

JARINGAN OTOT

Oleh:
TIM HISTOLOGI

Chapter 49:
Movement &
Support



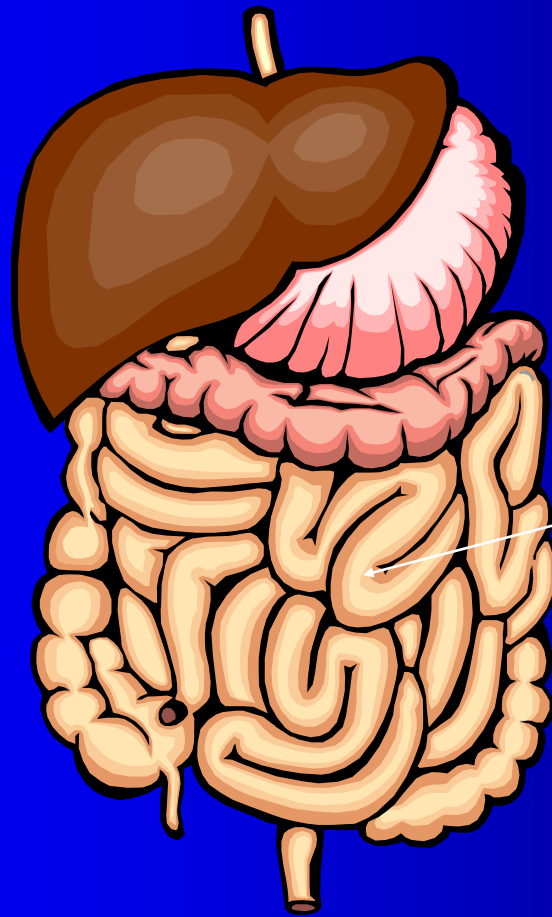
Jaringan Otot

- Mengandung protein kontraktil
- Sel otot & substansia interseularis
- Berdasarkan struktur & fungsinya:
 1. Otot polos (textus muscularis non striatus)
 2. Otot seran lintang (otot rangka/textus muscularis striatus)
 3. Otot jantung (textus muscularis cardiacus)

Otot Polos

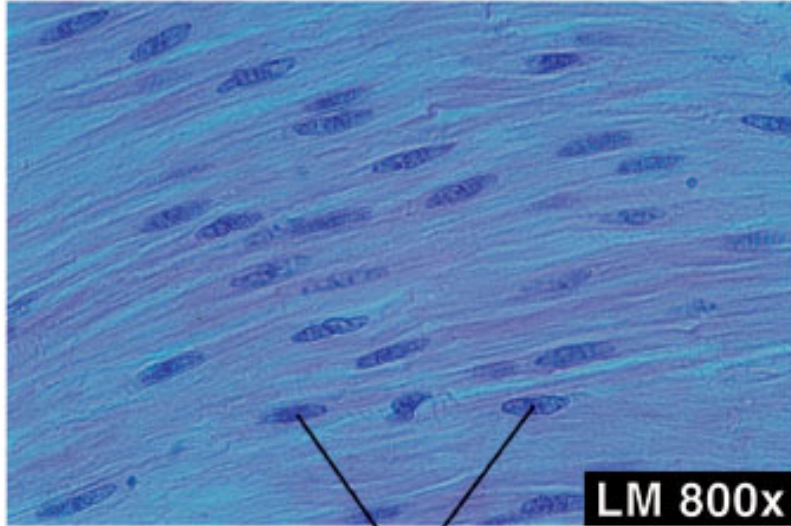
- Bentuk seperti kumparan (fusiform)
- Inti di tengah sel
- Sitoplasma: homogen
- Otot polos terkecil: pembuluh darah, terbesar: uterus saat wanita hamil.
- Lokasi: pd semua alat yg mampu melakukan kontraksi di luar kehendak kita

Contoh Otot Polos

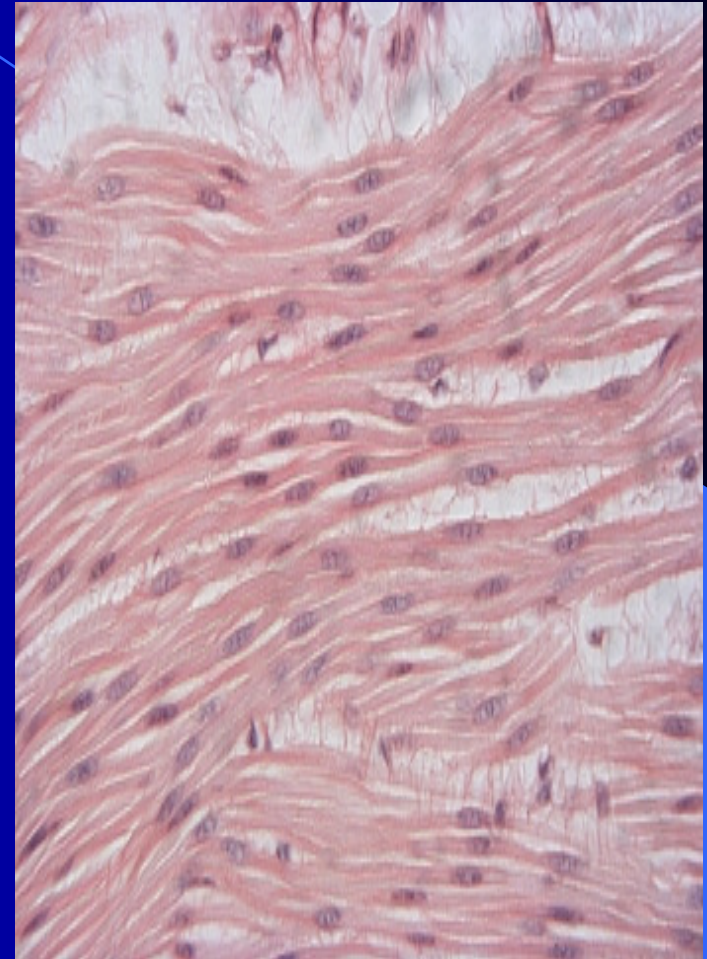
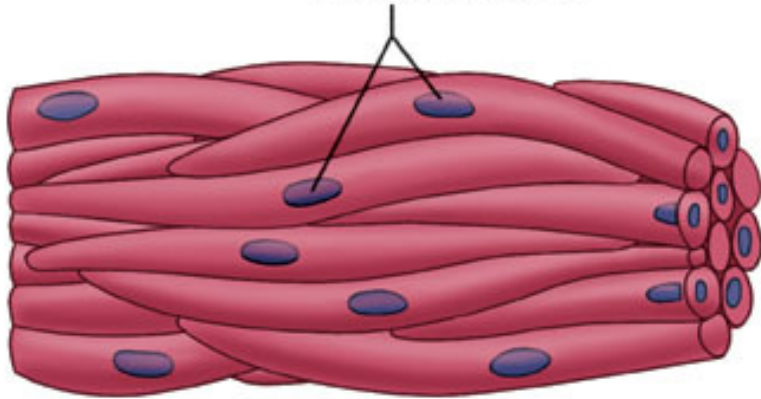


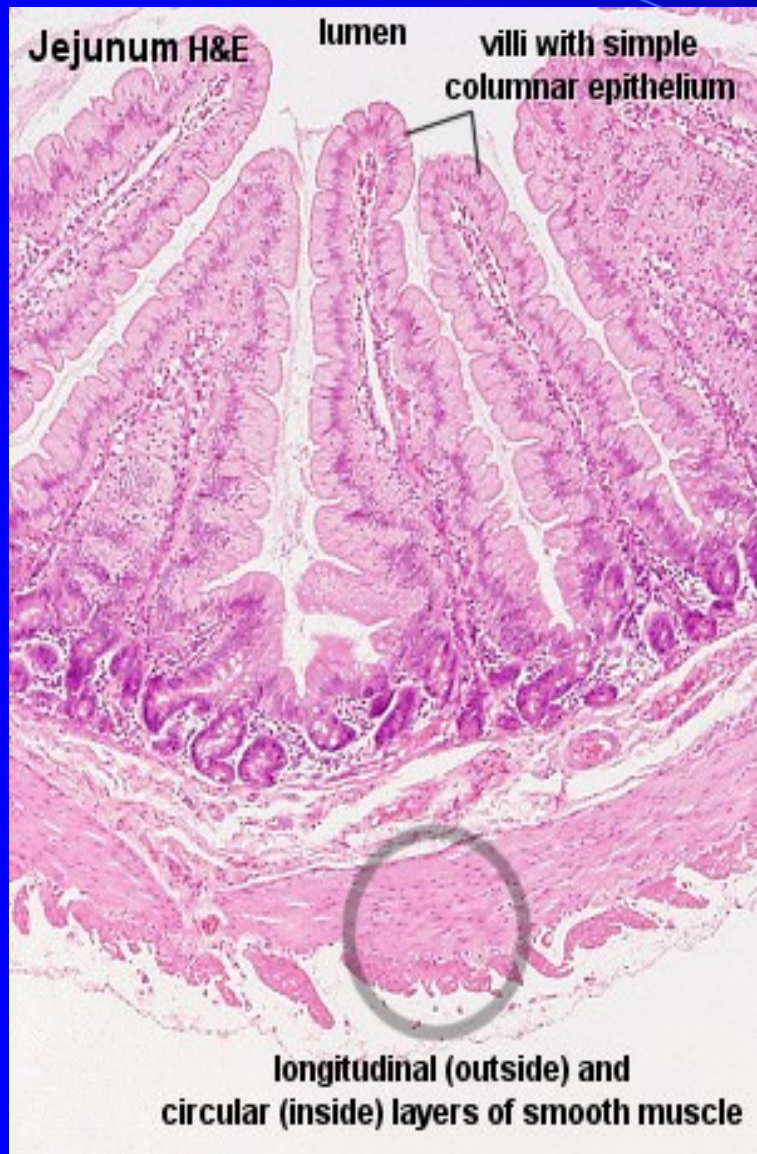
Small Intestine

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Nuclei of smooth muscle cells





Otot Lurik / Seran lintang

- Struktur sel otot rangka
- Inti di tepi sel
- Sitoplasma mpy myofibril, pd mikroskop elektron tampak myofilamen
- Pd potongan membujur: sel-sel berdampingan, menunjukkan batas sel yg tdk jelas spt sinsitium, shg nukleus tampak banyak
- Kontraksi: disadari

Contoh Otot Lurik

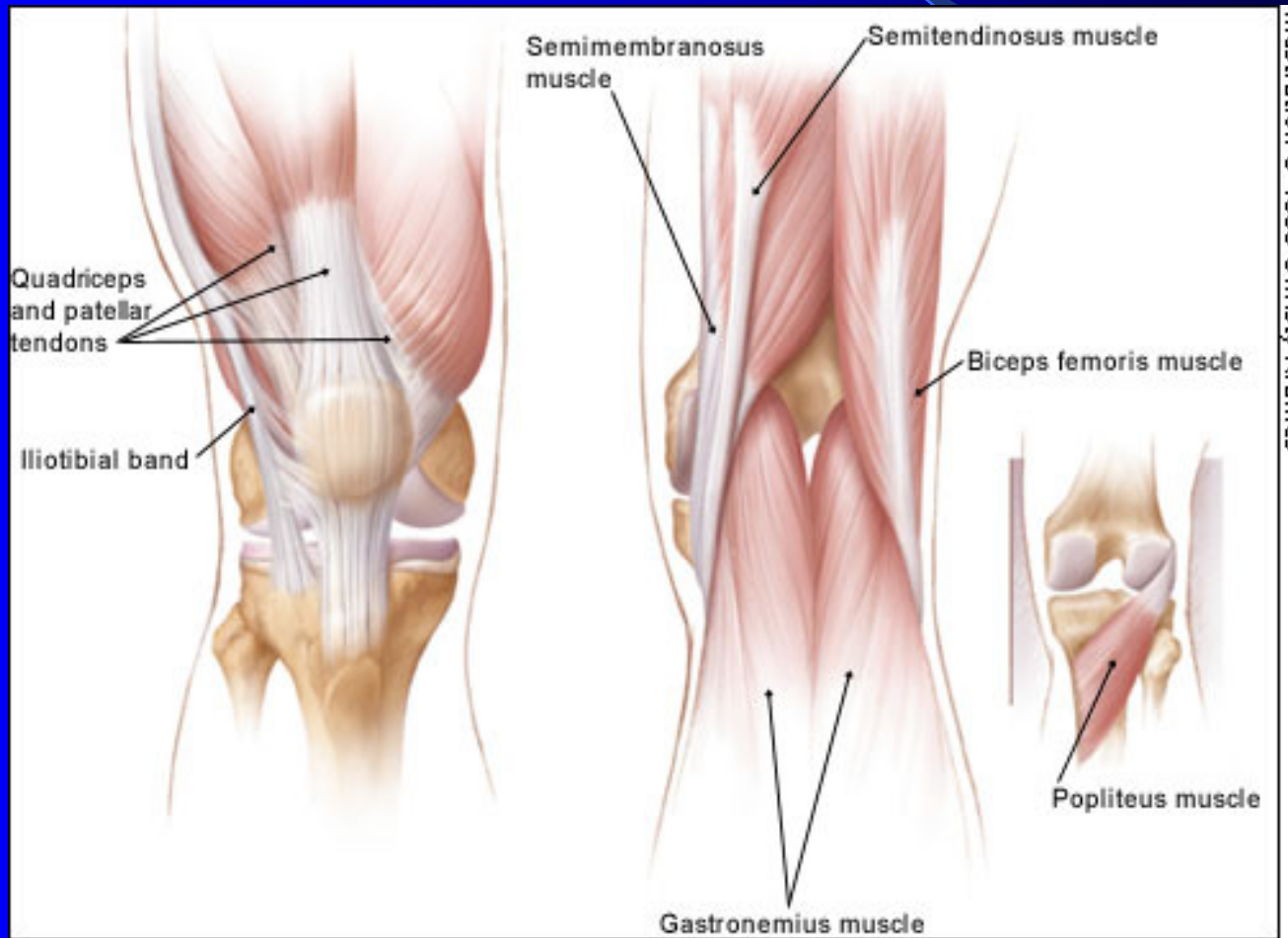
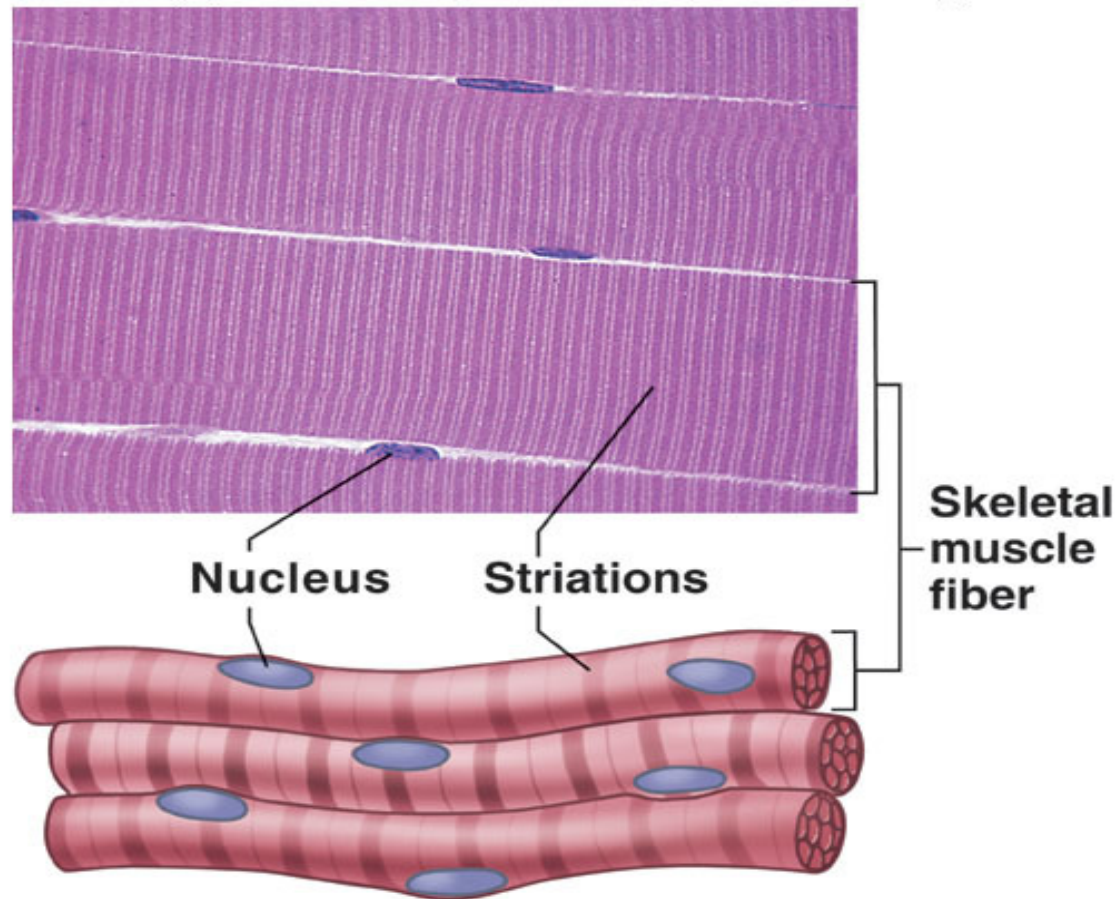


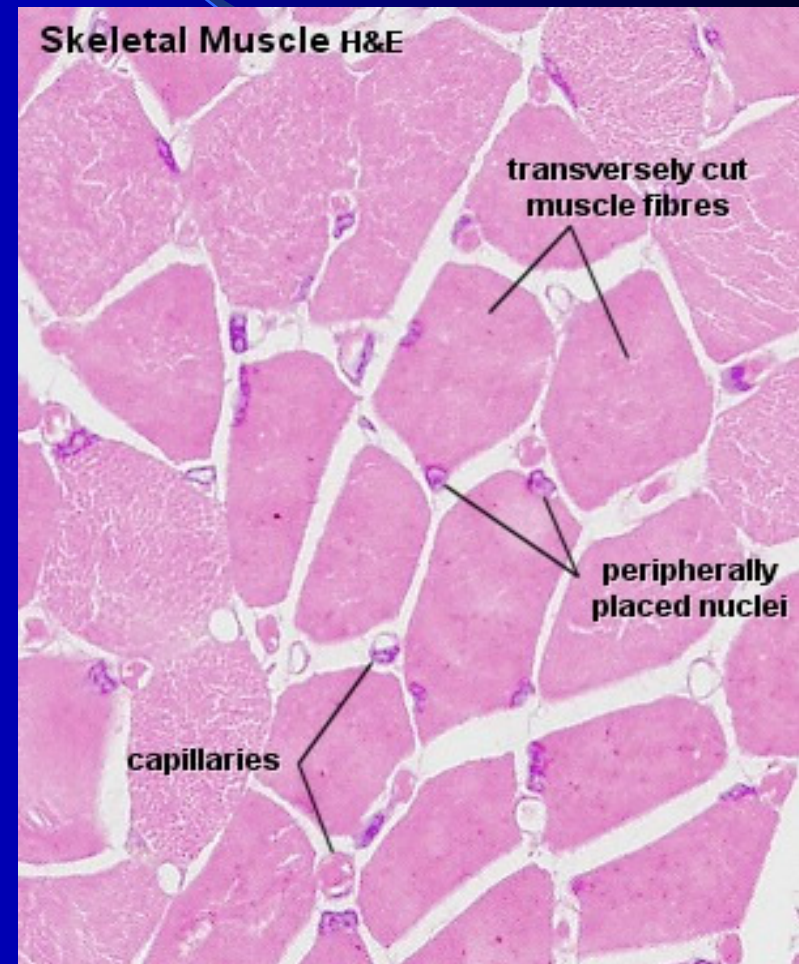
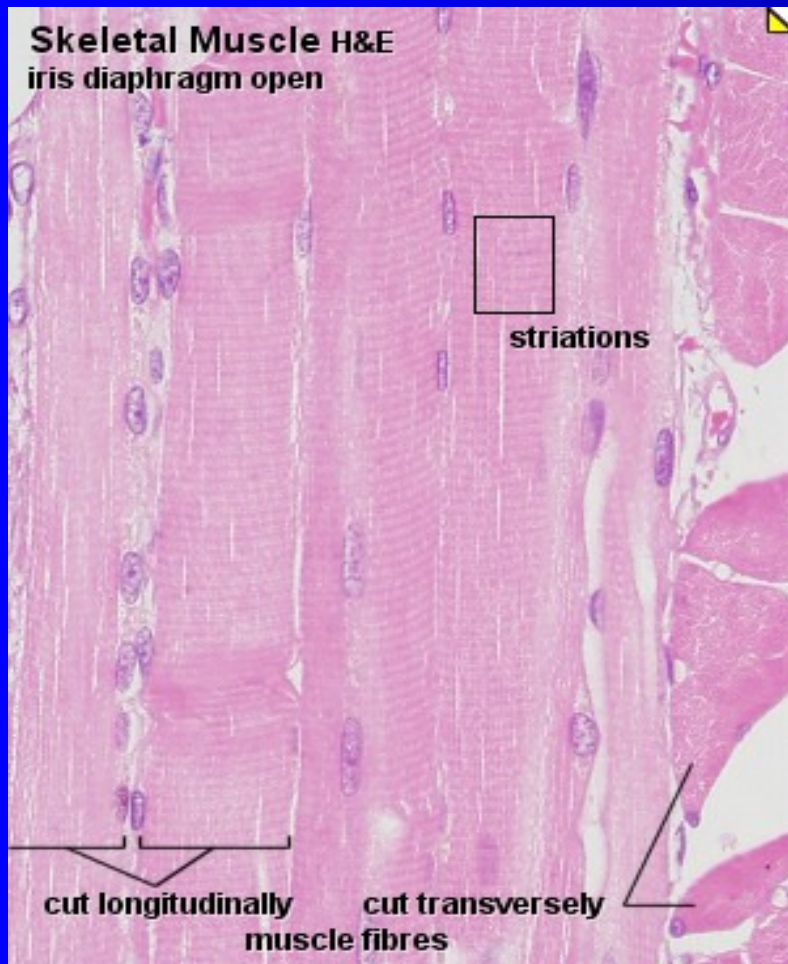
Illustration © 1999 Christy Kramas

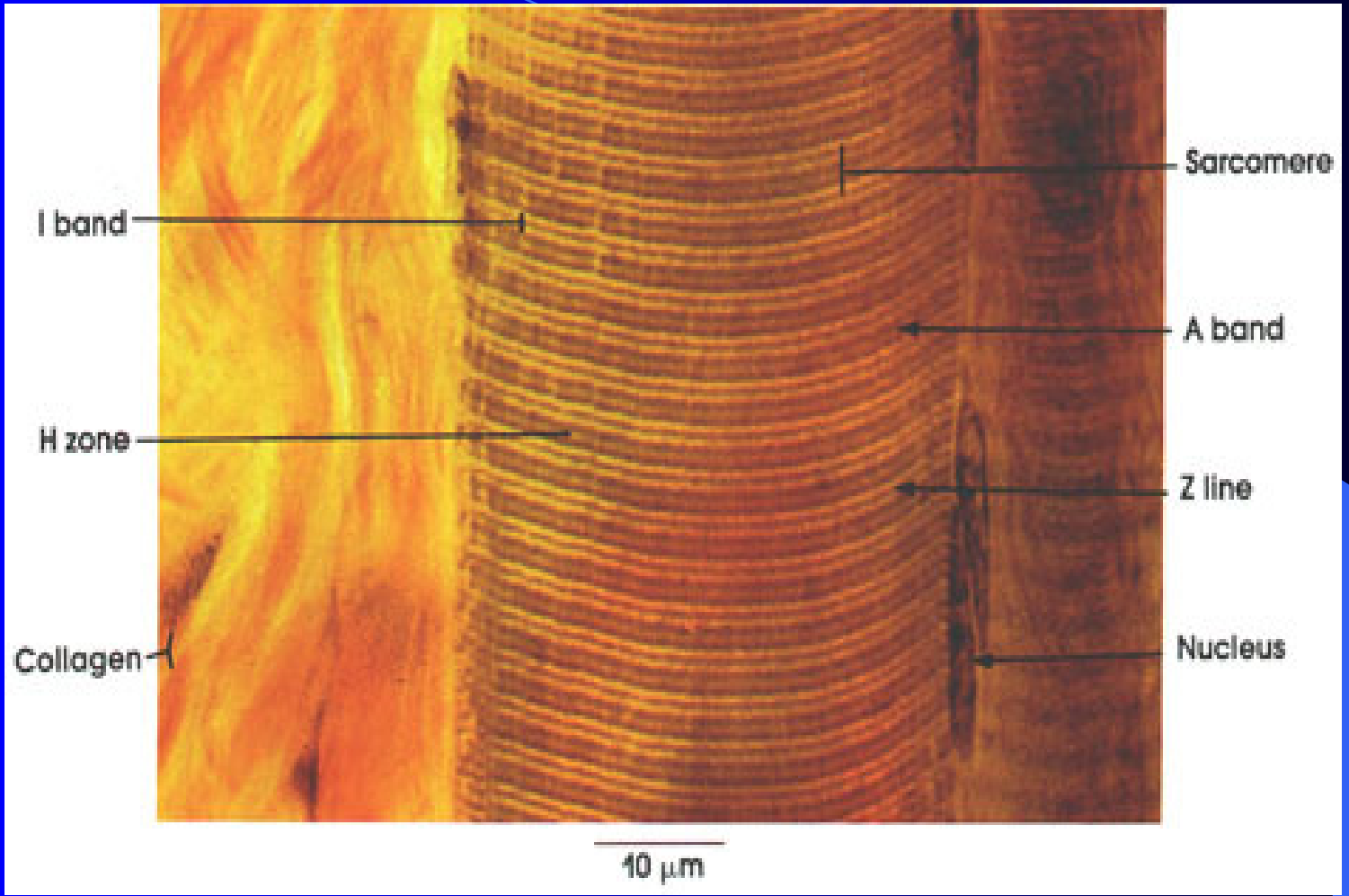
Otot Seran lintang

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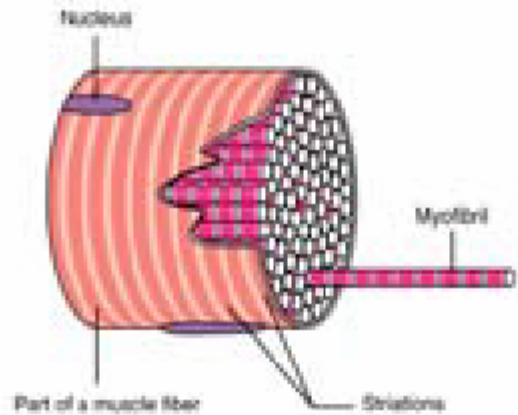


Otot Seran Lintang





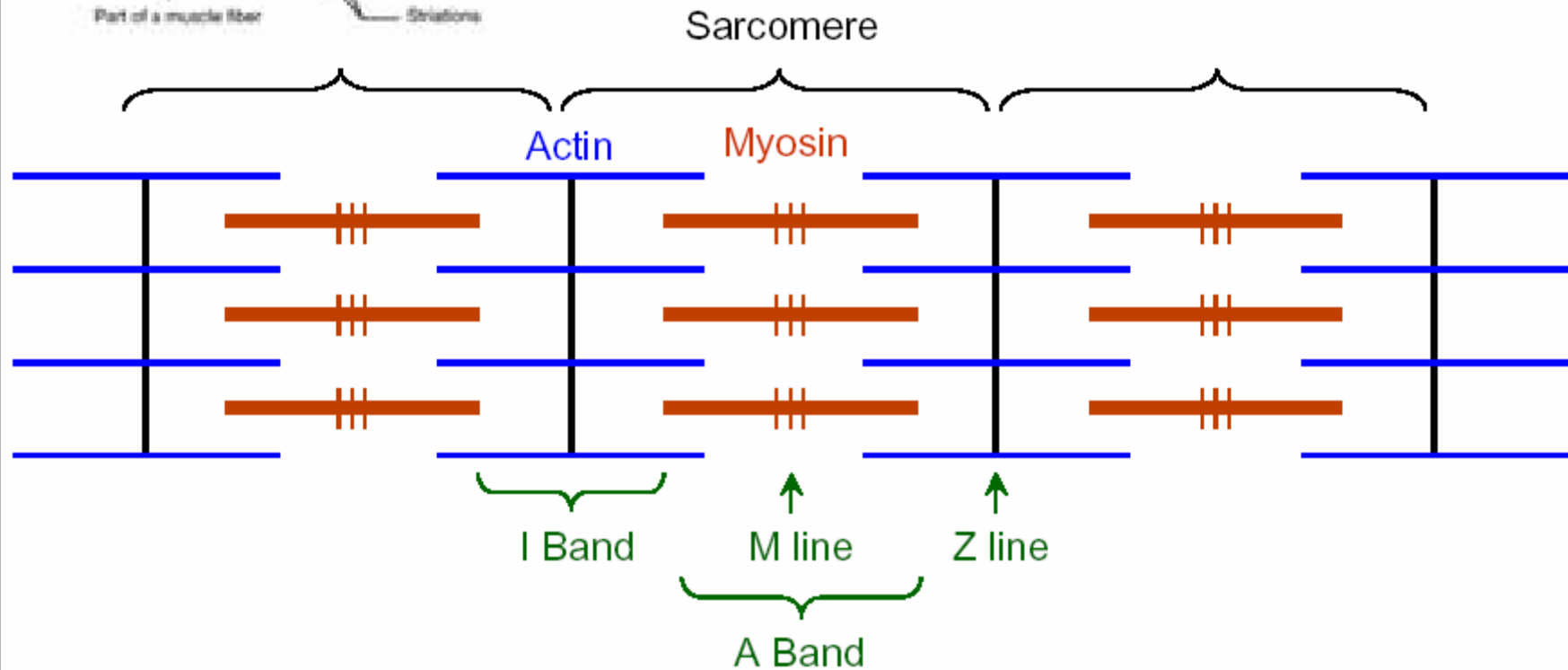
Microanatomy of Muscle:



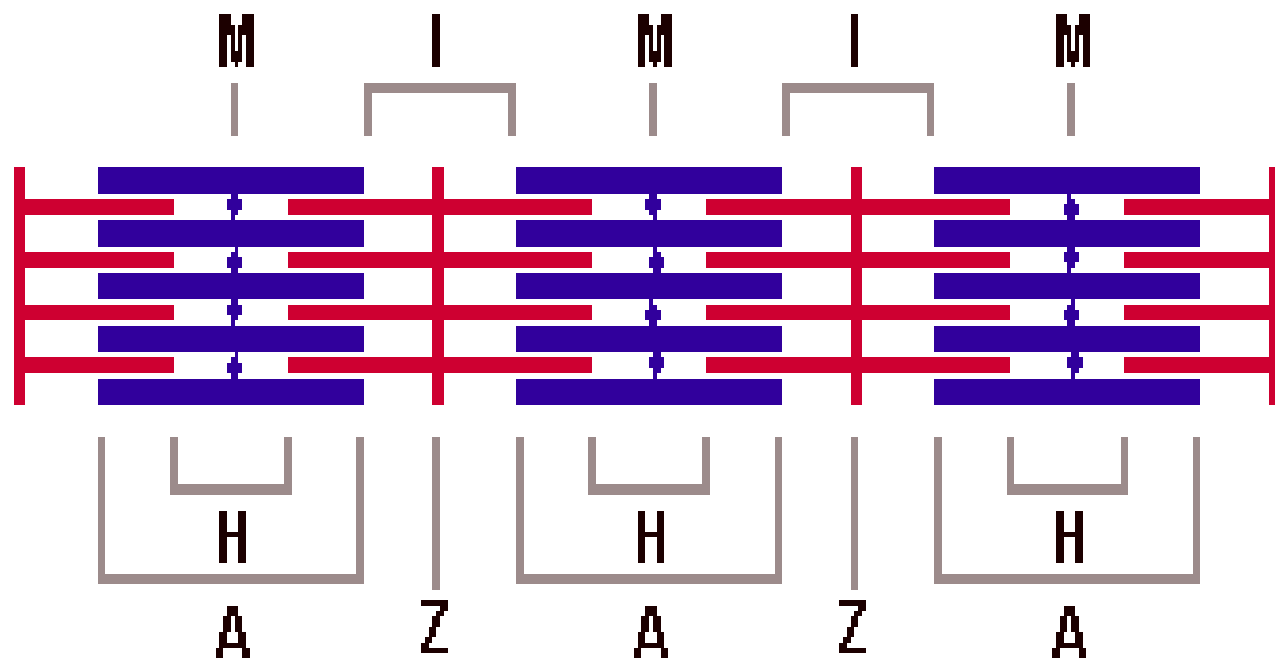
Myofibrils contain myofilaments (protein):

- 1) **Actin** (Thin filament)
- 2) **Myosin** (Thick filament)

Sarcomere: Repeating units of myofilaments (~ 10,000 / cell)

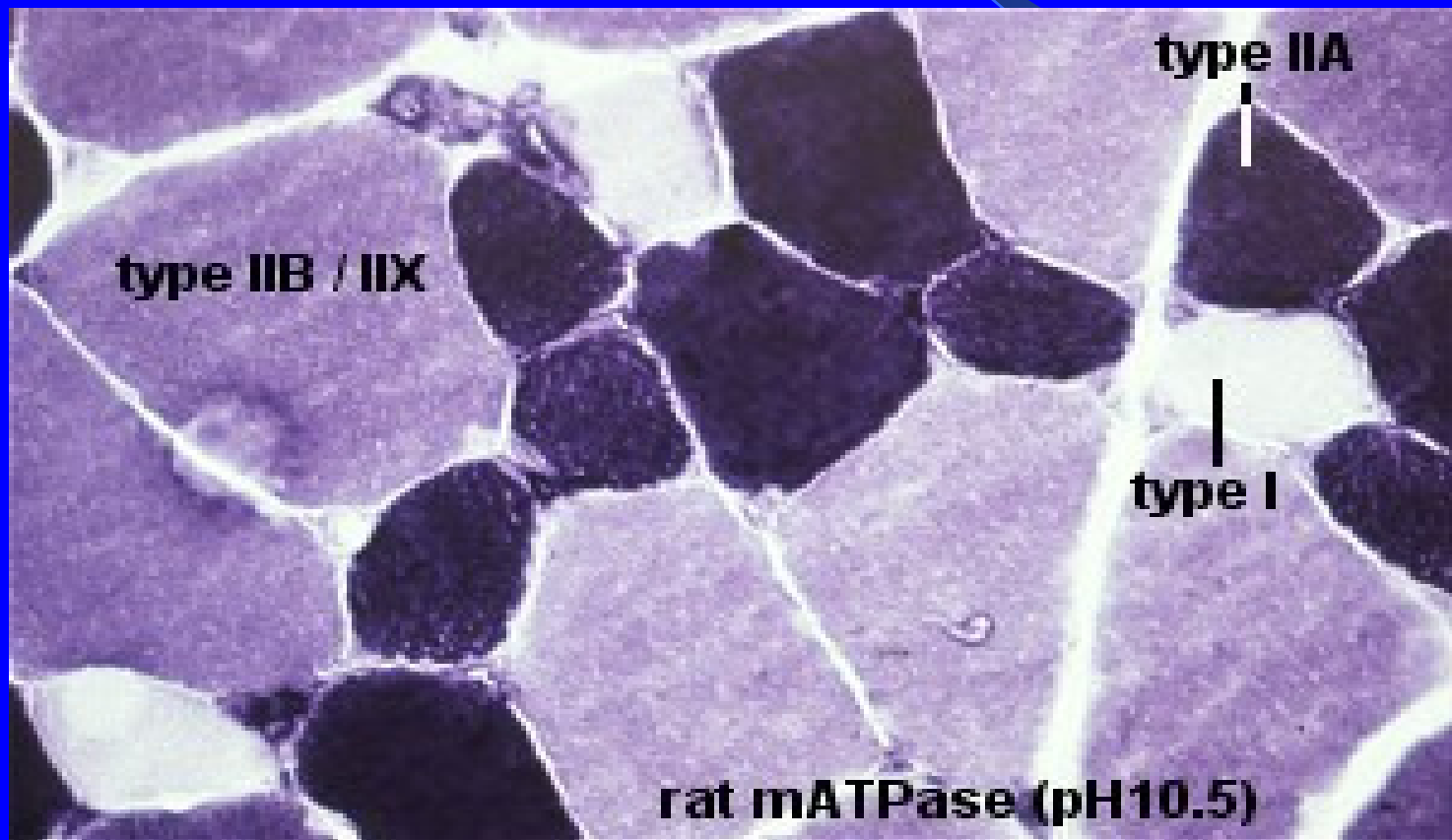


— myosin — actin



Bands and lines in the contractile apparatus of skeletal muscle

Tipe serabut otot skelet

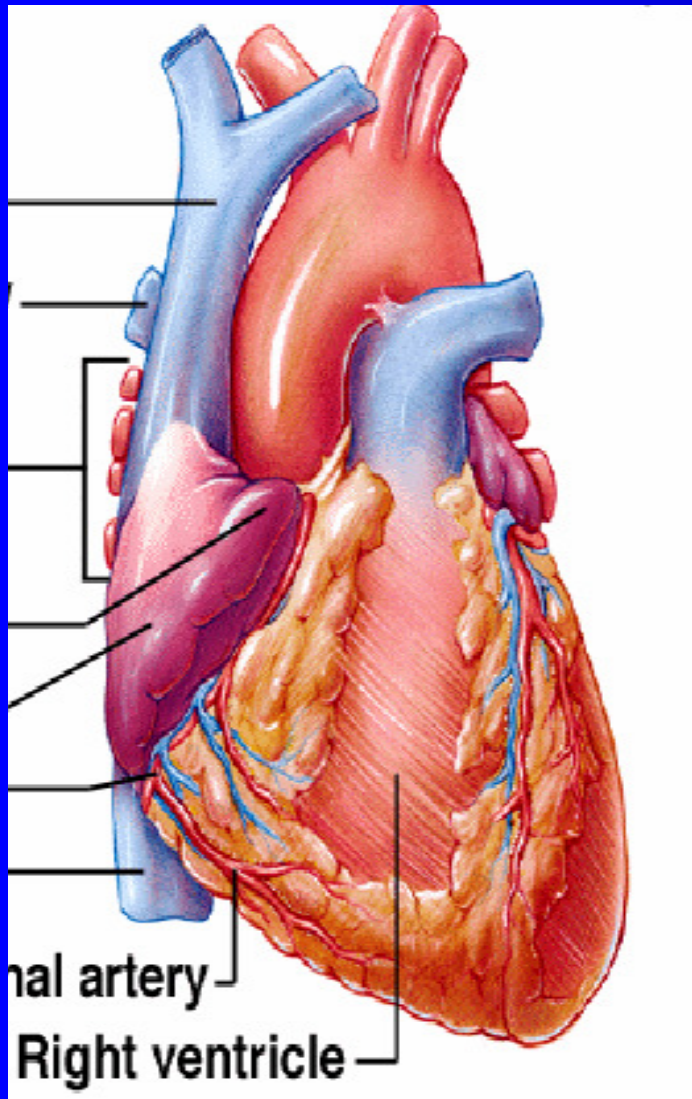


Otot Jantung

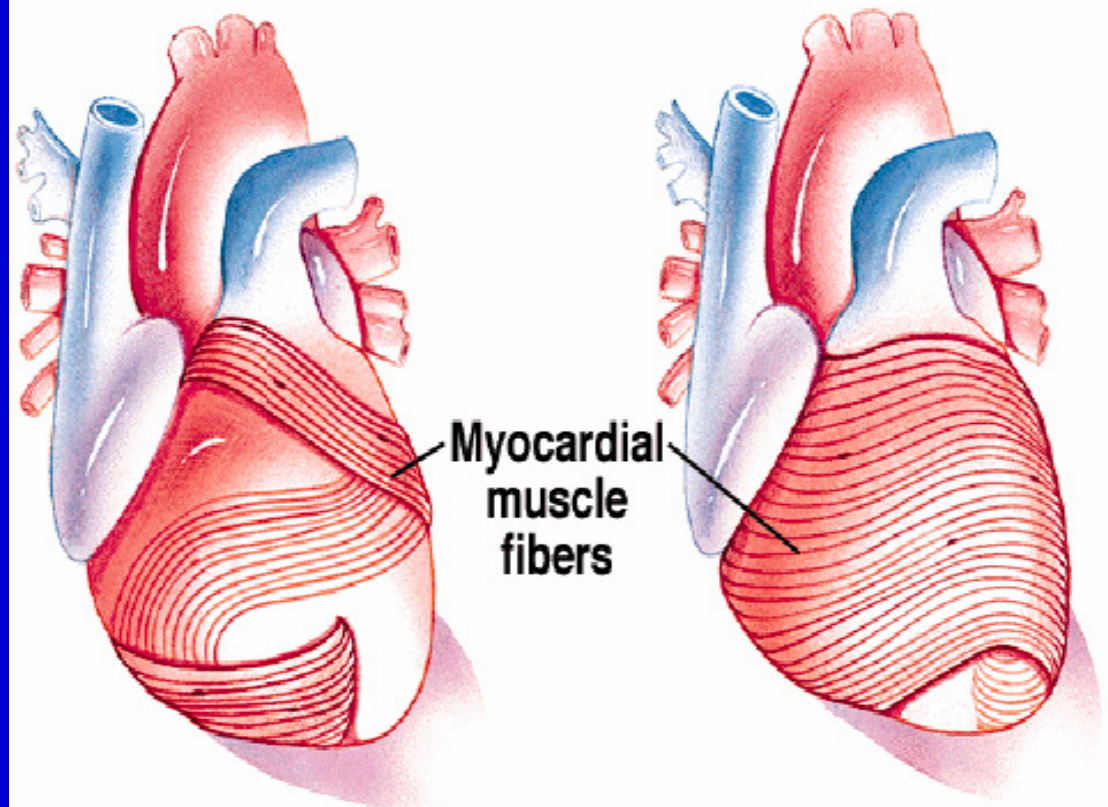
- Sel-sel berbentuk silinder, saling berhubungan dg hubungan khusus → discus intercalatus
- Sitoplasma mirip otot rangka
- Nukleus terlihat jelas, di pusat sel

Jantung

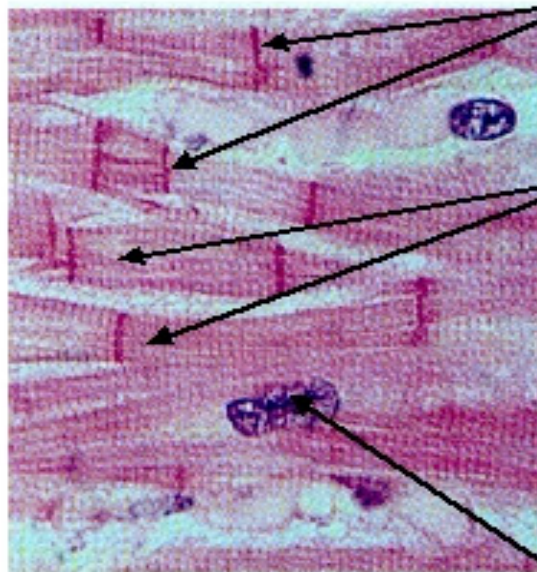
Shier/Butler/Lewis, *Hole's Human Anatomy and Physiology*, 8th edition, Copyright © 1999, The McGraw-Hill Companies, Inc. All rights reserved.



Ventricular Wall Muscle Fibers



Cardiac Muscle Characteristics



Intercalated disks

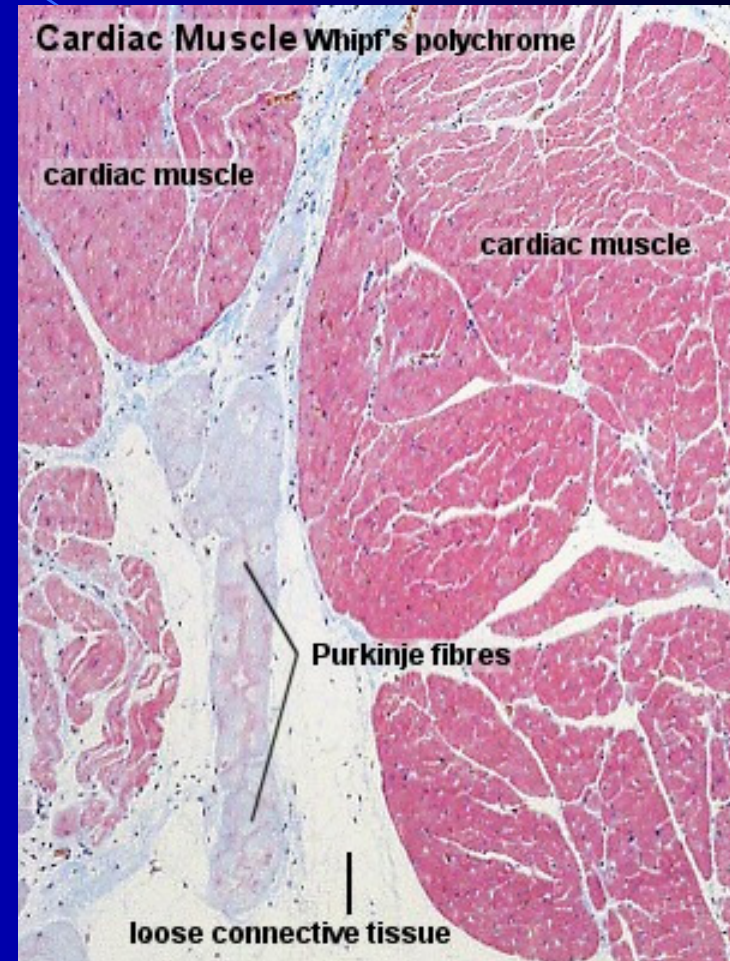
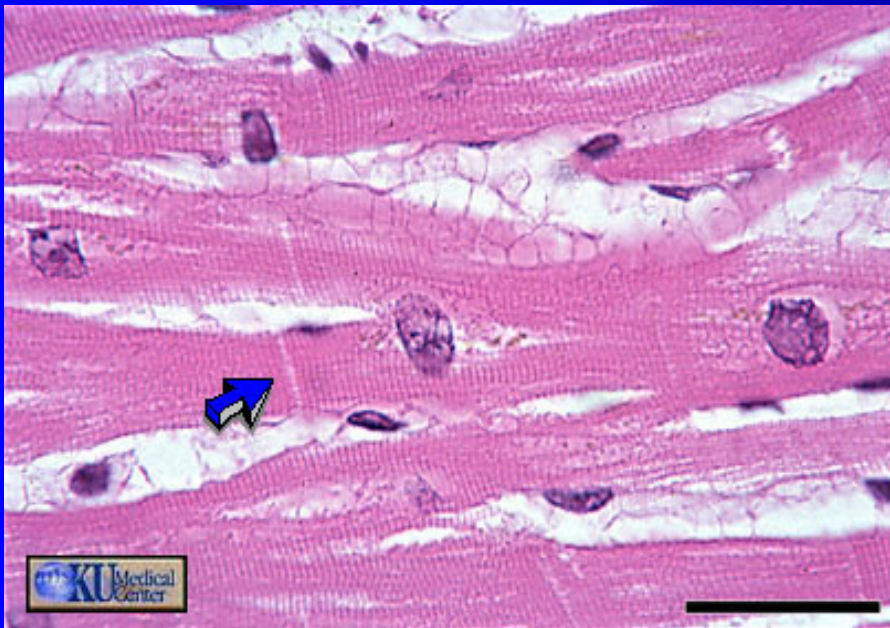
Cardiac muscle cells are faintly striated, branching cells, which connect by means of intercalated disks to form a functional network. The action potential travels through all cells connected together in the syncytium causing them to function as a unit.



nucleus

Cardiac myocytes are branched, mono-nucleated cells

OTOT JANTUNG

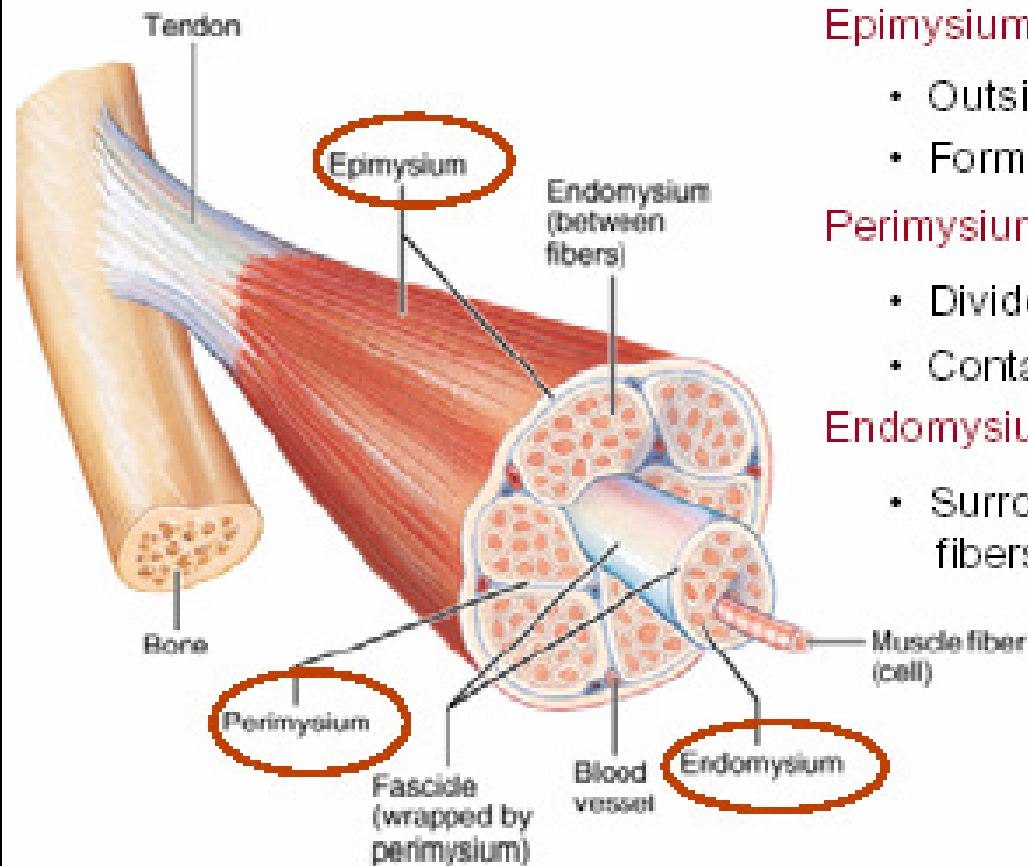


Selubung Otot

- Merupakan serabut penyusun otot, terakit menjadi berkas-berkas yg rapi
- Yg disebut muskulus (makroanatomi): gabungan berkas otot yg dibungkus oleh jaringan kolagen padat.

Gross Anatomy of Muscle:

Connective Tissue Layers:



Epimysium:

- Outside muscle covering
- Form tendons

Perimysium:

- Divides muscle into fascicles
- Contains blood vessels/nerves

Compartments



Endomysium:

- Surrounds individual muscle fibers & ties them together

Jenis Selubung Otot

- **Epimysium:** bungkus yg terletak di luar muskulus. Pd makroanatomi: fascia profunda.
- **Perimysium:** percabangan epimysium, merupakan sekat yg membungkus kesatuan otot yg lebih kecil. Pd makroanatomi: fascia muscularis
- **Endomysium:** percabangan perimysium, menyelubungi berkas otot yg lebih kecil. Dikenal dg: myofibra (disusun oleh sinsitium sel otot)

Neuromuscular junction

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