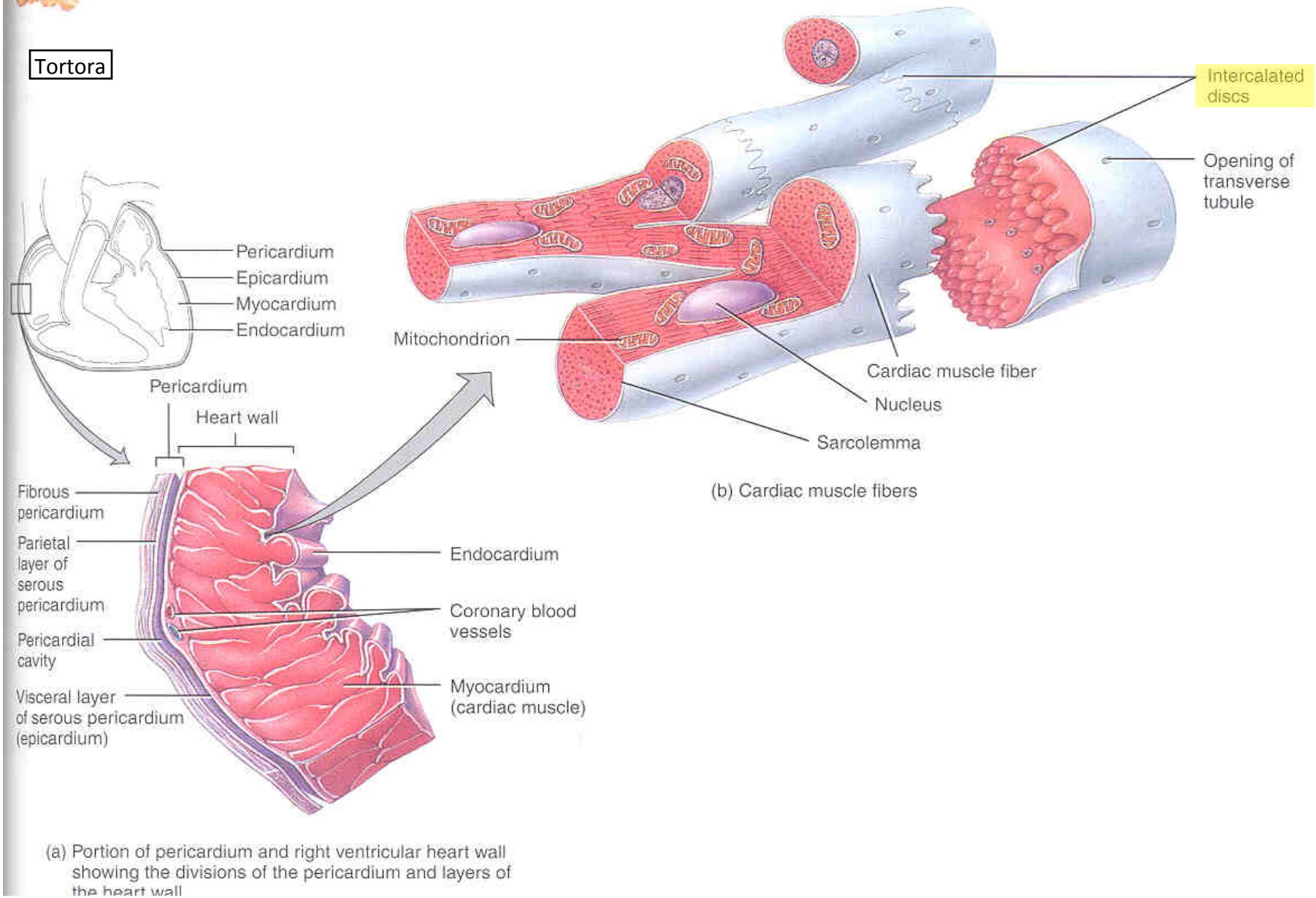
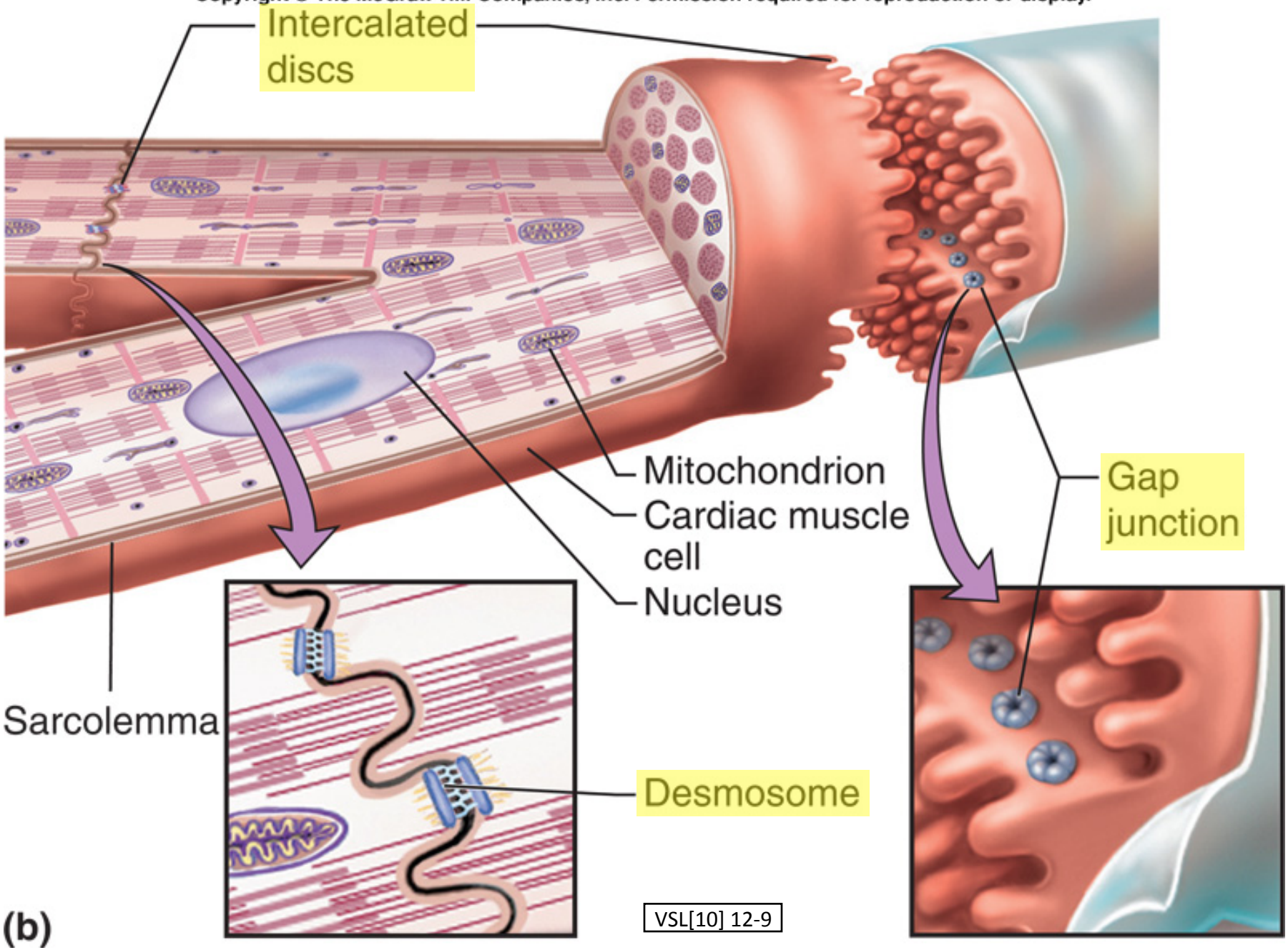
Figure 15.2 Pericardium and heart wall.

The pericardium is a sac that surrounds and protects the heart.

Tortora



(a) Portion of pericardium and right ventricular heart wall showing the divisions of the pericardium and layers of the heart wall



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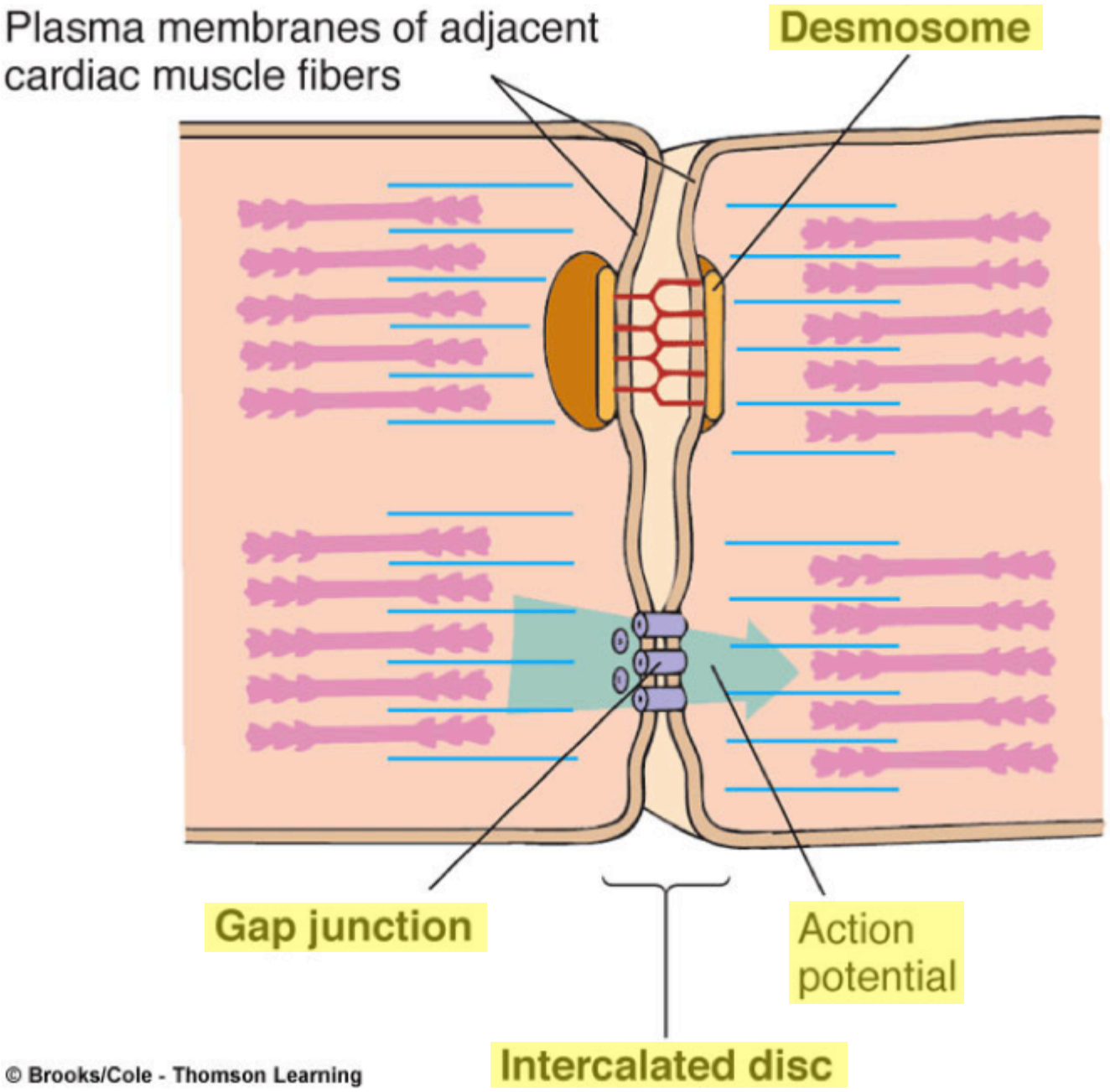
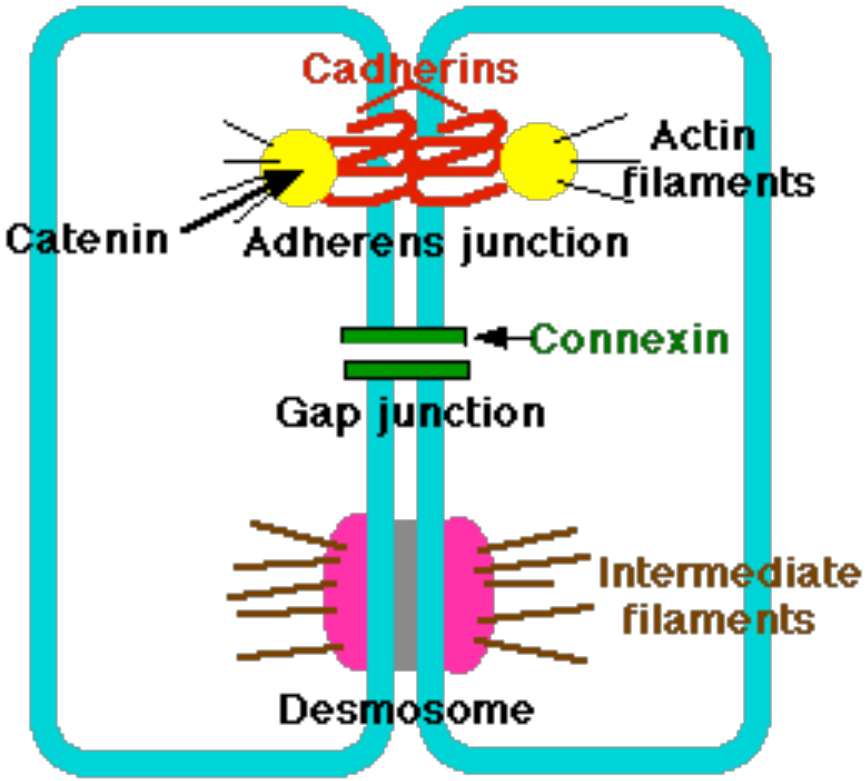

Plasma membranes of adjacent cardiac muscle fibers
Desmosome
Gap junction
Action potential
Intercalated disc
© Brooks/Cole - Thomson Learning

Holds cells together at ends



Holds cells together at ends and sides

Three-dimensional view of desmosome

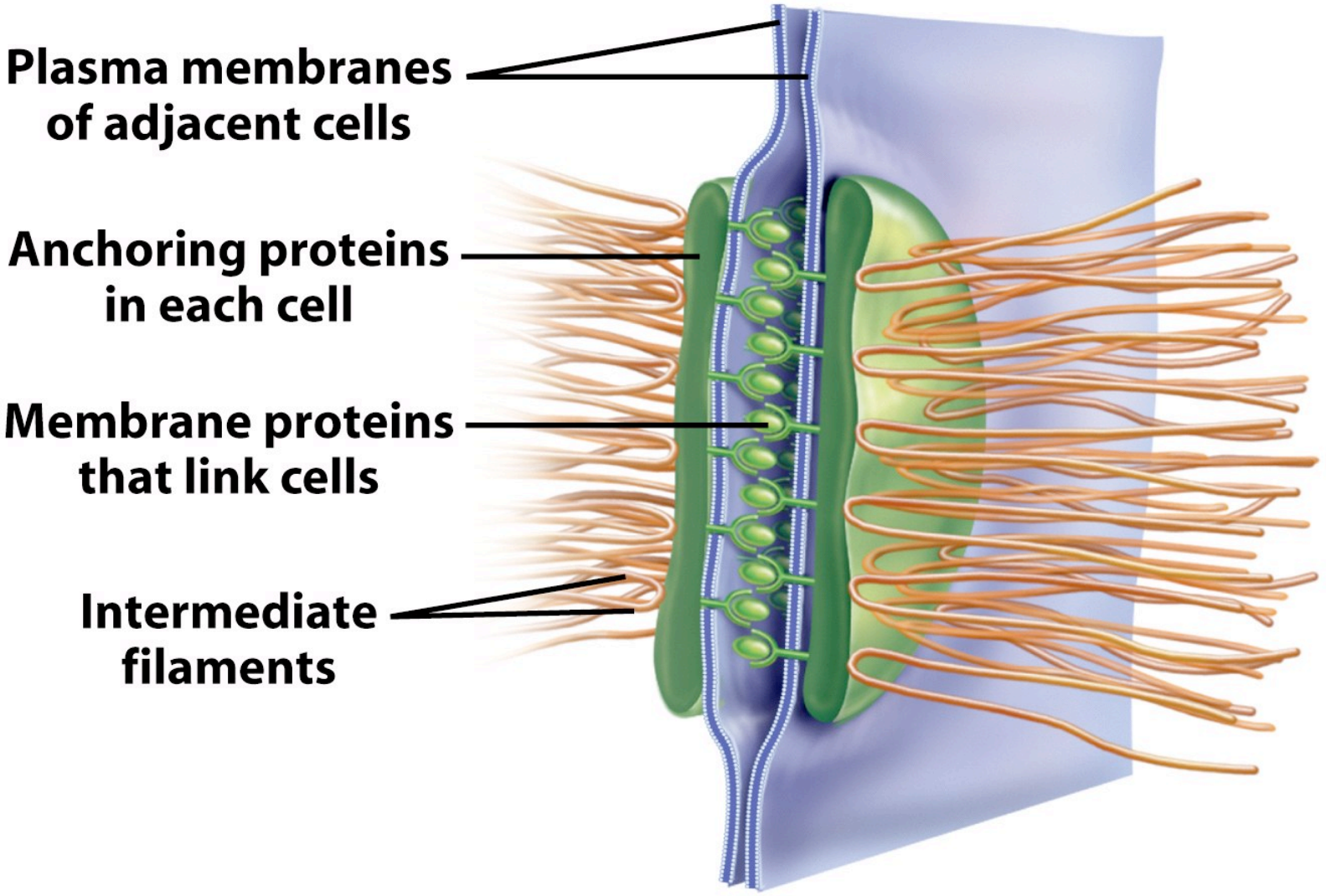
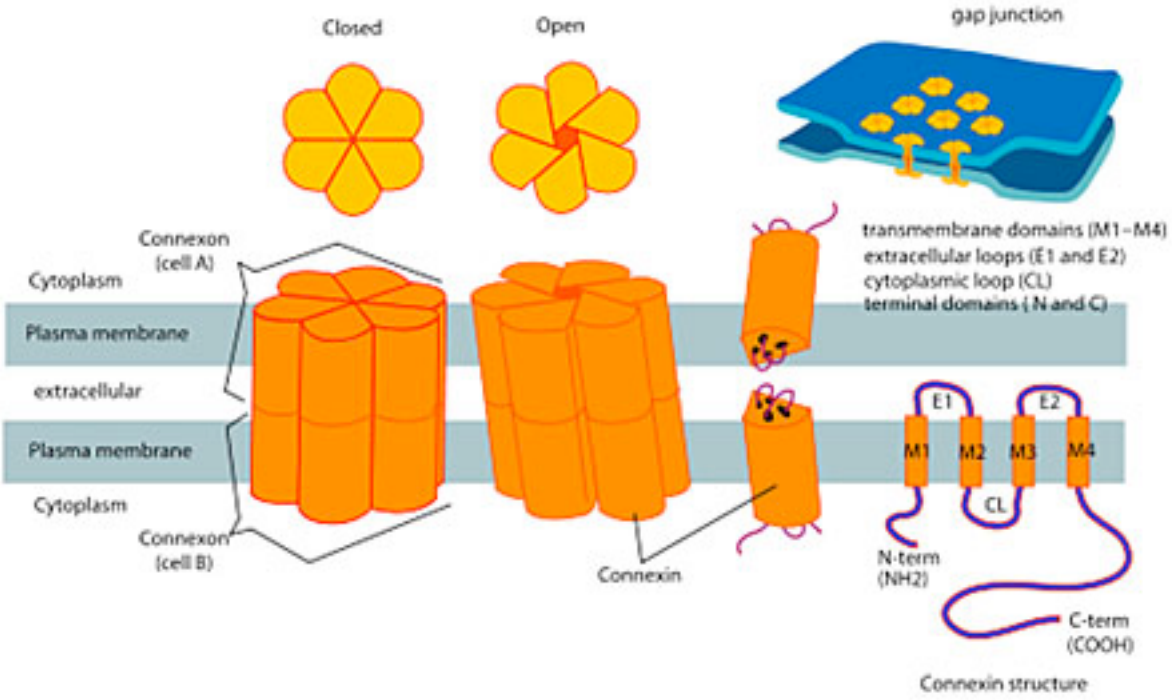


Figure 8-10b Biological Science, 2/e


Closed
Open
gap junction
Connexon
(cell A)
Cytoplasm
Plasma membrane
extracellular
Plasma membrane
Cytoplasm
Connexon
(cell B)
Connexin
transmembrane domains (M1–M4)
extracellular loops (E1 and E2)
cytoplasmic loop (CL)
terminal domains (N and C)
E1
E2
M1
M2
M3
M4
CL
N-term
(NH2)
C-term
(COOH)
Connexin structure

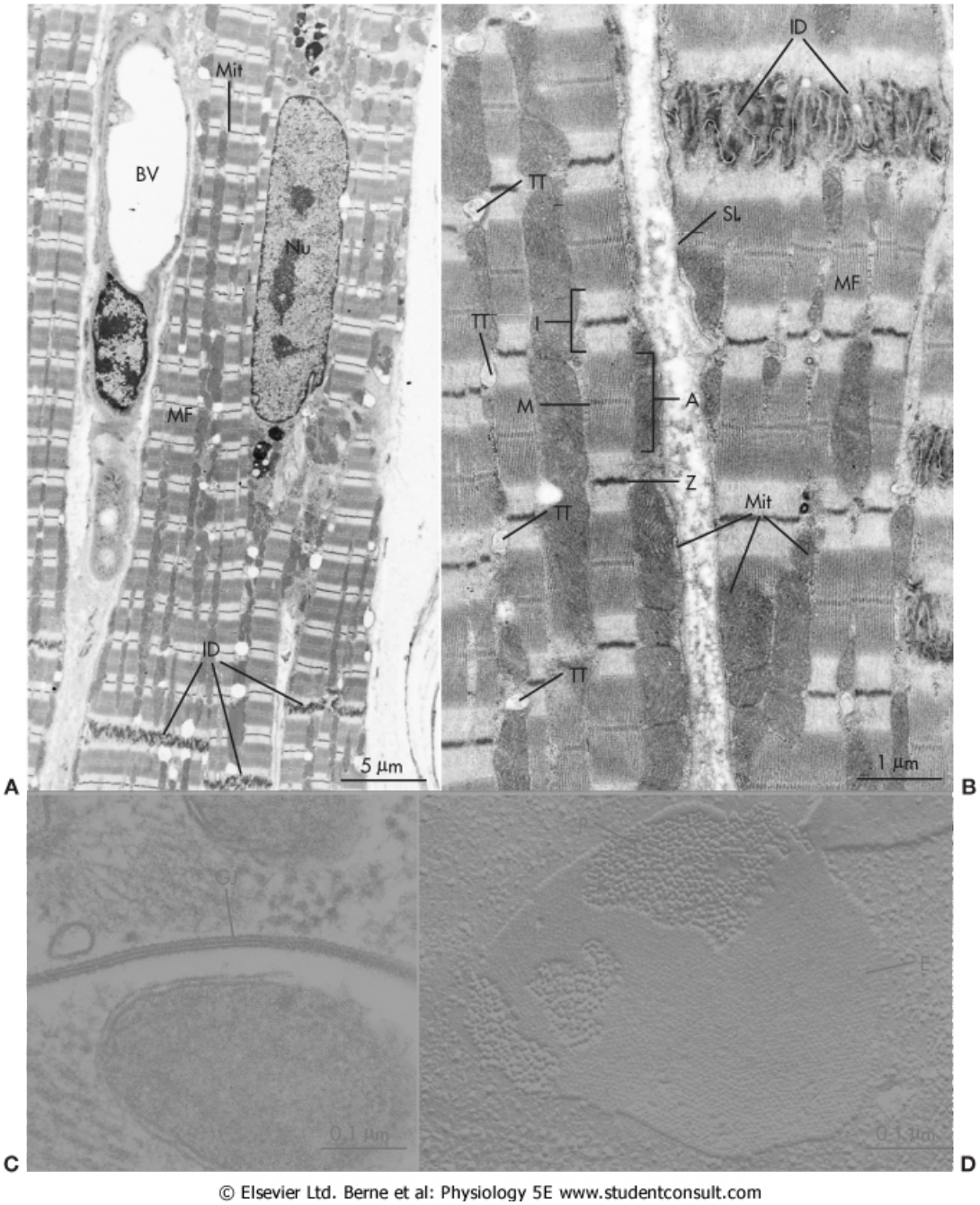


Figure 16-3 A, Low-magnification electron micrograph of a monkey heart (ventricle). Typical features of myocardial cells include the elongated nucleus (Nu), striated myofibrils (MF) with columns of mitochondria (Mit) between the myofibrils, and intercellular junctions (intercalated disks, ID). A blood vessel (BV) is located between two myocardial cells. B, Medium-magnification electron micrograph of monkey ventricular cells showing details of the ultrastructure. The sarcolemma (SL) is the boundary of the muscle cells and is thrown into multiple folds where the cells meet at the intercalated disk region (ID). The prominent myofibrils (MF) show distinct banding patterns, including the A-band (A), dark Z-lines (Z), I-band regions (I), and M-lines (M) at the center of each sarcomere unit. Mitochondria (Mit) occur either in rows between myofibrils or in masses just underneath the sarcolemma. Regularly spaced transverse tubules (TT) appear at the Z-line levels of the myofibrils. C, ~~High-magnification electron micrograph of a specialized intercellular junction between two myocardial cells of the mouse. Called a gap junction (GJ) or nexus, this attachment consists of very close apposition of the sarcolemmal membranes of the two cells and appears in thin section to consist of seven layers. D, Freeze-fracture replica of mouse myocardial gap junction, showing distinct arrays of characteristic intramembranous particles. Large particles (P) belong to the inner half of the sarcolemma of one myocardial cell, whereas the "pitted" membrane face (E) is formed by the outer half of the sarcolemma of the cell above.~~

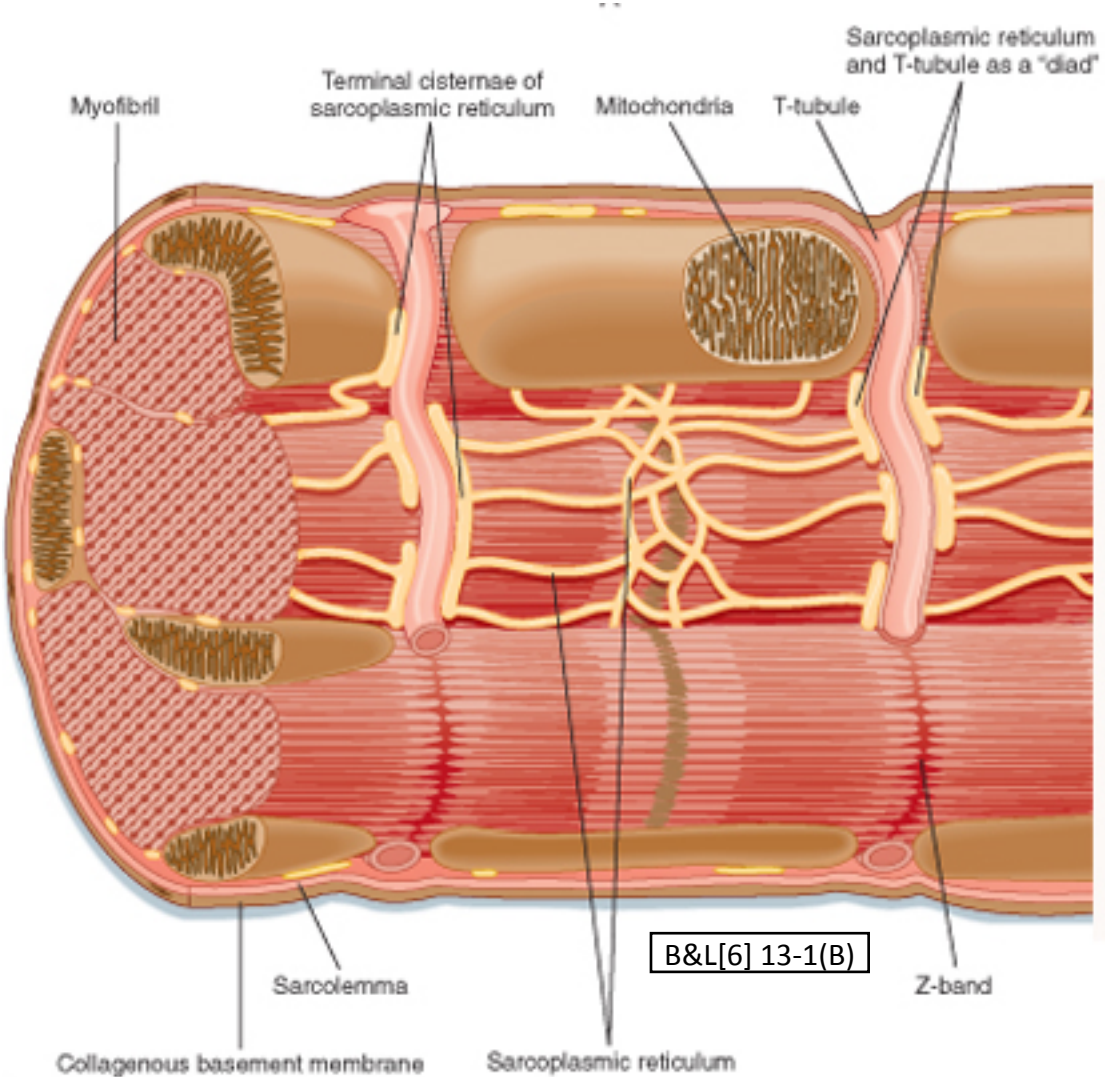


Figure 13-1 B, Schematic representation of the organization of a sarcomere within a cardiac muscle cell. (part B, redrawn from Fawcett D, McNutt NS: J Cell Biol 42:1-45, 1969.)

END

Video 1, Module 5