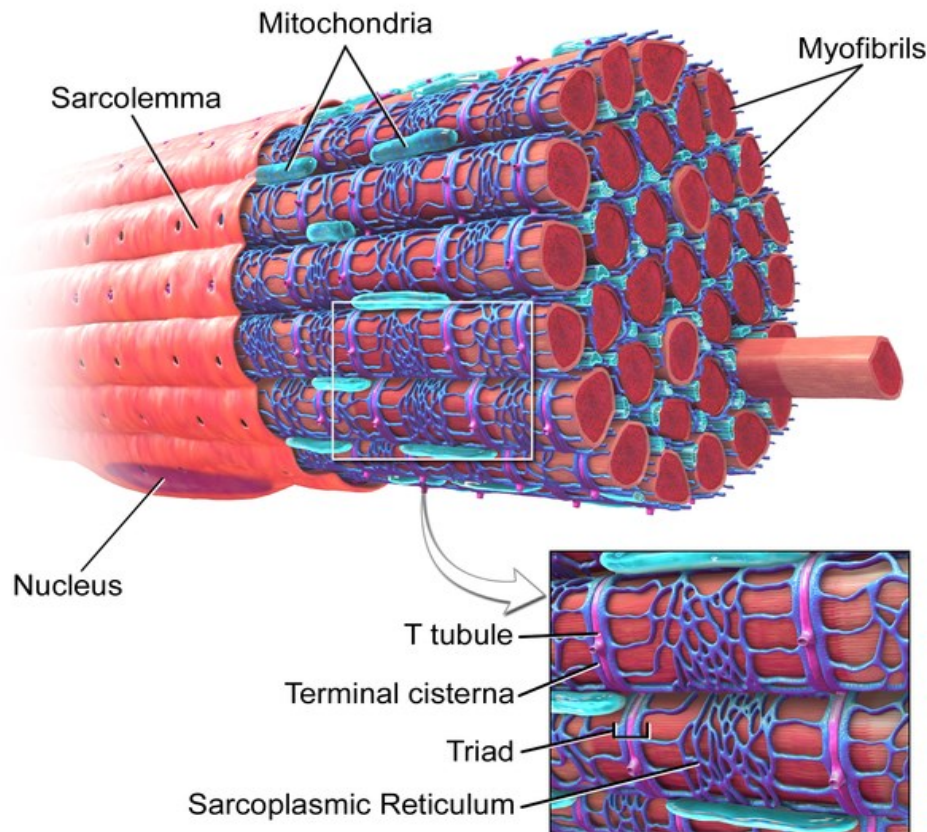


Muscle Contraction 1

- Muscle structure
- Actin and myosin filaments
- Sliding filament theory



Muscle fibres and myofibrils



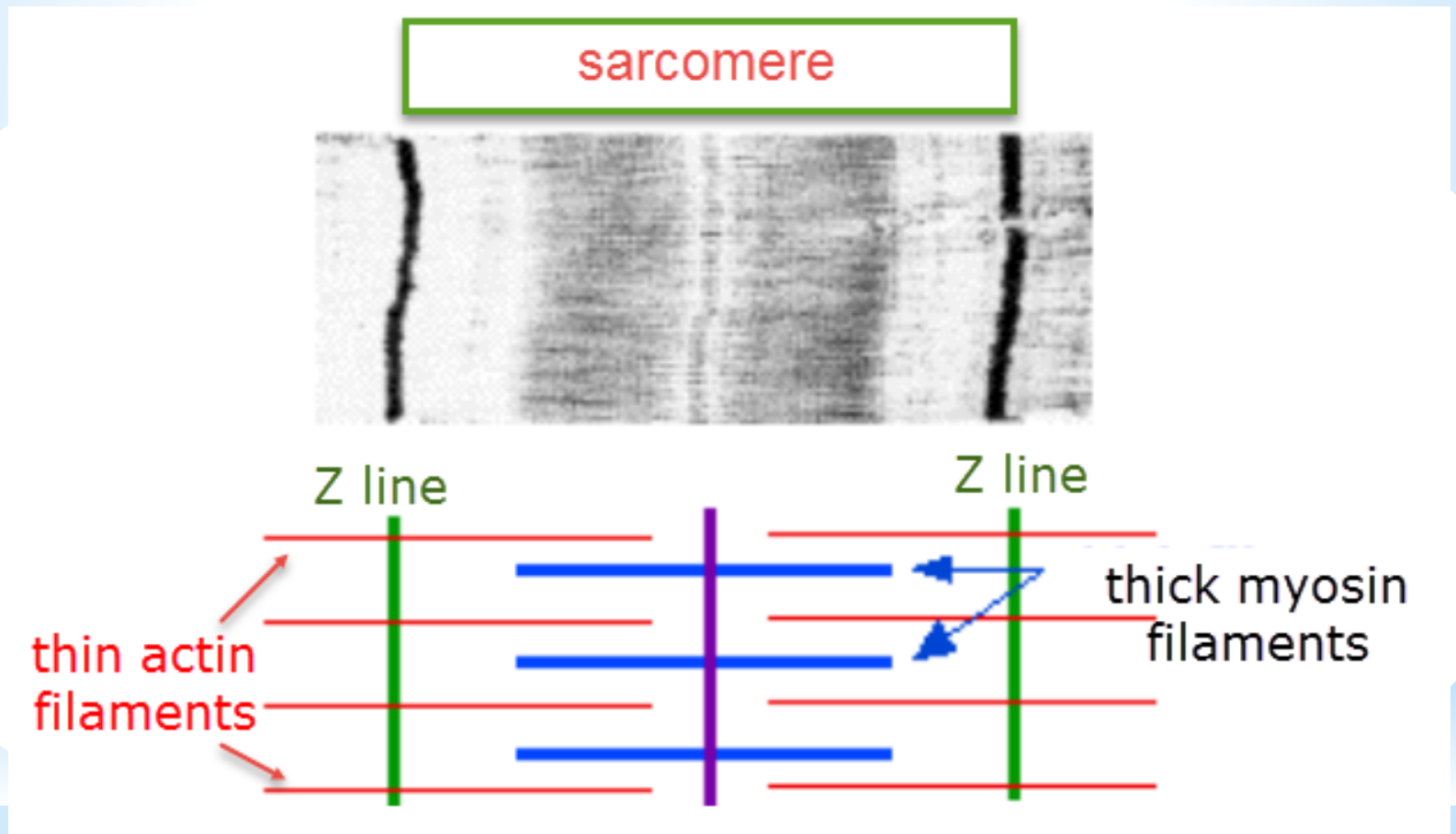
Skeletal muscle fibres are multinucleate

They contain specialized endoplasmic reticulum called “sarcoplasmic reticulum”.

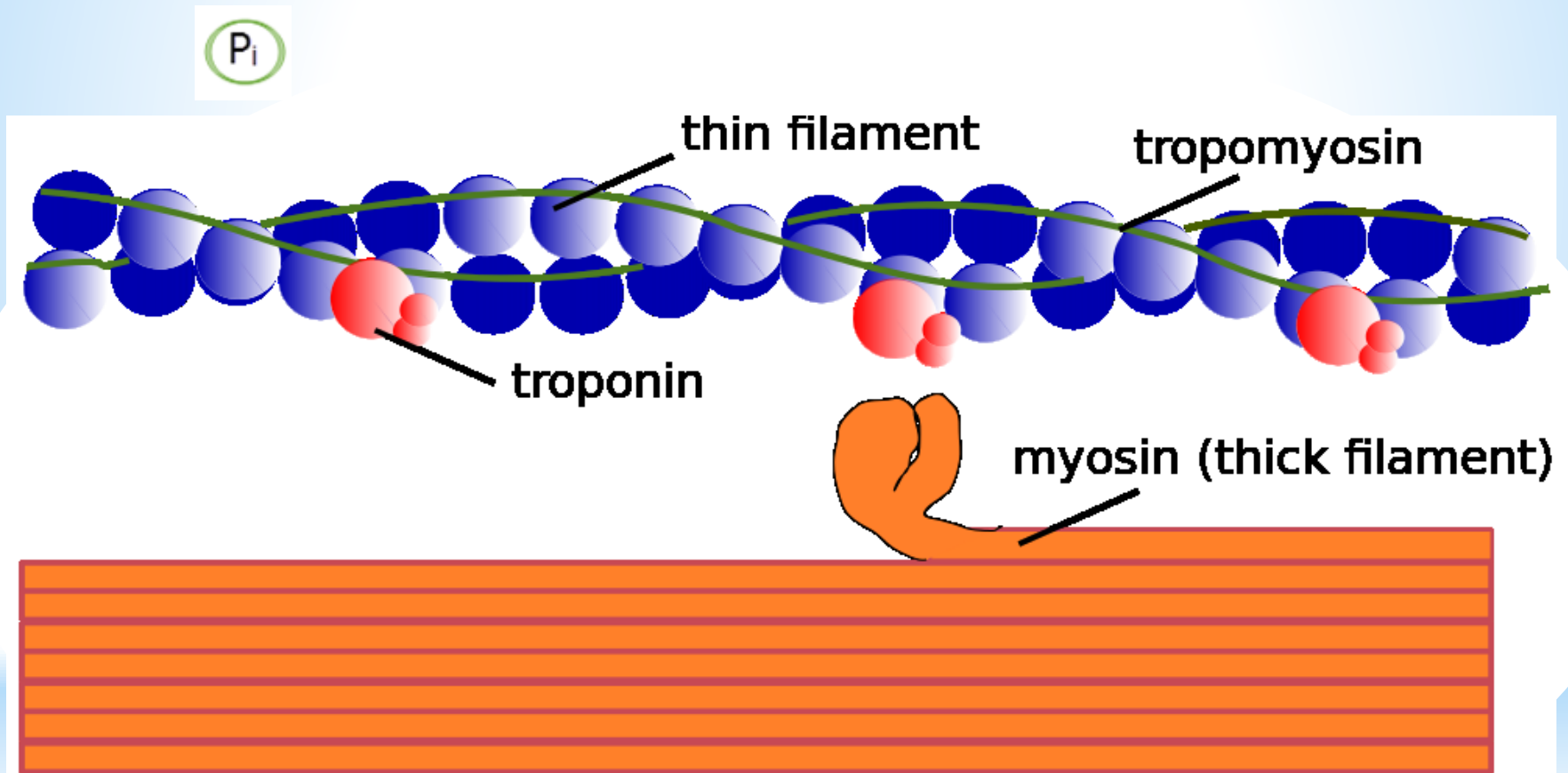
Muscle fibres contain many myofibrils.

Each myofibril is made up of contractile sarcomeres.

Sarcomeres contain thick myosin and thin actin filaments



Myosin and Actin filaments



The sliding filament theory of muscle contraction.

When a muscle contracts, the actin is pulled along myosin toward the centre of the sarcomere.

The actin and myosin filaments become completely overlapping.

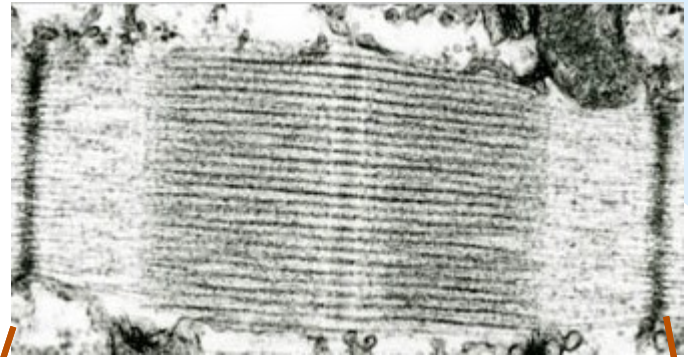
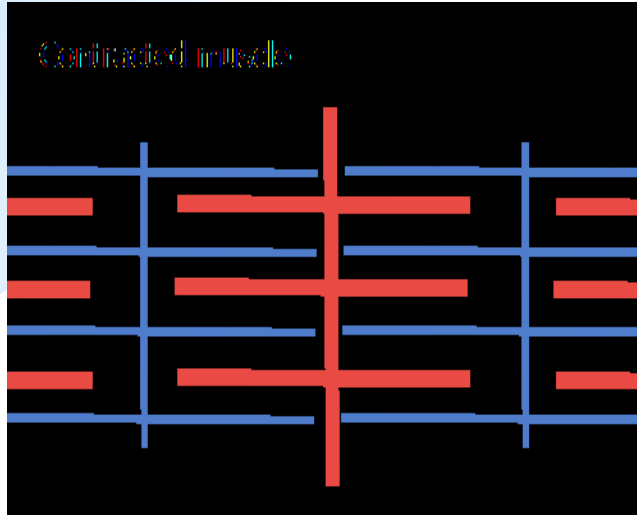
There is no pale area in the centre

The muscle shortens.

Note:

The actin & myosin filaments don't change length, they just slide past each other.

Sliding filament theory



Z line

Z line

