Objectives

- Identify and utilize anatomical positions, planes, and directional terms.
- Demonstrate what anatomical position is and how it is used to reference the body.
- Distinguish between the commonly used anatomical planes and recognize their individual views.
- Apply directional terms to their location on the human body.

Introduction

- Proper reference to anatomical positions, knowledge of injury terminology, and mechanisms essential for communicating effectively with other health care professionals
  - Assist you in documenting findings, convey history information during medical referrals, and collaborate with other healthcare professionals regarding care of your athlete
Anatomical Reference Terminology

- All anatomical descriptions and references are based on standardized position of the body
  - Anatomical Position
    - Allows us to reference specific body regions in relation to the body as a whole and one anatomical landmark to another
      - Avoid confusion and misinterpretation of your findings
      - Can be standing or supine (on the spine)
        » Standing most common and easiest to visualize

Anatomical Position

- Standing erect, with palms and feet facing forward
- Is the standard reference point in which all positions, movements, and planes are described

Anatomical Reference Terminology

- From anatomical position can also define three anatomical planes of movement useful in describing postural positions, motions, and function of various muscles and joints
  - Imaginary planes that separate the body into left and right (sagittal or median), top and bottom (Transverse), or front and back (frontal or coronal)

Anatomical Planes

- Fixed lines of reference along which the body is often divided or sectioned to facilitate viewing of its structures
- Allow one to obtain a three-dimensional perspective by studying the body from different views
Anatomical Planes

Sagittal plane
- The plane dividing the body into right and left portions
- Midsagittal or median are names for the plane dividing the body into equal right and left halves
- For example, when nodding your head or flexing your elbow, this occurs in the sagittal plane

Frontal plane
- The plane dividing the body into front and back portions
- Also called the Coronal plane
- Lifting arms out to the side occurs in the frontal plane

Transverse plane
- The horizontal plane dividing the body into upper and lower portions
- Also called the Horizontal plane
- Shaking your head no or rotating your palms so it is facing backwards takes place in the transverse plane

Anatomical Reference Terminology

- Patient positioning terminology important and helpful for understanding starting positions for various medical testing
  - Supine (face up) and prone (face down) refers to patient laying down
  - Short sitting-patient sitting on edge of table with legs hanging off the edge
  - Long sitting patient sitting with legs out in front of them with legs on the table or floor
Anatomical Reference Terminology

- Once in anatomical position one can begin to refer to specific structure using various anatomical terms
  - Describe position of body parts with reference to other body parts or the body as a whole

Positions and Directions

Superior
- Refers to a structure being closer to the head or higher than another structure in the body

Inferior
- Refers to a structure being closer to the feet or lower than another structure in the body

Anterior
- Refers to a structure being more in front than another structure in the body

Posterior
- Refers to a structure being more in back than another structure in the body

Medial
- Refers to a structure being closer to the midline or median plane of the body than another structure of the body

Lateral
- Refers to a structure being farther away from the midline than another structure of the body
Positions and Directions

Distal
(Reference to the extremities only)
• Refers to a structure being further away from the root of the limb than another structure in the limb

Proximal
(Reference to the extremities only)
• Refers to a structure being closer to the root of the limb than another structure in that limb

Superficial
• Refers to a structure being closer to the surface of the body than another structure

Deep
• Refers to a structure being closer to the core of the body than another structure

Prone
• Lying face down

Supine
• Lying face up

Unilateral
• Pertaining to one side of the body

Bilateral
• Pertaining to both sides of the body

Contralateral
• Opposite Side

Ipsilateral
• Same Side

Humans are bipedal, we walk on two legs, therefore our Ventral side / Dorsal side flips at our lower extremities. Ventral – Black Dorsal – White
## Table 7.1 Anatomical Terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Synonym</th>
<th>Term defined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anterior</td>
<td>VENTRAL</td>
<td>Toward the front of the body</td>
</tr>
<tr>
<td></td>
<td>Palmar</td>
<td></td>
</tr>
<tr>
<td>Posterior</td>
<td>Dorsal</td>
<td>Toward the back side of the body</td>
</tr>
<tr>
<td>Superior</td>
<td>Cranial</td>
<td>Toward the head</td>
</tr>
<tr>
<td></td>
<td>Cephalic</td>
<td></td>
</tr>
<tr>
<td>Inferior</td>
<td>Caudal</td>
<td>Moving away from the head toward the feet</td>
</tr>
<tr>
<td>Medial</td>
<td></td>
<td>Toward the midline of the body</td>
</tr>
<tr>
<td>Lateral</td>
<td></td>
<td>Away from the midline of the body</td>
</tr>
<tr>
<td>Proximal</td>
<td></td>
<td>Referring to a position or attachment on the body that is closer to the trunk or origin of reference</td>
</tr>
<tr>
<td>Distal</td>
<td></td>
<td>Referring to a position or attachment on the body that is farther away from the trunk or origin of reference</td>
</tr>
<tr>
<td>Superficial</td>
<td></td>
<td>Nearest to the surface of the skin</td>
</tr>
<tr>
<td>Deep</td>
<td></td>
<td>Farther from the surface of the skin</td>
</tr>
<tr>
<td>Central</td>
<td></td>
<td>Nearest or closer to the center of a structure or system</td>
</tr>
<tr>
<td>Peripheral</td>
<td></td>
<td>Farther away from the center of a structure or system</td>
</tr>
<tr>
<td>Visceral</td>
<td></td>
<td>Referring to the covering of an internal organ</td>
</tr>
<tr>
<td>Peritonal</td>
<td></td>
<td>Referring to the internal wall of a body cavity</td>
</tr>
</tbody>
</table>

Adapted from J.L. Reece, 1992, Clinically oriented anatomy, 3rd ed. (Baltimore: Williams & Wilkins)