

Drooling management

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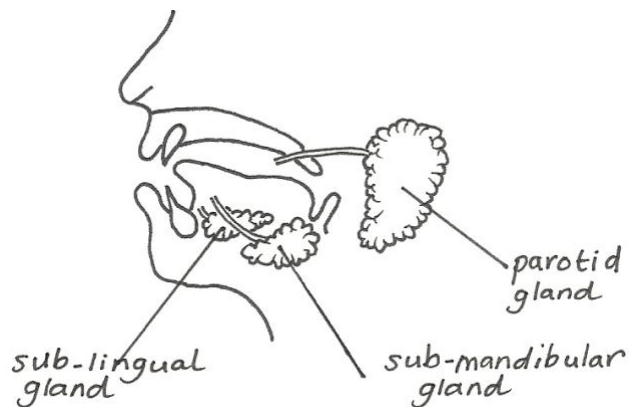
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Drooling (also known as dribbling or sialorrhea) is when saliva flows outside the mouth. Drooling is generally caused by an inability to retain saliva within the mouth, problems with swallowing or an overproduction of saliva.

Drooling can be part of Rett syndrome: those with the syndrome may be slow to acquire saliva control and it may re-emerge as a problem in late adolescence or early adulthood. It can be very distressing for families. It can also lead to dehydration due to loss of fluids, sore skin and wet clothing, and possible adverse comments from others.

Saliva is produced by three pairs of salivary glands in the mouth. The sub-maxillary glands (the sub-mandibular and sub-lingual glands) are responsible for the production of thick saliva which helps keep the mouth moist, and the parotid glands produce watery saliva during eating to help with chewing and swallowing.

People usually swallow around once per minute when awake, but this increases in response to increased saliva production, such as when smelling food or eating. Swallowing saliva is an automatic act but is dependent on the ability to feel the build-up of saliva in the mouth, and good tongue movements to collect the saliva and push it to the back of the mouth for swallowing. Drooling is usually due to poor tongue movements or swallowing difficulties rather than simply poor lip closure or an over-production of saliva.



Location of salivary glands (left side of the face)

Drooling is normal in babies. Most children learn to control this as they mature, usually around 15-18 months, although some will drool until the age of 3 in particular situations. The ability to control saliva develops alongside feeding and other motor skills. It can change over time and some people experience increasing difficulty with saliva control in adulthood, sometimes associated with a loss of swallowing skills.

The five main approaches to the management of drooling in people with neuro-disabilities are described below:

Conservative management

Conservative measures should always be considered before medical or surgical treatments:

- Avoid sweets and fizzy drinks where possible as these are thought to stimulate saliva production
- Dental problems can cause overproduction of saliva therefore regular check-ups and an active teeth cleaning programme are important
- Use a low-foaming toothpaste (ask a healthcare professional if unsure which brands are low-foaming)
- Try to prevent the individual putting their fingers or objects in the mouth where possible, to reduce stimulating saliva production. Flexible elbow splints are sometimes used to

- reduce mouthing, but this requires careful consideration with an occupational therapist
- When wiping away saliva dabbing the lips firmly, rather than wiping across the mouth and chin, will avoid stimulating saliva production and may help to trigger a swallow
- Neckerchiefs or bandanas in soft, absorbent cotton may be more age-appropriate than a bib
- Some individuals have found travel sickness acupuncture wrist bands helpful in reducing saliva production, but only for short periods of time

Oral motor exercises

It may be suggested that a speech and language therapist could provide a programme of exercises to increase tongue control. In order for a programme to be effective the following conditions are necessary:

- the individual must be aware of when s/he is drooling and want to gain control
- the individual and family/carers must be prepared to practise the exercises every day
- the individual must be able to imitate a range of oral movements, including closing the lips and lifting the tongue tip, and swallowing on command.

Oral-motor programmes are rarely possible for people with Rett syndrome.

There is no evidence that other general oral stimulation programmes involving stroking, massage or vibration, or blowing / sucking / biting / chewing activities are effective in reducing drooling.

Medication

There are several medicines that are currently used to reduce saliva production. These are usually anticholinergic medicines, not licensed specifically for saliva control but which have been used for many years to help manage drooling, following clear international guidelines. The medicines most commonly used by neuro-disability doctors include:

- ipatropium bromide – an inhaled medicine, originally used to treat asthma
- hyocine skin patches – developed as a travel sickness medicine with the side effect of drying the mouth. This may be effective in the short term, but has a number of side effects. Hyocine should not be used in people with epilepsy or a high risk of epilepsy, because of possible side effects. Patches should never be cut (areas can be taped over if a small dose is required).
- glycopyrrolate / glycopyrronium – taken orally or through a feeding tube.
- trihexyphenidyl – taken orally or through a feeding tube. This medicine is generally used to smooth out involuntary body movements.

Anticholinergic medicines may have side effects and therefore require careful medical supervision. Possible side effects include constipation, and increased bladder capacity (with reduced frequency of urination). Rarely seen side effects include difficulty settling to sleep, blurred vision and irritability.

Botulinum Toxin-A Injection

Botulinum Toxin-A injections are used to stop messages going from the nerves to muscles or glands. Botulinum Toxin-A is injected directly into saliva glands (usually both sub-mandibular glands and 1 parotid gland), located using ultrasound. Injections are usually given on a day care unit by a neuro-disability consultant or ear, nose and throat surgeon, with use of local anaesthetic and mild sedation. Sometimes a general anaesthetic is required if the individual finds it difficult to keep still or tolerate touch around the face.

Effects last for around 12 weeks, on average, before a repeat injection is required. There appears to be a cumulative effect so injections are needed less frequently over time

Botulinum Toxin-A is not licensed for saliva control but there are clear, internationally accepted guidelines for its use.

Surgery

Surgery is generally considered only after medication has been tried and when the individual has mature dentition (11 years or older). The most common surgical procedures used to control drooling are:

- redirecting the ducts from the salivary glands towards the back of the mouth – this requires good swallowing ability to avoid inhaling the extra saliva
- tying off the ducts from the salivary glands
- removal of the salivary glands

Some people with Rett syndrome gain long-term benefit; others have only a temporary improvement. Undesirable consequences can be a dry mouth, poor oral hygiene and some difficulties with chewing. Referral to an ear, nose and throat surgeon who specialises in this area will be required to consider this option.