Human Physiology – Muscle

Action potentials in nerve and muscle

In muscle

- Entire muscle neurone is involved.
- Skeletal and cardiac muscle is closer to -90mV (remember this is the refractory period in nerves!)
- Action potential lasts 1-5 msecs for skeletal muscle and 10-300 msec for cardiac and smooth muscle.
- Velocity over skeletal muscle fibre is 18 times slower then nerve.

In nerve

- only axon is involved
- resting potential for nerve is -70mV
- impulse lasts for ½ to 2 seconds.
- Nerve conduction velocity is 18 times faster than muscle.

Signal transmission in synapse

A synapse = functional junction between one neurone and the other neurone (or effector such as a muscle or gland). Remember an effector does the effect.

2 types of synapses:

1. Electrical
   - Ionic current spreads to the next cell through gap junctions
   - It's a 2 way transmitter, its faster and capable of synchronising groups of neurones.

2. chemical
   - one way info transfer from a pre synaptic neurone to a post synaptic neurone.

Key words

Axodenritic – axon to a dendrite (we covered this earlier on)
Axosomatic – axon to a cell body
Axoaxonic – axon to another axon