

very forceful activity
- even for every short time daily
(isometric exercise)



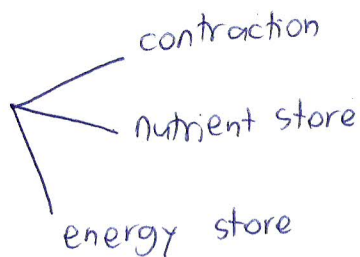
HYPERTROPHY

[↑ muscle fiber size]

≠ Hyperplasia



↑ power



muscle x used / used weakly

*clinically

- 1- Limb in cast → hinders muscle contraction
- 2- x used ≈ 1 month
- 3- Muscle denervation

↳ electrical stimulation



help fr atrophy

↳ re-innervation (3-4 month)



return normal



after this period

↓
degenerate

↓
convert into

fat fibrous tissue



ATROPHY

[diminished muscular size]

over worked / fatigued



depletion ATP



↓ Ca⁺⁺ reuptake by
sarcoplasmic reticulum



x muscle relaxation
(persist combination
actin + myosin)



MUSCLE CONTRACTURE
(CRAMP)

[sustained muscle contraction
that is not initiated by AP]

Prolonged / Forceful contraction

- ↳ ↓ energy producing substance (ATP etc...)
- ↳ accumulation lactic acid
- ↳ prolonged activity
- ↓
- ↳ ↓ transmission nerve signal in neuromuscular junction
- ↳ Interruption blood flow (1-2 min)
- ↓
- ↳ ↓ nutrient & O_2 supply



MUSCLE FATIGUE

[temporary decrease work capacity of skeletal muscle following prolonged or forceful contraction]

Injury / Destruction motor nerve

- ↳ Failure transmission at motor end plate (Myasthenia gravis)
- ↳ Cut motor nerve
- ↳ Lesion of motor nerve in ant. horn cell (Poliomyelitis)



MUSCLE DENERVATION

