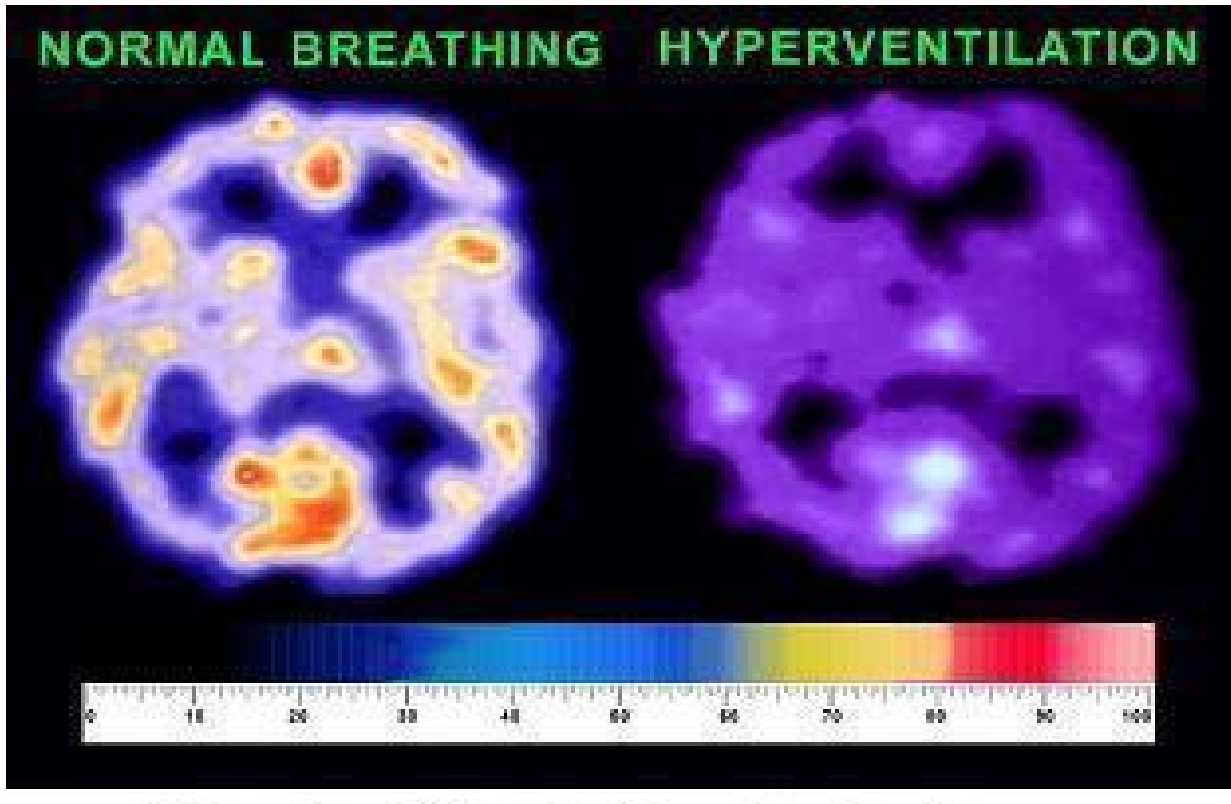


What is Mouth Breathing?



Effects of 1 minute of voluntary hyperventilation on brain oxygen levels (vasoconstriction due to a lack of CO₂)

Mouth Breathing starts when a person can't get enough air through their nose, so the mouth takes over.

The physiologic effect of mouth breathing is called **hyperventilation**.

This is a condition in which a person experiences rapid, shallow breathing.

What Causes Mouth Breathing?

- Allergies and/or food sensitivities
- Enlarged tonsils or adenoids
- Chronic nasal congestion
- Respiratory infection
- Asthma
- Deviated septum
- Nasal polyps



How Does Mouth Breathing Affect the Body?

Incorrect tongue placement which affects:



- **Speech:** The most commonly associated speech problem is a lisp, or the inability to say "S" sounds correctly. When you have an open mouth, you also have a "tongue thrust swallowing pattern." This type of swallowing pattern causes the tongue to protrude during speaking and swallowing.
- **Swallowing:** Mouth breather's disturbances (infant swallowing, tongue thrust, facial rictus when swallowing) causes abnormal peristaltic activity which leads to the swallowing of a lot of air. This can cause abdominal bloating, intestinal pain and excessive burping and belching.
- **Breathing:** When you breathe through your mouth, the air reaches the lungs full of impurities since it has not been filtered, warmed and humidified by the nose.
- **Chewing:** Mouth breathing leads to chewing food with lips apart, which becomes faster, noisier and less efficient than with lips closed. This can lead to greater digestive problems and potential for choking.

Structural mouth changes like:



- **Weak lips:** Proper lip seal cannot be maintained. The lips do not touch and muscular effort is required for contact between the upper and lower lip.
- **No external support for the teeth:** Keeping an open mouth posture can cause diminished strength of the muscles of the lips, cheeks, jaw and tongue; a lowered and more anterior oral rest posture of the tongue, leading to changes in aesthetics and position of teeth/occlusion (improper fit of the teeth); elongated face, retruded mandible, and palate becoming more narrow and/or deep.
- **Crooked teeth:** Mouth breathing causes incorrect jaw development. The upper and lower jaws become different sizes or are malformed, resulting in either an overbite or an under bite.
- **Malocclusion:** The most common trait of people who chronically breathe through their mouths is an elongated lower face and a narrowed upper arch in the mouth (maxillary constriction). Cheek muscles pressing in on the upper side teeth cause these traits.

Craniofacial abnormalities:



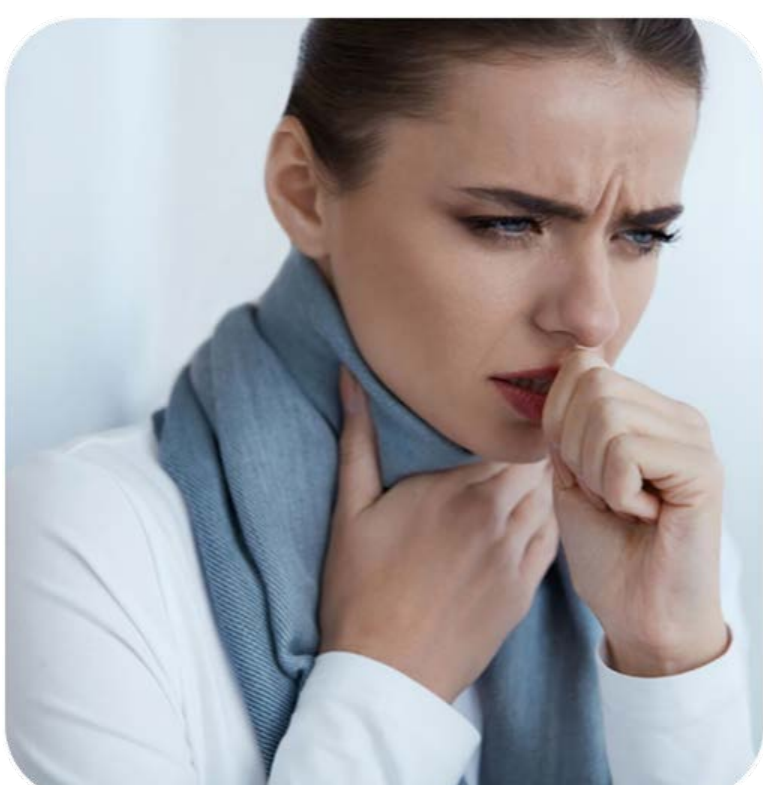
- **Long, narrow faces & mouths:** When the mouth is left open to breathe, the muscles in the cheeks become taut. These taut cheek muscles apply an external force to the upper and lower jaw which creates a narrowing affect on the dental arches and the face. Also, the tongue, which is meant to naturally rest at the roof of the mouth, drops down into the floor of the mouth. This can cause the upper arch to become narrower (due to the lack of lateral pressure) and the mid-face will not develop normally because the tongue does not push this part of the face out.
- **Less defined cheek bones & Class II occlusion:** Since a mouth-breathing child/person does not rest his or her tongue on the roof of the mouth, the jaws are unable to be properly shaped by the tongue, and the natural forward growth of the jaws is impeded and causes flatter cheeks.
- **Small lower jaws:** People who suffer with mouth breathing develop narrower upper jaws, smaller lower jaws and longer faces. This is because mouth breathing only promotes the growth of the upper jaw, rather than both jaws. An overjet, a large overbite and a smile that reveals too much of the gums are frequently the results of this uneven jaw growth.
- **Gummy smiles:** As a result of the gums losing their moisture when mouth breathing, the saliva dries up and the gums will become reddened in color and overgrow.

Other effects on the mouth include:



- **Xerostomia:** Mouth breathing can quickly dry out the mouth and decrease saliva production. Dry mouth is one of the causes of gum disease, which can create health issues throughout your body including stroke, heart disease and heart attacks.
- **Halitosis:** Xerostomia caused by mouth breathing can lead to bad breath. Saliva is necessary to moisten the mouth and wash away dead cells that accumulate on the tongue, gums and cheeks. If not removed, these cells decompose and can cause bad breath.
- **Increased risk of caries:** Since mouth breathing decreases the amount of saliva present in the mouth, there is an increase in developing tooth decay and cavities. Saliva is extremely important for neutralizing acid and helping to wash away bacteria.
- **Gingival inflammation:** If a person has a habit of breathing through their mouth, it will become dry and create an environment in which plaque easily accumulates. In addition, the resistance of the gums will be reduced, making the gums prone to inflammation.

Respiratory symptoms:



- **Cough:** Congestion secondary to anatomical issues in the nose such as a deviated septum or swollen turbinates causes mouth breathing during exercise and during sleep. This mouth breathing dries out the vocal cords and causes irritation keeping the cough persistent.
- **Chronic throat tickle:** When someone is a mouth breather, they will wake up with a very dry mouth or even a sore throat. This is caused by sleeping with the mouth wide open. This can dry out the throat and cause it to be consistently scratchy or sore.
- **Asthma:** Asthma can cause a person to breathe through the mouth, but breathing through the mouth at night can also make exercise-induced asthma symptoms worse. Air that is inhaled through the mouth isn't as warm or moist as air that comes in through the nose. This can make the airway more irritated and breathing more difficult.
- **Shortness of breath:** Anyone with shortness of breath suffers from low body O₂ content caused by over breathing. Two additional factors (mouth breathing and chest breathing) worsen this sensation of dyspnea.

Neurovascular symptoms:



- **Lightheadedness:** During sleep, mouth breathers usually breathe hard and often wake up exhausted. To test this yourself, if you try taking 10 hard breaths in and out - you'll be left light headed.
- **Dizziness:** Bad breathing restricts blood flow to the brain, which affects nerve cells. This can cause dizziness and tingling. Low carbon dioxide levels affect the Nervous System. Anyone who has experienced dizziness after blowing up balloons or practicing deep breathing in a fitness class, will be familiar with how quickly excessive breathing can deprive the brain of oxygen.
- **Memory loss:** Deficits in working memory, reading comprehension and arithmetic skills in children with mouth breathing syndrome has shown negative correlation between mouth breathing and certain cognitive tasks.
- **Poor concentration:** Children who mouth breathe typically do not sleep well, causing them to be tired during the day and possibly unable to concentrate on academics. Children who exhibit problems concentrating at school are often misdiagnosed with attention deficit disorder (ADD) or hyperactivity.

The Role of the Dental Hygienist



- **ASK** the patient about mouth breathing during their medical history interview
- **PERFORM** intraoral exams (a survey of the airway and relevant structures)
- **EDUCATE** the patient about the negative oral health effects of mouth breathing
- **DISCUSS** potential treatment options

How is Mouth Breathing Corrected?

Myofunctional therapy can help you to:

- Breathe correctly
- Stop nail biting
- Decrease or stop snoring
- Eliminate open mouth posture
- Treat pain of the muscles of the face
- Improve swallowing function
- Decrease sleep apnea
- Stop tongue thrusting
- Prevent orthodontic relapse due to tongue thrusting

