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## Dry mouth syndrome

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### Summary

- About 10 per cent of the general population and 25 per cent of older people have dry mouth syndrome, which is the lack of sufficient saliva.
  - A dry mouth is a symptom of an underlying problem, rather than a disease in itself.
  - Treatment includes saliva substitutes, dietary changes and good oral hygiene.
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About 10 per cent of the general population and 25 per cent of older people have dry mouth syndrome – not enough saliva in the mouth. A dry mouth is a symptom of an underlying problem, rather than a disease in itself.

A number of things may cause a persistently dry mouth, including prescription medications, medical treatments and certain autoimmune diseases such as **Sjogren's syndrome**. Treatment includes products that help to moisten the mouth. Dry mouth syndrome is also called xerostomia.

### Salivary glands

The salivary glands are located around the mouth and throat. These glands make saliva, which is pumped into the mouth along tiny channels called salivary ducts. The salivary glands include:

- parotid – located in front of the ear and behind the angle of the jaw
- submandibular – located beneath the tongue on both sides of the jaw (mandible)
- sublingual – located in the floor of the mouth
- minor salivary glands – found in various locations around the mouth, including the inner cheeks and throat.

A steady flow of saliva keeps the mouth moist at all times. Chewing and swallowing food increases the flow of saliva – simply looking at and thinking about appetising food can also cause an increased saliva flow.

### Protective role of saliva

A dry mouth significantly increases the risk of tooth decay and other oral diseases. Having enough saliva keeps your mouth healthy as it:

- contains components that can directly attack the bacteria that cause decay
- has anti-fungal properties
- helps to destroy viruses
- neutralises the acids produced by plaque
- contains phosphorus and calcium. These substances are vital to the ongoing process of remineralisation, which is the rebuilding of tooth enamel (the hard surface layer that protects the tooth) to prevent tooth decay
- moistens food, which enables comfortable swallowing
- helps with the formation of particular sounds in speech
- boosts sensation inside the mouth and allows, for example, the experience of pain, food texture and taste.

### Symptoms of dry mouth syndrome

Dry mouth symptoms may include:

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- saliva that feels thick or stringy
- rough, dry tongue
- the tongue tending to stick against the roof of the mouth
- problems with chewing or swallowing (particularly dry foods such as biscuits)
- bad breath
- mouth ulcers
- dry and cracked lips
- susceptibility to oral thrush infections
- high rate of tooth decay
- a prickly, burning sensation in the mouth
- loose acrylic dentures (as saliva helps to create the suction between the gum tissues and the acrylic base of the denture).

### **Related symptoms in the rest of the body**

Depending on the cause, dry mouth syndrome may be associated with symptoms outside the mouth, including:

- dry and itchy eyes
- dry nose or throat
- frequent coughing
- reduced sense of smell
- constipation
- joint pains or stiffness
- generally feeling unwell
- unexplained weight loss
- in women, frequent vaginal thrush infections.

### **Dry mouth syndrome and tooth decay**

Poor oral hygiene and a sugary diet tend to cause caries (tooth decay) on the biting surfaces and in between teeth. However, dry mouth syndrome causes a different pattern of tooth decay. The decay tends to start along the gum line (gingival margin) and, in some cases, the gums draw back to expose the underlying tooth layer (dentine).

Unlike enamel, dentine offers less resistance to acids and decay tends to be rapid. Decay of the exposed dentine is called 'root caries'.

Decay may also be seen on the lower front teeth, which are normally well protected by saliva produced from beneath the tongue.

### **Causes of dry mouth syndrome**

Many different conditions, some short term and others long term, can disrupt the production of saliva. These conditions may include:

- drugs and medications – about 600 drugs and medications, both legal and illegal, are known to cause dry mouth. These include antihistamines, high blood pressure medications, sedatives, decongestants, analgesics, antidepressants and illegal drugs such as cocaine
- dehydration – drinking too little fluid can cause thick saliva and a dry mouth. Other causes of dehydration include medical conditions such as blood loss, chronic diarrhoea or kidney failure
- infection – a bacterial or viral infection of the salivary glands (such as mumps) can cause inflammation and restrict saliva production
- **Sjogren's syndrome** – is a common autoimmune disease that mainly affects the eyes and salivary glands, but can also affect the sweat glands
- salivary duct obstructions – for example, tiny stones made from saliva minerals may lodge in the salivary

ducts and restrict saliva flow

- certain diseases – including AIDS, amyloidosis, cerebral palsy, diabetes, Parkinson's disease, primary biliary cirrhosis and lupus
- nerve problems – the function of the salivary glands is controlled by facial nerves. Injury or surgical damage to these nerves, for example, may reduce saliva production
- some cancer treatments – such as chemotherapy or radiotherapy (if directed at the head or neck) may temporarily reduce the ability of salivary glands to make saliva
- other causes – including habitually breathing through the mouth, for example, in the case of a persistently stuffy nose or blocked sinuses, or hormone changes from pregnancy or menopause.

### **Diagnosis of dry mouth syndrome**

Diagnosis of dry mouth syndrome may include:

- physical examination – the inner cheeks appear dry and rough, rather than moist and shiny
- tooth examination – the doctor or dentist may check the pattern of tooth decay
- saliva tests – for example, a typical saliva test involves rolling out the lower lip and patting it dry. Normally, saliva should re-moisten the lower lip within half a minute or so
- medical history – to check for diseases or medicines that could be drying out your mouth.

### **Treatment of dry mouth syndrome**

Treatment depends on the cause, but may include:

- changes to medicines – if you are taking a medicine that causes dry mouth as a side effect, the doctor may be able to alter the dose or prescribe an alternative medicine
- saliva substitutes – your doctor or dentist can prescribe an artificial saliva substitute. Use strictly as directed
- dry mouth products – these products contain a variety of agents such as lubricants that may help treat your dry mouth. The product range includes toothpaste, mouthwash, gums and topical gels. Speak to your dentist for specific recommendations
- antibiotics and anti-fungal drugs – may be used to treat an infection
- surgery – salivary gland blockages, such as stones, are usually treated with surgery
- other treatments, if required – any underlying condition, such as Sjogren's syndrome or diabetes, needs appropriate medical treatment.

### **Tips for living with dry mouth syndrome**

Be guided by your doctor and dentist, but general dietary suggestions include:

- Eat chewy foods to stimulate the flow of saliva.
- Chew food thoroughly before swallowing.
- Include watery foods in your daily diet.
- Avoid crunchy foods that could injure the mouth, such as crackers or potato crisps.
- Avoid acidic foods and beverages, such as soft drinks, citrus fruits and citrus fruit juices, to protect your tooth enamel.
- Restrict sugary foods and drinks or avoid them altogether.
- Avoid mint lollies and mint mouthwashes, as these products tend to aggravate dry mouth tissue and increase the risk of tooth decay. It's better to ask your dentist about non-mint-flavoured mouthwashes.
- Avoid any substance that increases mouth dryness. These include cigarettes, alcohol, caffeinated drinks and spicy foods.
- Chew sugar-free gum between meals to promote the flow of saliva.

- Drink plenty of water, but avoid sipping slowly as this can wash away any saliva. It may help to carry a drink bottle.
- Ask your doctor and dentist for other dietary suggestions, including a complete list of foods and drinks to limit or avoid.

### **Self-care suggestions for dry mouth syndrome**

Be guided by your doctor and dentist, but general self-care suggestions include:

- Brush and floss your teeth at least twice daily.
- Regularly use fluoride-containing products. Ask your dentist about which ones are best.
- Treat dry lips with Vaseline or some other type of greasy balm, such as lanolin. An air humidifier used in your bedroom at night may help.
- Consult your pharmacist. There are preparations that may help to moisten your mouth, including sprays, lozenges or pastes.
- Ask your dentist for more information if you wear dentures – adhesive dental products may be recommended.
- Take out partial or full dentures while you sleep.
- Ask your dentist for advice on toothpaste suitable for dry mouth syndrome.
- Visit your dentist regularly for check-ups, and treatment if necessary.
- Continue to take your medication, even if your medicine is to blame. Your doctor may not be able to change it or alter the dose. Do not stop taking your medicine without your doctor's knowledge and approval.

### **Where to get help**

- Your dentist
- Your doctor
- Pharmacist
- **Dental Health Services Victoria** Tel. (03) 9341 1000 (standard charges apply) or 1800 833 039 (country callers), 8.00 am to 4:30 pm (Monday to Friday)

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