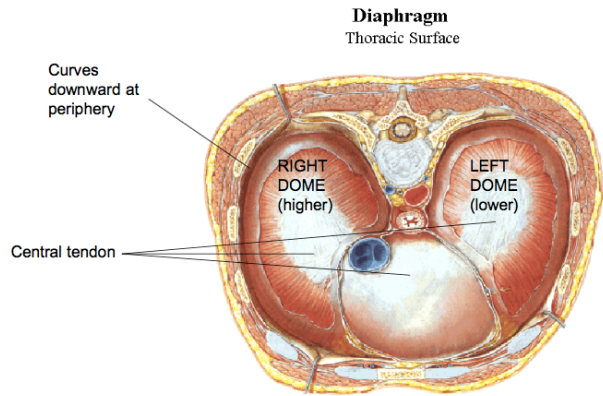


**LECTURE 4: Diaphragm: Mechanisms of Breathing**

**Diaphragm**

- Flat muscular sheet that extends all the way around the thoracic wall between the thorax and abdomen
- Low attachments to the costal margin of the ribs
- Muscle fibers attached to the periphery moves up and attaches at the central tendon (aponeurosis)
- Contraction pulls the central tendon downwards and depresses the diaphragm



**• Attachments of Diaphragm**

- Xiphoid process anteriorly, costal margin of the inferior 6 ribs all the way to the back
- At the back, attaches to the 12<sup>th</sup> rib and lumbar transverse processes
- Has connective tissue on top of quadratus lumborum and psoas major

<b>Quadratus Lumborum</b>	<ul style="list-style-type: none"> <li>- Origin: Iliolumbar ligament and iliac crest</li> <li>- Insertion: Lower border of 12<sup>th</sup> rib, transverse process of upper lumbar vertebrae</li> </ul>
<b>Psoas Major</b>	<ul style="list-style-type: none"> <li>- Origin: Bodies, transverse processes and intervertebral discs of all lumbar vertebrae and T12</li> <li>- Insertion: Top of femur</li> </ul>

- Arcuate ligaments (median, medial and lateral) that arch across
  - Median: Anterior aspect of aorta
  - Medial: Anterior aspect of psoas major
  - Lateral: Quadratus lumborum
- Crua are extensions of the diaphragm that attach to the body of the lumbar vertebra
  - Right curs: L1-3/4
  - Left curs: L1-2/3; slightly higher than the right
- Medial arcuate ligament is formed by the medial border of the right crus
- Important attachment to the central tendon

