

Chapter 14, The Brain and Cranial Nerves

“Apply What You Know” Answers

- p. 521—Figure 14.9 is a sagittal section of the brainstem and thus shows structures that are inferior or superior to each other, including the superior and inferior colliculi. Figure 14.10 is a cross section that passes superior to the plane of the inferior colliculi, and thus does not include the inferior colliculi.
- p. 533—Orexins stimulate wakefulness, so a defect in the orexin receptor interferes with its function and produces the abnormal lapses into sleep that characterize narcolepsy. This is similar to type 2 diabetes mellitus insofar as this is caused not by a lack of the hormone insulin, but by a receptor defect or deficiency that prevents insulin from acting.
- p. 535—Allan is the more likely of the two to commit violent crimes associated with lacking any fear of the consequences, because fear is a function of the amygdala and he has a destructive tumor of the amygdala. John is unable to form new memories, which is characteristic of a loss of hippocampal function and consistent with his tumor and inability to remember his granddaughter’s name.
- p. 538—The Wernicke area is a multimodal association cortex. It receives input from vision, hearing, and the somatosensory cortex to integrate this diverse input into a decision on what one will speak.