

EXHIBIT 14-1
CLINICAL APPLICATIONS RELATED TO THE CRANIAL NERVES

NERVE	DISORDER
I. Olfactory	Loss of the sense of smell, called <i>anosmia</i> ; may result from head injuries in which the cribriform plate of the ethmoid bone is fractured and from lesions along the olfactory pathway.
II. Optic	Fractures in the orbit, lesions along the visual pathway, and diseases of the nervous system may result in visual field defects and loss of visual acuity.
III. Oculomotor	A lesion in the nerve causes <i>strabismus</i> (squinting), <i>ptosis</i> (drooping) of the upper eyelid, pupil dilation, the movement of the eyeball downward and outward on the damaged side, a loss of accommodation for near vision, and double vision (<i>diplopia</i>).
IV. Trochlear	In trochlear nerve paralysis, the head is tilted to the affected side and diplopia and strabismus occur.
V. Trigeminal	Injury results in paralysis of the muscles of mastication and a loss of sensation of touch and temperature. Neuralgia (pain) of one or more branches of trigeminal nerve is called <i>trigeminal neuralgia</i> (<i>tic douloureux</i>).
VI. Abducens	With damage to this nerve, the affected eyeball cannot move laterally beyond the midpoint and the eye is usually directed medially.
VII. Facial	Injury produces paralysis of the facial muscles, called <i>Bell's palsy</i> , loss of taste, and the eyes remain open, even during sleep.
VIII. Vestibulocochlear	Injuries to the vestibular branch are vertigo (a subjective feeling of rotation, ataxia) and <i>nystagmus</i> (involuntary rapid movement of the eyeball). Injury to the cochlear branch may cause <i>tinnitus</i> (ringing) or deafness.
IX. Glossopharyngeal	Injury results in pain during swallowing, reduced secretion of saliva, loss of sensation in the throat, and loss of taste.
X. Vagus	Severing of both nerves in the upper body interferes with swallowing, paralyzes vocal cords, and interrupts sensations from many organs. Injury to both nerves in the abdominal area has little effect, since the abdominal organs are also supplied by autonomic fibers from the spinal cord.
XI. Accessory	If damaged, the sternocleidomastoid and trapezius muscles become paralyzed, with resulting inability to turn the head or raise the shoulders.
XII. Hypoglossal	Injury results in difficulty in chewing, speaking, and swallowing. The tongue, when protruded, curls toward the affected side and the affected side becomes atrophied, shrunken, and deeply furrowed.