

**Department of
Physical Medicine and Rehabilitation**

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Closed on Sundays and Public Holidays
Consultation by Appointment



For enquiries and appointments,
please contact us



Oral-Motor Disorders



物理醫學及復康科部

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What are Oral-Motor Disorders?

The muscles of the mouth (referred to as "oral muscles") include the various muscle groups controlling the movements of the upper and lower jaws, lips, tongue, and cheeks. These muscles are closely related to speaking, chewing, and swallowing. To speak and eat smoothly, it is essential to have adequate oral muscle strength, range of motion, coordination, and a normal oral sensory system.

Children with oral-motor disorders experience problems during the development of oral muscles, leading to abnormalities in the sensation, strength, stability, coordination, or range of motion of the jaw, lips, or tongue. These deficits can affect the children's pronunciation and swallowing abilities.

Additionally, poor development of oral and facial muscles can potentially impact the structure of the skull, jaw and facial structures, teeth alignment, and the development of upper respiratory tract. This may lead to concurrent orofacial myofunctional disorders, causing structural or functional issues, such as facial asymmetry, misaligned teeth, and breathing difficulties.

Oral-motor development is a complex developmental process. If you suspect that your child may have oral-motor disorders or orofacial myofunctional disorders, it is essential to seek medical help early. Otherwise, they may encounter difficulties not only in speaking and eating, but also face long-term impacts on their appearance, self-care, learning, and social skills.

Common Symptoms of Oral-Motor Disorders

- Fear of being touched on the face and mouth, resistance to brushing teeth, etc.
- Picky-eating or refusing certain textures and forms of food (e.g. rejecting coarser or harder-to-chew ones)
- Resisting to try new foods
- Frequent choking while eating or drinking
- Gagging easily when eating or brushing teeth
- Drooling frequently after the age of two
- Weak chewing ability (e.g. unable to chew meat, vegetables, etc.)
- Keeping the mouth open habitually
- Difficulty in using a straw for sipping
- Spillage of water from mouth or nose while drinking
- Significant retention of food residue in the mouth after eating
- Tongue frequently sticking out while speaking or swallowing.
- Habitually keeping food in the mouth for a long time
- Inability to imitate certain oral-motor movements (e.g. extending and raising the tongue tip, licking the lips or corners of the mouth).
- More frequent unclear pronunciation compared to peers
- Tongue-tie
- Abnormal teeth growth



Causes of Oral-Motor Disorders

Congenital brain developmental impairments

Common congenital diseases, such as Down syndrome and cerebral palsy, often lead to incomplete brain development or injury. These conditions can cause damage to brain regions responsible for controlling body movements, resulting in a loss of control over certain limbs and oral muscles. In addition, conditions like muscle tone disorders, where muscles cannot contract and relax voluntarily, can also affect normal oral muscle development.

Tongue-tie

The lingual frenulum is a membrane located under the tongue which controls its movement. If the lingual frenulum is too short or tight, it can affect the agility and flexibility of the tongue, causing infants to have difficulties in sucking, feeding, and swallowing. For young children, it can lead to challenges in articulating words accurately. Additionally, tongue-tie may cause orofacial myofunctional disorders as well. If the tongue cannot be positioned correctly against the roof of the mouth, it can affect the growth of the jawbone, leading to upper airway obstruction and potentially causing sleep disorders and mouth breathing.

Developmental Delay

The development of oral muscles and abilities in children involves different stages. Children need continuous oral exploration and training to accumulate experience in using their oral muscles, allowing them to control various oral functions effectively. If there is a lack of such oral muscle exploration and training, including age-appropriate chewing exercises or positive sensory feedback, children may experience delayed oral-motor development.

Oral Sensory System Dysfunction

Children with developmental disorders, such as autism spectrum disorder, attention deficit/hyperactivity disorder, or developmental coordination disorder, may also experience issues with sensory integration. Problems with oral muscle sensory integration can manifest as hypersensitivity, hyposensitivity, or a combination of both. If a child's oral sensory sensitivity is too high, they may dislike having their mouth being touched and adversity to try different foods. If the sensitivity is too low, they may frequently seek oral stimulation, such as biting the fingers, lips, or other objects, or having a preference for certain foods. Whether the sensitivity is too high or too low, it can affect the development of oral muscles.

Mouth Breathing or Sleep Apnea

Sleep apnea is more frequently observed in adults, but children can also experience it, leading to continuous mouth breathing or irregular breathing during sleep. If a child often breathes through their mouth during sleep or daily activities, it can impact the development of the skull, jaw and facial structures, and teeth alignment, including:

- Elongated facial shape
- Lips open at rest
- Forward tongue posture
- Flattened facial and jaw bones
- Protrusion of the upper teeth
- Shortened upper lip
- Flared nostrils
- Underdeveloped upper jaw
- Shortened chin
- Forward head posture

Persistent Finger-Sucking or Use of Pacifiers

Generally, young children should stop finger-sucking or using pacifiers between six months and one year of age. Continuing to suck on fingers or pacifiers causes the tongue to habitually rest in a more forward position, or even move in a tongue-thrusting pattern. Moreover, these habits restrict oral exploration, hindering the development of oral muscles.

How Can Speech Therapy Help Children with Oral-Motor Disorders?

If a child shows signs of oral-motor disorders, our Speech Therapists will assess the child's oral-motor abilities and the impacts on communication, swallowing, and feeding. If diagnosed with an oral-motor disorder or orofacial myofunctional disorder, the Speech Therapist will design specific therapy for the oral muscles, which may include facial and oral sensory training, muscle massage and stretching, strengthening exercises of the oral muscles, and oral-motor coordination training. Depending on the child's abilities and needs, the Speech Therapist may use specially-designed tools for oral-motor exercises.

The main goal is to strengthen the child's oral-motor abilities in order to improve speaking and eating performances. This involves enhancing the movement, agility, accuracy, and endurance of the oral muscles, improving speech clarity and chewing ability gradually. Some children with oral-motor disorders may also have issues with breathing, sleep, teeth, tongue-tie, or other developmental problems. Our Speech Therapists may collaborate with other healthcare professionals to provide a comprehensive treatment plan.

