

Where are the cell bodies of the primary afferent fibers that mediate facial pain located?

Trigeminal ganglion

Where are the cell bodies of the primary afferent fibers that mediate facial tactile sensation located?

Trigeminal ganglion

Where are the cell bodies of the primary afferent fibers that mediate jaw proprioception located?

Trigeminal mesencephalic nucleus

What is the peripheral distribution of taste fibers in cranial nerves VII and IX?

VII=anterior 2/3 of tongue

IX=posterior 1/3 of tongue

Are the axons of primary sensory neurons or ascending projection neurons located in the spinal trigeminal tract?

Primary sensory neurons

What is the rostro-caudal somatotopic organization of the nucleus caudalis?

Back of face, to front of face, to oral cavity

Where is dental pain represented?

Junction of the caudal nucleus and the interpolar nucleus

Which sensory modalities are processed by the gracile, cuneate and spinal trigeminal nucleus?

mechanosensory

Which cranial nerves project afferents through the solitary tract?

7, 9, and 10

What sensory signs would you expect to observe in a patient with an infarction of PICA?

Loss of taste on ipsilateral tongue, loss of pain and temperature sense on the ipsilateral face and contralateral limbs and trunk, vertigo

What sensory modalities are conveyed in the lateral and medial lemniscus?

Lateral=hearing; medial=mechanosensory

What is the principal neuron type in the mesencephalic trigeminal nucleus?

Primary sensory neurons

What are the key constituents in each of the: MLF, medial lemniscus, basis pedunculi, and central tegmental tract?

MLF: second-order vestibular fibers; axons of brain stem neurons controlling eye movements

Medial lemniscus-you should know this by now

Basis pedunculi: descending axons from cortex to spinal cord and brain stem.

CTT: ascending axons of the gustatory pathway; descending axons from red nucleus to the inferior olivary nucleus

Which midbrain structure is important in pain regulation?

Periaqueductal gray matter – and WHY? Because it contains neurons that project to the raphe nuclei.

By what brain stem pathway does gustatory information reach the parvocellular division of the ventral posterior medial nucleus?

Central tegmental tract

Where do the thalamic gustatory neurons project?

Insular and opercular cortex