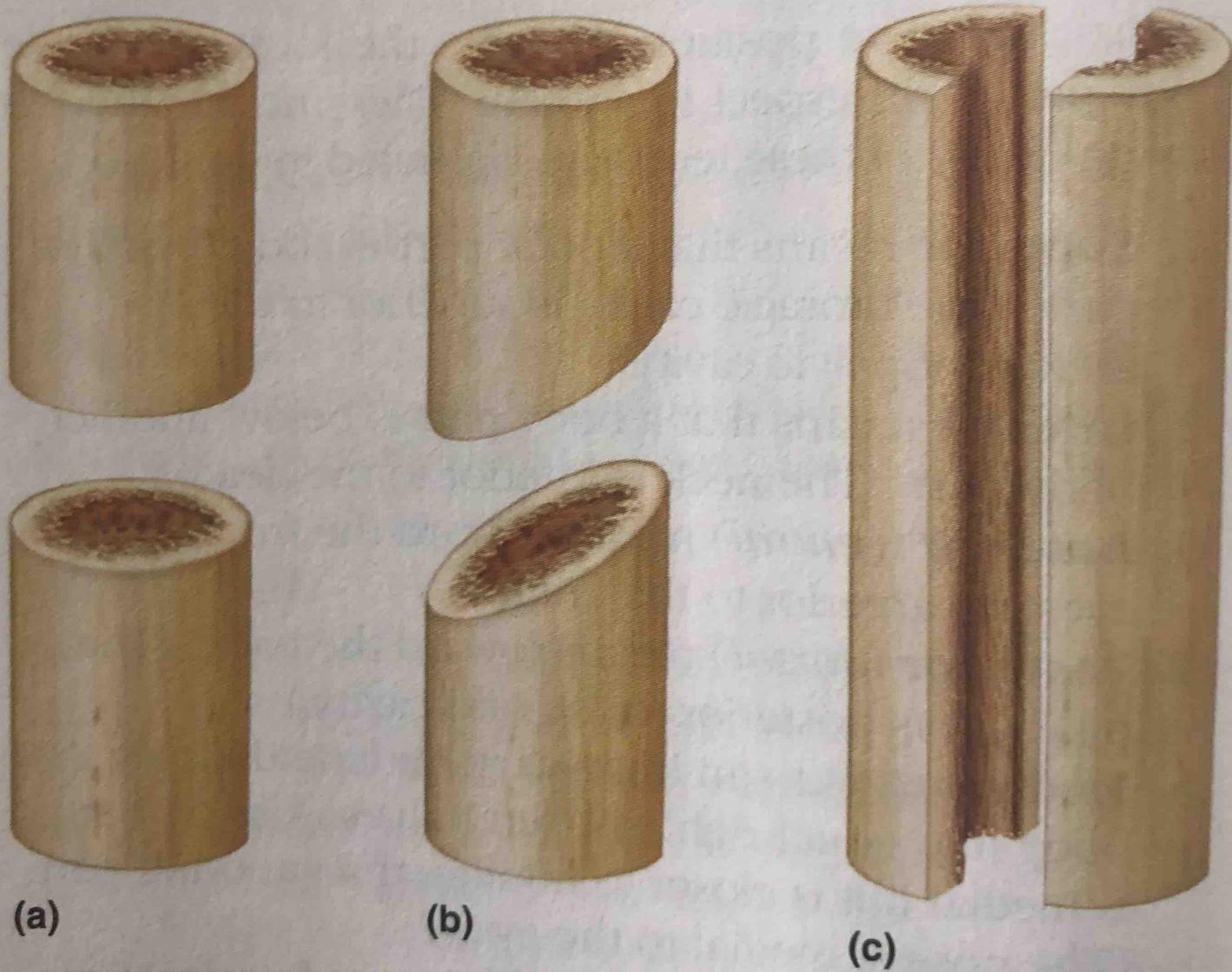


FIGURE 1.16 Cylindrical parts may be cut in (a) cross section, (b) oblique section, or (c) longitudinal section.