



Figure 5-7: Schematic diagram indicating movements useful in evaluating the function of individual eye muscles.

OCULAR MOTOR SYSTEM— BINOCULAR MECHANISMS

Key Points

1. In humans, two-thirds of the visual field is projected onto the retina of both eyes. One important function of the ocular motor system, therefore, is to control eye movements and position each eye so that an object of interest projects to corresponding points on each retina and is thus perceived as only a single object. The neural systems designed to achieve these goals operate both automatically (reflexively) and volitionally.
2. The main functions of the ocular motor system are gaze shifting and gaze holding. (*Note:* The term *gaze* refers to movement involving both eyes.) *Gaze shifting* refers to the ability to move both eyes to place a new or different image on the macula of both retinæ. Gaze shifting can be stimulus driven (automatic/reflex) or nonstimulus driven (voluntary). *Gaze holding* refers to the ability to maintain binocular fixation on an object of interest when the head is moving, when the object of interest is moving, or when both are moving.