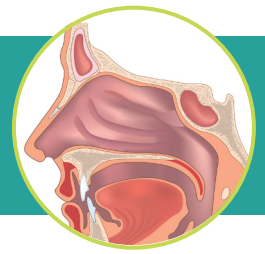
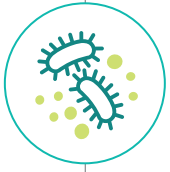


MAIN FUNCTIONS OF THE NOSE



PREPARING AIR FOR THE LUNGS

The lungs and throat do not tolerate dry air well. The nose processes the air we breathe to prepare it for our lungs. Mucous membrane rich with blood vessels lines the nasal cavity. The increased surface area and the many blood vessels enable the nose to warm and humidify incoming air quickly.



CLEANING AIR OF DIRT AND PATHOGENS

The air we breathe has all kinds of foreign particles in it – dust, pollution, allergens, smoke, bacteria, viruses, small bugs, etc. Cells in the mucous membrane produce mucus and have tiny hairlike projections (cilia). The mucus traps incoming dirt and pathogens, and the cilia carries it out of the airway. This action helps clean the air before it goes to the lungs.



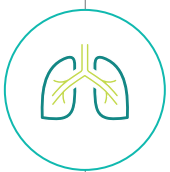
CONTROL OF THE AIR STREAM

The complicated labyrinth of valves and turbines within the nose regulates direction and velocity of the air stream. This ensures maximum exposure to the fine arteries, veins and nerves, as well as the mucus blanket to clean, humidify, warm and smell the air.



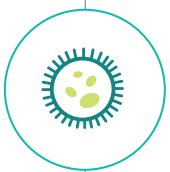
OLFACTION (SENSE OF SMELL)

The nose has a large number of nerve cells that detect odors. We sniff to pull in the air to come in contact with these nerves. Sense of smell is necessary for safety. We need our smell to detect smoke, spoiled food and some toxic gases. Smell is also intimately connected to taste; food will appear tasteless if the sense of smell is impaired.



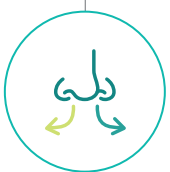
NASAL RESISTANCE

The nose creates a narrow passage for the air, which creates resistance for the air flow. This resistance is necessary to maintain elasticity of the lungs and ensure proper ventilation. Nasal resistance also conditions the tissues on the back of the throat to prevent sagging (which can lead to snoring and obstructive sleep apnea).



NITRIC OXIDE PRODUCTION

The vasodilator gas nitric oxide (NO) is produced in the paranasal sinuses and is excreted continuously into the nasal airways. NO improves oxygen transport throughout the body and oxygen absorption in the lungs. It relaxes vascular smooth muscle and allows blood vessels to dilate. NO also has antifungal, antiviral, antiparasitic and antibacterial qualities.



NASAL CYCLES AND CONNECTION TO AUTONOMIC NERVOUS SYSTEM

There is a predictable pattern of swelling and shrinkage within the nose that alternates airflow between two sides of the nose. It is called the “nasal cycle”. Nasal cycles are linked to sympathetic (SNS) and parasympathetic (PNS) nerves and impact body temperature, blood pressure, hormone production, arousal level and even mood.