

Dendrite Encyclopedia Article

Dendrite

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Dendrite

Nerve cell fibers that receive signals from other cells.

The nerve cell, or neuron, has two types of fibers to send and receive signals. Dendrites are short, threadlike fibers that extend from the cell body of a nerve cell to receive signals. The other fibers, the axons, send or transmit signals to other nerve cells. Dendrites receive electrochemical signals, which are known as postsynaptic potentials, from the axons of other neurons. The information contained in these signals is fired across a synaptic gap a billionth of an inch wide and transmitted toward the cell body, with the signals fading as they approach their destination. A single neuron can have many dendrites, each composed of numerous branches; together, they comprise the greater part of the neuron's receptive surface.

The number of axons and dendrites increases dramatically during infancy and childhood. Scientists believe this increase in nerve growth may occur to facilitate the rapid development experienced during this stage of human growth. Alternatively, the number of axons and dendrites decreases in early **adolescence**. Thus, a child of six has more dendrites than an adult.

For Further Study

Books

Barr, Murray Llewellyn. *The Human Nervous System: An Anatomical Viewpoint*. 6th ed. Philadelphia, PA: Lippincott, 1993.

Resetak, Richard M. *Receptors*. New York: Bantam Books, 1994.

Audiovisual Recordings

Messengers. Princeton, NJ: Films for the Humanities, 1985. *Nerves at Work!* Part of *The Living Body* series. Princeton, NJ: Films for the Humanities, 1985.