Nerve Fiber Classification

Nerve Fiber Size and Function

	Erlanger-Gasser Classification	Numerical Classification		Diameter (μm)	Function
Myelinated	A-alpha	I	Velocity ↑	12-20	Proprioception, somatic motor
	A-beta	II		5-12	Sensory touch and pressure
	A-gamma			3-6	Motor to muscle spindles
	A-delta	III		2-5	Sensory touch, temperature & *fast pain*
	B			1-3	Preganglionic sympathetic
	C	IV		<1	Sensory touch, temperature & *slow pain*

Myelination		
Myelinated	Lightly-myelinated	Non-myelinated
A fibers	B fibers	C-fibers

- The myelin sheath around a nerve increases conduction velocity
- Myelin is formed by oligodendrocytes in the CNS
- Myelin is formed by Schwann cells in the PNS
- Myelin-sheath gaps along an axon are called Nodes of Ranvier

Nerve Fiber Stimulus	
A-beta	-Low-threshold mechanoreceptors
	-Pacinian corpuscles
A-delta	-Low-threshold mechanical & thermal
	-High-threshold mechanical & thermal
C	-High-threshold mechanical, thermal & chemical
	-Free nerve ending

- 75% of A-delta fibers and 25% of C fibers are *Pure* nociceptors
- A-delta nociceptor – localized, sharp, pricking pain
- C nociceptor – dull, poorly localized pain
- C polymodal receptors – make up 95% of all C fibers, respond to intense heat

