

CNVII Facial Nerve

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1 Somatic motor Pathway:

Motor: Pre-central gyrus -> Corticobulbar tract (1°) -> (Pontomedullary junction) Facial motor nucleus -> Facial nerve (2°) -> Muscles of facial expression

2 Parasympathetic Motor Pathway:

Lacrimal / nasal mucosa: Hypothalamus -> Dorsal longitudinal Fasciculus -> Superior Salivatory Nucleus (2° Synapse) -> Pterygopalatine ganglion (3° Synapse) -> Lacrimal gland + Nasal Mucosa Gland

3 Submandibular/Sublingual: Hypothalamus -> Dorsal Longitudinal Fasciculus -> Superior Salivatory nucleus (2° Synapse) -> Lingual Nerve -> Submandibular ganglion (3° Synapse) -> Submandibular / Sublingual gland

4 Special sense (2/3 Taste) Pathway:

Sensory cortex (Gustatory area) -> Ventral Posterior Medial Nucleus of Thalamus (VPM) (2° Synapse) -> Nucleus Solitarius (3° Synapse) -> Tractus solitarius -> -> Geniculate Ganglion -> Chorda Tympani -> RUN W/ Lingual nerve (V3) -> Taste Anterior 2/3 tongue

5 Dysfunction

- Bell's palsy is an example of CN VII paralysis

5.1 DDX

Facial CN VII lesions vs UMN lesions:

- Facial = weakness on half of the face
- UMN: weakness on one half (but only the lower 2/3 = forehead not affected)