# Pediatric sialorrhea (drooling)

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## 1 Sialorrhea is common in children with neurologic impairment

Sialorrhea can be normal in children with typical development until age 4 years. It occurs in as many as 44% of children with cerebral palsy.[1] It typically results from poor oral motor control and fluctuates alongside the child's developmental trajectory. Reversible contributors such as nasal obstruction, dental issues, and medication effects (e.g., benzodiazepines and clozapine) should be considered.

## 2 Treatment is guided by adverse effects and the impact on quality of life

In children with neurologic impairment, overall function, comorbidities, and goals of care are dynamic, and sialorrhea may also fluctuate. Adverse effects include skin breakdown, aspiration and respiratory deterioration, social isolation, lower quality of life, and high caregiver burden.[2] Intervention is warranted if complications occur, particularly for recurrent or severe aspiration events.

## 3 Nonmedical interventions can be beneficial

Reminders to swallow may be helpful, and speech or occupational therapy can improve oral motor skills. Adaptive seating, bibs, barrier creams, and suction devices lessen the impact of drooling.

## 4 Anticholinergic medications have variable efficacy and are titrated based on therapeutic response and adverse effects

Atropine 1% (ophthalmic formulation; off label) is dosed at 1–2 drops sublingually up to every 4 hours as necessary. Glycopyrrolate is started at 0.02 mg/kg orally or via gastrostomy tube 3 times daily and titrated every 5–7 days at 0.02 mg/kg increments (maximum dose 0.1 mg/kg). Adverse effects include xerostomia, constipation, urinary retention, tachycardia, visual disturbance, and behavioural changes.[3]

## 5 Botulinum toxin injection or surgical interventions may benefit those who do not adequately respond to, or cannot take, medications

Botulinum toxin injection of the salivary glands substantially decreases the severity of sialorrhea; it is generally performed under ultrasonography guidance and sedation every 4–6 months.[4,5] In refractory cases, surgical options include salivary gland excision or salivary duct ligation.[5]

## References

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