

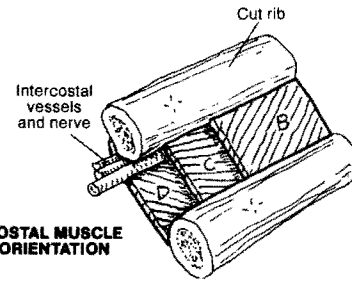
# V. MUSCULAR SYSTEM / TORSO

## MUSCLES OF THORAX & POSTERIOR ABDOMINAL WALL

CN: Use blue for E and red for G. (1) You may wish to darken the underside of the diaphragm (A) in the anterior view. Do not confuse the arcuate ligaments with the 12th rib. (2) In the cross sectional view above, color the broken lines which represent transparent, membranous portions of the intercostal muscles.

### THORAX MUSCLES:\*

THORACIC DIAPHRAGM<sup>A</sup>  
 EXTERNAL INTERCOSTAL<sup>B</sup>  
 INTERNAL INTERCOSTAL<sup>C</sup>  
 INNERMOST INTERCOSTAL<sup>D</sup>



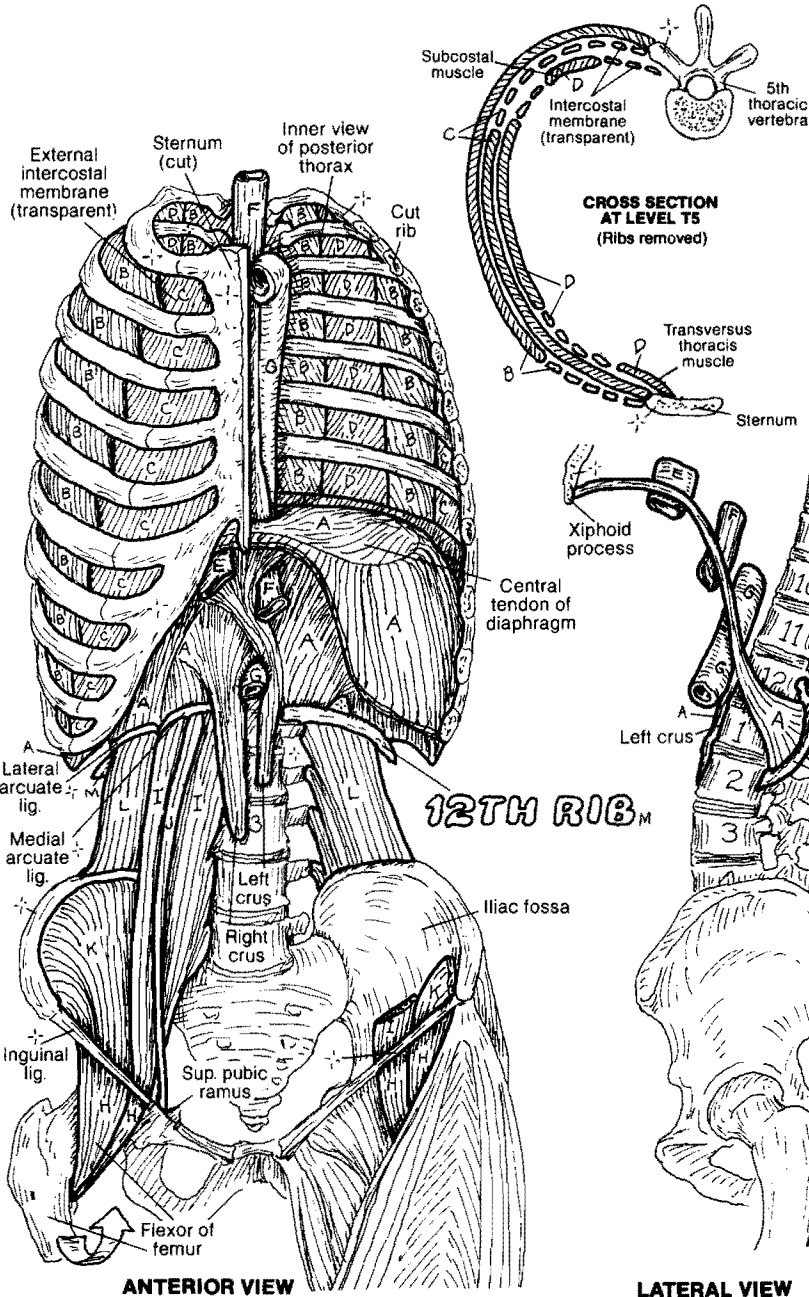
INTERCOSTAL MUSCLE FIBER ORIENTATION

The *thoracic diaphragm* is a broad, thin muscle spanning the thoracoabdominal cavity; its origin, much of which is illustrated here, includes the lower six ribs (not shown).

The left and right halves of the diaphragm insert into each other (central tendon). The diaphragm is responsible for 75% of the respiratory air flow. Openings (hiatuses) in the diaphragm provide passage for major transiting structures.

The *intercostal muscles* alter the dimensions of the thoracic cavity by collectively moving the ribs, resulting in 25% of the total respiratory effort. The specific function of each of these muscles, with respect to fiber orientation, is not understood. The innermost intercostals are an inconstant layer, and here include the transversus thoracis and subcostal muscles.

### INFERIOR VENA CAVA<sup>E</sup> ESOPHAGUS<sup>F</sup> AORTA<sup>G</sup>



ANTERIOR VIEW

LATERAL VIEW

POSTERIOR VIEW

### POSTERIOR ABDOMINAL WALL MUSCLES:\*

- ILIOPSOAS<sup>H</sup>
- PSOAS MAJOR<sup>I</sup> MINOR<sup>J</sup>
- ILIACUS<sup>K</sup>
- QUADRATUS LUMBORUM<sup>L</sup>

The tendons of *iliacus* and *psaos major* converge to a single insertion (*iliopsoas*). *Iliopsoas*, a strong flexor of the hip joint, is a powerful flexor of the lumbar vertebrae; a weak *psaos* may contribute to low back pain. *Quadratus lumborum* is an extensor of the lumbar vertebrae (bilaterally) and a lateral flexor unilaterally. It functions in respiration by securing the 12th rib. Immediately anterior to these muscles is the retroperitoneum (see Plate 109).