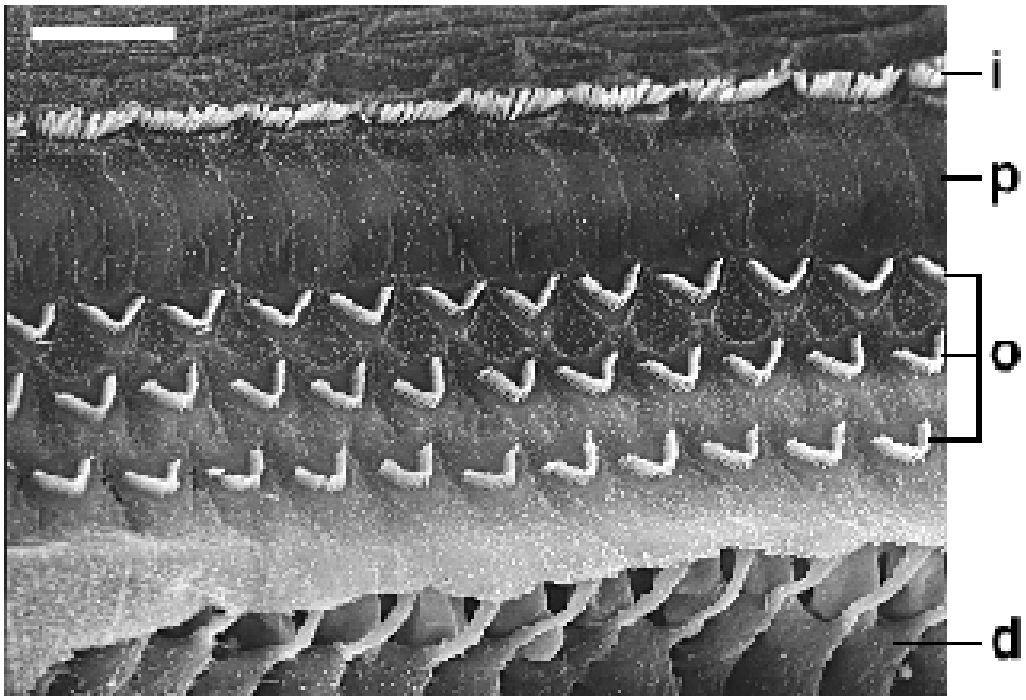
Inner and Outer Hair Cells in the Organ of Corti of the Human Ear:



Each hair cell has many hairs (stereocilia) that are bent/vibrated when the basilar membrane responds to sound waves in the perilymph fluid. The bending of the stereocilia stimulates the hair cells, which in turn excite neurons in the auditory nerve.

The neuron firing/impulse rate on the auditory nerve depends on both the sound intensity *I* <u>*and*</u> the frequency *f* of the sound – *e.g.* neurons do <u>*not*</u> fire on <u>*every*</u> oscillation cycle of frequency *f* for very faint sounds. Neutrons <u>*do*</u> tend to fire on the peaks of/in phase with a cycle, however.