

CN X

CN X is also known as the vagus nerve. It is a motor, sensory and visceral nerve with several functions such as heart rate regulation, respiratory drive regulation, palate elevation, swallowing and talking. It is clinically assessed by checking for the ability to swallow, elevate the palate and maintain a midline uvula.



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Vagus Nerve

Vegas-sign

There are 4 major nuclei for the vagus nerve: the motor fibres originate in the nucleus ambiguus in the medulla; the special sensory (taste) fibers originate in the solitary nucleus; the parasympathetic output to the viscera originates from the dorsal nucleus of the vagus nerve; and somatic sensory fibers originate from the spinal trigeminal nucleus. The vagus nerve exits the skull through the jugular foramen.

Sensory

Sensor

CN X monitors aortic arch chemoreceptors and baroreceptors and it is responsible for taste from the epiglottic region.

Aortic Arch Chemoreceptors and Baroreceptors

A-Orca Key-receptor and Barrel-receptor

CN X helps regulate respiratory drive via aortic chemoreceptors and heart rate via aortic baroreceptors (only responds to increased blood pressure not decreased). Heart rate is also controlled since the vagus supplies parasympathetic innervation of the heart through innervation of the sinoatrial node.

Taste from Epiglottic Region

Epiglottis Taste-sensor

A pharyngeal branch of CN X is responsible for taste from the epiglottic region.

Motor

Motor

Clinical testing of the vagus nerve is via assessment of motor functions such as swallowing, palate elevation, and maintenance of a midline uvula.

Swallowing

Swallow

CN X is responsible for swallowing along with CN IX.

Palate Elevation

Palette Elevator

A pharyngeal branch of CN X supplies the muscles of the palate.

Talking

Walkie-talkie

The recurrent laryngeal nerve, a branch of CN X, is responsible for muscle movements in the mouth that allow for speech.

Coughing

Coughing-coffee

If a patient cannot cough it suggests damage to laryngeal function.

Midline Uvula

Uvula with Midline

The vagus nerve maintains a midline uvula. If there is damage, the uvula deviates away from the side of the lesion.