



Muscular Tissue

What are the main functions of muscular tissue?

- ❖ Movement
- ❖ Maintenance of posture
- ❖ Joint stabilization
- ❖ Heat generation

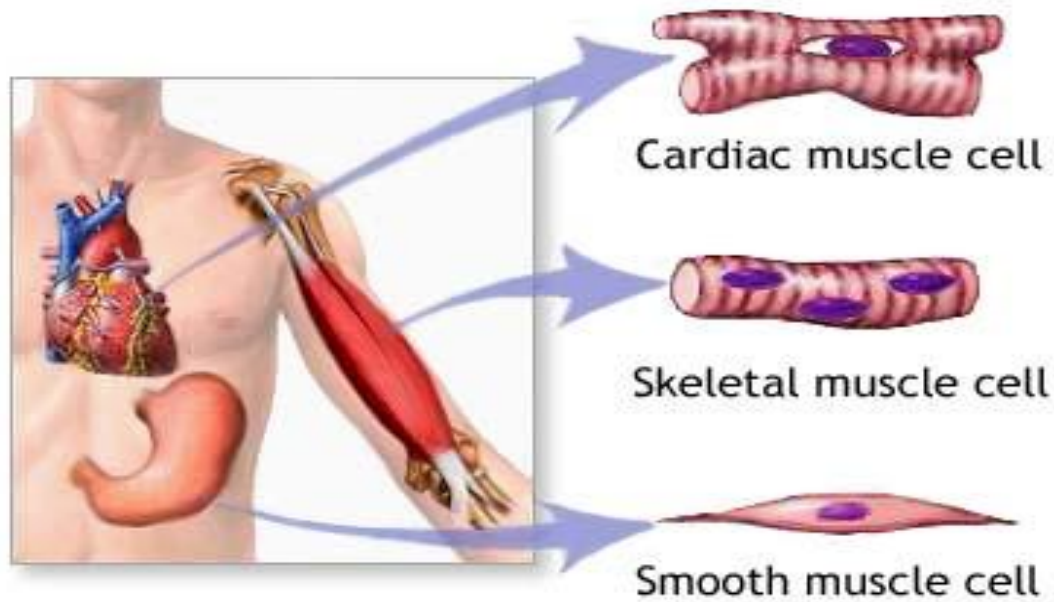
What are the four functional features of muscle tissue?

- ❖ Contractility
- ❖ Extensibility
- ❖ Elasticity

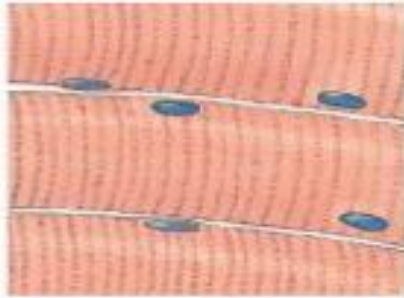
What are the three types of muscle tissue?

- 1) Skeletal Muscle Tissue
- 2) Cardiac Muscle Tissue
- 3) Smooth Muscle Tissue

Three Types of Muscles



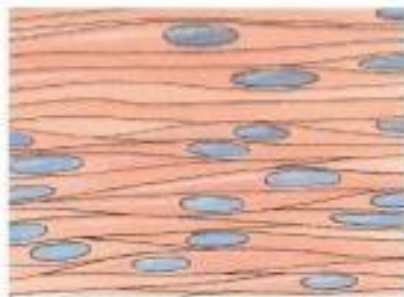
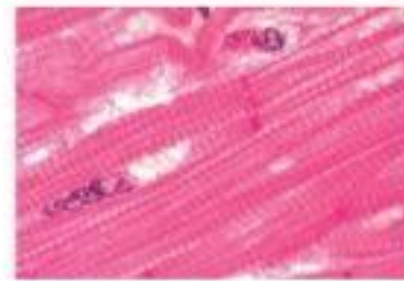
Muscle Tissue Types



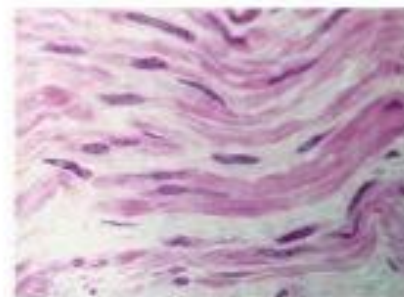
Skeletal



Cardiac



Smooth

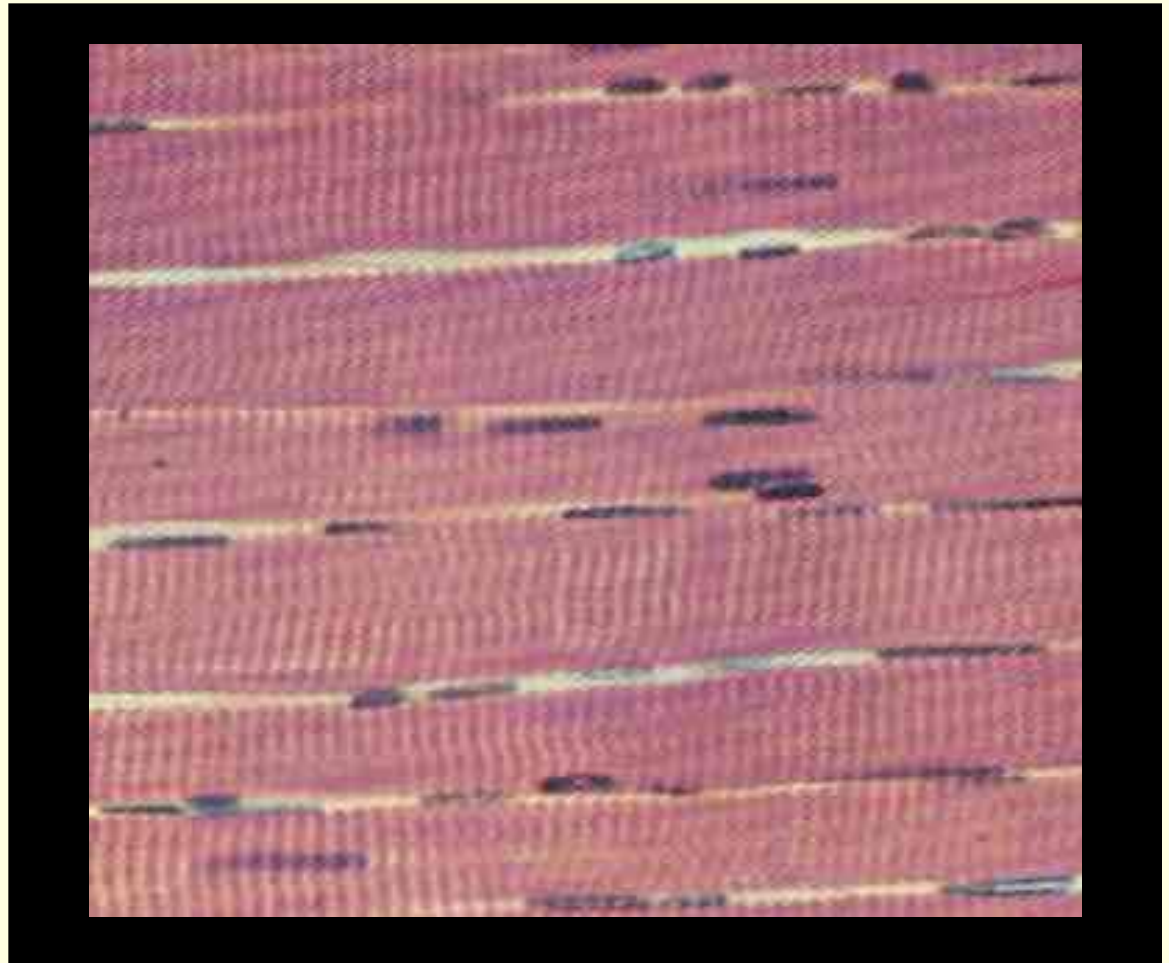


Muscle Comparison Chart

Muscle Tissue	Cell Shape	Striae	Nucleus	Control	Special structures
Skeletal	Cylindrical	Yes	Multi-nucleate & peripheral	Voluntary	none
Cardiac	Cylindrical & branched	Yes	Uninucleate & central	Involuntary	Intercalated discs
Smooth	Fusiform	No	Uninucleate & central	Involuntary	May be single-unit or multi-unit

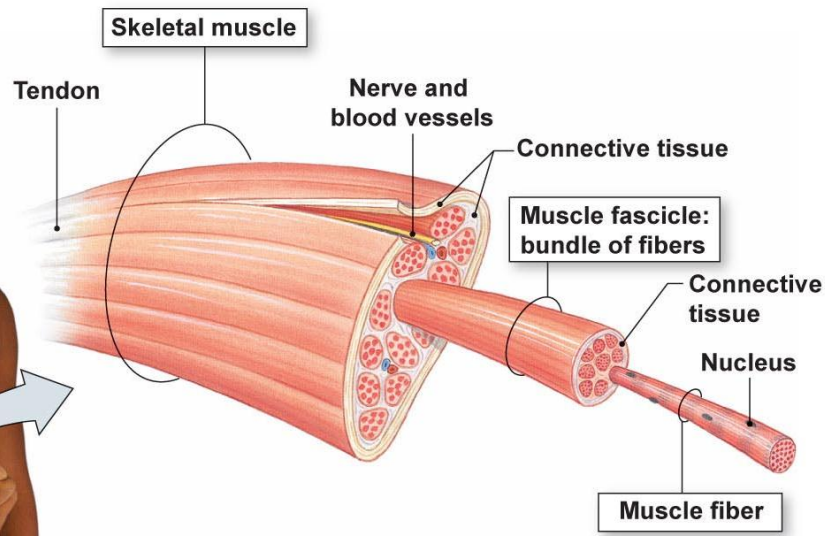
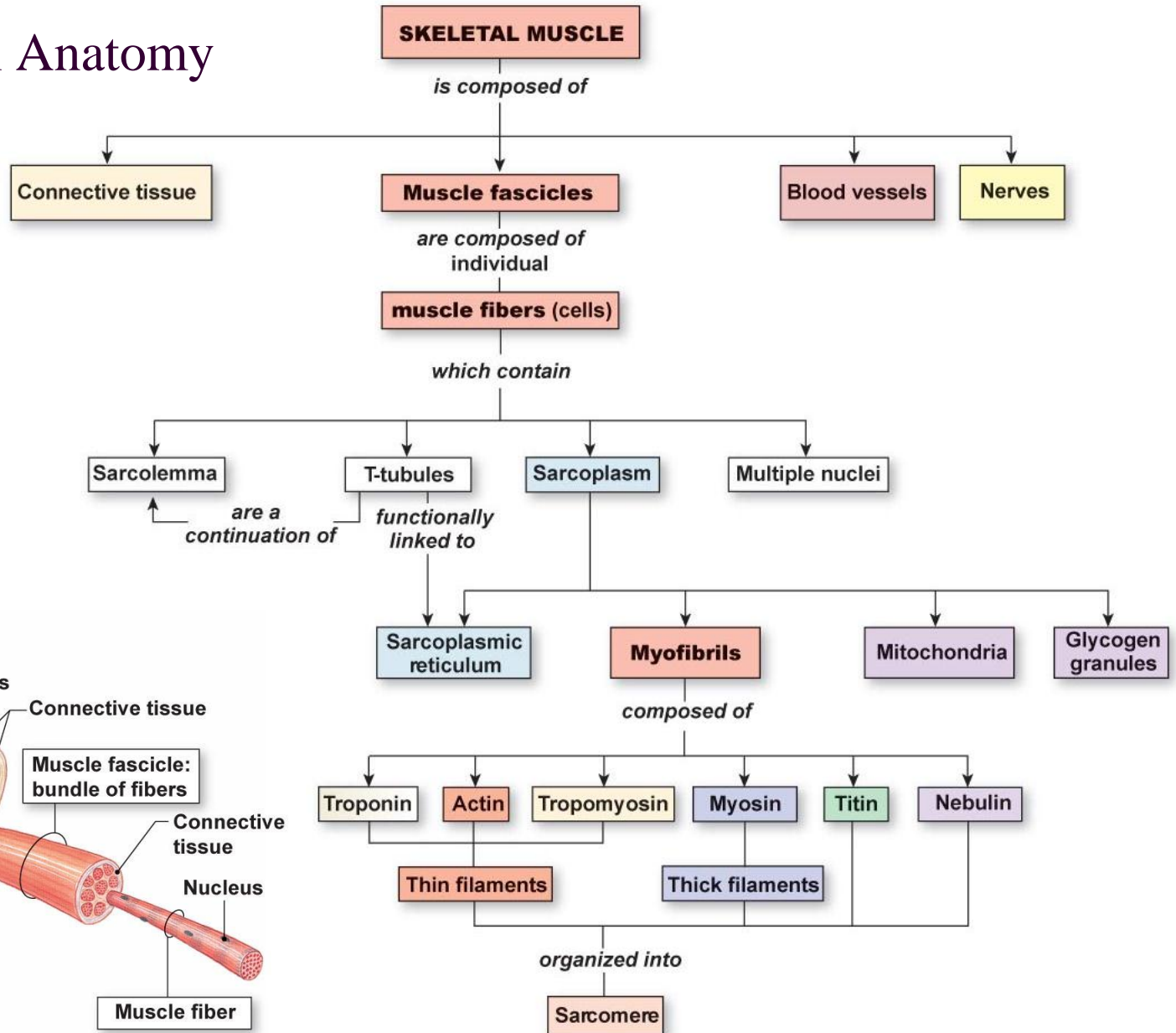
What muscle tissue is this?

Skeletal Muscle



Skeletal Muscle

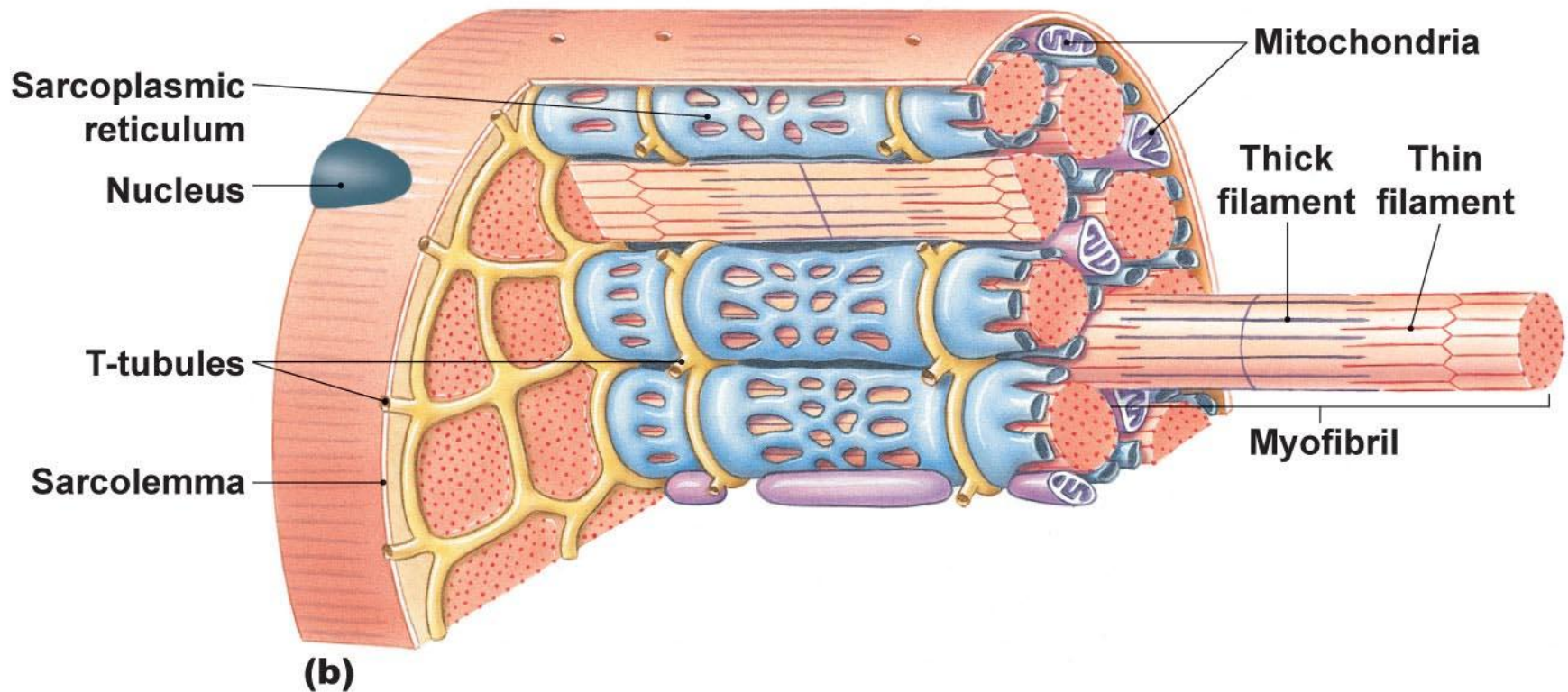
Functional Anatomy



Skeletal Muscle

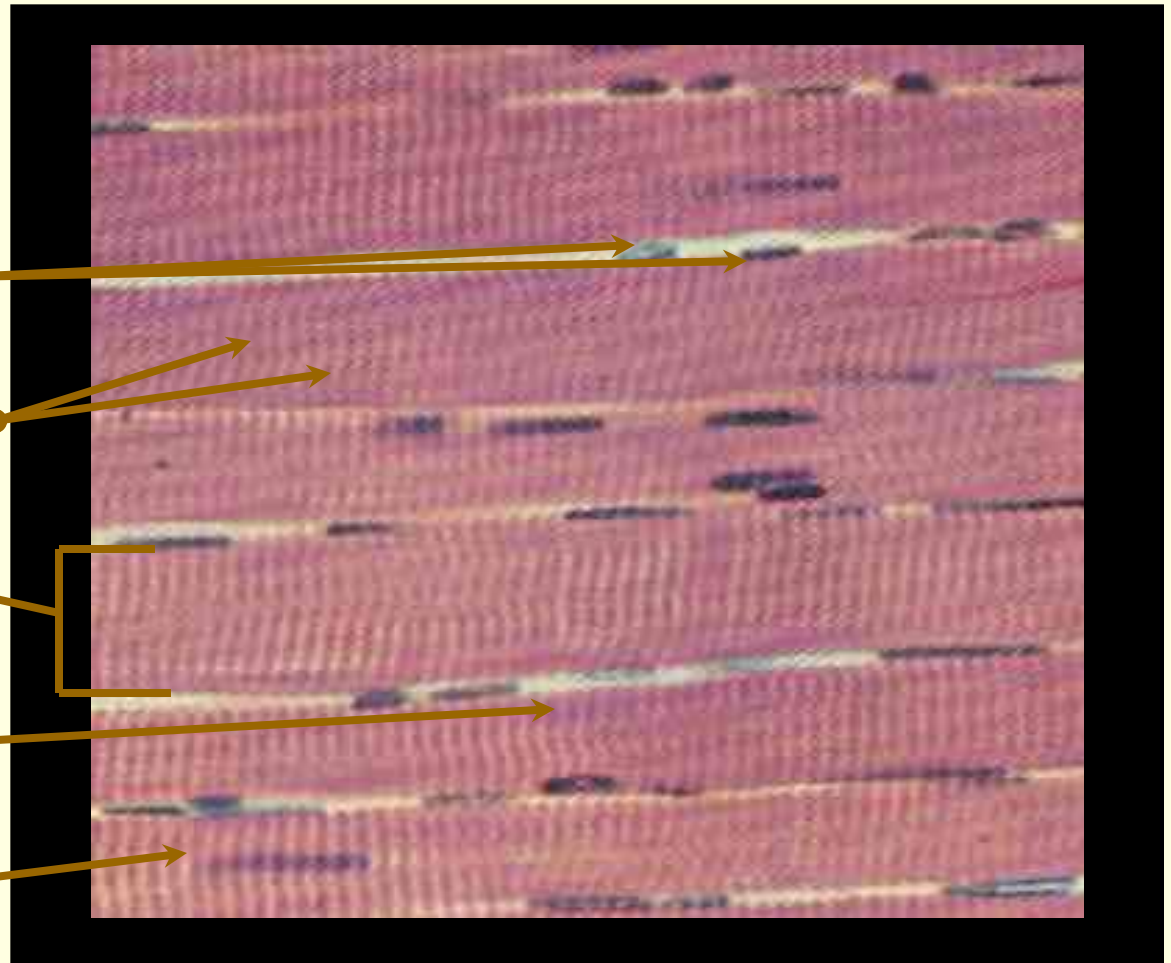
Functional Anatomy

ULTRASTRUCTURE OF MUSCLE



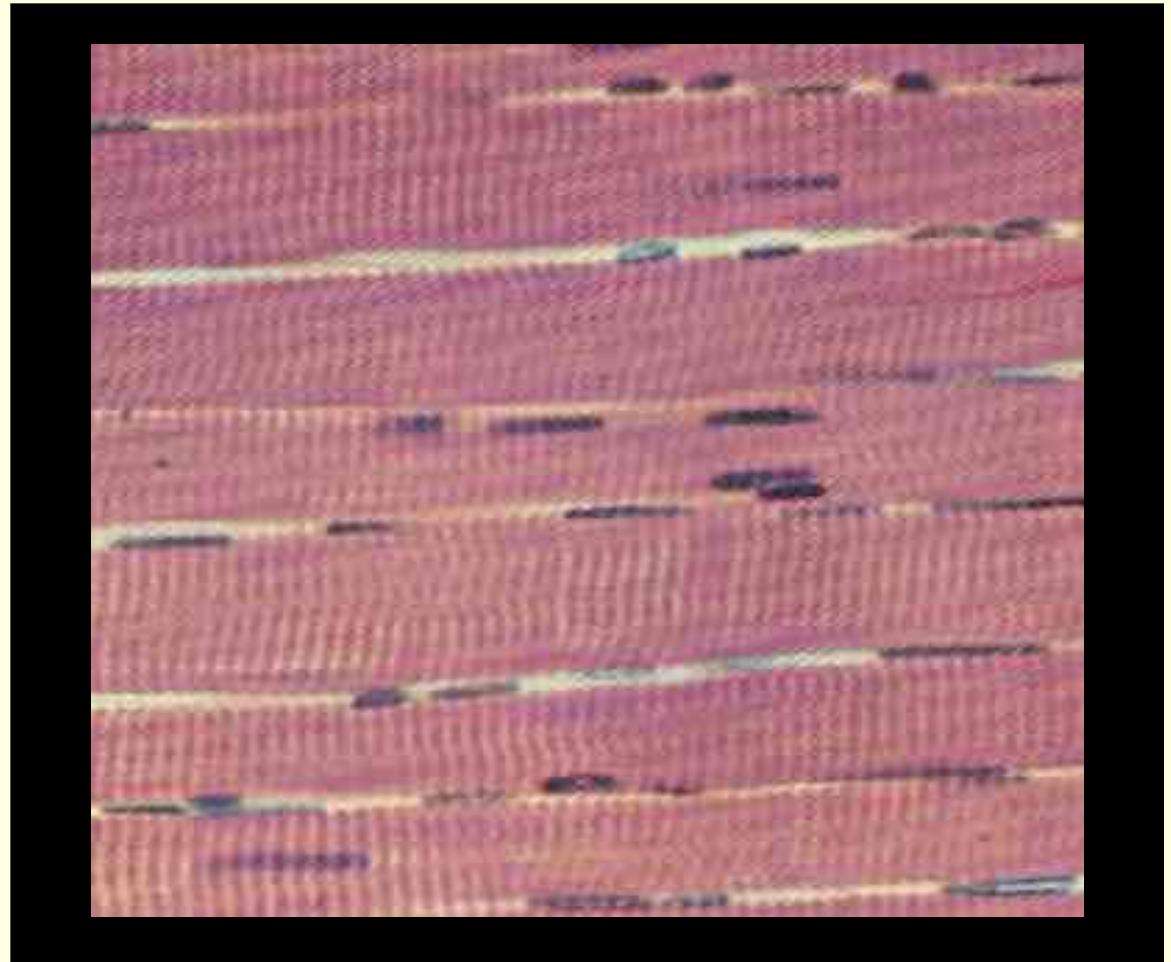
What are 6 features of this tissue?

- Long, cylindrical cells
- Multinucleated
- Obvious striations
- Muscle fiber
- A band (myosin)
- I band (actin)



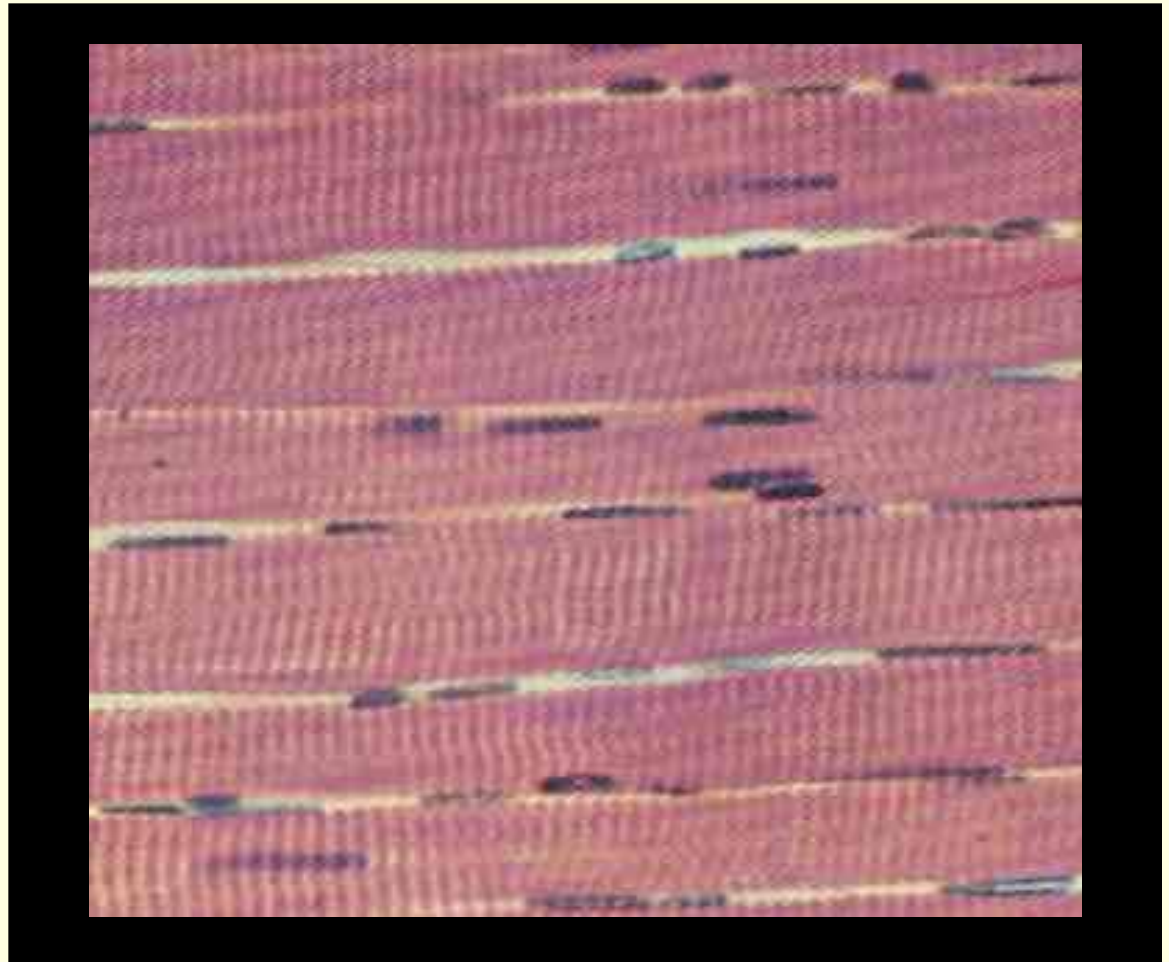
What are its three main functions?

- 1) Voluntary movement
- 2) Locomotion
- 3) Voluntary control



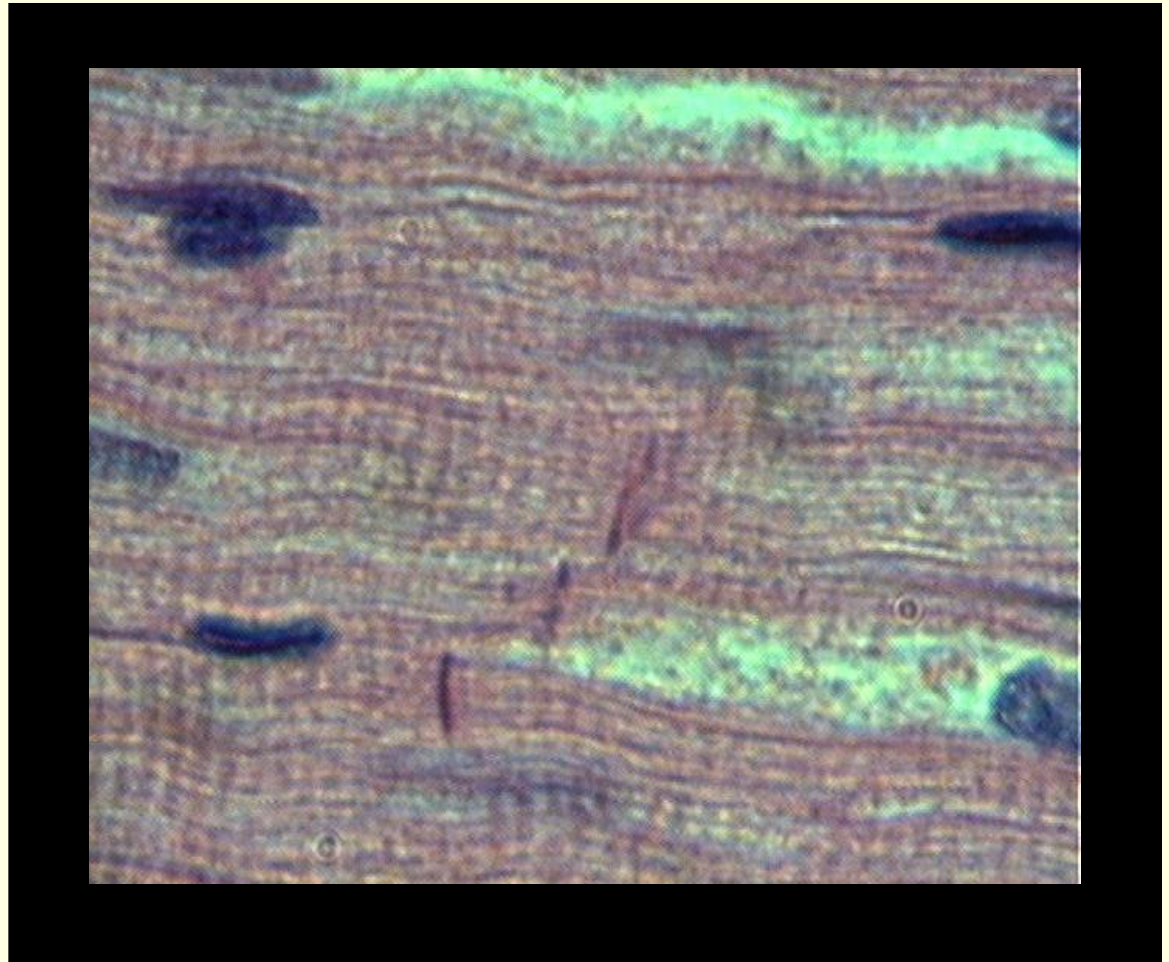
Where is this tissue located?

- Muscles attached to bone
- Occasionally muscle attached to skin



What muscle tissue is this?

Cardiac Muscle



Heart muscle structure

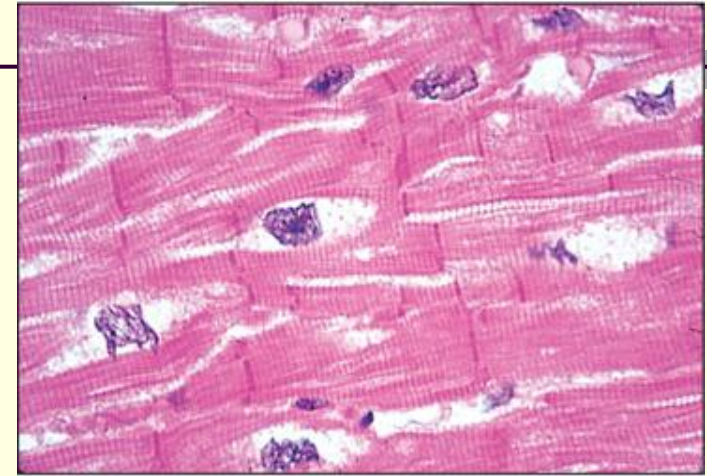
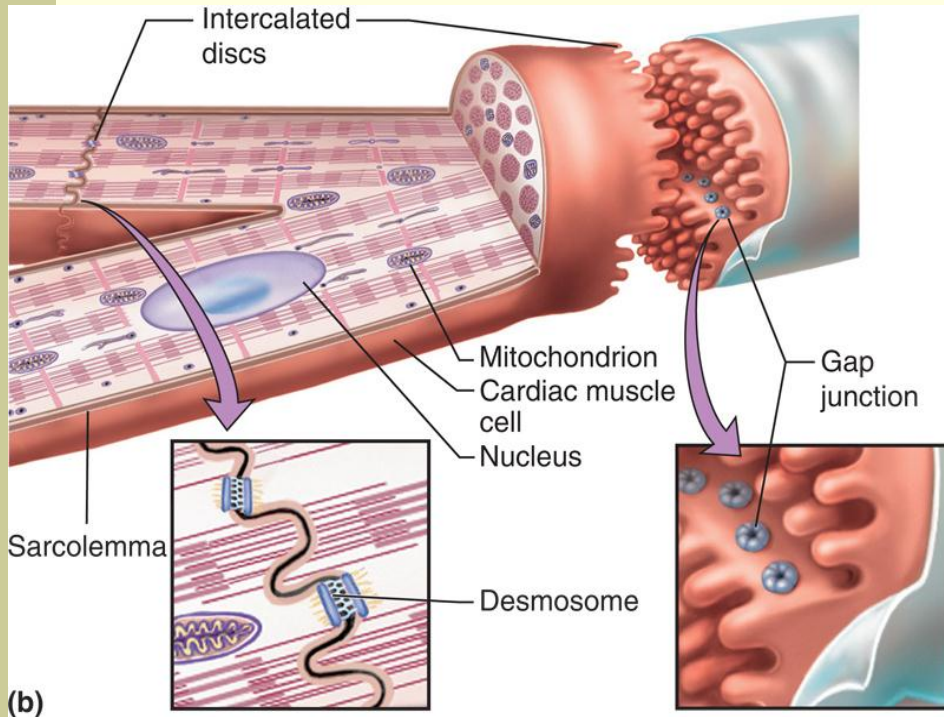
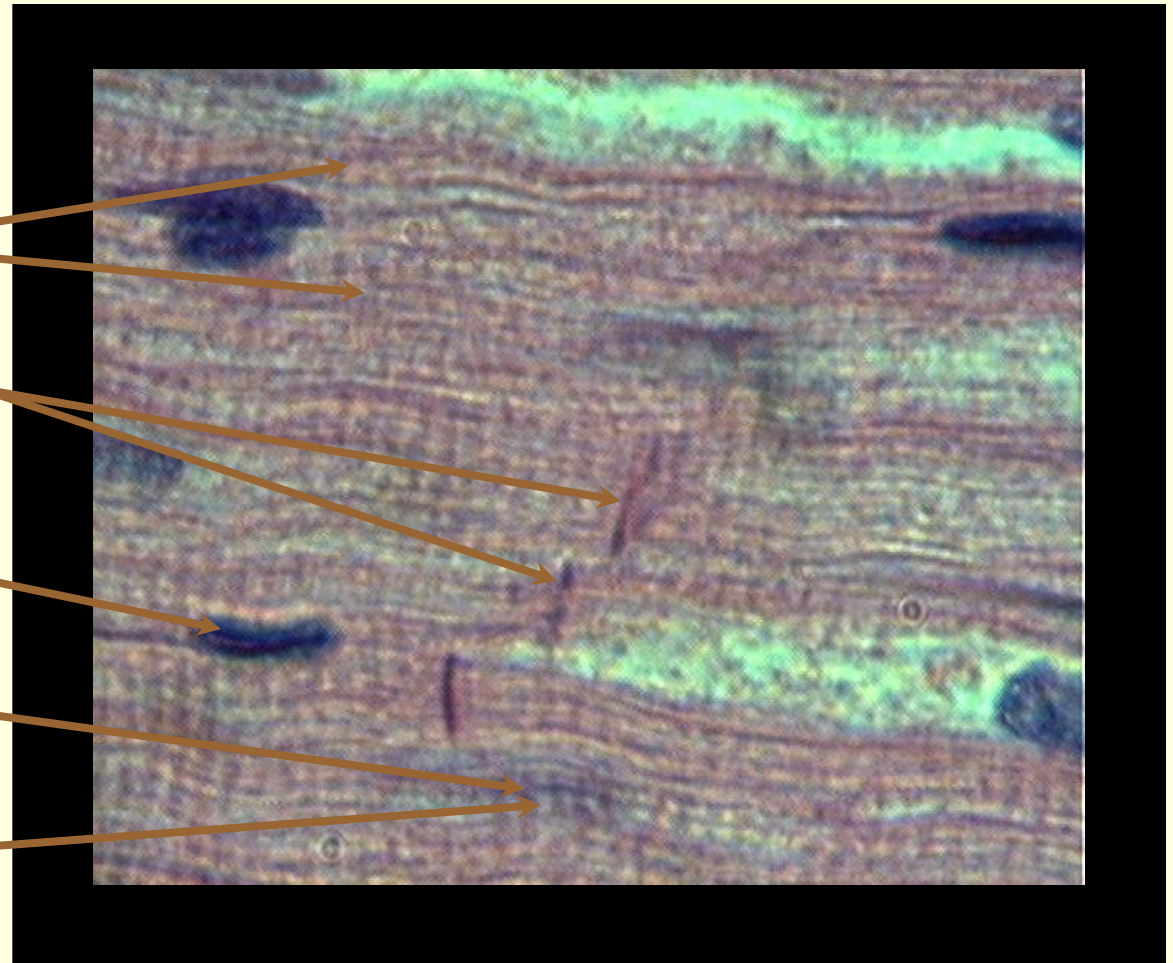


fig 12-9

striated, branched cells, 1 nucleus/cell, connected by intercalated discs
spontaneous contraction, regulated by autonomic NS, hormones
blood flow regulated by active hyperemia

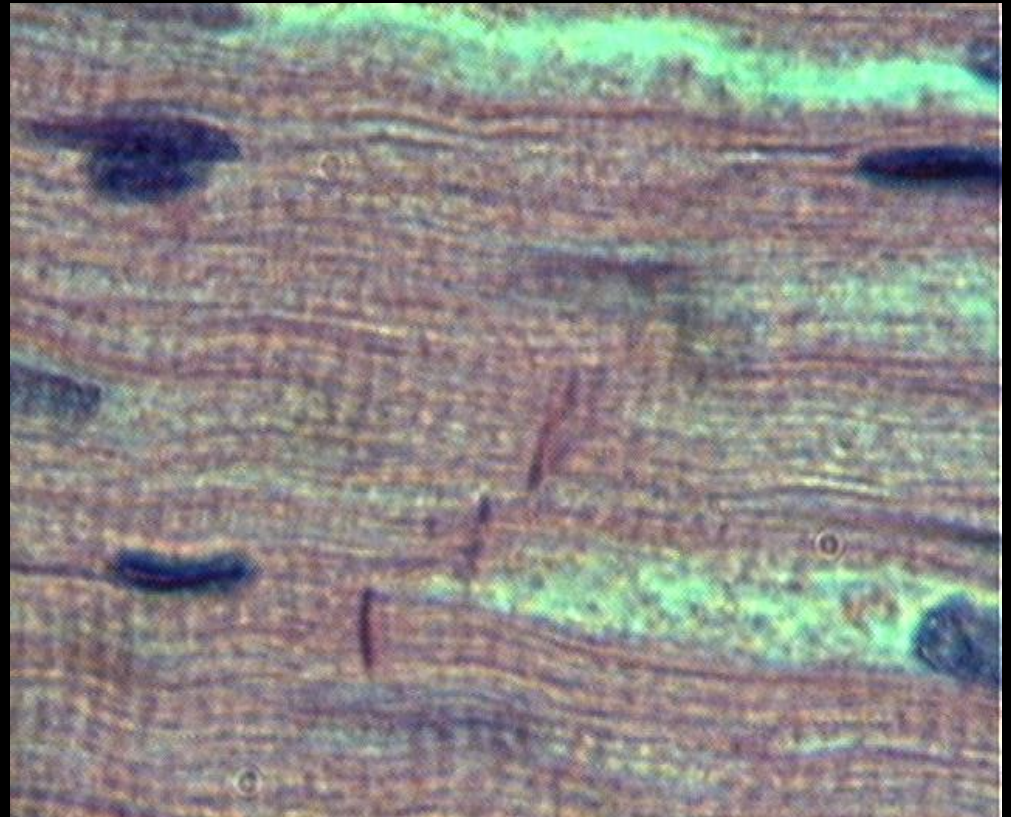
What are 6 features of this tissue?

- Branching
- Striated
- Intercalated disks
- Nucleus
- A band (myosin)
- I band (actin)



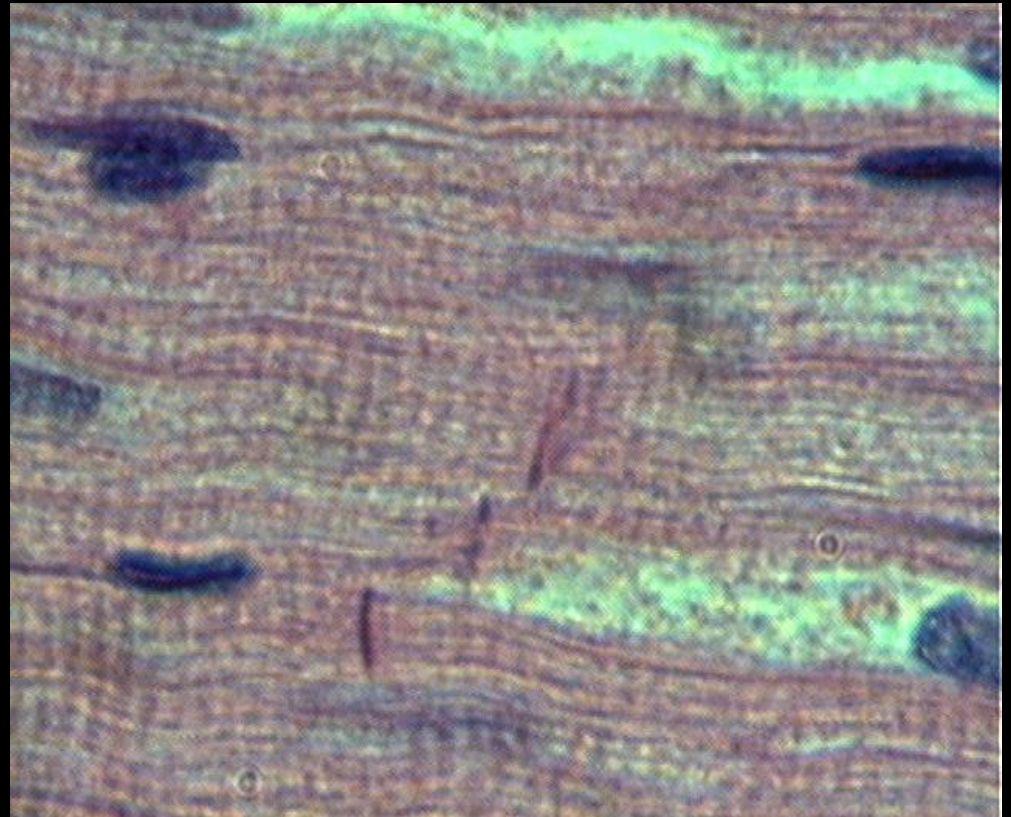
What is its main function?

Involuntarily
propels blood
to and from
heart



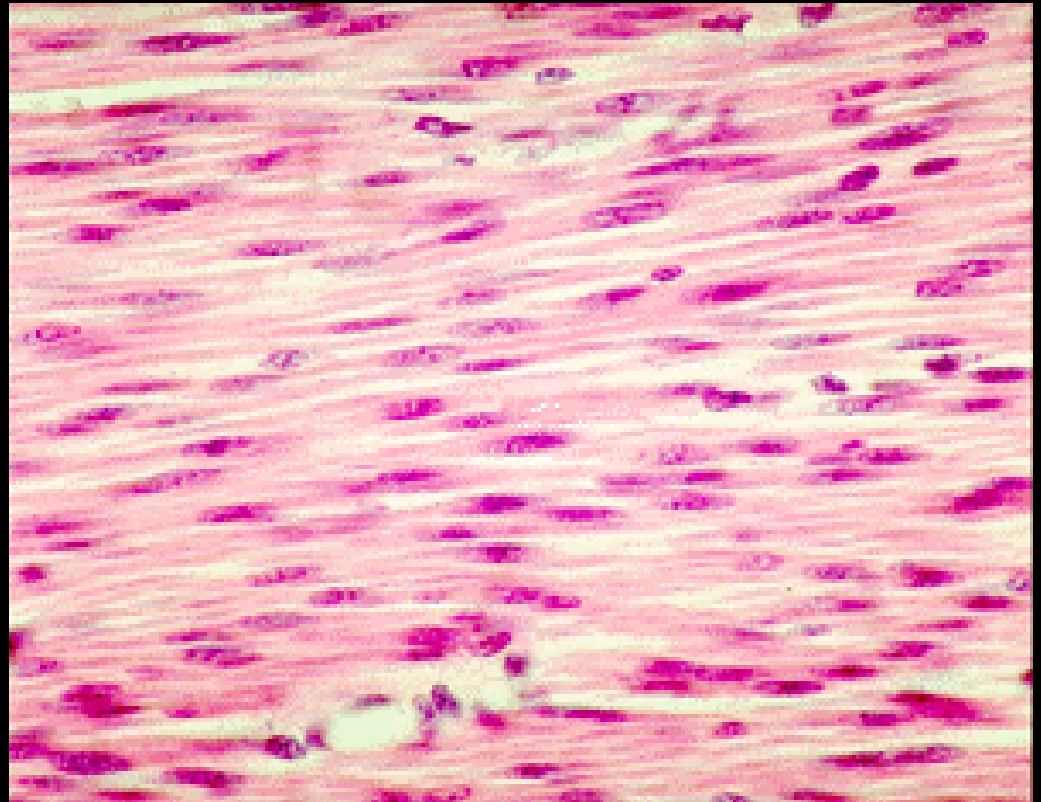
Where is this tissue located?

Within the walls
of the heart



What muscle tissue is this?

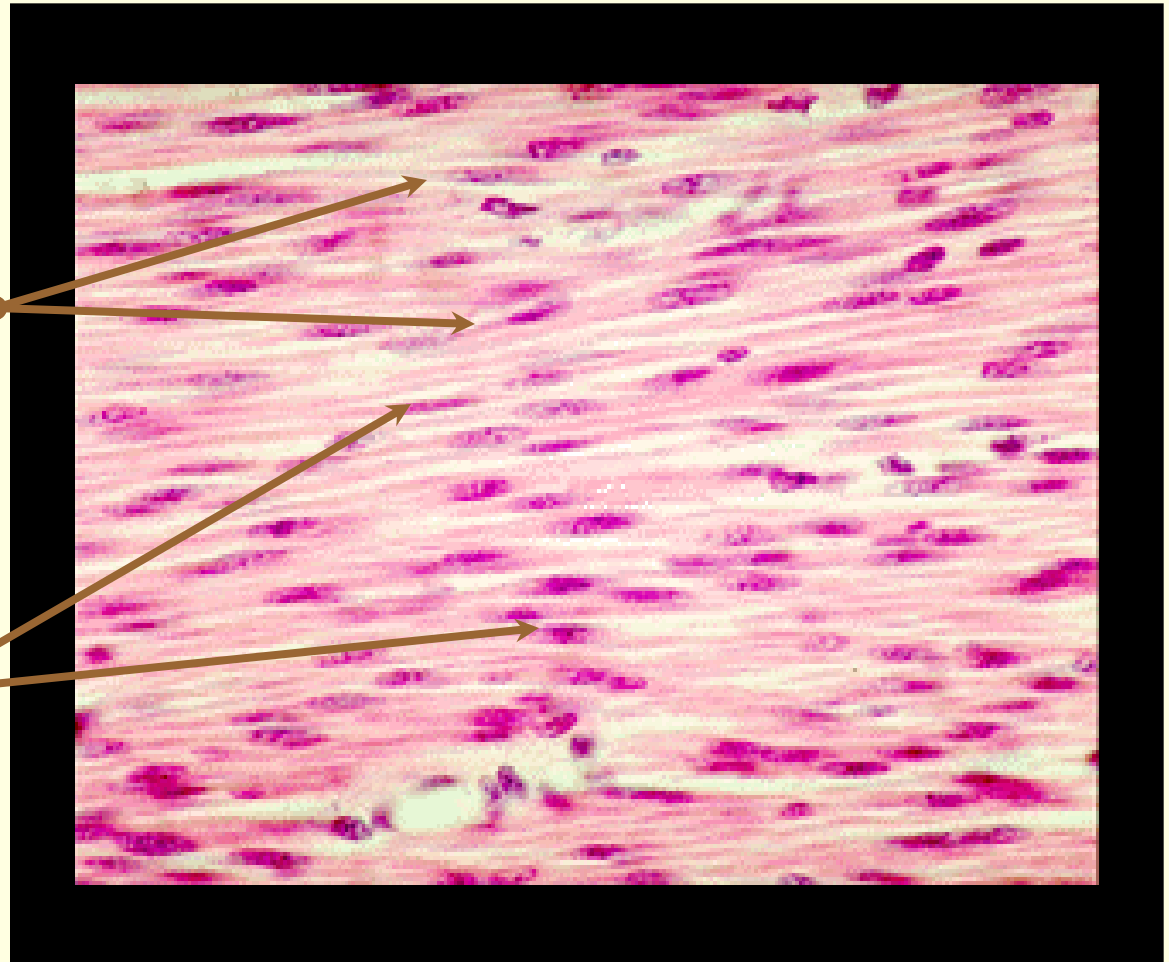
Smooth Muscle



What are 2 main features of this tissue?

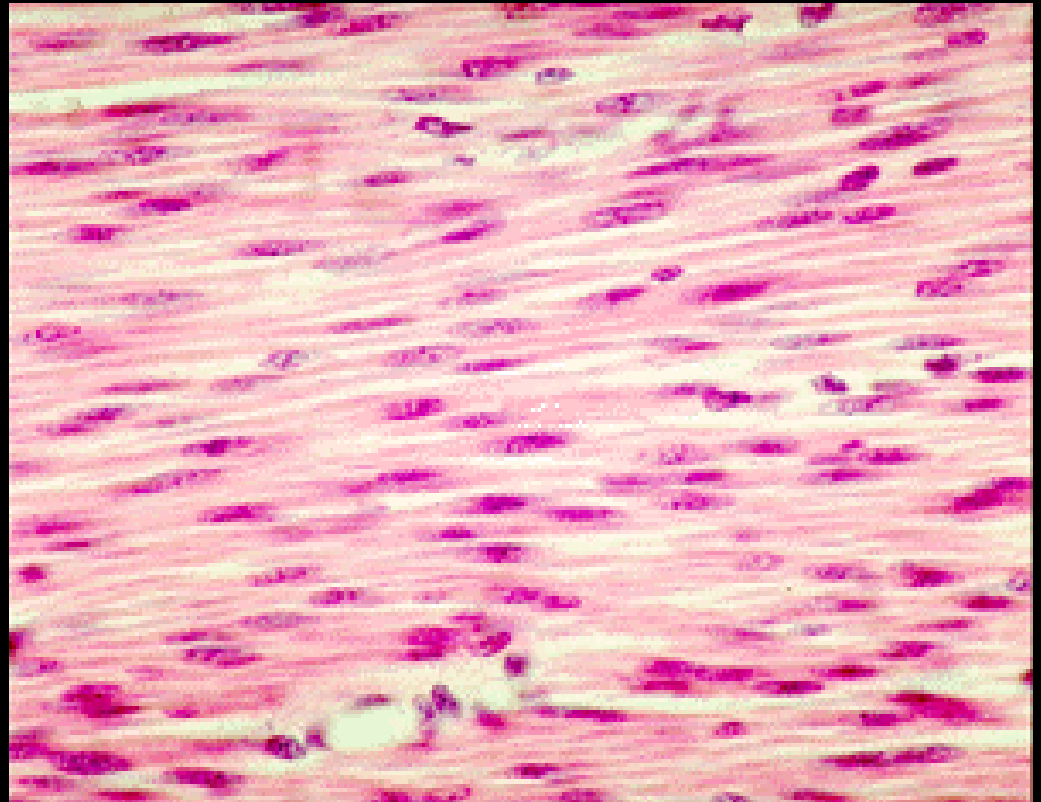
Spindle shape cells

Central nuclei



Where is this tissue located?

- Walls of hollow organs
- Walls of blood vessels



What is its main function?

Involuntary
peristaltic
movement

