



The Wellness Family

Dr. Leingang Keeps You Informed

Tethered Oral Tissues or Tongue Tie

Tethered Oral Tissues (TOTS) can consist of either a tongue tie (where the thin piece of skin under a baby's tongue restricts movement of the tongue) or where the upper lip is restricted due to being anchored to the gum. This thin membrane of tissue should undergo cell death during embryonic development but in some cases will fail to do so, thus, creating a "tethered-like" cord of tissue. TOTS is a condition that often runs in families and is said to have a genetic component.

Beyond Breastfeeding

Research implicating tongue tie with difficulties in breastfeeding suggests a broad span; anywhere from 25-60% incidence of breastfeeding associated difficulties such as: failure to thrive, maternal nipple damage, maternal breast pain, poor milk supply as well as difficulty latching and refusing the breast. Some studies have shown that for every day of maternal pain during the first three weeks of breastfeeding, there is a 10-26% risk of stopping breastfeeding. However, difficulties with breastfeeding alone should not be the only concern in order to consider evaluating a baby for TOTS and for possible intervention.

In one study, tongue tie was associated with the displacement of the epiglottis and larynx. Infants with this disorder were known to have difficulty breathing. These infants' arterial oxygen percent saturation levels were measured during three different times; asleep, suckling and awake. The results showed that their SaO₂ was unstable and slightly low; symptoms similar to those observed in victims of sudden infant death syndrome (SIDS) before their death. Unstable or low SaO₂ levels may also lead to neurological and developmental issues in children.

In the case of an upper lip tie (ULT), the baby may not be able to obtain a proper latch or seal on the breast. A successful latch occurs when the baby is able to flair their upper lip and take both the areola and the nipple in their mouth. When a baby has an upper lip tie, they are unable to flair their top lip out effectively (like fish lips) and may only take the nipple into their mouth. This may lead to a poor seal and swallowing excessive amounts of air during feeding. The air in the baby's belly can then lead to symptoms of colic or reflux and unnecessary medications may be prescribed. Lip ties can also hold mother's milk on the front surface of the upper front teeth during night time at-will feeding, leading to dental decay.

Children with TOTS may also have speech difficulties that may require extensive speech therapy.

For the infant, the common symptoms related to TOTS may include the following: several unsuccessful attempts at nursing; colic, gassy, reflux; failure to gain weight or thrive; unsustained latch, calloused or blistered lips; and sinus congestion or snoring.



Breastfeeding difficulties alone should not be the only concern in order to consider evaluating a baby for tongue tie.

For the mother, the most common symptoms may include: painful latch, cut or cracked areas; bleeding nipples; flattened, blanched or creased nipples; failure to bond with the infant leading to depression; or plugged, ducts, engorgement, mastitis or thrush.

Why the Rise in TOTS?

One theory in relation to the rise in the number of detected cases of TOTS is the fortification of foods with folic acid. In 1998, *folic acid* was added to foods such as most enriched bread flours, cornmeal, pasta, rice and grains in the U.S. and Canada. The intent behind adding this synthetic B vitamin to foods was to help prevent neural tube defects (NTD) in babies.

Although adding folic acid to our food sources has reduced the number of NTD's, it may have also led to the rise in children being born with a particular genetic defect in what is called the "MTHFR" gene and subsequent poor postnatal folate status. This particular gene is a key regulator of "methylation"; one of the most important biochemical reactions in our body needed for healthy DNA function and overall health. It is recommended that woman take the natural active form of *folate*, not *folic acid*, during pregnancy. Folate is also found in its natural form in dark green leafy vegetables.

How TOTS Affects Structure & Function

TOTS is considered a “mid-line” defect; meaning it affects the centre or core of our body. The tongue is anatomically attached to the bone and fascial structures of the head and torso. The tension caused from the tethered tissues can create long-lasting structural changes to the musculoskeletal system; especially in the neck, cranium and face. The changes in these regions can then lead to adaptive changes throughout the rest of the body and then present as postural abnormalities or asymmetries. In infants, these postural challenges can lead to difficulties in reaching various developmental milestones such as: rolling over, creeping or crawling. Developmental milestones are necessary in order for a child develop a healthy sensory-motor system. Proper sensory input is essential for academic, social, emotional and motor skill learning and development. If there is abnormal structure of any spinal regions, this critical sensory information may not make it to key areas of the brain and a child may develop a “disorganized” sensory-motor system. A child may later on go on to receive the diagnosis of “Sensory Processing Disorder” and have trouble with attention, learning and/or behavior.

TOTS can also affect the subtle “pumping” movement of the cranial bones. This action is necessary in order for the cerebral spinal fluid, the fluid that protects the brain and spinal cord, to move toxins and away from the brain. The cerebral spinal fluid is like a sewer system that eliminates waste but when the cranial pumping motion is inhibited, toxins can affect brain function and development.

Revision Intervention Options

There are various degrees of lip and tongue ties and various opinions on the necessity for intervention.

It is important to understand that a child does not need to display feeding or speech issues in order for there to be a problem. Dentists, pediatricians and ear, nose and throat doctors (ENT's) are the primary professionals that perform revision procedures. There are two methods for revisions: one uses a laser and one uses scissors. With either option, parents should interview the practitioner on their method and success rate for non-re-attachment post procedure.

It is critical that when seeking an opinion, the parent does research within their community to find a practitioner that is well versed in the different degrees of tongue/lip ties and that they also understand the structural implications of tethered oral tissues. It is also important that the practitioner is versed in post procedure wound care and the need for stretching exercises, cranial-sacral and chiropractic care in order to prevent re-attachment of the tissues.

Why Chiropractic & Cranial Sacral Care is Important

Due to the structural changes associated with TOTS, it is imperative that pre and post revision care includes chiropractic spinal adjustments and cranial-sacral therapy. The spinal column; especially the cervical spine (neck region) has a vast amount of neurological sensory input projecting to the brain. If there are structural stressors on the spine or cranium, this will lead to poor neurological communication from the body to the brain which will alter proper neurological function and development. Specific spinal adjustments can restore proper musculoskeletal structure, which in turn will restore neurological function.

For more information visit www.tonguetieprofessionals.org

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Dear Patient,
Dr. Leingang is dedicated to providing you with the absolute best in family wellness care. So take a moment today to discuss with your Family Wellness Chiropractor any concerns you may have regarding your family's overall health and wellness.

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