

not directly cause these conditions. Therefore, maintaining good oral health and preventing dental diseases will be very important if you have respiratory conditions. The following recommendations will help you to prevent dental diseases and manage your respiratory condition/s:

- Brush your teeth twice a day with a fluoride toothpaste.
- Floss your teeth regularly and use a mouthwash containing chlorhexidine as recommended by your dental practitioner.
- Quit smoking: Call Quitline free on 13 7848 (13 QUIT) in Australia and 0800 778 778 in New Zealand for support.
- Have regular dental check-ups and get dental treatment as recommended by your dental practitioner.
- Make sure to let your dental practitioner know about your respiratory condition/s including your medication list and hospitalisation record. For example, if you have asthma, give details such as any triggers that make asthma worse, frequency of asthma attacks and their latest occurrence.
- If you are using inhalers, get a spacer device (Figure 3) as recommended by your healthcare practitioner. A spacer device delivers inhaled drugs directly into the airway and can minimise you getting unwanted effects in your mouth. Remember to bring your inhaler to all your dental visits.



Figure 3: Using a spacer device for inhaling medication

- Rinsing your mouth after using inhalers, chewing sugarless gum, especially after meals and sipping water frequently will also help you to lessen dry mouth, dental decay and dental erosion
- If you are wearing full or partial dentures, clean them regularly using a toothbrush or denture cleaning brush, remove them at night and store them in a dry, safe location
- If you are using a CPAP machine for OSA clean it regularly as per the instruction manual

Respiratory conditions are increasingly associated with worsening oral health and dental diseases. Practising good oral hygiene and making regular dental visits as recommended by your dental practitioner will help you to improve your oral health, prevent dental diseases and manage your respiratory conditions.

Respiratory Conditions and Oral Health

Information for Patients
Special Topic Pamphlet No. 28

Further enquiries

Dental Practice Education Research Unit
ARCPOH, Adelaide Dental School
The University of Adelaide SA 5005
Australia

A joint program by
Colgate Oral Care and The University of Adelaide

enquiries dperu@adelaide.edu.au

phone +61 8 8313 4235

web health.adelaide.edu.au/arcpoh/dperu/

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June 2025 CRICOS 00123M



What are respiratory conditions?

The human respiratory system includes the pharynx (throat), larynx (voice box), trachea (windpipe), bronchi, bronchioles, alveoli (air sacs), lungs and the passages that transfer air from the mouth as well as the nose into the lungs (Figure 1).

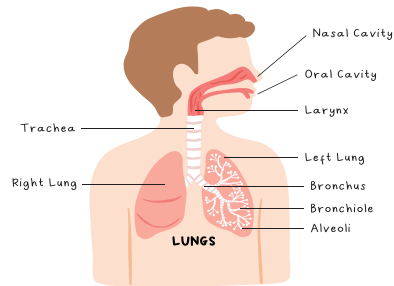


Figure 1: Human respiratory system

Illnesses that affect the respiratory system are known as respiratory conditions. Respiratory conditions occur when there are problems with the lungs or airways, making it hard to breathe.

These conditions can be

- **acute** (short-term) (e.g., pneumonia and influenza), or
- **chronic** (long-term) (e.g., asthma and chronic obstructive pulmonary disease (COPD)).

Asthma and COPD are the two most common chronic respiratory conditions in both Australia and New Zealand.

What are the signs and symptoms of respiratory conditions?

In general, signs and symptoms of respiratory conditions, especially those of chronic ones, may be mild and develop slowly. People may think such signs and symptoms are due to ageing and lack of fitness. As a result, they try to adjust their lifestyle to accommodate their symptoms without seeking healthcare. Therefore, if you have one or more of the following signs and symptoms, you should see your general practitioner (GP).

- **Persistent and unexplained cough** lasting for more than 3 weeks.
- **Shortness of breath (breathlessness)** not related to increased physical activity and/or your current state of fitness or health.
- **Wheezing** a high-pitched whistling sound when you breathe (caused by air trying to go through narrow or blocked airways) can be one of the first signs of respiratory conditions such as asthma or COPD.

- **Mucus/sputum/phlegm** particularly an increased build-up lasting for more than a month.
- **Fatigue** not relieved by sleep or rest is one of the most common symptoms of respiratory conditions.
- **Chest infections** that affect your lungs, either in the larger airways (bronchitis) or in the smaller air sacs (pneumonia).
- **Chest tightness** that gets worse with breathing or coughing and lasts for more than a month.
- **Unintentional weight loss** can be a sign of a serious illness such as severe COPD or lung cancer.

How do respiratory conditions present in your mouth?

Respiratory conditions and their associated medications can affect your mouth. Below is a brief description of some respiratory conditions and how they affect your mouth.

Asthma: a condition where the airways become blocked or narrow, causing difficulty breathing and wheezing. People with asthma may breathe through their mouth instead of their nose, which can lead to a dry mouth. Asthma medications, in addition to being acidic, can also cause dry mouth. All these factors can lead to problems like oral thrush (a fungal infection), tooth erosion, tooth decay, and gum disease (Figure 2).

COPD: is a progressive lung disease that makes it difficult to breathe. It is caused by damage to the lungs. Smoking is the main cause, and gum disease is also associated with COPD. People with COPD might get a dry mouth because they breathe through their mouth or because of the medication they take. Their immune system may be weaker, which can lead to infections. These problems can increase the risk of tooth decay, gum disease, and mouth infections (oral thrush) (Figure 2).

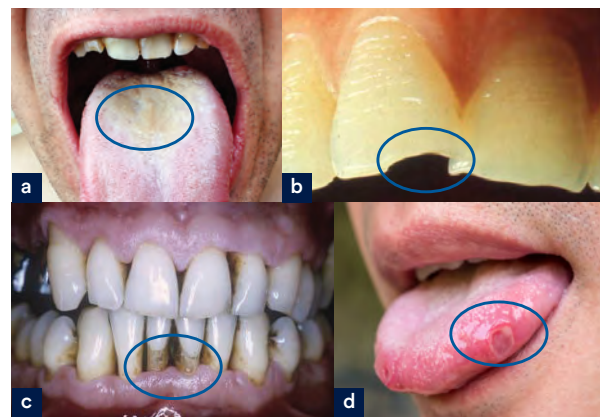


Figure 2: Oral symptoms associated with respiratory conditions and/or their medications (a) Oral thrush (circled); (b) Tooth erosion (circled); (c) Gum disease with receding gums (circled); (d) Tuberculous ulcer on the tongue (circled)

Pneumonia: a serious infection that causes inflammation of the air sacs in your lungs, making it hard to breathe. It happens when bacteria or viruses get into your lungs. People with a weak immune system are more likely to get pneumonia. Those with pneumonia may also have poor oral hygiene, bleeding gums, and severe gum disease.

Obstructive Sleep Apnoea (OSA): a condition where a person's breathing stops and starts during sleep. This happens when the muscles in the throat relax too much, blocking the airway. It can cause you to wake up briefly, gasp for air, and then drift back to sleep. This affects sleep quality. People with OSA may experience dry mouth, teeth grinding, gum disease, bad breath, and jaw pain. Using a Continuous Positive Airway Pressure (CPAP) machine to treat OSA can also cause dry mouth, which increases the risk of tooth decay and gum disease (Figure 2).

COVID-19: a serious respiratory condition affecting the lungs, making it hard to breathe. It can cause dry mouth, mouth sores, and changes in taste and smell, which affect diet and oral care, leading to tooth decay and gum disease. A weakened immune system and side effects from medication can also affect oral health.

Lung cancer: is the growth of malignant tumours in the lungs, which can spread to the mouth and cause swelling, especially in the lower jaw. This can lead to numbness in the lower lip. People with lung cancer may also experience oral problems like dry mouth, mouth sores, bleeding gums, and jaw pain, especially if undergoing treatments like chemotherapy or radiotherapy.

Tuberculosis (TB): a serious lung infection that can spread to the mouth, causing sores, especially on the tongue (Figure 2). It weakens the immune system, making it harder to fight bacteria in the mouth, increasing the risk of gum disease, tooth decay, and oral thrush. TB can also cause dry mouth, bad breath, and other oral health problems due to its treatments.

Why is it important to maintain good oral health and prevent dental diseases if you have respiratory conditions?

The mouth extends to the upper airways causing your mouth to potentially carry germs that cause respiratory conditions. If you have good oral health, you are less likely to have respiratory conditions. If you have poor oral health, germs in your mouth can enter into your airways and lungs. In particular, bacteria that cause gum disease are associated with respiratory conditions. Severe gum disease that is not treated can make respiratory conditions like pneumonia, asthma, COPD, and COVID-19 worse, even though it does