

Cyber Psych Links for

GENERAL PSYCHOLOGY: WITH SPOTLIGHTS ON DIVERSITY

Chapter 2

NEURONS: THE BUILDING BLOCK OF THE NERVOUS SYSTEM (pp. 41-46)

When one considers the complexity of the simple nerve cell, it is no wonder that a full understanding of how the human brain functions remains beyond the grasp of contemporary science. After all, there may be 100 billion neurons in the human brain. And as we learn in this first Topic of Chapter Two, although the neuron is but a single cell, it is in no way to be considered simple. As you might imagine, many of the Internet websites that can help us appreciate the neuron are from disciplines other than psychology. Many such websites are simply beyond the level of a beginning psychology class. I have tried to choose a few that are instructive, not overwhelming. Indeed, I've included a few specifically designed for "kids" and one designed for "beginning neuroscientists." All of them involve colorful illustrations, simple explanations, and even an occasional animation.

http://www.ninds.nih.gov/health_and_medical/pubs/NINDS_Neuron.htm

A site from the National Institute of Neurological Disorders and Stroke—a beautifully done booklet on the nerve cell, including sections on the birth of neurons, their structure, migration, differentiation, and death.

<http://faculty.washington.edu/chudler/cells.htm>

A website called *Neuroscience for Kids*, maintained by Eric H. Chudler, PhD, of the University of Washington in Seattle.

FROM ONE NEURON TO ANOTHER: THE SYNAPSE (pp. 47-51)

The sites listed above focus largely on the structures of neurons and, in general terms, how they function. The activity of just one neuron is exciting enough, but nothing much really happens in the nervous system unless neurons can communicate with each other. That communication takes place at the synapse, and the process is most dynamic indeed. The following websites deal with synaptic activity and the neurotransmitters that make it all happen.

<http://faculty.washington.edu/chudler/synapse.html>

More of *Neuroscience for Kids* with links to others, including a summary from the Society of Neuroscience, “How do nerve cells communicate?”

<http://synapses.bu.edu>

This site can be nearly overwhelming—and quite technical. Click on “Synapse Web,” a site from the Medical College of Georgia expressly for beginning neuroscientists—and who knows, that could be you! In the second box at Synapse Web, click on “synapses.” Here you will find a great schematic diagram of a synapse, like ours on page 47. BUT clicking on each structure in the diagram will give you an image of that structure taken by an electron microscope.

<http://web.indstate.edu/thcme/mwking/nerves.html>

A site that is quite complete without being overly “technical,” but it is more wordy than it is visual.

THE ENDOCRINE SYSTEM (pp. 53-54)

The endocrine system mirrors the nervous system in many ways. Here are two websites that expand that discussion.

<http://www.nlm.nih.gov/medlineplus/endocrinesystemhormones.html>

If you have a question about the endocrine system or hormones, you can find it answered here—a service of the U.S. National Library of Medicine and the U.S. National Institutes of Health.

<http://www.endo-society.org>

Website of “the most active professional organization of endocrinologists in the world.”

THE SPINAL CORD (pp. 57-60)

Almost all of the websites in any way related to the spinal cord have a focus on spinal cord *injuries* and their treatment. We can do no better here than to recommend the same two sites we mentioned in the text.

<http://www.christopherreeve.org>

You will find out a lot about the late actor Christopher Reeve, and discover a lot about research and treatment programs for people with spinal cord injuries.

<http://www.spinalcord.org>

Under the button “News and Information,” a click takes you to a very long list of “Resources” on the spinal cord, and up-to-date “Fact Sheets.”

THE “LOWER” BRAIN CENTERS (pp. 60-66) AND THE CEREBRAL CORTEX (pp. 66-77)

I suspect that you have a pretty good idea of the extent of the coverage of “the brain” on the Internet. In less than 0.20 seconds, *Google* located 20,700,000⁺ entries! There probably are very good sites buried in the list. For introductory psychology students, I would caution that we not get carried away. Chapter Two provides a comprehensive summary of what you need to know for now. Nonetheless, there are a few sites that are worth a visit.

<http://www.waiting.com/brainanatomy.html>

One of many with a focus on brain injury, this site provides some very nice, colorful visuals.

<http://www.pbs.org/wnet/brain>

A website derived from the PBS series on the brain. You’ll find excellent visuals of the brains of babies, children, teenagers, adults, and the elderly.

<http://www.msu.edu/~brains/humanatlas>

The human brain is a rather homely organ. This site (from Michigan State University) provides photographs of actual MRI sections of the brain. It is not very pretty, and not very instructive, but if you’d like to see what a brain really looks like, here is a place to go.

<http://www.brainexplorer.org>

This website gives an opportunity to explore what the brain looks like. Click on “Brain Atlas” and you will find great images that are easy to navigate.

<http://web.sfn.org>

Site of the Society for Neuroscience: 34,000 thousand scientists worldwide devoted to the study of the brain. I recommend clicking on “Publications.” The first three on the list are technical, scientific journals and pretty heavy reading. “Brain Briefings” will reward you with a list of scores of 2-page summaries on “how neuroscience discoveries lead to clinical applications.” Perhaps the most useful part of this section of the site is “Brain Facts” a 52-page primer in pdf format.