The Pacinian Corpuscle

Touch and Pressure Receptors

- Epidermis
- Dermis
- Free nerve endings
- Meissner's corpuscles
- Pacinian corpuscles
- Sensory nerve fibers

Pacinian Vibration Detector

- Vibration
- Tactile
- Discrimination
- Action potential
- Time

The Pacinian Corpuscle diagram:

- No compression
  - No deformation of nerve ending
  - No action potentials

- Compression of nerve ending
  - Action potentials

- Compression of nerve ending with no deformation
  - No action potentials

- Compression of nerve ending with deformation
  - Action potentials

- Membrane potential vs. Time
- Pressure vs. Membrane potential
Senses

vibration &

fluence

Senses

slow

pushing

Senses

prolonged

pressure

Senses
temperature &
pain

How Pain Works: Neuron Reactions

Heat Stimulus

Reaction Probe

Peripheral Nerve

How Pain Works

Pain

nociceptive pain

neuropathic

pain

psychic pain
Several factors, physiological and psychological, can influence pain perception:

**Age** — Brain circuitry generally degenerates with age, so older people have lower pain thresholds and have more problems dealing with pain.

**Gender** — Research shows that women have a higher sensitivity to pain than men do. This could be because of sex-linked traits and hormonal changes that might alter the pain perception system. Psychosocial factors could be at work, too — men are expected not to show or report their pain.

**Fatigue** — We often experience more pain when our body is stressed from lack of sleep.

**Memory** — How we have experienced pain in the past can influence neural responses (memory comes from the limbic system).