

# Smell and Taste

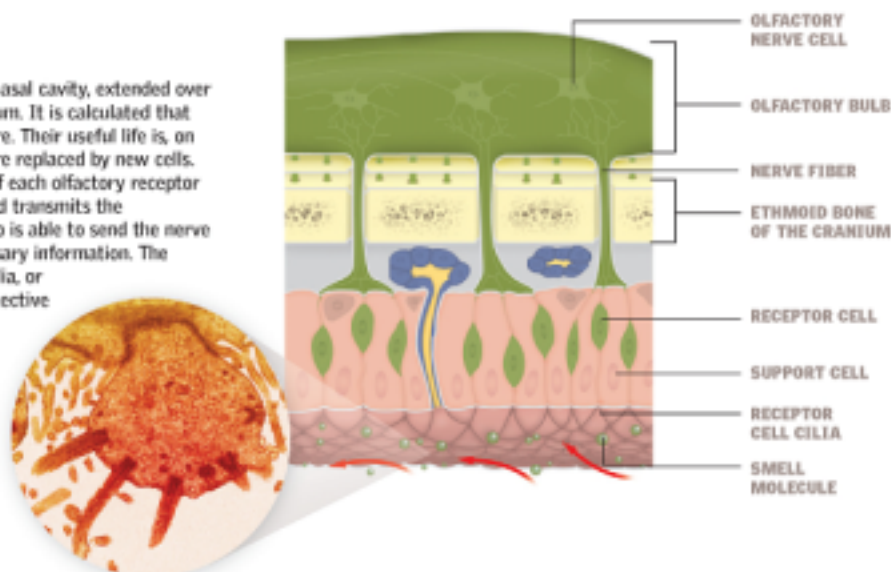
These two senses of the body function as powerful allies of the digestive system. Taste involves the perception of dissolved chemical substances arriving, for example, in the form of food. Taste sensation is principally seated on the upper surface of the tongue, and saliva is a fundamental ingredient for dissolving and tasting. Smell involves the perception of these chemicals when they take the form of dispersed aromas. The sense of smell operates at a greater distance than that of taste and can capture substances floating in the environment. It is thought that smell is some 10,000 times more sensitive than any of our other senses. ●

## Olfactory Cells

These are located deep in the nasal cavity, extended over the so-called olfactory epithelium. It is calculated that some 25 million cells are located there. Their useful life is, on average, 30 days, after which they are replaced by new cells. They have a dual function. One end of each olfactory receptor is connected to the olfactory bulb and transmits the sensations it records, so that the bulb is able to send the nerve impulses to the brain with the necessary information. The other end terminates in a group of cilia, or microscopic hairs, which serve a protective function within the mucosa.

# 10,000

THE NUMBER OF ODORS THE SENSE OF SMELL CAN DISTINGUISH

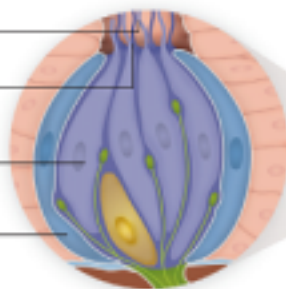


## Gustatory Papillae

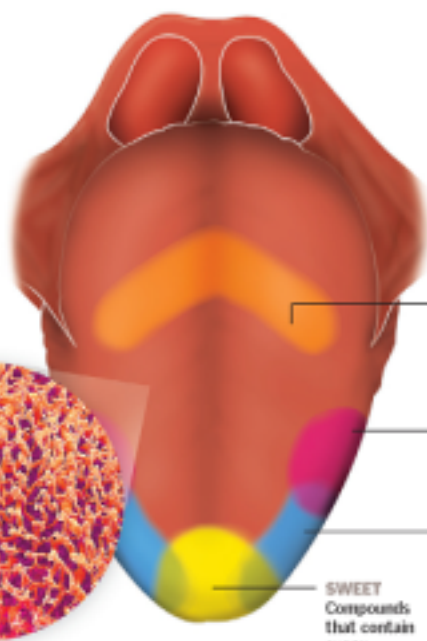
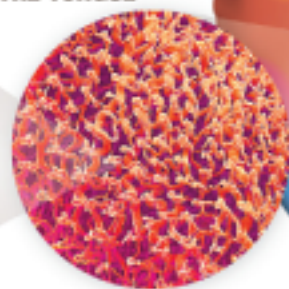
The tongue is the principal seat of the sense of taste. It has great mobility at the bottom of the mouth and contains between 5,000 and 12,000 gustatory papillae. Each of these papillae has approximately 50 sensory cells, which have an average life span of 10 days. The salivary glands are activated by the ingestion of food or just before ingestion. They generate an alkaline liquid called saliva, a chemical solvent that, together with the tongue, breaks down the substances of which food is composed and makes it possible to differentiate between them by taste. The tongue takes charge of perceiving these tastes via the fungiform papillae, which give the tongue its rough appearance.

### GUSTATORY PAPILLA

TASTE PORE  
TASTE HAIRS  
CELL RECEPTOR  
SUPPORT CELL



### SURFACE OF THE TONGUE



## 4 Flavors

THE SURFACE OF THE TONGUE CAN DISTINGUISH: SWEET, SALTY, SOUR, AND BITTER.

**BITTER**  
A disagreeable and enduring sensation

**SOUR**  
Produces acidity

**SALTY**  
Contains more salt than necessary

**SWEET**  
Compounds that contain sugar

## Taste Center

The area of the brain that receives information from the tongue

IMPULSES FROM THE GLOSSOPHARYNGEAL NERVE

TRIGEMINAL NERVE IMPULSES

OLFACTORY BULB  
Located behind the nose, it receives information directly from the nasal fossae.

OLFACTORY NERVE FIBERS

The upper section of the nasal fossae is the seat of the olfactory nerve and the sense of smell. The complex, as a whole, is called the "yellow spot."

GLOSSOPHARYNGEAL NERVE  
Collects the sensory impressions of taste from the posterior one third of the tongue.

TRIGEMINAL NERVE  
Receives sensory information from the entire face, but especially from the nasal fossae and the mouth.

TONGUE  
The principal seat of the sense of taste, with its thousands of gustatory papillae.

