

# 455 Trigeminal Neuralgia, Bell's Palsy, and Other Cranial Nerve Disorders

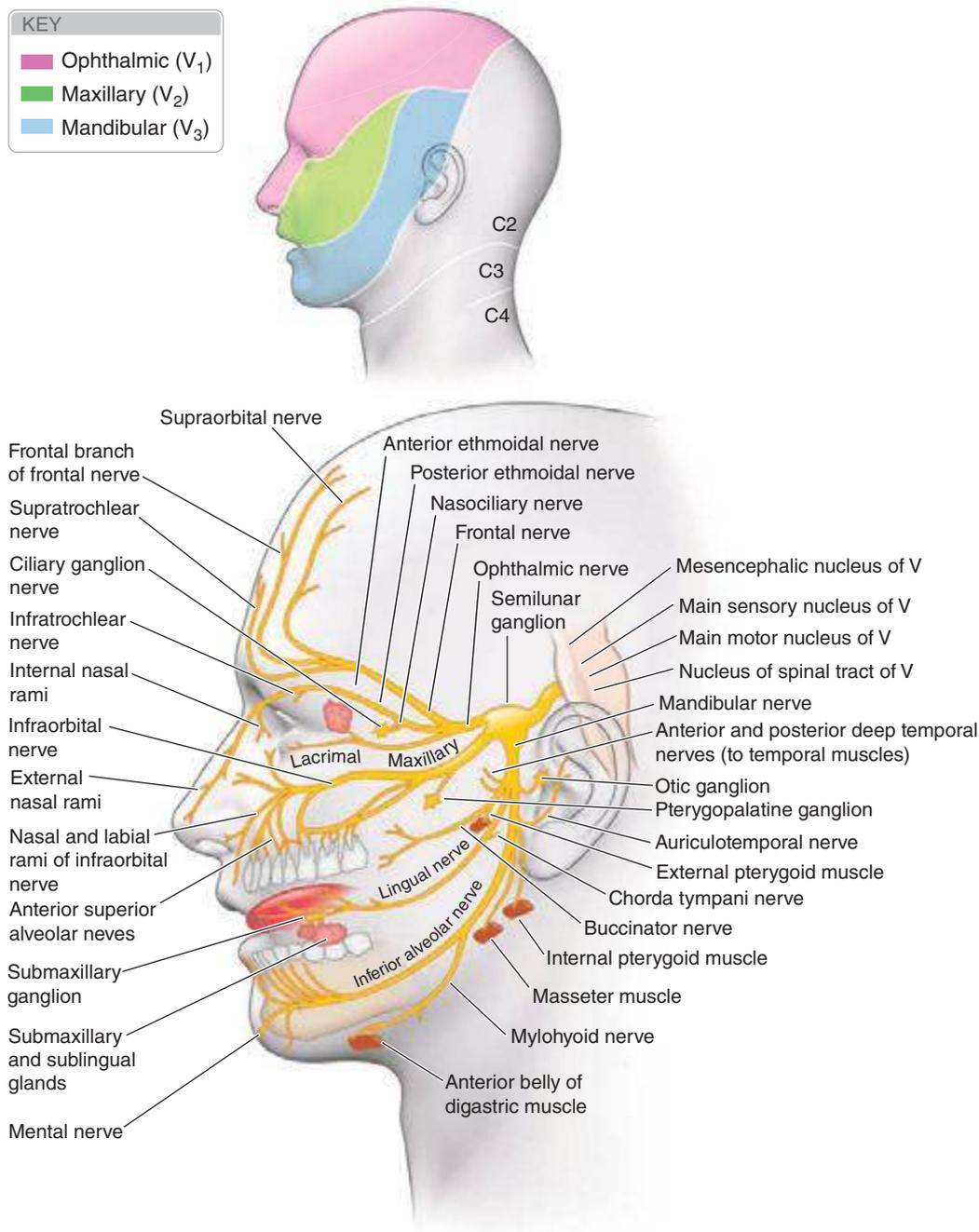
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Symptoms and signs of cranial nerve pathology are common in internal medicine. They often develop in the context of a widespread neurologic disturbance, and in such situations, cranial nerve involvement may represent the initial manifestation of the illness. In other disorders, involvement is largely restricted to one or several cranial nerves; these distinctive disorders are reviewed in this chapter. **Disorders of ocular movement are discussed in Chap. 39, disorders of hearing in Chap. 43, and vertigo and disorders of vestibular function in Chap. 28.**

## FACIAL PAIN OR NUMBNESS

### ANATOMIC CONSIDERATIONS

The trigeminal (fifth cranial) nerve supplies sensation to the skin of the face and anterior half of the head (Fig. 455-1). The motor part innervates the muscles involved in chewing (including masseters and pterygoids) as well as the tensor tympani of the middle ear (hearing especially for high-pitched tones). It is the largest of the cranial nerves. It exits in the lateral midpons and traverses the middle cranial fossa to the semilunar (gasserian, trigeminal) ganglion in Meckel's cave, where the nerve divides into three divisions (ophthalmic [V1], maxillary [V2], and mandibular [V3]). V1 and V2 traverse the cavernous sinus to exit in the superior orbital fissure and foramen rotundum, located above and below the eye socket respectively; V3 exits through the foramen ovale. The trigeminal nerve is predominantly sensory, and motor innervation is exclusively carried in V3. The cornea is primarily innervated by V1, although an inferior crescent may be V2. Upon



**FIGURE 455-1** The trigeminal nerve and its branches and sensory distribution on the face. The three major sensory divisions of the trigeminal nerve consist of the ophthalmic, maxillary, and mandibular nerves. (Adapted from Waxman SG: *Clinical Neuroanatomy*, 26th ed. <http://www.accessmedicine.com>. Copyright © The McGraw-Hill Companies, Inc. All rights reserved.)