

Aurobindo College of Dentistry

Indore, Madhya Pradesh

INDIA



Module plan

- Topic : **ORAL HABITS**
 - Subject: Orthodontics
 - Target Group: Undergraduate Dentistry
 - Mode: Powerpoint – Webinar
 - Platform: Institutional LMS
 - Presenter: **Dr. Rakesh Thukral**

Definition of habit

- ⦿ **A habit can be defined as the tendency towards an act that has become a repeated performance, relatively fixed, consistent and easy to perform by an individual.**

Classification of Habits

- **Useful and Harmful habits**
- **Empty and Meaningful habits**
- **Pressure, Non-pressure and Biting habits**
- **Compulsive and Non-compulsive habits**

Useful habits

- ⦿ These includes habits that are considered essential for normal function such as proper positioning of the tongue, respiration and normal deglutination.

Harmful habits

- ⦿ These includes habits that have a deleterious effect on the teeth and there supporting structures such as thumb sucking, tongue thrusting ,etc

Empty habit

- ⦿ They are habits not associated with any deep rooted psychological problems.

Meaningful habit

- ⦿ They are habits that have psychological bearing.

Pressure habits

- ⦿ These includes sucking habits such as thumb sucking ,lip sucking and tongue trusting.

Non-pressure habits

- ⦿ Habits which do not apply a direct force on the teeth or its supporting structures.
- ⦿ Example: mouth breathing

Biting habits

- ⦿ These includes habits such as nail biting,pencil biting, lip biting

Possible Equilibrium Influences: Magnitude and Duration of Force Against the Teeth During Function

Possible equilibrium influence	Force magnitude	Force duration
Tooth Contacts		
Mastication	Very heavy	Very short
Swallowing	Light	Very short
Soft Tissue Pressures of Lip, Cheek, and Tongue		
Swallowing	Moderate	Short
Speaking	Light	Very short
Resting	Very light	Long
External Pressures		
Habits	Moderate	Variable
Orthodontics	Moderate	Variable
Intrinsic Pressures		
PDL fibers	Light	Long
Gingival fibers	Variable	Long

Compulsive habits

- ◎ These are deep rooted habits that have acquired a fixation in the child to the extent that the child retreats to the habit whenever his security is threatened by events which occur around him.
- ◎ The child tends to suffer increased anxiety when attempts are made to correct the habit.

Non-Compulsive habits

- ◎ They are habits that are easily learned and dropped as the child matures.

Thumb and digit sucking

- Digit sucking is defined as placement of thumb or one or more fingers in varying depths into the mouth.
- It is considered normal till age of three and half to four years.
- Persistence of habit beyond this age can lead to malocclusion.



Etiology

- ◎ Various theories are put forward for explaining thumb sucking:

Freudian theory:

- ◎ According to Sigmund Freud distinct phases of psychological development of oral and anal phases seen in first 3 years of life.
- ◎ In oral phase mouth is believed to be an oro-erotic zone.

- ◎ Children have tendency to place finger or other objects in the oral cavity.
- ◎ Prevention of act results in emotional insecurity and poses risk of child developing other habits.

Oral drive theory of Sears and Wise:

- ◎ It was proposed in 1950.
- ◎ It states that prolonged suckling could lead to thumb sucking.

Benjamin's theory:

- ◎ It suggests that thumb sucking arises from the rooting or placing reflex seen in mammalian infants.
- ◎ Rooting reflex is the movement of infants head and tongue towards an object touching his cheeks.
- ◎ The object is usually mothers breast but may also be finger or pacifiers.
- ◎ This rooting reflex disappears in normal infants around 7-8 months of age.

◎ **Learned pattern:**

- ◎ According to this thumb sucking is merely a learned pattern with no underlying cause or psychological bearing.

Phases of development

Phase 1 (Normal and sub-clinically significant):

- ⦿ It is seen during first 3 years of life.
- ⦿ Thumb sucking in this phase is considered normal and terminates at the end of the phase.

Phase 2 (Clinically significant sucking):

- ⦿ Extends between three to six and half years of age.
- ⦿ It indicates that child is under great anxiety.
- ⦿ Dental treatment should be initiated during this phase.

Phase 3(Intractable sucking):

- ◎ Thumb sucking persisting beyond the 4th or 5th year of life alerts dentists for psychological aspect of habit.

Effects of thumb sucking

- ◎ Thumb and digit sucking causes a number of changes in dental arch and supporting structures.
- ◎ The severity of malocclusion depends on following factors:
 - a) **Duration** : The amount of time spent indulging in the habit.
 - b) **Frequency**: The number of times habit is activated in a day.
 - c) **Intensity**: The vigor which the habit is performed.

Effects

- ⦿ Labial tipping of maxillary anterior teeth resulting in proclination of maxillary anteriors.
- ⦿ Lingual tipping of mandibular incisors in patients resting hand on mandibular anteriors resulting in increased overjet.
- ⦿ Anterior open bite due to restriction of incisor eruption and supraeruption of buccal teeth.

- ① Contraction of cheek muscles during thumb sucking resulting in narrow maxillary arch causing posterior crossbites.
- ① Development of tongue thrusting habit as a result of open bite.
- ① Hypotonic upper lip and hyperactive mentalis activity of lower part of face.



Anterior open bite



Posterior cross bite



Tongue thrust



Proclined upper incisors

Diagnosis

- ◎ The parents should be questioned on the frequency and duration of the habit.

- ◎ The child's emotional status is assessed by :
 - a) Feeding habit

 - b) Parental care of child

 - c) Assessment of parents- their working schedule.

Intra-oral clinical examination –

- ⦿ Assessment of proclination, open bite, cross bite, increased overjet etc.

Extra-oral examination-

- ⦿ Finger examination - presence of clean nails and callus on the finger is associated with thumb sucking.

Management of thumb sucking

- ◎ **Psychological approach:**
- ◎ Children lacking parental care, love and affection resort to this habit.
- ◎ Thus the parents should be counseled to provide the child with adequate love and affection.

- ◎ Dunlop put forward a theory called *Beta hypothesis* that states that the best way to break a habit is by its **conscious, purposeful repetition**.
- ◎ He suggests that the child should be asked to sit in front of a large mirror and asked to suck his thumb observing himself as he indulges in the habit.
- ◎ This procedure is very effective if the child is asked to do the same at a time when he is involved in an enjoyable activity.



Thumb guard



Bandage

Mechanical aids

- They are reminding appliances that assist willing child to quit the habit but cannot do so as the habit has entered a subconscious level.

- Habit breakers are of 2 types:

- a) **Removable habit breaker:**

- It consists of a crib and is anchored to the oral cavity by means of clasps on posterior teeth.

b) Fixed habit breaker:

It is a heavy gauge stainless steel wire design to form a frame soldered to bands on molars.

- ⦿ Other aids are bandaging thumb and bandaging elbow

Chemical approach

- ⦿ Use of bitter tasting or foul smelling preparation placed on thumb that is sucked can make the habit distasteful.
- ⦿ The medicaments used are:
 - a) Pepper dissolved in a volatile medium
 - b) Quinine
 - c) Asafoetida

Tongue thrust habit

- It is defined as a condition in which tongue makes contact with any teeth anterior to the molars during swallowing.



Etiology

- ◎ **Genetic factors:**

These are specific anatomic or neuromuscular variations in oro-facial region that precipitate tongue thrust e.g. Hypertonic orbicularis oris activity.

- ◎ **Learned behavior:**

It can be acquired as a habit.

Factors leading to tongue thrust as a habit

- a) prolonged bottle feeding.
- b) Prolonged thumb sucking.
- c) Prolonged tonsillar and upper respiratory tract infection.
- d) Prolonged duration of tenderness of gum or teeth resulting in change in swallowing pattern to avoid pressure on tender zone.

Maturation:

- ⦿ Infantile swallow changes to mature swallow as posterior deciduous teeth erupt.
- ⦿ Due to delayed maturation infantile swallow persists for longer duration of time.

Mechanical resistance:

- ⦿ Conditions such as macroglossia, constricted dental arches and enlarged adenoids predispose to tongue thrust habit.

Neurological disturbance:

- ⦿ Neurological disturbance like hyposensitive palate and moderate motor disability causes tongue thrust.

Psychogenic factors:

- ⦿ Forced discontinuation of other habits like thumb sucking often take up tongue thrusting.

Classification

Simple tongue thrust :

Features:

- a) Normal tooth contact during swallowing act.
- b) Presence of anterior open bite.
- c) Good intercuspation of teeth.
- d) The tongue is thrust forward during swallowing to help establish an anterior lip seal.
- e) Abnormal mentalis muscle activity is seen.

Complex tongue thrust:

Features:

- a) Characterized by a teeth apart swallow.
- b) Diffused or absence of anterior open bite.
- c) Absence of temporal muscle constriction during swallowing.
- d) Contraction of circumoral muscles during swallowing.
- e) Poor occlusion of teeth.

Clinical features of tongue thrusting habit:

- a) Proclination of anterior teeth
- b) Anterior openbite
- c) Bimaxillary protrusion
- d) Posterior open bite
- e) Posterior crossbite

Management of tongue thrust

Habit Interception:

- 1.The tongue thrust can be intercepted by use of habit breakers, both fixed and removable with cribs.
- 2.The child is taught the correct method of swallowing
- 3.Various muscle exercises of the tongue can help in training it to adapt to the new swallowing pattern.

Treatment of malocclusion:

Once the habit is intercepted the malocclusion associated with the tongue thrust is treated using removable or fixed orthodontic appliances.



Mouth Breathing Habit

- ◉ Mouth breathing can lead to altered jaw and tongue posture which can alter the oro-facial equilibrium thereby leading to malocclusion



Classification of mouth breathers

1) Obstructive:

- ⦿ Complete or partial obstruction of the nasal passage can result in mouth breathing.

Causes of nasal obstruction can be:

- ◉ Deviated nasal septum
- ◉ Nasal polyps
- ◉ Chronic inflammation of nasal mucosa
- ◉ Localized benign tumours
- ◉ Congenital enlargement of nasal turbinates.
- ◉ Allergic reactions of nasal mucosa.
- ◉ Obstructive adenoids.

2.Habitual:

A habitual mouth breather is one who continues to breathe through his mouth even though the nasal obstruction is removed. Thus mouth breathing becomes a deep rooted habit that is performed unconsciously.

3.Anatomic:

- ⦿ An anatomic mouth breather is one whose lip morphology does not permit complete closure of the mouth, such as patient having short upper lip.

Pathophysiology

- ⦿ **During oral respiration, the following three changes in posture occur:**
- ⦿ Lowering of the mandible
- ⦿ Positioning the tongue downwards and forwards
- ⦿ Tipping back of the head

- ⦿ Lowering of the tongue and mandible upsets the oro-facial equilibrium.
- ⦿ There is an **unrestricted buccinator activity** that influences the position of the teeth ,narrowing of maxillary arch and posterior cross bite

Clinical Features:

- ⦿ The type of malocclusion most often associated with mouth breathing is called long face syndrome or the classic adenoid facies.
- ⦿ **These patients exhibit the following features:**
- ⦿ Long and narrow face
- ⦿ Narrow nose and nasal passage
- ⦿ Short and flaccid upper lip

- ⦿ Contracted upper arch with possibility of posterior cross bite
- ⦿ An expressionless or blank face.
- ⦿ Increased overjet as a result of flaring of the incisors.
- ⦿ Anterior marginal gingivitis

Anterior open bite

Diagnosis

◎ History:

- ◎ A detailed history should be recorded from the patient as well as parents.

- ◎ **Clinical examination:**

- ◎ Various tests can be employed to diagnose mouth breathing:

- ◎ **Mirror Test:**

- ◎ A double sided mirror is held between the nose and the mouth. Fogging on the nasal side of the mirror indicates nasal breathing while fogging towards the oral side indicates oral breathing.

Cotton Test:

- ◎ A butterfly shaped piece of cotton is placed over the upper lip below the nostrils. If the cotton flutters down it indicates nasal breathing. This test can be used to determine unilateral nasal blockage.

Water Test:

- ◎ The patient is asked to fill his mouth with water and retain it for a period of time. While nasal breathers accomplish this with ease, mouth breathers find the task difficult.

Observation:

- ⦿ In nasal breathers the external nares dilate during respiration. In mouth breathers, there is either no change in the external nares or they may constrict during inspiration.

Cephalometrics:

- ⦿ Cephalometric examination helps in establishing the amount of nasopharyngeal space, size of adenoids and also helps in diagnosing the long face associated with mouth breathing.

Rhinomanometry:

- ◎ It is the study of nasal airflow characteristics using devices consisting of flow meters, and pressure gauges. These devices help in estimation of airflow through the nasal passage and nasal resistance

Management

- ⦿ **Removal of nasal or pharyngeal obstruction:**
- ⦿ Any nasal or pharyngeal obstruction should be removed by referring the patient to the E.N.T surgeon.

- ⦿ **Interception of the habit:**
- ⦿ Mouth breathing can be intercepted using a vestibular screen.
- ⦿ Alternatively adhesive tapes can be used to establish lip seal.

Rapid maxillary expansion:

- ⊙ Patients with narrow constricted maxillary arches benefit from widening the arch with rapid palatal expansion which has been found to increase the nasal air flow and decrease the nasal air resistance.

Bruxism

- It can be defined as the grinding of teeth for non-functional purposes.



Etiology:

- ◎ Psychological and Emotional stresses.
- ◎ Occlusal interference or discrepancy between centric relation and centric occlusion.
- ◎ Pericoronitis and periodontal pain.

Clinical Features

- ⦿ Occlusal wear facets on the teeth
- ⦿ Fracture of teeth and restorations
- ⦿ Mobility of teeth
- ⦿ Tenderness and hypertrophy of masticatory muscles. Muscle pain when the patient wakes up in the morning
- ⦿ -Temporomandibular joint pain and discomfort can occur

Diagnosis

- ◎ **History and clinical examinaion** in most cases is sufficient to diagnose bruxism.
- ◎ **Occlusal prematurities** can be diagnosed by use of articulating papers.
- ◎ **Electro-myographic examination** can be carried out to check for hyperactivity of the muscles of mastication

Treatment

- ⦿ Appropriate **psychological** counseling by a psychiatrist may be initiated.
- ⦿ **Hypnosis, relaxing exercises and massage** can help in relieving muscle tension.

- ◎ **Occlusal adjustments** have to be carried out to eliminate prematurities.
- ◎ **Night guards** or other **occlusal splints** that cover the occlusal surfaces of teeth help in eliminating occlusal interference, prevent occlusal wear and break the neuromuscular adaptation.

Lip Biting

- ⦿ This habit sometimes appears after forced discontinuation of thumb and finger sucking.
- ⦿ It most often involves the lower lip which is turned inwards and pressure is exerted on the lingual surfaces of the maxillary anteriors.



Features:

- ⦿ Proclined upper anteriors and retroclined lower anteriors.
- ⦿ Hypertrophic and redundant lower lip.
- ⦿ Cracking of lips.



- ⦿ This habit can be intercepted using **lip bumpers** that not only keep the lips away but also improve the axial inclination of the anterior teeth due to unstrained action of the tongue.

Nail Biting



- It does not produce gross malocclusion.
- Minor local tooth irregularities such as rotation, wear of incisal edges and minor crowding can occur as a result of nail biting.

- People in certain countries in middle-east exhibit what is called the **nut notch** which is a wear of teeth in the form of a notch.



- This is the result of cracking open and eating hard nuts using the incisal edges of the anteriors.

- These patients may exhibit mild irregularities and rotation of teeth.

