

Chapter 16, Sense Organs

“Apply What You Know” Answers

- p. 585—Cold and warm receptors are phasic receptors, since they quickly adapt to a sustained change in temperature.
- p. 591—The facial nerve innervates the anterior two-thirds of the tongue, so facial nerve damage could cause a loss of sensitivity to sweet, salty, and sour tastes. The glossopharyngeal nerve innervates the posterior one-third of the tongue, so glossopharyngeal nerve damage could result in a loss of the bitter taste. Fracture of the ethmoid bone can injure the olfactory nerve tracts and cause a loss of smell (anosmia).
- p. 597—The stapedius and tensor tympani muscles are fast glycolytic muscles. The ability to respond quickly to loud noises is more important in these muscles than fatigue resistance, a characteristic of slow oxidative muscles.
- p. 614—The prime movers in convergence of the eyes are the medial rectus muscles.
- p. 620—When we look directly at a star, we focus this point of light on the fovea centralis. The fovea contains only cone cells, which are not very sensitive to dim light. Therefore, a dim star may not stimulate the receptor cells of the fovea enough to produce an image. When we look slightly away from the star, its image falls on one side of the fovea, in a region with some rod cells. Rods are more sensitive than cones and may therefore respond to the starlight.