

## muscle physiology lecture 17

### nociceptor depolarization

nociceptor pain can be categorized. visceral somatic pain is further classified into two types as well, deep somatic and superficial pain. A $\alpha$  and C fibres are mostly located in superficial organs, like the skin for example deep somatic structures, like muscles and joints, have mainly C fibres.

hyperalgesia - an exaggeration of pain response.

allodynia - experiencing pain when you should not be.

peripheral vs. central sensitization.

periphery vs. dorsal horn - a lot of peripheral activation can alter synapses @ the dorsal horn. ex: substance P causes activation of central NMDA receptors, thus affecting chronicity of pain.

microtrauma - it is hard to pinpoint the cause because it's just a lot of tissue damage.

macrotrauma - damage a lot of tissue, vascular disruption

classifying injuries - acute, subacute, chronic, acute on chronic.

when you're injured, you bleed - blood vessels and lymphatic vessels start to leak, have to plug up otherwise you die. form a clot. need to clean after the clot forms. clinical signs of an inflammatory response are redness, pain, heat, and swelling. loss of function can also be observed. after the wound is cleaned, your body begins to lay down collagen. deposit a lot of scaffolding-like collagen III and then get collagen I with good structural integrity. then over time, that provisional matrix is replaced with non-injured tissue. injury  $\rightarrow$  bleed  $\rightarrow$  clot  $\rightarrow$  clean  $\rightarrow$  repair  $\rightarrow$  heal  $\rightarrow$  function/dysfunction

intentional clot - provisional matrix - weak - fibrin fibronectin clot.

fibrin - fibrous protein involved in blood clots. fibronectin - glycoprotein that binds.

when platelets are in a tissue, the pro-inflammatory cytokines release (ex: TNF- $\alpha$ ) to regulate the inflammation.

neutrophils migrate through the body via chemical gradients, called

chemotaxis. chemotaxis - direct travel based on chemicals. attractants & repellents.