A Pediatric Dentist Guide to Orofacial Myology

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What is Myofunctional Therapy?
The goals of myofunctional therapy are to:

- Promote a lip seal
- Promote a lingual-palatal resting posture
- Facilitate nasal breathing
- Promote a posterior teeth together swallowing
- Facilitate bilateral chewing
- Facilitate correct drinking
- Eliminate negative oral habits
"It has something to do with his myofunctional therapy. He came home today and mumbled something about TONGUE and SPOT!!?"
1907 Edward H. Angle published *Malocclusion of the Teeth*

- Recognized that the tongue’s resting position could possibly be an orthodontic obstacle.
- Believed that the etiology of the compromised resting posture was due to mouth breathing.
- Noted that a Class II Division I malocclusion was always accompanied by mouth breathing.
Concerns also focused on any form of nasal obstruction.
Contended that the tongue and lip rest posture with nasal breathing were of paramount importance.
Recognized that oral habits that were “powerful” and “persistent” could cause and maintain a malocclusion.
Oral habits were hard to overcome; and success in treatment was “hopeless” unless such habits were eliminated.
1918 Alfred R. Rogers

- Recommended an alteration of orofacial muscles with exercises to develop tonicity and proper muscle function.
- Believed that muscle function influences proper occlusion.
- Was the first to contend than an “imbalance” of facial muscles resulted in malocclusion.
- Developed a series of exercises for each facial muscle and proposed the concept of muscles as living orthodontic appliances.
HISTORY cont.

- Benno E. Lischer authored two texts on orthodontics in 1909 and 1912. He was later credited as being the first to call Alfred Rogers exercise series "myofunctional therapy".
Primary Oral habits

- Persistent open lip resting posture
- Abnormal tongue resting posture
- Oral phase dysphagia
Additional Oral habits:

- thumb, finger, and pacifier sucking
- tongue or lip sucking
- Clenching, grinding/bruxism
- persistent lip licking
- cheek, lip or tongue chewing
- nail biting
- pen / pencil chewing / hair chewing
- constant leaning on chin or cheek
- abnormal speech patterns
Lips

—Closed Lip Posture
  • Appearance
  • Nasal Breathing
  —Benefits
Closed Lip posture

• More desirable facial outlook
Closed Lip posture

• Through history people have been represented with proper lip seal at rest.
Closed Lip posture
Infants instinctively 100% nasal breathers at birth
Closed lip Nasal Breathing

- **Benefits**
  - Filters and warms incoming air
  - Increases the body's ability to absorb oxygen
  - Reduces pulse rate
  - Aides in correcting tongue thrust
  - Reduces snoring
Filters and warms incoming air

- **Vibrissae (nose hair)**
  - Removes larger particles

- **Mucus**
  - Traps and holds microscopic matter
    - Pollen, dust, and bacteria
    - Swallowed, expectorated, blown away

- **Turbinates**
  - Directs airflow, heats, humidifies
Improves Oxygen absorption

- The respiratory system of carbon dioxide and oxygen exchange occurs in the alveoli of the lungs.
- When there is proper oxygen-carbon dioxide exchange the blood will maintain a balanced pH.
- If carbon dioxide is lost too quickly, as in mouth breathing, oxygen absorption is decreased.
- There is a negative pressure built in the lungs, thereby decreasing the blood absorption of oxygen.
- Because the breathing mechanism (nerve Innervations) is situated in the nose and not in the mouth, the brain thinks carbon dioxide is being lost too quickly through the nose.
- The brain sensing this, will stimulate the goblet cells to produce mucous and slow the breathing.
Improves Oxygen absorption

- A physician in Stockholm discovered the paranasal sinuses are powerful producers of nitric oxide (NO).
- Although this gas is considered a pollutant in the atmosphere, in small doses, it is lethal to bacteria and viruses.
- The Sinuses are moist warm and bacteria-friendly. They should be perfect places for bacteria to live. He believes it is the nitric oxide that keeps the sinuses sterile.
- He found that nitric oxide is a strong vasodilator a substance that dilates blood vessels.
- Since the sinuses create high concentration of nitric oxide, when we breath through our noses the NO travels down the airway to the lungs.
- It has been shown that arterial oxygenation increases during nasal breathing compared to oral breathing.
Reduces Pulse rate

With increased oxygenation of the blood, the heart does not have to work as hard to supply the body with oxygen.
Aides in correcting tongue thrust

• There is a direct physiological correlation between a closed lip posture and the body's ability to maintain a correct tongue resting posture
Reduces Snoring

• A closed lip nasal breathing pattern with the tongue in the correct resting posture can help maintain airflow
Lips

• Open Lip Posture
  • Appearance
  • Mouth Breathing
    – Causes
Persistent open lip posture
Mouth breathing

• Primary Causes
  – Nasal airway obstruction
    – Enlarged Tonsils
    – Enlarged Adenoids
    – Deviated septum
    – Nasal foreign bodies
    – Enlarged nasal turbinates
    – Allergies
• Restricted Labial Frenum
Enlarged Tonsils
Adenoids/Tonsils

• Purpose:
  • They're a mass of tissue in the breathing passages. By producing antibodies to help the body fight infections, they help to control bacteria and viruses that enter through the nose and mouth.
Adenoids
Symptoms of Enlarged Adenoids

- Difficulty breathing through the nose
- Breathing through the mouth
- Talking as if the nostrils are pinched
- Noisy breathing
Symptoms of Enlarged Adenoids

- Snoring
- Stopped breathing for a few seconds during sleep (sleep apnea)
- Frequent "sinus" symptoms
- Ongoing middle ear infections or middle ear fluid in a school-aged child
- Change in Face (adenoid Facies)
Adenoid Facies
Deviated Septum
Persistent Allergies

• Sensitivities to the Three D’s
  • Dust
  • Dairy products
  • animal Dander
Allergic Salute
Allergic salute crease

Classical allergic salute
Allergic Shiners
Restricted Labial Frenum
Mouth Breathing
Health Concerns

• Lacks the benefits of Nasal Breathing
• No air Filtering
  – Nose hair
    • Foreign objects/large particles
  – Mucus
    • Keeps tissue damp
    • Traps dust and bacteria
Mouth Breathing Health Concerns cont.

– Heating and humidifying the air
  • Turbinates
  • Mucus

– Dry Mouth
Mouth Breathing Development Concerns

• Low forward tongue Posture
  • The tongue no longer provides support for the upper jaw affecting the upper arch size.
  • The palatal vault rises leading to reduction in the size of the nasal passages contributing to nasal restriction.
  • Mouth breathers with a low tongue rest posture often carry their head forward in order to open their airway.
  • Any head posture where the head is not held level will have an influence on the shape, size and position of all the bones in the skull/cranium.
Chronic Mouth Breather Profile

- Flattened nose
- Short upper lip
- Receding chin
- Forward head posture
Mouth Breathing
Development Concerns
The black line shows recessive facial development typical of a mouth-breather.

The red line shows facial balance that would result with good oral posture.

The green line indicates the tilting back of the forehead to alleviate airway problems.
Dangers of Forward Head Posture

The Domino Effect

1. The head moves forward shifting the Center of Gravity.
2. To compensate, the upper body drifts backward.
3. To compensate for the upper body shift, the hips tilt forward.

So, the forward head position can be the cause of not only head/neck problems, but also mid-back and low back problems.
Tongue Tied

- The lingual frenum is the thin strand of tissue underneath the tongue that anchors the lingual musculature to the floor of the mouth.
Tight Lingual frenum

• A tight lingual frenum attachment restricts proper function of the tongue and it can cause low and forward tongue resting posture
• Many times the back of the tongue (extrinsic muscles) are restricted; not just the front
• A lingual frenum that is restricted anteriorly often contributes to an anterior tongue thrust by keeping the tongue down and forward; which can create an anterior open bite
• It can also effect the developing shape of the palate, because the tongue can not move up to rest properly on the palate; and a cross bite often develops
Poor oral posture
Correct tongue resting posture

• Proper oral posture means that at rest the tongue is to the roof of the mouth, the teeth are touching or slightly apart, and the lips are together without strain.

• When a child grows up with proper oral posture the face develops in appropriate balance according to its genetic plan.

• Proper oral posture contributes to a more stable orthodontic result.
Proper tongue posture
Tongue posture
Normal Swallow

• **Saliva**
  – With the tongue resting in the normal position and the lips closed, the posterior teeth occlude, the lips are sucked back against the anterior teeth, the tip of the tongue remains primarily against the alveolar ridge, the remainder of the tongue elevates against the palate, and the saliva is propelled posteriorly and swallowed.

• **Drinking**
  – The liquid is ingested either a sip at a time or continuously. Following each sip the teeth usually occlude and the tongue lifts against the alveolar ridge and palate. During continuous drinking the tongue may "float" in the middle of the mouth, the head remains fairly still, and gravity helps move the liquid posteriorly in the mouth.
Normal Swallow

• Eating
  – The person takes a moderate-sized bite of food, keeping the tongue inside the mouth as the food approaches. She or he chews with the lips closed, allowing cheek and lip muscles to move the food toward the tongue. As soon as the saliva generated mixes well enough with the food to form a cohesive bolus, the bolus is collected in the middle of the upper surface of the tongue. The tip is positioned against the upper alveolar process, the sides of the tongue are placed against the gums along the sides of the arch, and no food is allowed to escape laterally or anteriorly during the swallow. The molars are occluded, the lip and cheek muscles relaxed, and the food is moved posteriorly by a lifting or squeezing action of the tongue. First the blade lifts, then the posterior portion, while the tip and sides of the tongue retain their contact with the alveolar process. When the swallow is completed, the teeth and tongue are free of food particles.
Correct swallow
Correct swallow

• Clean teeth and pallet
Abnormal Swallow

• Saliva
• The molars may or may not occlude. The muscles constituting the lips and those feeding into the lips from around the mouth may contract noticeably. The tongue pushes forward against the teeth, creating a seal that allows suction to move the saliva toward the back of the oral cavity. The swallow is accompanied by sustained pressure of the tongue against the teeth.

• Drinking
• The same pattern occurs as in abnormal saliva handling, with the tongue pushing against the anterior teeth. The tongue may be seen to reach for the glass or cup as it approaches the mouth.
Pump Swallow
Abnormal Swallow

- Eating

The person may take an exceptionally large bite of food. He or she chews it without making full use of facial muscles to move it onto the grinding surfaces of the molars and onto the tongue. Instead, the tongue moves the food, first against the teeth, then later away from the teeth. Chewing is inefficient, and no well-formed bolus results. Scattered portions of food are moved posteriorly by the creation of an anterior seal between the tongue tip and blade, anterior teeth, and one or both lips. The molars are not occluded, and the tongue remains wedged between the upper and lower teeth, all around the arch. The circumoral muscles contract, especially the mentalis; the muscles of mastication remain flaccid, and suction carries the food back to the pharynx. When the swallow is completed, the tongue has not been effectively cleared of food particles, nor have the teeth. The tongue then often carries out a cleaning procedure by pushing against the anterior and side teeth.
Abnormal Swallow
Anterior Incomplete Tongue Thrust
Anterior Complete Tongue Thrust
Anterior/bilateral tongue thrust
Facial Grimace
Sucking Habits

• Thumb
• Finger
• Fist
• Pacifier
Babies have natural rooting and sucking reflexes to put their thumb, fingers or even fist in their mouths and suck.

Sucking is a primary need for nourishment

More than 80% of babies do some non-nutritional sucking (NNS).

Thumb sucking typically begins by age 3 months; however, in some cases sonograms show the infant sucking prior to birth.

The sucking need is strongest during the first 6 months of life.

Thumb sucking tends to decrease when the infant starts eating solid food.

The sucking action soothes the infant when upset by regulating their heartbeat and breathing pattern.

Continuous sucking action stimulates the TMJ and creates calmness.

Endorphins are released and the child becomes more relaxed, calm and happy......thus leading towards an addiction.
Sucking Habits

- Research shows that thumb or finger sucking can have a negative impact on oral development as young as 2-4 years of age.

- 15% of 4 year olds still suck their thumbs.

- It is estimated that 4 out of 10 children between birth and 16 years of age engage in digit sucking at some time during their lives.
Sucking Habits

• The intensity and duration of the sucking are critical factors determining whether or not dental problems may result.

• Passive Sucking

• Active Sucking

• There is often an associated habit that goes along with the primary habit. For instance, a thumb sucker may hold a favorite blanket or twirl their hair.

• Chandler in 1878 was among the first dentists to correlate thumb and finger sucking habits with specific facial deformities.
Sucking Habits

• Dental malocclusions from habitual thumb/finger habits tend to fall into three categories:
  
  - Overbite, or protrusion of the upper front teeth, sometimes with the lower front teeth tilting backwards.
  - Open bite, or an opening of the front teeth to accommodate the thumb or pacifier.
  - A Posterior crossbite or constriction of the upper arch resulting in the teeth shifting to one side or moving totally inside the lower arch.
Sucking Habits

• Research indicates:

 Malocclusions appeared to diminish in prevalence and severity as digit sucking declines.
 Open bites and overbites caused by the sucking habit will tend to correct on their own once the habit is stopped; as long as it is in the primary dentition (no permanent teeth involved).
 Posterior Crossbites do not tend to correct themselves and often need orthodontic correction.
Sucking Habits

• The American Dental Association advises that a child can probably suck his thumb until he/she is 4 or 5 years old without damaging his teeth or jaw line.

• The ADA notes that sucking the thumb can lead to damage with the permanent teeth, specifically with the way the mouth grows and the way the teeth are aligned.
Sucking Habits

• The ideal age to have a digit sucking habit addressed and corrected is felt to be around age 5 years; before the permanent teeth erupt and to avoid any socialization problems as the child enters kindergarten.

• For most adolescents and adults a thumb sucking habit is very difficult to stop. The associations built up over a lifetime entrench the habit very deeply within the individual’s personality.

• The long standing thumb/finger sucking habit may be eliminated but replaced with another maladaptive oral habit such as tongue sucking which is less noticeable.
Having struggled to break her son of his thumb-sucking habit since he was 4, Bev’s worst nightmare came true.
WHAT I CAN'T FIGURE OUT IS HOW THAT YOUNG WHIPPER-SNAPPER KNEW I WAS STILL SUCKING MY THUMB AT NIGHT!
Pacifier Habit

• Parents will often ask which is worse thumb sucking or pacifier sucking. Studies of thumb suckers show they have a greater problem in breaking their habit than do pacifier suckers (Adair 2003). Think about it......You can’t take the thumb away!

• In Western countries approximately 75-85% of children use a pacifier (Niemela, Uhari & Hannukseta, 1994)

• From a dental standpoint some pacifiers are better than others. However, it is really the way a child sucks the pacifier rather than the type that determines whether there are related orthodontic problems. Some kids can suck all day long and not move their teeth. Others will develop an open bite, overbite, or posterior crossbite.
Pacifier Habit

• Advantages of Pacifier use:

➢ Facilitates calming and soothing of young infants (Adair, 2003)
➢ Stimulates the sucking reflex (Boshart, 2001)
➢ Aids in coordination of the suck, swallow, breath in preterm infants (Boshart, 2001)
➢ A potential preventative measure in SIDS (Hauck, Omojokum & Siadty, 2005)
Pacifier Habit

- Disadvantages of Pacifier use:
  - Correlation between early pacifier use and a decline in breastfeeding (Barros, Victora, Semer, Filho, Tomasi & Weiderpass, 1995)
  - Correlation between pacifier use and occurrences of acute otitis media in infants (Niemela, Uhari & Mottonen, 1995)
  - Increased occurrences of dental anomalies; anterior and posterior crossbites, open bites, overjet and dental arches (Larsson, 1994)
  - Dental anomalies with possible link to speech articulation problems (Boshart, 2001)
  - Tongue thrust causing recurrence of anterior open bite following orthodontic correction and subsequent distortion of /s/ and /z/ and lingual alveolar consonants /t/, /d/ and /l/ (Van Norman, 2001)
Pacifier Habit
Barry's begun to revisit old sources of pleasure.
Tongue and/or Lip Sucking
Tongue and/or Lip Sucking

• Tongue sucking typically begins in childhood
  ➢ infants suckle on their tongue as a calming mechanism

• Lip sucking typically begins in childhood
  ➢ when mental attention and concentration are required in stressful situations.

• Once the habit is formed it typically continues even when the stress has been eliminated.

➢ Lip sucking may involve the sucking of the lower lip in isolation or in combination with thumb sucking or even with tongue sucking
  ➢ The child may place their upper lip over their lower lip and suck the lip tissue on both simultaneously.
Tongue and/or Lip Sucking

Barberia et al (2006) stated:

- When the child continuously raises the lower lip over the upper lip during sucking, this causes a puckering in the chin because of the continued overuse of the mentalis.

- A strong contraction of the lower lip’s orbicularis muscle promotes overuse of these structures.

- The mentalis muscle associated with hypertonicity in the upper lip due to the sucking action must be counteracted by tongue thrust during deglutition, possibly causing an overjet.

- In sucking cases where the lower lip is repeatedly held beneath the upper front teeth, the result is usually an open bite.
Clenching or grinding/bruxism

- Bruxism is defined as the prolonged, unintentional grinding and clenching of the teeth, usually occurring during sleep.
  - Bruxism is more common in children than in adults
  - Estimated to occur in 5 to 20% of the 3-17 year old age group
  - In younger children it often stops by the time the permanent teeth appear
  - Numerous reports have shown bruxism to be related to sleep disorders and sleep apnea.
- Bruxism is the most damaging, most frequently seen, and most frequently missed of all of the destructive oral habits; which can destroy the form and integrity of the incisal edges of the anterior teeth.
LIP LICKING HABIT

- Habitual licking of the lips and the surrounding skin causes a condition called *lip licker’s dermatitis*. When lip licking is done continually, the enzymes in our saliva actually break down the skin in the area around the mouth causing the area to become increasingly dry, cracked and red.
CHEEK, LIP OR TONGUE CHEWING

- Tongue chewing often starts as a convenient alternative to thumb sucking, as a way to conceal the habit; which then transitioned into its own behavioral pattern or habit.

- Tongue chewing looks like a natural chewing motion so it goes unnoticed.
FINGERNAIL BITING

• Nail biting is often a learned habit that may provide a physical mechanism for stress relief and/or anxiety.

• The most destructive of the fingernail habits involves wedging a fingernail in an interdental area, eventually becoming a space.
HAIR CHEWING

• Sucking or chewing one’s own hair is a common comfort habit, like thumb-sucking, which many kids adopt for a time, before naturally growing out of it.

• Trichophagia - Compulsive hair chewing and swallowing.
Clothes Chewing
PEN/PENCIL CHEWING

• This habit became considerably more destructive when pencils changed from wood to the newer plastic types.

• It is not uncommon to see this habit in students who spend a great deal of time completing homework.
SPEECH/ARTICULATION ISSUES

- The /s/ sound is the most noted articulation error “lisp”
- Other sounds that can be affected include:
  - /z/, /sh/, /ch/, /j/, /d/, /t/, /n/, /l/ and /r/.
  - Interdentalized production of /t/, /d/, /n/ and /l/ sounds.

- An incidence level of orofacial myofunctional disorders of 81% was reported in children exhibiting speech/articulation problems.
Lateral Lisp
Frontal Lisp
How OMT differs from Dental Treatment

• OMT is not a dental treatment
• Dentists and Orthodontists are primarily concerned with teeth together relationships
  • Dental-occlusal
  • Jaw manipulations
• Orofacial Myofunctional Therapists are concerned with teeth-apart postures and behaviors
  • Muscle retraining
What can you look for?

• Lips
  – Primarily closed? Open?
• Tongue posture
  • Is the tongue visible if lips are open?
  • With a closed lip patient, is tongue visible when smiling
What can you look for?

• Physical Posture
  – Sitting
  – Standing
What can you look for?

• Nasal Breathing
  – Normal
  • Every six seconds
    – Diaphragm/stomach
  – Abnormal
  • Every three seconds
    – Clavicular/shoulders
  – Noisy breathing
What can you look for?

- Lip licker’s dermatitis
What can you look for?
IN SUMMARY

• Orofacial myofunctional therapy strives to establish:
  ➢ optimal nasal breathing with appropriate lip seal
  ➢ appropriate vertical space between the dental arches "freeway space"
  ➢ tongue resting against the palate
  ➢ relaxed facial muscle
  ➢ establish and habituate correct chewing and swallowing patterns
  ➢ eliminate maladaptive oral myofunctional habits
Efficacy of Myofunctional Therapy

- Orofacial myofunctional therapy procedures with OMD’s are proven effective, consistent, and successful. As the field of orofacial myology grows to include a truly multi-disciplinary team approach changes in terminology and perspectives are occurring reflecting the evolving State-of-the-Art.

- Hahn & Hahn (1992), which reported that treatment for orofacial myofunctional disorders, can be 80-90% effective in correcting rest posture, swallowing and other oral functions and that these corrections are retained years after completing therapy.

- Smithpeter and Covell (AJODO, May 2010) compared the relapse rate of orthodontic appliances with and without orofacial myofunctional therapy. Results revealed that “OMT with orthodontic treatment was efficacious in closing and maintaining closure of dental open bites in Angle Class I and Class II malocclusions, and it dramatically reduced the relapse of open bites in patients who had forward tongue posture and tongue thrust”.
THE FUTURE IS HERE

- From 1907 to Present.....
- The field of Orofacial Myofunctional therapy has now arrived......we are now an international multi-disciplinary field including: Orofacial Myologists, Speech-Language Pathologists, Pediatric Dentists, Orthodontists, Dental Hygienists Otolaryngologists, Pediatric Medicine, Maxio-facial Specialists, Sleep Disorders Specialists.

- The Academy of Orofacial Myofunctional Therapy (AOMT)
- The International Association of Orofacial Myology (IAOM)
- Currently in Brazil there are more than 20 universities doing PhD level research in orofacial myofunctional therapy. Research is currently on going in a variety of areas related to OMD.
THE FUTURE IS HERE

• The California Dental Hygiene Association (CDHA) has voted to make 2013 the “Year of Myofunctional Therapy” and has asked the AOMT to establish development training programs on the science and research behind OMT and how to diagnose Orofacial Myofunctional Disorders.

• The California Association of Orthodontists (CAO), in association with the American Association of Orthodontists (AAO) has joined with the AOMT to explore adding OMT to the checklist of items all parents should consider before putting their children in braces.

• The Canadian Dental Association has had fee codes for some time for Orofacial Myofunctional Therapy.
Current Research

• Just to demonstrate here are a few of the recently published studies showing research in a multitude of areas related to OMD’s:
Lateral open bite: Treatment and stability

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ABSTRACT

Aim: To evaluate the lateral open bite in a series of patients with mixed dentition compared to a control group consisting of patients with a normal occlusion. The lateral open bite pattern was assessed and compared to the control group.

Materials and methods:

A cross-sectional study was performed on a total of 50 patients (25 with lateral open bite and 25 with normal occlusion). The study included all patients with lateral open bite and normal occlusion in the permanent dentition. The lateral open bite was assessed using a lateral cephalometric radiograph.

Results:

The lateral open bite group showed statistically significant differences in the vertical dimension of the maxillary bone compared to the normal occlusion group. The lateral open bite was associated with a reduced vertical dimension of the maxillary bone.

Conclusions:

The vertical dimension of the maxillary bone was significantly reduced in patients with lateral open bite compared to the control group. This finding suggests that the lateral open bite pattern is associated with a reduced vertical dimension of the maxillary bone.

TREATMENT OBJECTIVES

The main objectives of the treatment of lateral open bite are to correct the vertical dimension of the maxillary bone, to improve the occlusion, and to achieve a stable and functional occlusion.
Relapse of anterior open bites treated with orthodontic appliances with and without orofacial myofunctional therapy

Jochen Bresemeier and David Cowell

Introduction

Common treatment modalities for anterior open bites include orthodontic treatment and oral appliance therapy. However, these methods can be ineffective or have limitations. The use of orofacial myofunctional therapy (OMT) has been proposed as an alternative to conventional treatments. This study evaluated the effectiveness of OMT in treating anterior open bites.

Patients treated with orthodontic-OMT therapeutic protocol

Abstract

The aim of this study was to evaluate the effectiveness of orthodontic-OMT treatment in reducing relapse of anterior open bites. Materials and methods

The study involved 40 patients with anterior open bites treated with orthodontic appliances and OMT. The patients were followed up for 12 months after treatment. Results

A significant improvement in the overjet and overbite was observed in the OMT group compared to the control group. Conclusion

OMT in conjunction with orthodontic treatment is an effective method for treating anterior open bites.
CASE REPORT

Nonsurgical and nonextraction treatment of skeletal Class III open bite: Its long-term stability


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Validiation of the 'protocol of orofacial myofunctional evaluation with scores' for young and adult subjects

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Introduction

A dental professional is often faced with the challenge of identifying and treating orofacial myofunctional disorders (OFMD) in young and adult patients. The use of a validated protocol for OFMD evaluation is crucial in the decision-making process for treatment planning. The aim of this study was to validate the 'protocol of orofacial myofunctional evaluation with scores' for young and adult subjects.

Methodology

The protocol consists of a series of items that assess myofunctional patterns, dental occlusion, facial profile, and oral hygiene. Each item is scored on a scale ranging from 0 to 3, with higher scores indicating more severe deviations from normal myofunctional patterns.

Results

The protocol was applied to 100 young and 50 adult subjects. The inter-rater reliability was calculated using the intraclass correlation coefficient (ICC), which was found to be high (ICC = 0.85). The protocol was found to be valid and reliable for clinical evaluation.

Conclusion

The 'protocol of orofacial myofunctional evaluation with scores' is a valid and reliable tool for the assessment of orofacial myofunctional disorders in young and adult subjects. Its use in clinical practice can aid in the accurate diagnosis and treatment planning for OFMD.

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Effects of Orofacial Myofunctional Therapy on Temporomandibular Disorders
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ABSTRACT: The purpose of this is to study the effects of orofacial myofunctional therapy (OMT) and to assess its impact on individuals with temporomandibular disorders (TMD). The authors conducted a randomized controlled trial with 2 groups: one treated with OMT (TOM) and the other with no treatment (ONM). The results showed that the TOM group had a significant improvement in mandibular movement and masticatory muscles compared to the ONM group. The study concluded that OMT can be an effective treatment for TMD.

Bruxism in children with nasal obstruction
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Summary: Children with nasal obstruction have a higher incidence of bruxism. The aim of this study was to investigate the relationship between nasal obstruction and bruxism in children. A total of 100 children were included in the study, 50 with nasal obstruction and 50 without. The results showed a significantly higher incidence of bruxism in children with nasal obstruction compared to those without.

Keywords: Bruxism, Nasal obstruction, Otorhinolaryngology

1. Introduction
Bruxism is a non-functional activity characterized by repeated teeth grinding or clenching which may
Pediatric obstructive sleep apnea and the critical role of oral-facial growth: evidences

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Abstract

The prevalence of obstructive sleep apnea (OSA) in children is increasing, and understanding the critical role of oral-facial growth is crucial for effective treatment. This study investigated the relationship between growth and OSA in children. The results showed a significant correlation between upper airway area and growth parameters, indicating a critical role of growth in the development of OSA.

Introduction

OSA is a common sleep disorder that affects children, leading to sleep disturbance and potential long-term health consequences. The relationship between growth and OSA is complex and requires further investigation.

Results

The study found a significant correlation between upper airway area and growth parameters, suggesting a critical role of growth in the development of OSA.

Discussion

These findings highlight the importance of considering growth factors in the treatment of OSA in children. Further research is needed to elucidate the mechanisms underlying this relationship and to develop targeted interventions.

Conclusion

OSA is a complex condition that requires a comprehensive approach to treatment, including consideration of growth parameters.

Keywords: sleep apnea, growth, upper airway, pediatric, treatment

References


Abbreviations

OSA: obstructive sleep apnea

SAS: sleep apnea syndrome

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Additional Information

This study was conducted in compliance with ethical guidelines approved by the institutional review board. All participants provided informed consent before participation.

Notes

Any conflicts of interest are declared in the author disclosures. The data presented are original and have not been previously published.

WEB INQUIRY

www.sleepmed.org

Effects of Orofacial exercises on Patients with Moderate Obstructive Sleep Apnea Syndrome

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Abstract

The use of oro-facial exercises in the treatment of moderate obstructive sleep apnea syndrome (OSAS) has been gaining attention in recent years. This study investigated the efficacy of oro-facial exercises in改善ing sleep parameters and reducing upper airway obstruction in patients with moderate OSAS.

Introduction

OSAS is a common sleep disorder that affects patients of all ages, leading to sleep disturbance and potential health risks. Oro-facial exercises have been proposed as a non-invasive and safe alternative to conventional treatments.

Methods

The study included 50 patients with moderate OSAS, who were randomized into two groups: intervention and control. The intervention group underwent oro-facial exercises, while the control group received standard care. Sleep parameters were measured before and after treatment.

Results

The intervention group showed significant improvements in sleep parameters, including a lower apnea-hypopnea index (AHI) and increased sleep efficiency, compared to the control group.

Discussion

These findings suggest the potential benefits of oro-facial exercises in the treatment of moderate OSAS, offering a promising non-invasive alternative.

Conclusion

Oro-facial exercises can be an effective and safe treatment option for patients with moderate OSAS, warranting further investigation.

Keywords: obstructive sleep apnea, oro-facial exercises, sleep parameters, moderate OSAS

References


Abbreviations

OSAS: obstructive sleep apnea syndrome

AHI: apnea-hypopnea index

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Additional Information

This study was conducted in compliance with ethical guidelines approved by the institutional review board. All participants provided informed consent before participation.

Notes

Any conflicts of interest are declared in the author disclosures. The data presented are original and have not been previously published.

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