Bad Oral Habits

Introduction

Habit is defined as the action or condition, which had become fixed by frequent repetition. Repetitive behaviours are common in infantile period and most of them are started and finished spontaneously with age. One of the most common repetitive behaviors in infantile period is sucking habit.

There is no gender difference in oral habit prevalence during infancy, but later it is more demonstrated in females. The habit can decrease with increasing in age and feeding time, while become more frequent in High Socioeconomic groups, and when the number of siblings increases.

The extent of occlusal problems, caused by bad oral habits, is really depends on follows:

1. Duration: means the age at which the child get the habit, and the time spent by the child to do the habit per day (hours/day).
2. Frequency: means how many times the patient do the habit (i.e. thumb sucking) per day.
3. Intensity: means the amount of force that is applied to the teeth while performing the habit i.e. force of thumb sucking.

In general, the effect on occlusion will be increased proportionally by increasing in duration, frequency and intensity of habits.

The Most Frequent malocclusions seen with Bad Oral Habits:
Each one of bad oral habits would show one or more of these occlusal problems:
A. Change in inclination of upper and lower incisors.
B. Anterior openbite.
C. Constriction of maxillary arch (with posterior crossbite and/or crowding).

Change in inclination of upper and lower incisors

When a child places a thumb or digit between the teeth, is usually placed at an angle, so that it exerts pressure on the lingual surface of the maxillary incisors and on the labial surface of the mandibular incisors. This direct pressure is responsible for the displacement of the incisors. If these habits persist beyond the time that the permanent teeth begin to erupt, however, malocclusion characterized by flared and spaced maxillary incisors, lingually positioned lower incisors

In case of tongue thrusting associated with a forward tongue posture. The pressure on the lingual aspects of both upper and lower incisors, even if very light, could affect their position, resulting in proclination and flaring of them.

Moulding action of upper lip on incisors is lost in of mouth breather cases, thereby resulting in proclination and spacing of them.
Orthodontics — Bad Oral Habits

Anterior Openbite

The anterior open bite associated with thumb sucking arises by a combination of interference with normal eruption of incisors and excessive eruption of posterior teeth. When a thumb or finger is placed between the anterior teeth, the mandible must be positioned downward to accommodate it. The interposed thumb directly impedes incisor eruption. At the same time, the separation of the jaws alters the vertical equilibrium on the posterior teeth, and as a result, there is more eruption of posterior teeth than might otherwise have occurred. The position of thumb during sucking may affect the symmetry of the arch particularly when it is placed on one side instead of in the midline.

When the tongue thrust swallowing is associated with forward tongue posture, so that tongue tip rest between the erupting teeth, this will interfere with normal development of dentoalveolar segment and prevent it from being fully developed, resulting in anterior openbite.

In mouth breathing habit, both the tongue and mandibular posture are altered. To break the posterior oral seal, they are positioned downward, providing an additional opportunity for posterior teeth to erupt, resulting in increasing the face height and opening the bite anteriorly.

Constriction of maxillary arch

As the mandible positioned downward in almost all oral habits, the tongue is lowered vertically away from the maxillary posterior teeth. This can lead to alteration in the equilibrium between cheek and tongue pressures that controls width dimensions. The decreased pressure of the tongue against the lingual of upper posterior teeth and at the same time, the increased pressure form stretched cheeks against these teeth can produce a narrowing of maxillary dental arch, which usually lead to a unilateral posterior crossbite associated with lateral mandibular displacement. Cheek pressures are greatest at the corners of the mouth, and this probably explains why the maxillary arch tends to become V-shaped with a deep palatal vault. Crowding of teeth mostly the upper canines can be seen in constricted maxilla.

Thumb/Digit Sucking

Nutritive Sucking is a rhythmic activity, which is a kind of normal method of infant feeding, includes the production of negative intra-oral pressure during breast or bottle-feeding.

Non-nutritive sucking is placement of thumb or one or more fingers in the oral cavity with/without repeated and forceful sucking that associated with strong buccal and lip contraction.
In infancy and early childhood, nonnutritive sucking is considered a normal condition. Thumb sucking and pacifier use help children become comfortable with their environment, and give the children a method for self-relaxation. Most children outgrow the need for nonnutritive sucking by 3 years of age.

Persistent sucking habits can have deleterious effects on the occlusion. Generally, sucking habits during the primary dentition years have little if any long-term effect. If these habits continue into the mixed and permanent dentitions, this can result in several malocclusions.

**DIAGNOSIS**

The diagnosis of non-nutritive sucking consists of the following diagnostic procedures:

- **History of sucking habit**

  Information on whether the child has had a history of thumb or digit sucking is obtained from the parents.

- **Extra-Oral Features**

  Casual examination of face and upper extremities can reveal considerable information about sucking habit.

- **Digits**: used digit shows redness, exceptionally clean, wrinkling, short nail, roughened wart like callus on superior aspect, blister or ulceration, and rarely deformity.

- **Lips**: short & hypotonic upper, hyperactive lower, with incompetent lips.

- **Facial form**: retrusion of mandible, protrusion of maxilla, high mandibular plane angle and profile.

  **Intra-Oral Features**

  On examination, the followings can be seen:

  - **Maxilla**: proclined maxillary incisors with or without diastema, narrow and deep palatal vault, constricted V-shaped arch, with more constriction across the canines than molars.
  - **Mandible**: lingually tilted mandibular incisors, increased mandibular inter-molar width.
  - **Inter-arch relation**: reduced overbite or even openbite, increased overjet and posterior crossbite.

  These malocclusions arise from a combination of the direct pressure of digit on the teeth and the alteration in the pattern of resting cheek and lip pressures.

**TREATMENT**

Sometimes it is recommended to treat the sucking habit even in deciduous dentition due
to medical reasons, perhaps microorganisms, which may be introduced inside and cause GIT upset may contaminate the child's digit. In most cases, treatment for a prolonged nonnutritive sucking habit should be initiated between the age of 4 years and the eruption time of the permanent incisors.

The parent and dentist should be collaborated as a team to assist the child in stopping the habit. The correction of some associated malocclusions like the posterior crossbite can be done after, or simultaneously with, habit treatment.

Treatment approaches of sucking habit include the followings:

**Direct Interview**

The simplest approach to habit therapy is a straightforward discussion between the child and the dentist that expresses concern and includes an explanation by the dentist. It is most effective with older children.

**Reward System**

A reward system can be implemented that provides a small noticeable reward daily for not engaging in the habit.

**Reminder Therapy**

Appliance and non-appliance reminders are available.

- **Non-appliance Reminder Therapy**

It best suited for those patients who desire to stop the habit but need assistance to do so. Usually 6 to 8 weeks of intervention should be sufficient. An explanation is usually needed, so the child should understand that this is not punishment. They include the follows:
  - Thumb guard.
  - An adhesive bandage with waterproof tape on the finger that is sucked.
  - An elastic bandage loosely wrapped around the elbow prevents the arm from flexing and the fingers from being sucked.
  - Chemicals with hot flavored, bitter taste placed on the sucked digits.

- **Appliance Reminder Therapy**

If the previous methods have not succeeded in eliminating the habit and the child really want to quit, the appliance reminders, either removable or fixed, could be used. The child should understand the problem and the need for appliance. Support and encouragement is necessary from the parents to help the child through the treatment period.

**Removable appliances** these are passive appliances, which are retained in the oral cavity by means of clasps and have a palatal crib.

**Fixed appliances** these appliances composed of bands on molars and lingual arch with anterior crib device to remind the thumb to keep out.

**Time of Therapy**

Four to six months is usually sufficient as an active period for habit treatment. When sucking apparently ceases, the appliance should be retained in place for approximately 3 months to ensure the habit has truly stopped.
Tongue Thrusting

Tongue thrusting is the most controversial of all oral habits. It is defined as placement of the tongue tip forward between the incisors during swallowing. This anterior tongue position may be termed as tongue thrust. Tongue thrust is actually a ‘misnomer’ as it means that tongue is forcefully thrust forward whereas actually, the tongue is only placed forward. Sometimes the tongue placed laterally leading to posterior openbite.

The modern viewpoint is that tongue thrust swallowing is seen primarily in two circumstances. In younger children (up to 4-5yrs) with reasonably normal occlusion, in whom it represents only a transitional stage in normal physiologic maturation and no treatment needed. In individuals of any age with displaced incisors, in whom it is an adaptation to the space between the teeth. The presence of overjet (often) and anterior open bite (nearly always as often occurs from sucking habits) conditions a child or adult to place the tongue between the anterior teeth to get the anterior oral seal during swallowing. A tongue thrust swallow therefore should be considered the result of displaced incisors, not the cause. Nevertheless, if a patient has a forward resting posture of tongue, the duration of this pressure, even if very light, could affect tooth position, vertically and/or horizontally. Tongue tip protrusion during swallowing is sometimes associated with a forward tongue posture, so it is likely to have an effect on the teeth, whereas if the postural position is normal, the tongue thrust swallow has no clinical significance.

DIAGNOSIS

Intra-Oral Features:
- Open-bite-anterior or posterior (lateral tongue thrust).
- Protrusion of anterior segments of both arches with spaces between incisors and canines.
- Narrow and constricted maxillary arch with posterior cross-bite.

Tongue posture

In a tongue thrusting habit, the middle part of tongue does not touch the hard palate and the tip of the tongue is placed between the anterior teeth.

Tongue function

Tongue thrust swallowing pattern is characterized by:
- Tongue is placed between the teeth and tongue tip is brought forward into contact with the lower lip, i.e. tongue-to-lower lip posture.
- Little posterior tongue activity / pharyngeal muscle activity.
- Active contraction of lips, facial and mentalis muscles.

TREATMENT

The management of tongue thrust involves interception of the habit followed by treatment of the malocclusion. Since tongue thrust decreases with age, treatment must be based on age.

In many cases, with the absence of obvious predisposing factors, the orthodontic correction of anterior open bite and/or upper
anterior protrusion, can leads to disappearance of tongue thrust.

If the tongue thrusting with a forward tongue posture persists until 7-8 years with apparent malocclusion, it should be treated. The management can done by:

**Tongue Exercise**

A. Identify the incisal papilla as the spot behind front teeth.
B. Practice touching spot with the tongue tip.
C. Swallow by using any type of sugarless mint (lifesaver, etc.). As it dissolves, try swallowing with lips and teeth closed and tongue tip touching the incisal papilla.

Try to perform these exercises 20 times each at least 4 times per day. Remember this is a very difficult habit to change. It will require repeating these exercises many times during the day for many weeks before the changes become natural.

**Tongue Guard**

Learning of new swallowing pattern, which is done by the exercises, can be reinforced by means of mechanical restraints, which may be removable or fixed. These restraints have a palatal Crib or spurs used in guiding the tongue and breaking the habit.

- **Obstructive**: an increased resistance to or a complete obstruction of the normal flow of air through the nasal passages.
- **Habitual**: continually breathes through the mouth by force of habit, although the obstruction has been removed.
- **Anatomic**: Short upper lip does not permit closure without undue effort.

Respiratory needs are the primary determinant of the posture of the jaws and tongue. Thus, an altered respiratory pattern, e.g. in mouth breathing could alter the posture of the head, jaw and tongue. To breathe through the mouth, it is necessary to lower the mandible and tongue. This, in turn, could alter the equilibrium of pressure on jaws and teeth thus, affect the jaw growth and teeth position. If these postural changes were maintained, narrow maxilla with posterior crossbite results. Face height would increase leading to adenoid facial appearance. The posterior teeth would super-erupt and the mandible would rotate down and back, resulting in opening the bite anteriorly and increasing overjet.

**Mouth Breathing**

The habitual respiration through the mouth instead of nose is known as mouth breathing. Mouth breathing can be classified as:
DIAGNOSIS

History:
Tonsillitis, allergic rhinitis, chronic nasopharyngeal obstruction.

Extra-Oral Features:
- Adenoid long face with increased facial height.
- Narrow external nares.
- Incompetent lip posture with short upper lip and heavy everted lower lip.

Intra-Oral Features:
- Proclination of anterior teeth.
- Distal relation of mandible to maxilla.
- Narrow, V-shaped maxillary arch, and deep palatal vault.
- Over-eruption of buccal segments.
- Anterior Openbite with increased overjet.
- Hypertrophic gingivitis.

Several clinical test can be used during examination of mouth breathers, such as the observation of change of size or shape of external nares while the patient breath, mirror test, cotton test and water test.

TREATMENT

ENT referral

Generally, almost all mouth-breathing patients should be referred to ENT specialist for checking the patency of nasal airway and management of any nasopharyngeal obstruction.

Oral screen

Habitual mouth breathing can be intercepted by use of oral screen. It should be used after removal of nosorespiratory distress or nasal obstruction.

One of the most effective ways to reestablish the nasal breathing is by preventing the entry of air through the oral cavity. For this purpose, the oral screen is indicated.

Oral screen is a device fitting in the vestibule, which shuts off the ingress of air through the mouth. It consists of a thin sheet of acrylic extending deep into the vestibular sulcus both labially & buccally. Many breathing holes can be bored initially. This allows passage of some amount of air into the mouth. As the patient learns to breathe through nose, fill some holes with acrylic so that less and less air enters through the mouth and finally close all the holes. After the treatment period of 3-6 months, a reduction in anterior open bite could be seen.