

Ganglion Cells

By: Josh Rosen

What connects your eyes to your brain? What can possibly be the cause of one of our biggest senses? The Ganglion Cell. Only really known by eye-doctors and biologists, this cell is one of the more important ones that are contained within our bodies. The ganglion cell lives on the inner surface of our retina. Contained inside of the ganglion is information that's been extracted from bipolar and amacrine cells and sends it through their Synapse straight to the brain. The Synapse's function is to transfer electrical activity from nerve to nerve.

The ganglion is big for a cell, on one end you have something that looks like a sun and on the other you have something that looks like plant roots. On each end you have the Dendrite and on the other you have Synapses. Both might look similar but the functions are different. The Dendrite is the organelle that extracts the information from the bipolar and amacrine cells. It receives information in a form of action potentials, the potentials are either excitatory or inhibitory. The next important part is the Axon, one of the more important organelles of the cell. The Axon is a long slender projection nerve

cells (Neuron) that conducts electrical impulses away from neuron cells of the body. Basically transfers information to other neurons, muscles, and cells. Around the Axon is what's called the Myelin Sheath. The myelin sheath increases the speed in which impulses propagate throughout the myelinated fibers. While impulses go through the fibers they move continuously as wave forms. It's a gelatin type coating covering the entire Axon organelle. You might be asking how myelinated cells are made, the special organelle that does this is called a Oligodendrocytes. This organelles job is to provide support and insulation to Axons throughout the nervous system. So in short, the Oligodendrocytes creates a myelinated fiber layer that made of 80% lipids and 20% proteins.

All the information that this tiny cell has to gather and process is rough. Imagine if your head was absorbing books of information 15-16 hours a day, all the headaches and stress coursing through your brain would be pretty irritating. The ganglion cells are constantly producing information and showing it to the brain. All this goes on, as long as you have your eyes open.

