Nerve	Trigeminal (CN V)	Facial (CN VII)
Anatomy	Three Branches Ophthalmic (VI) Sensory to face Maxillary (V2) Sensory to face Mandibular (V3) Sensory to face and Motor for mastication -Motor nucleus in the pons -Exits skull through the Oval Foramen	Motor: Facial expression Sensation: Concave surface of skin on pinna Taste: Rostral 2/3 of tongue Parasympathetic fibers to lacrimal and salivary glands Motor fibers originate from the motor nucleus of CN VII in the ventral part of the rostral medulla Exits through the stylomastoid foramen
Testing	<u>Cutaneous Sensation</u> Corneal Reflex A: ophthalmic branch E: CN VI +/- VII Palpebral Reflex A: ophthalmic and maxillary branch E: CN VII Trigeminofacial reflex A: ophthalmic and maxillary branch E: CN VII Noxious responses Nasal mucosa A: ophthalmic and maxillary branch Lateral maxilla A: maxillary branch E: CN VII curling of ipsilateral lip and head withdrawal (cortical) Lateral mandible A: mandibular branch E: head withdrawal (cortical) <u>Motor Dysfunction</u> Paresis/paralysis: Inability to close mouth / prehend food Atrophy Symmetry and tone Masticatory muscle paresis or paralysis “head caved in” <u>Sensory Dysfunction</u> Decreased sensation, hypesthesia or anesthesia Decreased or absent reflexes Abnormal paresthesia, hyperesthesia	<u>Reflexes</u> Menace response A: CN II, E: CN VII Corneal Reflex A: ophthalmic branch E: CN VI +/- VII Palpebral Reflex A: ophthalmic and maxillary branch E: CN VII Trigeminofacial reflex A: ophthalmic and maxillary branch E: CN VII <u>Motor</u> -Facial symmetry -Symmetry of movement <u>Parasympathetic Function</u> -Lacrimation (STT) -Dry eye and nose <u>Cutaneous sensory testing</u> Sensation to medial surface of pinna <u>Special senses</u> Taste (tartaric acid or atropine) <u>Motor Dysfunction</u> -Inability to close eye, drooping ear, eyelid, lip -Widening of palpebral fissure *acute deviation of nose to normal side, chronic contracted and deviated to abnormal side

		-Lack of nostril flare -Abnormal facial reflexes
Lesion Localization	Central vs Peripheral <u>Intracranial</u> Brainstem: Motor and sensory dysfunction signs and usually brainstem signs -Other CN signs (VII, VIII) -**Ipsilateral** hemiparesis -Obtundation -CP deficits -Cerebellar signs <u>Extracranial</u> -Signs vary with location of the lesion/branches involved -DO NOT have brainstem signs	Intracranial vs Extracranial <u>Intracranial</u> Brainstem -Motor, sensory and parasympathetic involved -**Ipsilateral** CN VII paresis/paralysis -Reduced/absent lacrimation and taste Extracranial: Interosseous Nerve -CN VII paresis/paralysis -No brainstem signs +/- Middle ear disease +/- Horner's Syndrome
Diagnostic work up	History -Vaccinations Clinical Signs Advanced Imaging: MRI/CT +/- Skull Radiographs CSF analysis Dogs +/- type 2M antibody serology for masticatory muscle myositis	Clinical signs Schirmer Tear Test Otoscopic Examination Advanced Imaging: MRI/CT Skull Radiographs CSF analysis
Diseases	<u>Idiopathic Trigeminal Neuropathy</u> "Trigeminal Neuritis" -Diagnosis of exclusion -Extracranial -Idiopathic -Common in dogs, uncommon in cats -Acute onset dropped jaw, inability to close mouth -Dysphagia/drooling -Atrophy common *can be unilateral	<u>Idiopathic Facial Nerve Paralysis</u> Extracranial Dogs and cats (Cocker Spaniels) Acute, usually unilateral Localization: peripheral, proximal to geniculate ganglion Pathology: No inflammation; degeneration of myelinated fibers Prognosis is good; weeks to months for recovery <u>Otitis Media/Interna</u>

	-Sensation is usually normal +/- Horner's Syndrome, facial paralysis associated <u>Masticatory Muscle Myositis</u> -Muscle swelling and pain -Trismus -Do not usually have a dropped jaw <u>Neoplasia</u> -Lymphoma -Other round cell neoplasia -Nerve sheath tumor <u>Infection</u> -Rabies	<u>Neoplasia</u> -Intracranial: primary and secondary neoplasia -Extramedullary: lymphoma -Secondary involvement by squamous cell carcinoma, osteosarcoma, adenocarcinomas <u>Trauma</u> Bite wounds, ear surgery <u>Metabolic</u> Hypothyroid facial neuropathy in dogs (suspected, not proven); may be associated with other generalized motor unit clinical signs <u>Inflammation</u> -Polyradiculoneuritis, brachial plexus neuritis <u>Motor unit disease</u> Myasthenia gravis, botulism
Treatment	<u>Trigeminal Neuropathy</u> -Supportive Care (feeding tube, fluids) -Usually resolves in 2-6 weeks -Corticosteroids are NOT recommended <u>Rabies</u> -No treatment, get a solid history and be careful <u>Neoplasia</u> -Intracranial: primary and secondary neoplasia -Extracranial: lymphoma, malignant peripheral nerve sheath tumor -Secondary involvement by squamous cell carcinoma, osteosarcoma, adenocarcinomas	<u>Idiopathic Facial Nerve Paralysis</u> -Prevent exposure keratitis with artificial tears (NOT SALINE type) or ophthalmic ointments -Routine monitoring for KCS and corneal ulcers -Efficacy of corticosteroids is unknown and not recommended Treat ear infection/trauma

	Trauma -Signs develop acutely, resolution depends on severity	