



INFORMATION ON  
DROOLING IN CHILDREN  
WITH NEURODISABILITIES

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FROM PROVECA

## WHAT IS DROOLING

Drooling (also known as poor saliva control, 'sialorrhea' or 'dribbling') is sometimes a problem in children and adolescents with cerebral palsy or other neurological conditions. The incidence of drooling has been found to be as high as 40% in young people with Cerebral Palsy. Chronic drooling is sometimes referred to as hypersalivation, although strictly speaking this means an overproduction of saliva by the salivary glands. In most cases of chronic drooling there is typical production of saliva but there is a difficulty to successfully remove saliva from the mouth through swallowing.

## HOW DROOLING AFFECTS A CHILD

Chronic drooling can have an impact on both health and quality of life. The effects can include:

- Irritated and broken-down skin
- Dehydration
- Constant wetness and foul-smelling clothes
- Interference with personal relationships
- Low self-esteem

In addition, children with more severe drooling are at risk of breathing saliva into the lower airway (known as aspiration) instead of swallowing it. This increases the risk of chest infections.

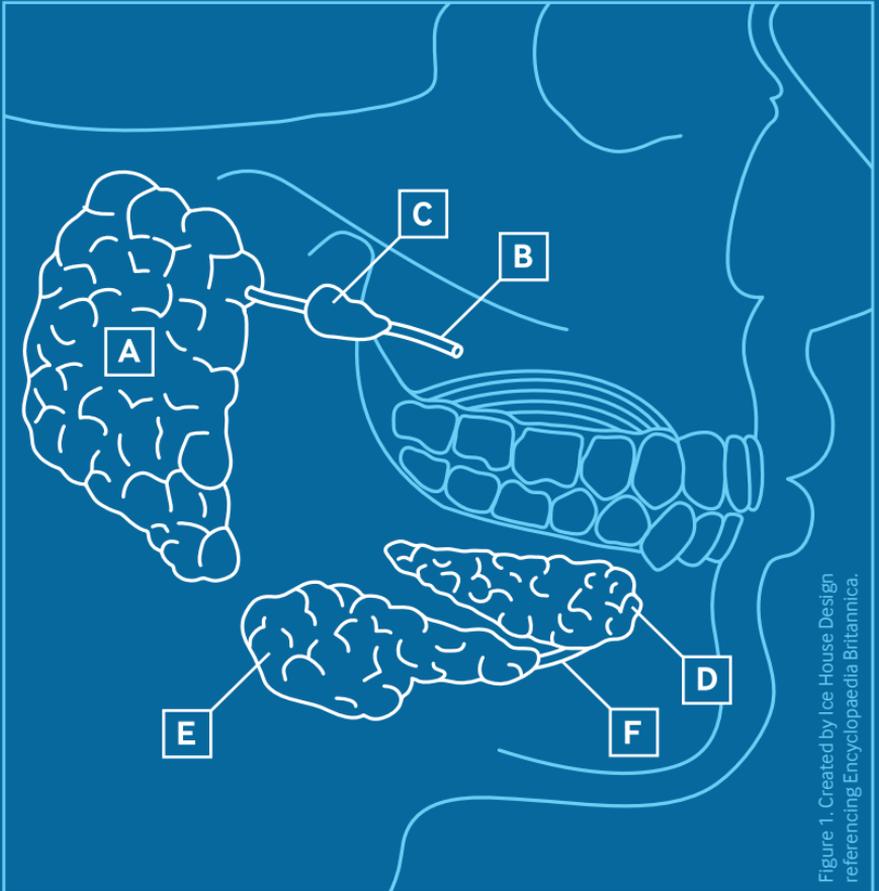
## HOW IS SALIVA PRODUCED?

There are three major pairs of glands in the mouth: the submandibular, sublingual and parotid glands. A child produces approximately 1000 to 1500 ml/day.<sup>1</sup>

The submandibular and sublingual glands produce saliva through ducts in the front of the mouth just under the tongue (see figure 1). They produce most (about 65%) of the saliva in the mouth and the secretions from these glands are watery. The sublingual glands produce a little saliva that is thicker in consistency. The parotid glands produce saliva through the ducts which open into the mouth near the second upper molar teeth. These large glands are most active during mealtimes.

The nervous system is responsible for the overall control of salivation and these nerves are not under conscious control.

# THE SALIVA GLANDS



**A** Parotid Gland

**B** Parotid Duct

**C** Accessory Parotid Gland

**D** Sublingual Gland

**E** Submandibular Gland

**F** Submandibular Duct

# WHAT ARE THE MAJOR FUNCTIONS OF SALIVA?

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To lubricate food to assist with chewing and turning food into a bolus (soft ball) making it easier to swallow

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To lubricate the mouth during speech

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To cleanse the teeth and gums and assist with oral hygiene

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To regulate acidity in the oesophagus (gullet)

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To destroy micro-organisms and clear some toxic substances

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To facilitate taste

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To initiate digestion

## WHY DO SOME CHILDREN DROOL?

Drooling is typical in the first six to eighteen months of life until oral-motor function (the ability to control the movement of the mouth and throat) is developed. It is unusual for a child older than four years to exhibit persistent drooling. This problem is most commonly seen in children with cerebral palsy or other conditions associated with neurological impairment.

Drooling is not usually a result of overproduction (hypersalivation) but of inefficient control of salivary secretions. This may be due to:

- Lack of awareness of external salivary loss
- Inadequate lip closure resulting in an open mouth posture
- Absent or impaired oropharyngeal (mouth and back of throat) sensation
- Atypical movements/abnormal tone of the tongue and lips (sometimes known as intra-oral motor impairment)
- Reduced frequency of swallowing and difficulty with swallowing (sometimes known as dysphagia)
- A combination of the above

## MODIFIED TEACHERS DROOLING SCALE

Reference 2

Score	Description
1	Dry: Never drool
2	Mild: Only the lips are wet; occasionally
3	Mild: Only the lips are wet; frequently
4	Moderate: Wet on the lips and chin; occasionally
5	Moderate: Wet on the lips and chin; frequently
6	Severe: Drools to the extent that clothing becomes damp; occasionally
7	Severe: Drools to the extent that clothing becomes damp; frequently
8	Profuse: Clothes, hands, trays and objects become wet; occasionally
9	Profuse: Clothes, hands, trays and objects become wet; frequently

### HOW IS DROOLING ASSESSED?

Several scales have been used by clinicians to help assess the severity of drooling including the modified Teachers Drooling Scale (shown above) which assesses the extent of drooling and the Drooling Impact Scale, which assesses the impact of drooling on the child.

## HOW IS DROOLING MANAGED?

When a child needs treatment for their drooling they're usually offered speech and language therapy and occasionally physiotherapy to start with. Bobath therapy helps address the underlying reason for the child's drooling by improving oral motor control and sensory awareness, when the child's drooling is caused by a neurological condition such as Cerebral Palsy. (<https://www.bobath.org.uk/about-us/bobath-therapy>)

There are many products available to help minimize the impact of drooling. Neckerchiefs or bandanas are used to absorb saliva around the neck and wrist bands could be of use to help the child wipe their mouth and chin.

Please find here a link to a company that can provide such products <https://fledglings.org.uk/collections/bibs-neckkerchiefs>

This is known as conservative management and where this is not effective, there are licensed and unlicensed drugs available to treat persistent drooling. For more information on the treatment of drooling, you can contact the child's GP or paediatrician.

For more information about the management of saliva in children with Cerebral Palsy please visit the website address below for the NICE guidelines 2017 on the assessment and management of Cerebral Palsy in the under 25's and go to section 1.11 Management of Saliva control.

<https://www.nice.org.uk/guidance/ng62/chapter/recommendations>

## **FURTHER INFORMATION**

The Bobath Centre is a national charity that provides services for children with Cerebral Palsy. Further information can be found at:

The Bobath Centre <https://www.bobath.org.uk/about-us/bobath-therapy>

Cerebral Palsy UK <https://www.cerebralpalsy.org.uk/>

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## References

- 1 Fairhurst CB, Cockerill H. Management of drooling in children. Arch Dis Child Educ Pract Ed 2011;96:25-30.
- 2 Zeller RS, Davidson J, Lee H-M, Cavanaugh PF. Safety and efficacy of glycopyrrolate oral solution for management of pathologic drooling in pediatric patients with cerebral palsy and other neurologic conditions. Ther Clin Risk Manag 2012; 8:25-32.

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