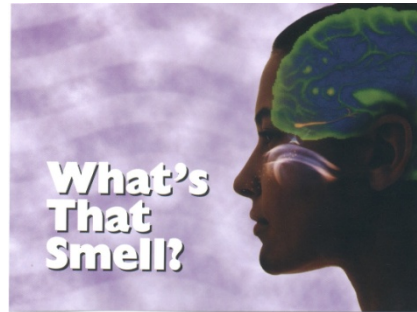


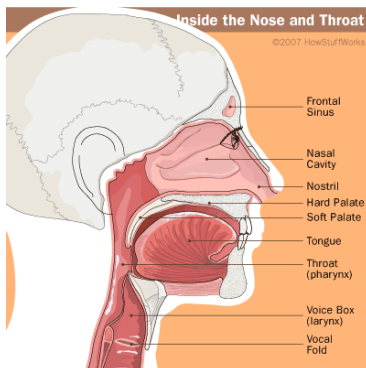
Notes: Taste and Smell



Source: [Advanced Odor Solutions](#)

The receptors for taste and olfaction are classified as chemoreceptors because they respond to chemicals in solution. Four types of taste receptors have been identified but the olfactory receptors are sensitive to a wider range of chemicals. Another type of sensation that is sometimes mentioned is umami. Umami is the response to salts of salts of glutamic acid. The receptors for smell and taste work together to respond to stimuli.

SMELL



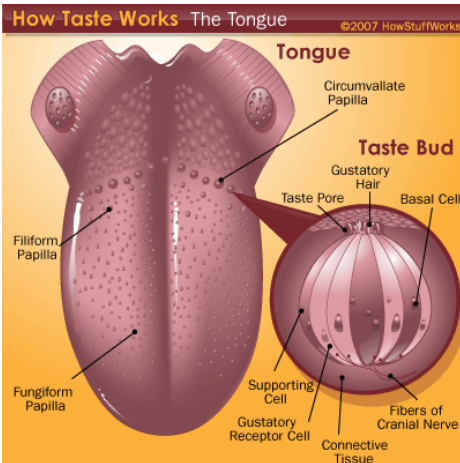
Source: [HowStuffWorks](#)

Thousands of olfactory receptors are located in the upper part of the nasal cavity. The olfactory receptor cells are neurons (nerve cells) equipped with olfactory hairs. The hairs are moistened by a layer of mucus secreted by underlying glands. When the receptors are stimulated by chemicals dissolved in the mucus, they transmit impulses along the olfactory nerve to the brain.

Note the role of hair cells in the process of smell.

Human chemoreceptors in the nasal cavity can discriminate thousands of different odors.

TASTE



Source: [HowStuffWorks](#)

The taste buds are the specific receptors for the sense of taste. These receptors are located on the tongue, soft palate and the inner surface of the cheeks. Chemoreceptors in the taste buds respond to chemicals dissolved in the saliva. The specialized taste cells, gustatory cells, are continuous with gustatory hairs which extend through the taste buds. The sensory cells send messages through the cranial nerves to the brain.

Note the role of hair cells in the process of taste.

Humans can detect four main kinds of taste: **SWEET, SALTY, SOUR, AND BITTER**. Umami is another taste sensation. Each taste sensation responds to a different substance. For example, sweet receptors respond to sugars and some amino acids which would help to ensure that the body receives sufficient carbohydrates and amino acids.

Many of the sensations associated with taste are actually smell sensations, You depend on both senses to detect flavors in food. That is why when you have a cold and your smell receptors are blocked, food seems to have little or no taste.

Humans have chemoreceptor cells for taste in taste buds. Most of the taste buds are on the upper surfaces of the tongue. The average tongue has about 10,000 taste buds and each taste bud consists of about 50 cells. Each individual taste bud is specialized for detection of a specific taste--sweet, sour, salty, bitter or umami.

Each taste cell has receptors on its apical surface. There are transmembrane proteins which either admit the ions that give rise to the sensations of salty and sour or bind to the molecules that give rise to the sensations of sweet, bitter and umami. Taste receptor cells are connected to a sensory neuron that transmits sensory information to the brain.