

Chemical Defenses

A Nigerian child eats a poisonous bean, which requires extraordinary treatment by the local physician, framing investigation of cell membrane structure, secretion, intercellular communication, and neurons.

Readings about the **Nervous System** can be found in **Chapter 26**.

- To learn about the **structure of a neuron**, read p. 538. Figures 26.4 and 26.5 show how neurons connect to neurons or to muscles.
- To learn about **resting potential**, read p. 540.
- If you are not sure how the **sodium-potassium pumps** work, see p. 83 and Figure 4.19
- If you need some help distinguishing **passive transport, simple diffusion, facilitated diffusion, and active transport**, read pp. 83 with special attention to the summary in Table 4.2.
- To learn about **action potentials**, read pp. 540-542. Figure 26.6 steps through Resting and action potentials.
- To learn about **neurotransmitters, synapses, and synaptic transmission**, read pp. 544-545.
- If you are not sure what we mean by **receptor proteins**, review p. 55
- Table 26.1 will provide you a glimpse of the **variety of neurotransmitters** and their roles. You don't need to memorize them, but they help you learn about the symptoms that appear when they are in excess or deficiency.
- More information about **acetylcholine** and neuromuscular junctions can be found on pp. 600-601
- If you want to learn more about **exocytosis**, see pp. 83-84.
- To learn how **drugs** affect synaptic transmission and action potential, take a look at the table on p. 553.
- For an excellent example of how mutations and natural selection lead to **differences in susceptibility to the effects of a neurotoxin**, study the *Investigating Life: The Nerve of those Clams*, found in your Connect Assignments for Chemical Defenses.

Readings about **Cellular Secretion** and **Organelles** can be found in **Chapter 3**.

- Not sure what the steps of **cellular secretion** are? They are listed in Figure 3.13 and described more fully on pp. 57-58, along with the roles of the **nucleus, ribosomes, rough endoplasmic reticulum, smooth endoplasmic reticulum, and Golgi apparatus**.
- **Lysosomes, Vacuoles, and Peroxisomes** are described on pp. 59-60
- Table 3.3 summarizes the structures found in **eukaryotes** can be found on p 66.
- If you want to compare those, to the structures found in **prokaryotes**, see Figures 3.5 & 3.6 on p. 50- 51.