Sri Aurobindo College of Dentistry

Indore, Madhya Pradesh

INDIA

MODULE PLAN

TOPIC : ORAL HABITES IN CHILDREN
SUBJECT: PEDODONTICS

TARGET GROUP: UNDERGRADUATE DENTISTRY

MODE: POWERPOINT – WEBINAR

PLATFORM: INSTITUTIONAL LMS

PRESENTER: DR.BINTI RANI CHAND

Contents

INTRODUCTION

- HABIT is a way of acting through fixed repetition.
  - The word HABIT is such that when the letter “H” is removed, “A BIT” remains;
  - When the letter “A” is removed, “BIT” remains;
  - When the letter “B” is removed, “IT” still remains.
  - This implies the persistence of act and interference with regular pattern of facial growth

“All bad habits start slowly and gradually and before you know you have the habit, the habit has you”

-Zig Ziglar

Habit: Definitions

- **Dorland(1957) –**

  Fixed or constant practice established by frequent repetition

- **Buttersworth(1961) –**

  Frequent or constant practice or acquired tendency, which has been fixed by frequent repetition

Moyer

Habits are learnt pattern of muscle contraction of a very complex nature

Hogeboon and Salder

It is a methodical way in which mind and body act as a result of frequent repetition of a certain definite sets of nervous impulses

- **Mathewson(1982) –**

  Learned patterns of muscular contractions

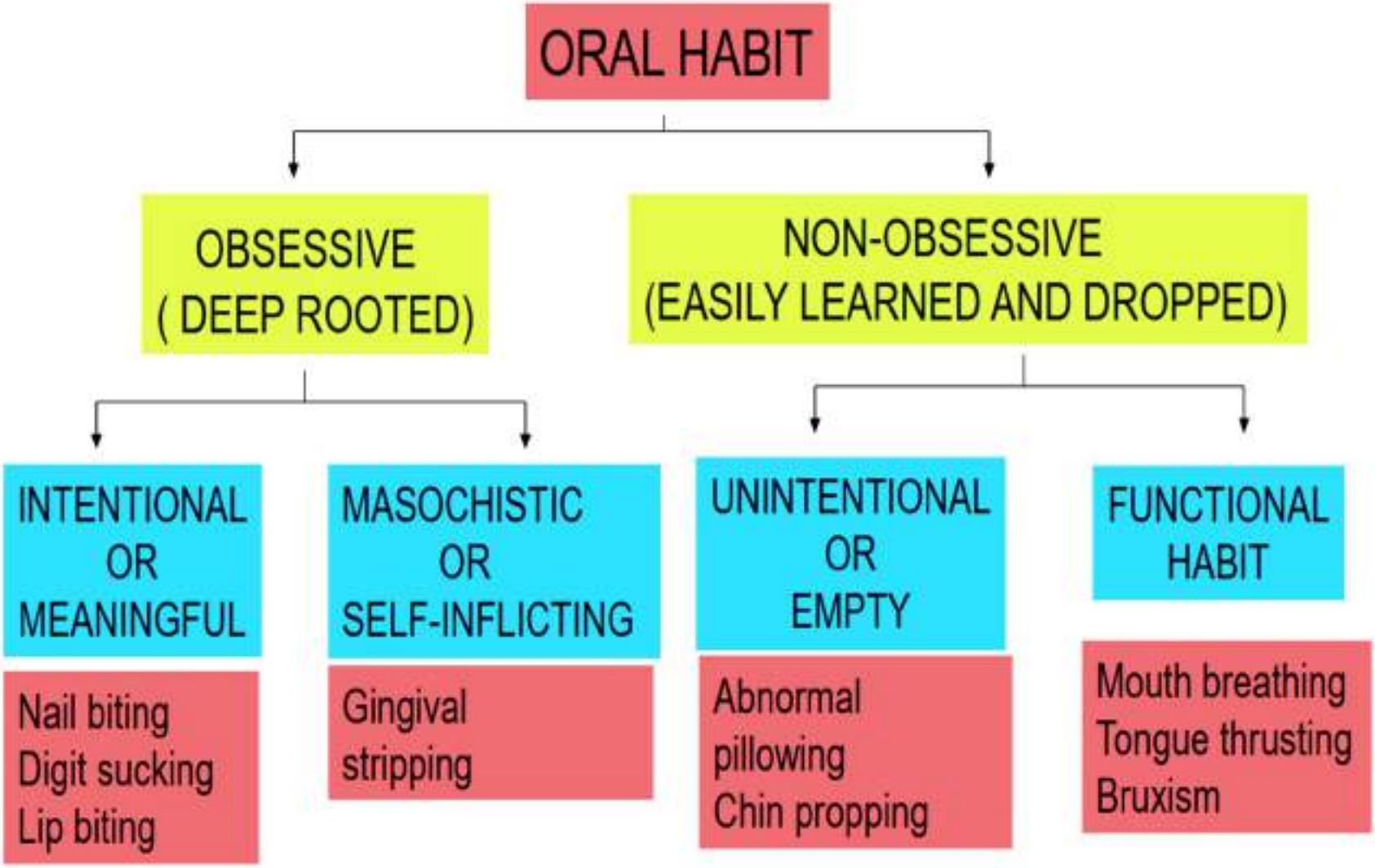
- **Boucher**

  As a tendency towards an act or an act that has become a repeated performance, relatively fixed , consistent, easy to perform and almost automatic

Development of habit

- Unconscious mental pattern
  - Instinct
  - Insufficient or Incorrect outlet of energy
  - Pain or discomfort or insecurity
  - Abnormal physical size of parts
  - Limitation /Imitation by parents or others

CLASSIFICATION OF HABITS



Habits: Classification

- William James (1923)
  - Useful
  - Harmful
- Kingsley(1956)
  - Functional oral habit
  - Muscular habit
  - combined
- Morris and Bohanna (1969)
  - Non pressure habit
  - Pressure habit
  - Biting habit
- Earnest Klein (1977)
  - Empty
  - meaningful

- Graber (1976)
  - Thumb /digit sucking
  - Tongue thrusting
  - Lip/nail biting, bobby pin opening
  - Mouth breathing
  - Abnormal swallow
  - Speech defects
  - Postural defects
  - Psychogenic habits-bruxism
  - Defective occlusal habits
- Finn (1987)
  - Compulsive habits
  - Non- compulsive habit
    - Primary habit
    - Secondary habit

HABITS

Cause	Origin	Patient awareness
Physiologic	Retained	Unconscious
Pathologic	Cultivated	Conscious

SUCKING HABITS

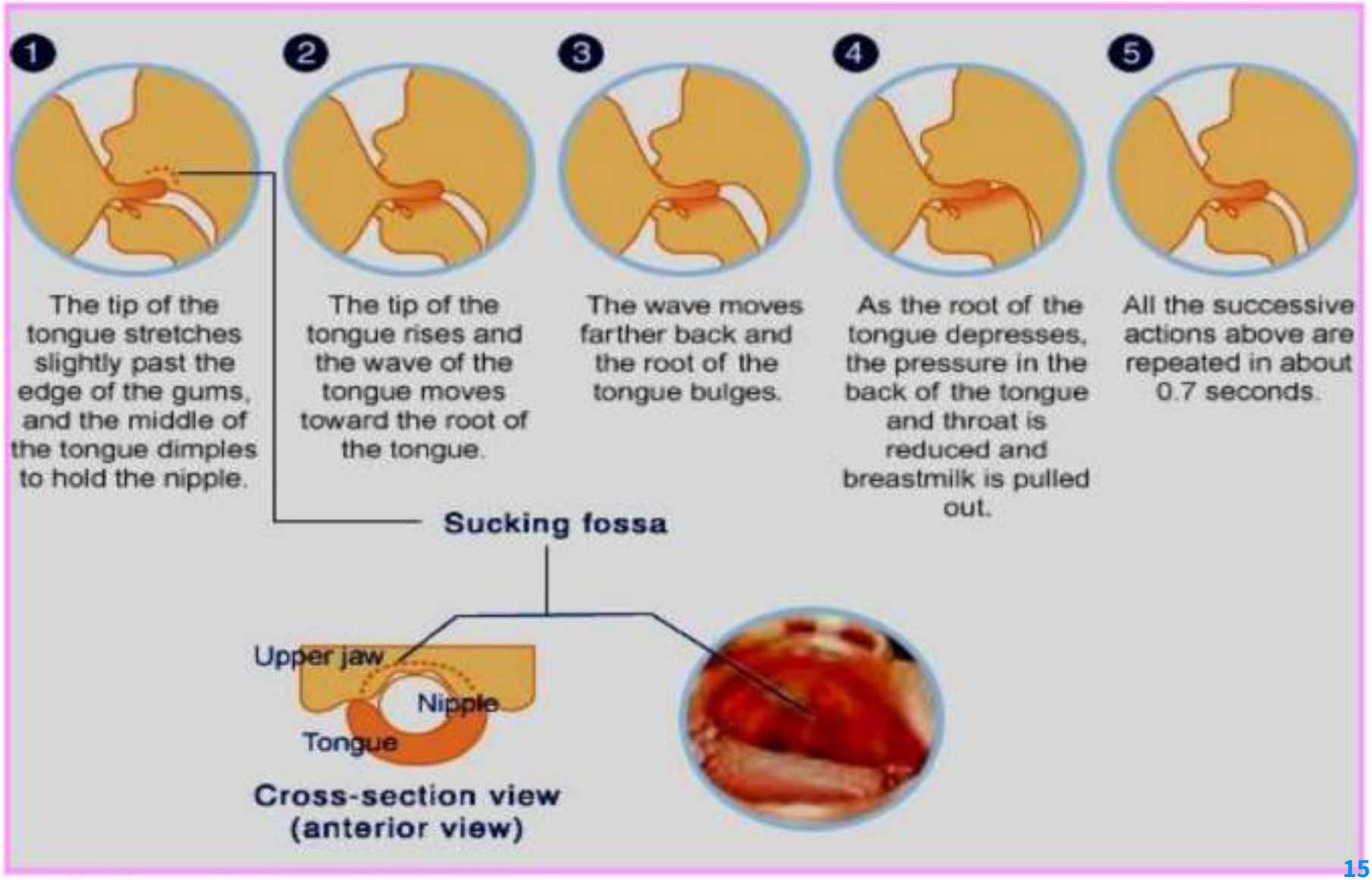
Nutritive Sucking

- Breast feeding
- Bottle feeding

Nonnutritive Sucking

- Thumb sucking
- Pacifier sucking
- Others (blanket)

SUCKING REFLEX



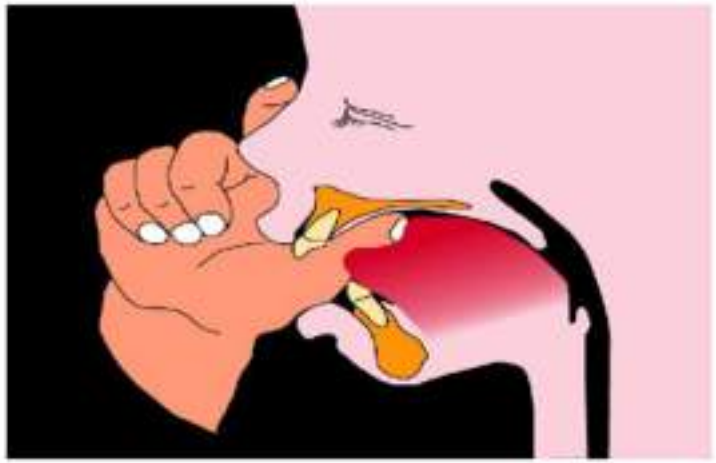
Breastfeed

- Stimulates muscles around the mouth and tongue activity for normal growth.
- Allows milk flow on demand
- Allows gravity working correctly on muscles involved

Bottlefeed

- Muscles don’t work hard, normal growth affected.
- Milk flows in continuous flow, muscles don't work
- Keeps tongue in unnatural forward position

Thumb sucking



Thumb or Digit sucking

- Synonyms-
  - Thumb sucking/ Digit sucking/ Finger sucking

- Definitions -

Gellin(1978): Placement of thumb or one or more fingers in varying depths into the mouth or oral cavity

Moyers: Repeated and forceful sucking of thumb with associated strong buccal and lip contractions.

Thumb sucking: Classification

Based on clinical observation –

- Normal thumb sucking
- Abnormal thumb sucking
  - Psychological
  - Habitual

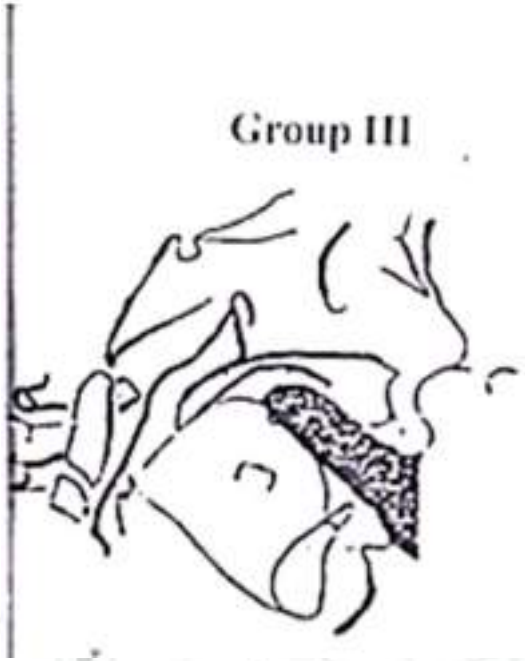
Subtelny(1973)

Type A	Type B	Type C	Type D
50%	13-24%	18%	6%
Whole digit is placed inside mouth with pad of the thumb pressing over the palate	Thumb is placed into the oral cavity without touching the vault of the palate	Thumb is placed into the mouth just beyond the first joint, contacting the hard palate & only maxillary incisors	Little portion of thumb is placed into the mouth
Max/ Mand Ant Contact	Max/ Mand Ant Contact	No contact with Mand incisor	Lower incisors made contact approx. at the level of thumb nail

Group I

Group II

Group III



Group IV

Johnson(1993): classified Non-nutritive habits based on factors that influence the severity of the habit:

Table 9.8: Classification of NNS habits.

Level	Description
Level I (+/-)	Boys or Girls of any chronological age with a habit that occurs during sleep.
Level II(+/-)	Boys below age 8 with a habit that occurs at one setting during waking hours.
Level III(+/-)	Boys under age 8 years with a habit that occurs at multiple settings during waking hours.
Level IV(+/-)	Girls below age 8 or a boy over 8 years with a habit that occurs at one setting during waking hours.
Level V (+/-)	Girls under age 8 years or a boy over age 8 years with a habit that occurs across multiple settings during waking hours.
Level VI (+/-)	Girls over age 8 years with a habit during waking hours.

(+/-) designates willingness of the parents to participate in treatment.

Etiology of thumb sucking

Classical Freudian theory (1905)

- Psychoanalytical theory holds that this original response arises from an inherent psychosexual drive suggesting that digit sucking is a pleasurable erotic stimulation of the lips & mouth
- Human possess a biologic sucking drive
- An infant associates sucking with pleasurable feelings such as hunger, satiety, & being held

Benjamin theory (1962)

Experimentation on monkey

Two theories

- Thumb sucking - Expression associated with sucking along with primary reinforcing aspect of feeding
- Thumb sucking from Rooting and placing reflex

Learning theory: Davidson (1967)

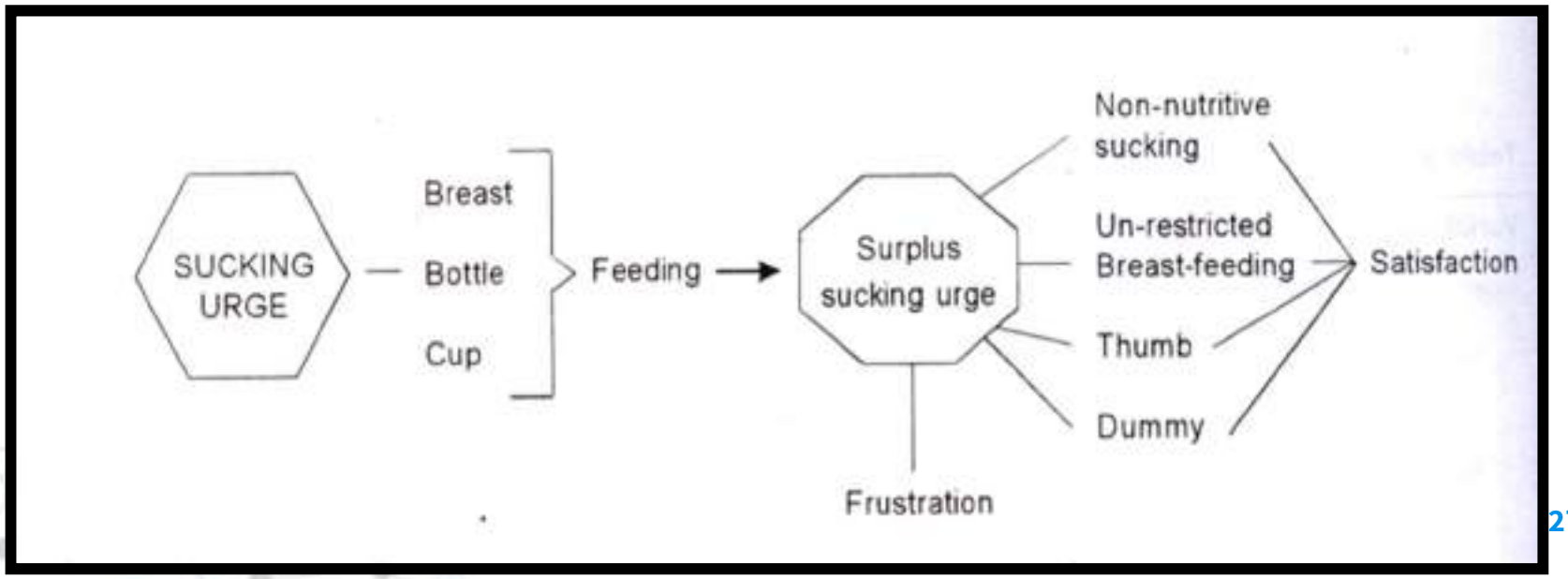
- This theory advocates that NNS stems from an adaptive response.
- Infants associates sucking with such pleasurable feelings as hunger.
- These events are recalled by sucking the suitable objects available, mainly thumb or finger.

Oral drive theory (Sears and Wise;1982)

- The strength of the oral drive is in part a function of how long a child continues to feed by sucking.
- Thus, thumb sucking is the result of prolongation of nursing, & not the frustration of weaning

Johnson and Larson (1993)

- Combination of two
- Explains that all children possess an inherent biologic drive for sucking
- Rooting and Placing reflex are mearly a means of expression of this drive
- Environmental factors also contribute to this sucking drive to non nutritive sources such as thumb or fingers



Thumb or Digit sucking

- **Maintenance of habit**
  - Normal upto 3 yrs (Psychoanalytic)
  - Persistence - psychological disturbance
    - Anxiety management
  - Adaptation during development (Learning theory)

Causative factors

1. Parent's occupation-Socioeconomic status
2. Working mother-Absence - insecurity
3. No. of siblings-Compensation for neglect
4. Order of birth of child-Imitation
5. Social adjustment and stress-Peer pressure, scolding parents
6. Feeding practices-Negative relation between breast feeding and development of dummy /finger sucking

7 . Age

1. In neonates
    1. Well developed suckling mechanism
    2. Primitive Demand for hunger

2. During eruption of primary molar- Teething

3. Still later (Active after 4 year)
    1. Emotional tensions

DIAGNOSIS

1) History

2) Extra oral examination

a) The digits

b) Lips

c) Facial form

d) Other features

3) Intra oral examination

a) Tongue

b) Dent alveolar structures

c) Gingiva

1). History

- Determine the psychological component involved
- Question regarding the frequency, intensity & duration of the habit
- Enquire the feeding patterns, parental care of the child
- Presence of other habits e.g tongue thrust etc should be evaluated

2). Extra oral examination

- Digit
  - Reddened, clean, chapped, short fingernail (dishpan thumb)
  - Chronic suckers - fibrous, roughened callus on superior aspect of finger
  - Deformation of finger
- Lip
  - Position at rest & during swallowing
  - Short, Hypotonic upper lip
  - Hyperactive lower lips

3). Facial form analysis

- Maxillary protrusion
- Mandibular retrusion
- High mandibular plane angle
- Profile
- Mentalis muscle contraction

3). Intraoral examination

- Tongue
  - Size & Position at rest , during swallowing
- Gingiva
  - Evidence of mouth breathing
    - Itching
    - Staining on max. labial surface

4). Dento alveolar structure

- Flared , proclined maxillary anteriors with diastema

- Retroclined mandibular anteriors

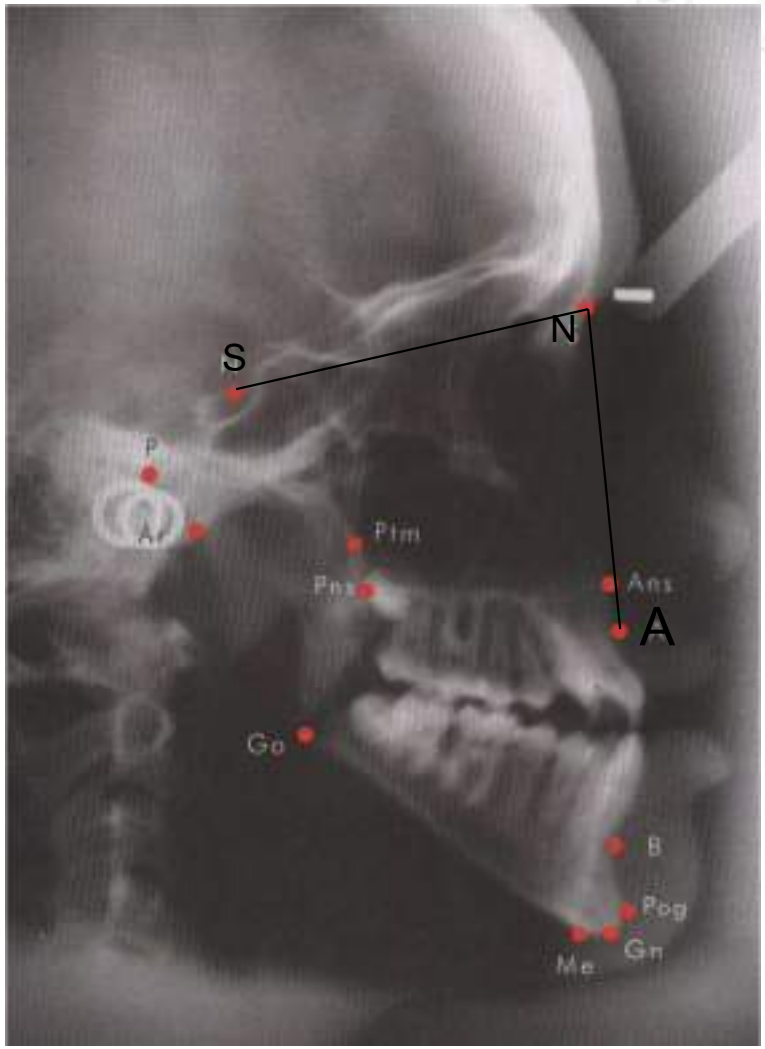
- Deformed right or left sided max. arch

Dentofacial changes associated with prolonged sucking habit (Johnson and Larson,1993)

Effects on maxilla

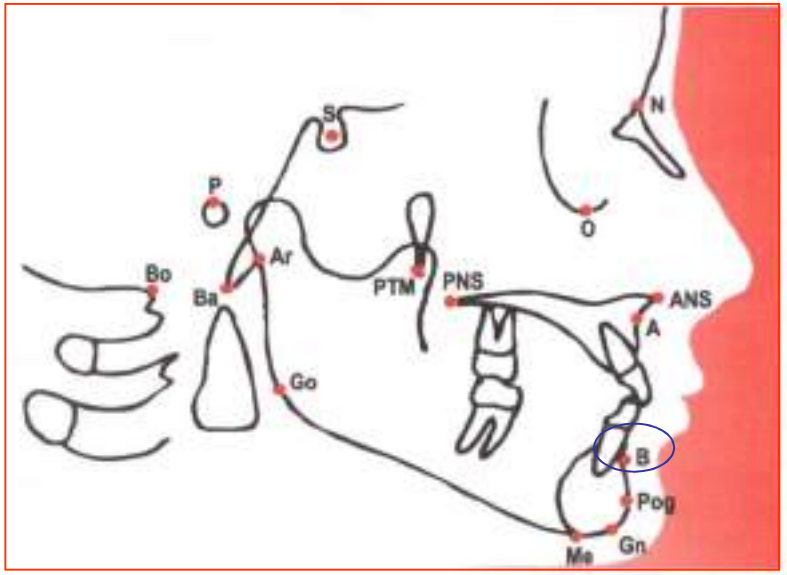
- ↑ proclination of max incisors
- ↑ Maxillary arch length
- ↑ Ant. placement of apical base of max
- ↑ Clinical crown length of max incisor
- ↑ Counterclockwise rotation of occlusal plane
- ↑ Atypical root resorption
- ↑ Trauma to max incisors
- ↓ Palatal arch width

- Increased SNA



Effect on mandible

- ↑ Proclination of incisors (Finger sucking)
- ↑ Mand. Intermolar distance
- Increased Distal position of B point



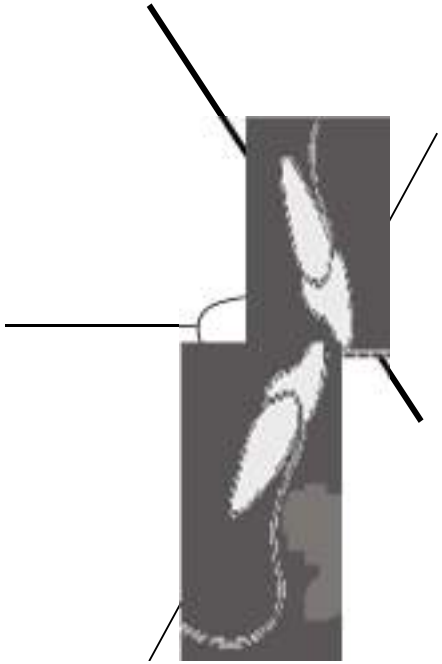
Effect on interarch relationship

- Anterior open bite

- Increased over jet

Increased unilateral and bilateral Cl II malocclusion

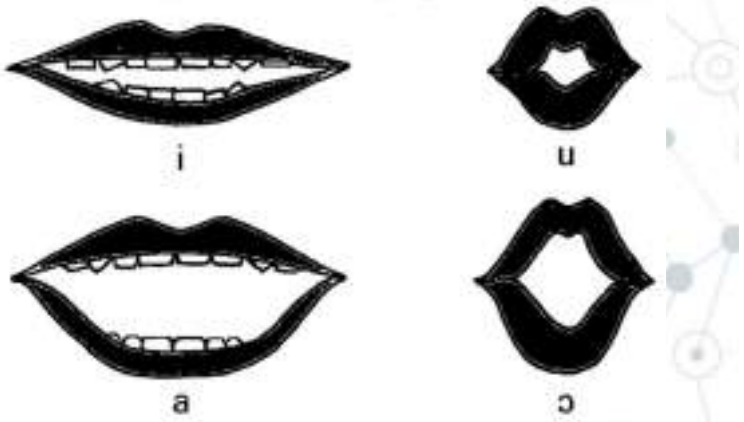
Decreased U/ L incisal angle



- Decreased overbite

- Increased posterior cross bite

- Effect on lip placement and function
  - Increased lip incompetence
  - Increased lower lip function under max. incisors



- Effect on tongue placement and function
  - Increase tongue thrust
  - Increased lip to tongue resting position
  - Increased lower tongue position

Other effects

- Risk to psychological health
- Increased risk of speech defects, especially lisping
- Habitual mouth breathing
- Tongue thrusting
- Middle ear infection
- Enlarged tonsils

- Clinical aspect (Moyer: 1955)
  - Phase I
    - Normal or sub clinically significant sucking (Pre school infant)
    - Birth to 3 yr
    - Most infants exhibit digit sucking especially during weaning.
    - Usually sucking is resolved towards the end of phase I

Phase II

- Clinically significant sucking
- From 3 – 7 yrs
- More serious attention required for purposeful digit sucking because:
  - -possibility of clinically significant anxiety
  - -Best time to solve dental problems related to digit sucking
- Firm and definitive programme of correction

- Phase III
  - Intractable sucking (Teenage child)
  - Beyond 4 th yr
  - Psychotherapy
  - Treatment for malocclusion

TREATMENT

The treatment plan can be divided into

- 1. Psychological therapy
- 2. Reminder therapy
- 3. Mechanotherapy

(1) PSYCOLOGICAL THERAPY:

- Screen the patient for underlying psychological disturbance that sustain thumb sucking habit. Once the psychological dependence is suspected child referred for counseling.
- Thumb sucking children between the age of 4 to 8 year need only reassurance, positive reinforcements and friendly reminders.
- Various aid are employed to bring the habit under the notice of child such as study model, mirror's etc.

Dunlop hypothesis:

- He believes that if a subject can be forced to concentrate on the performance of the act at the time he practices it, he can learn to stop performing the act.
- The child should be ask to sit in front of the mirror and asked to suck his thumb, observing himself as a indulges in the habit.
- This will make him realize how awkward he looks and want to stop sucking his thumb.

Three alarm system (Nortan and Gellin-1968)

- A chart is designed with days of the week & blank spaces.
- When the child engages in his habit, he is told to wrap the digit he sucks with coarse adhesive tapes.
- The child feels the tape in his mouth; it is the 1st alarm & this reminds him to stop the habit

- The elbow of the arm with the offending thumb is firmly wrapped in 2 inch elastic bandage; safety pins are placed at proximal and distal ends of bandages, and one safety pin is placed lengthwise at the mesial end of the elbow.
- When the child sucks the thumb again, the closed pin on the medial end of the elbow, mildly jabbing the elbow, indicates 2nd alarm.
- If the habit persist bandage is tightened; this is the final or third alarm, which will definitely remind the child of the habit

REMINDER THERAPY

(A) Extra oral approach:

- Employed bitter flavored preparations or distasteful agent that applied to finger or thumb eg. Cayenne, pepper, quinine, asafetida.
- A commercially available product femite can also be used.
- It should be applied on skin and nails allowed to dry for 10 min. A new coat should be applied in mornings n evening till habit is broken.

- **(B) Ace bandage approach**:-

Ace bandage approach involve nightly use of an elastic bandage wrapped across the elbow pressure exerted by the bandage remove the digit from the mouth as child tries and falls asleep.

- **(C) Use of long sleeve nightgown**.

It has been found that long sleeve night gown prevent the child from practicing thumb sucking because it interfere with contact of the thumb and oral cavity.

(2) Intra oral approaches:

- Various orthodontic appliances are employed to break the habit.
- Removable appliance palatal crib, rakes, palatal and lingual spur.
- Fixed appliances such as oral screen is more effective.

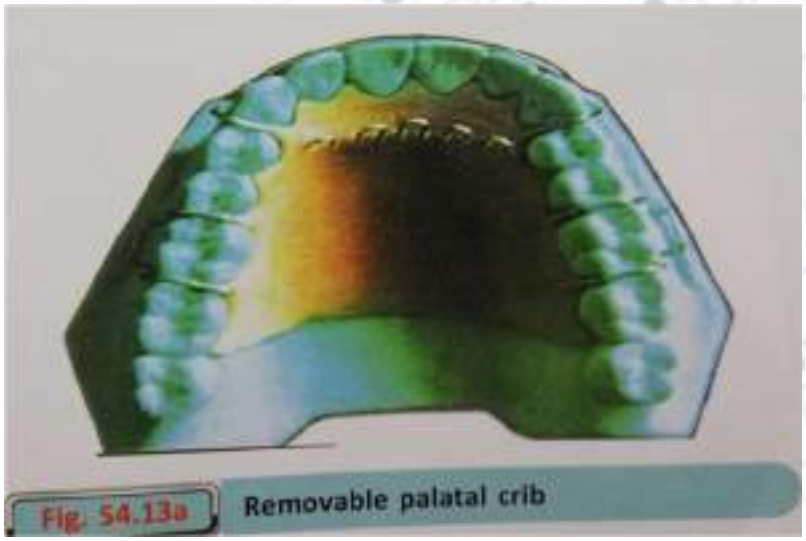


Fig. 54.13a Removable palatal crib

(3) MECHANOTHERAPY:

- *Blue grass appliances-* Consist of modified six sided roller machined from Teflon to permit purchase of the tongue.
- *Quad helix*– prevents the thumb from being inserted and also corrects the malocclusion by expanding the arch.

Current strategies

- Thumb home concept

- Use of hand puppets

- Thumb sucking book

- Special shirt

- Thumbuster

- RURS Elbow guard

Pacifier habit

Pacifier habit

- Pacifiers have been used by mankind for more than thousand of years
- They have been identified

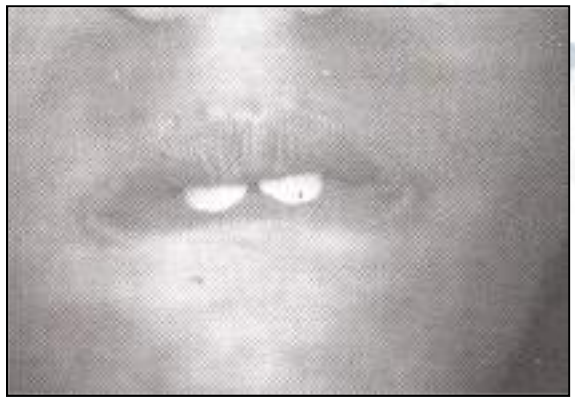
  To help children in translating to sleep

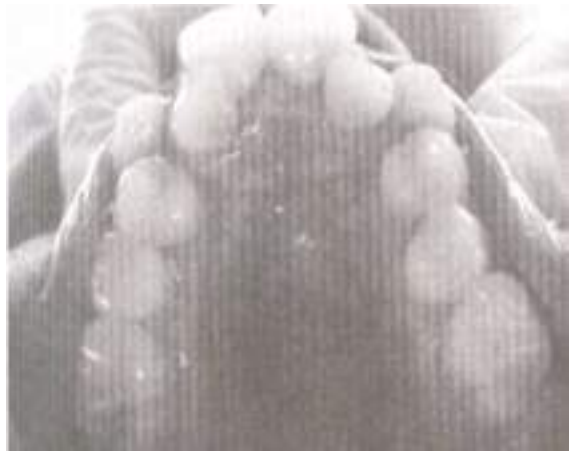
  To soothe infants

  To provide comfort while teething

Pacifier habit

- Clinical features
  - Oral Myofunctional alteration
    - Decrease muscular tonicity of tongue and lip
    - Lip entrapment
    - Lip incompetence
    - Narrow hard palate





Pacifier habit: Cl / F

- Dental changes
  - Posterior cross bite
    - Increased mandibular arch width
    - Decreased max. arch width
  - Anterior open bite
  - Cl II primary canine relationship
  - Increased overjet

Pacifier habit

Recommendations

- Should not use before breast feeding established
- More restraints for use
- Clean pacifiers routinely
- Avoidance of sharing among siblings
- Use should be curtailed before 2 yr, discontinued by 4 yrs

Tongue Thrusting

Tongue Thrusting

Definition

- Brauer (1965)

  Tongue thrust is said to be present if the tongue is observed thrusting between and the teeth did not close in centric occlusion during deglutition

- Tulley(1969) -

  Forward movement of tongue tip between the teeth to meet the lower lip during deglutition and in sounds of speech , so that the tongue becomes interdental

Tongue Thrusting

- Prevalence
  - Newborn – 97%
  - 5-6 yrs – 80%
  - By 12 yrs – 3%

Tongue Thrusting

- Classification
  - *Physiologic*
    - Normal tongue thrust swallow of Infancy
  - *Habitual*
    - Present after correction of malocclusion
  - *Functional*
    - Is an adaptive behavior developed to achieve oral seal
  - *Anatomical*
    - Person having enlarged tongue can have an anterior tongue thrust

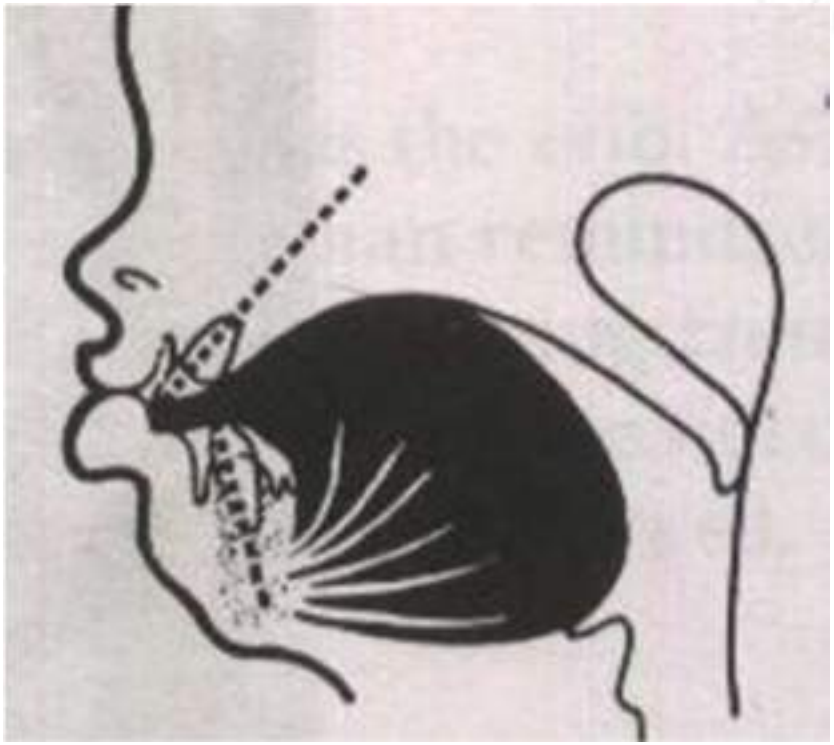
Moyers classification of swallowing patterns

Type	Inference
Normal infantile swallow	Tongue lies between the gum pads & mandible is stabilized by contraction of facial muscle(buccinator) Disappears on eruption of buccal teeth of primary dentition
Transitional swallow	Intermixing of normal infantile swallow & mature swallow during the primary dentition & early mixed dentition period
Normal mature swallow	Very little lip and check activity Mainly there is contraction of mandibular elevators
Simple tongue thrust swallow	Contraction of lips, mentalis muscles & mandibular elevators Tongue protrudes into an open bite that has a definite beginning and ending
Complex tongue thrust swallow	Teeth apart swallow Marked contraction of lip, facial and mentalis muscles Absence of temporalis muscle contraction during swallow Anterior open bite is present

Etiology of Tongue Thrusting:

1).Retained infantile swallow

- Retention of infantile suckling mechanism
- Incisor eruption – No drop of tongue
- Altered Tongue posture at rest



2).URTI

- Such as mouth breathing ,chronic tonsillitis, allergies, etc promote a more forward tongue posture due to pain and decrease in amount of space , which brings about a tongue thrust swallow.

- Physiologic need to maintain an adequate airway

3).Neurological disturbances

- Hypo sensitive palate
- Moderate Motor disability
- Disruption of sensory control and coordination of swallowing

4).Functional adaptability to transient change in anatomy

- Missing incisors
- Protrusion
- overjet
- openbite

} ANTERIOR SEAL

5).Feeding practices

- Bottle feeding
- Breast feeding
- Consistency of infant's food-

    Development of an adult swallow pattern

6).Induced due to other habits

- Digit sucking
- Pacifier sucking
- Sleeping habits

7).Hereditary

- Inherited hyperactive orbicularis oris
- Anatomical configuration
- Neuromuscular activity

8).Tongue size

- Macroglossia

9).Soft diet-

- Disuse atrophy of musculature

10).Trauma

- Persistent traumatic condition leading to abnormal deglutition

Diagnosis of Tongue Thrusting:

History

- Determine the swallow pattern of siblings & parents to check for hereditary etiologic factor
- Previous respiratory infections , sucking habits , neuromuscular problem

Examination

- Check for size, shape, & movements
- ***Functional examination***:
- Observe the tongue position while the mandible is in rest position
- Observe the tongue during various swallow

◎ *Palpatory examination:*

	Normal	**Tongue thrusting**
Place water beneath patients tongue and ask him to swallow	Mandible rises & teeth are brought together No contraction of lips and facial muscles	Marked contraction of lips and facial muscles
Place hand over temporalis muscle and ask to swallow	Temporalis contracts and mandible is elevated	No temporalis contraction
Hold the lower lip and ask the patient to swallow	Swallow can be completed	Patient cannot complete swallow

Fig. 17A: Simple tongue thrust

Fig. 17B: Complex tongue thrust

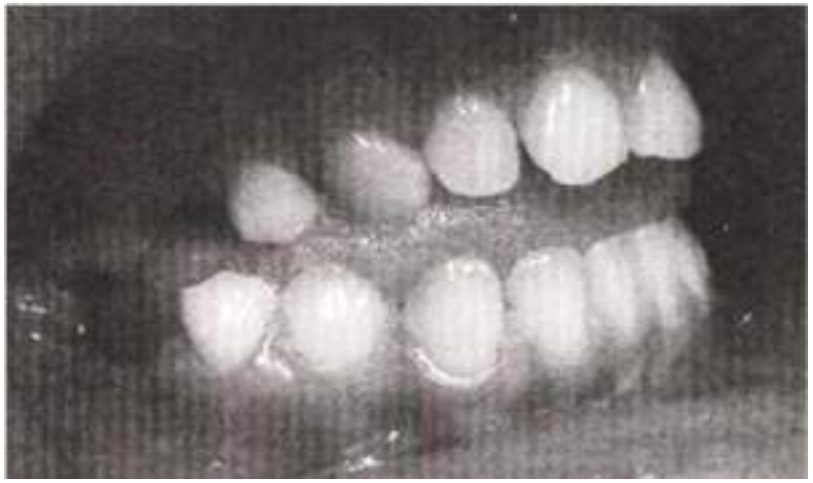
Fig. 30.19: Lateral tongue thrust.

C/F of Tongue Thrusting

- Extra oral

  - Lip posture
    - Lip separation
  - Mandibular movement
    - Upward and backward with tongue moving forward
  - Speech
    - Speech disorder
    - Sibilant distortion, lisping, problem in articulation of s, n, m, t, d, l, th, z, v
  - Facial form
    - Increased Anterior face height

- Intraoral
  - Tongue posture
    - Downward and forward
    - Tongue tip at rest is lower



Tongue Thrusting: Cl/F

- Malocclusion
  - In relation to maxilla
    - Increased overjet
    - Generalized spacing
    - Maxillary constriction

- In relation to mandible
  - Retroclination or proclination of mandibular teeth

- In relation to Intermaxillary relationship
  - Ant. Or post. Openbite
  - Posterior crossbite

Tongue Thrusting

- Treatment considerations
  - Age
    - Self correcting by 8-9 yr
      - Improved muscular balance during swallowing as mature swallow is adopted
    - Orthodontic correction in early mixed dentition(9-11)
  - Presence or absence of associated manifestation
    - Not indicated without malocclusion or speech problem

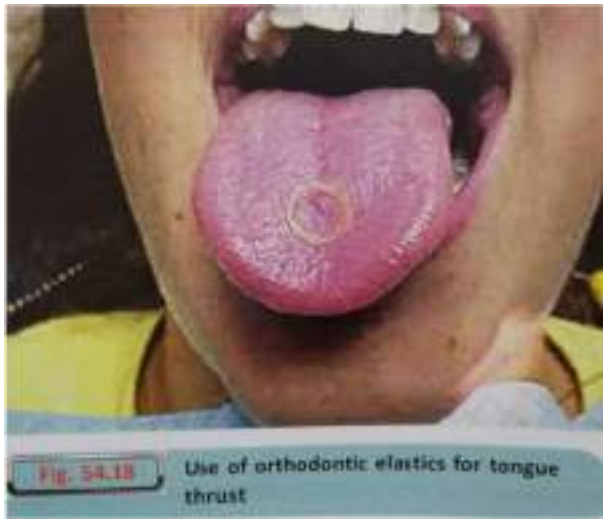
- Malocclusion
  - Correction of malocclusion
- Speech defect
  - Speech therapy during elementary school yr.
- Associated with other habits
  - Other habit correction

Tongue Thrusting :Treatment

- Myofunctional therapy
- Speech therapy
- Mechano therapy
- Correction of malocclusion
- Surgical treatment

Treatment: Myofunctional therapy: Garliner

- Guidance of correct posture of tongue during swallowing by various exercises
  - Placement of tongue tip in rugae area for 5 min
  - Orthodontic elastics and sugarless fruit drops
  - 2 S ,4 S exercises
    - Identification of Spot
    - Salivating
    - Squeezing in spot
    - Swallowing
  - Other exercise
    - Whistling
    - Reciting from 60 To 90
    - Yawning


Use of orthodontic elastics for tongue thrust

Treatment :Myofunctional therapy: Garliner

- Lip exercise
  - Tug of war and button pull exercise
- Lip massage
  - Lower lip over upper massage
- Subconscious therapy
  - Time- Special time for reminding
  - Subliminal therapy
    - Placing reminder sign in sight during meal
  - Autosuggestion
    - 6 times swallow before sleeping

Tongue Thrusting :Treatment

- Speech therapy
  - Training of correct position of tongue
  - Articulation of speech
  - Repetition of words with ‘S’ sound

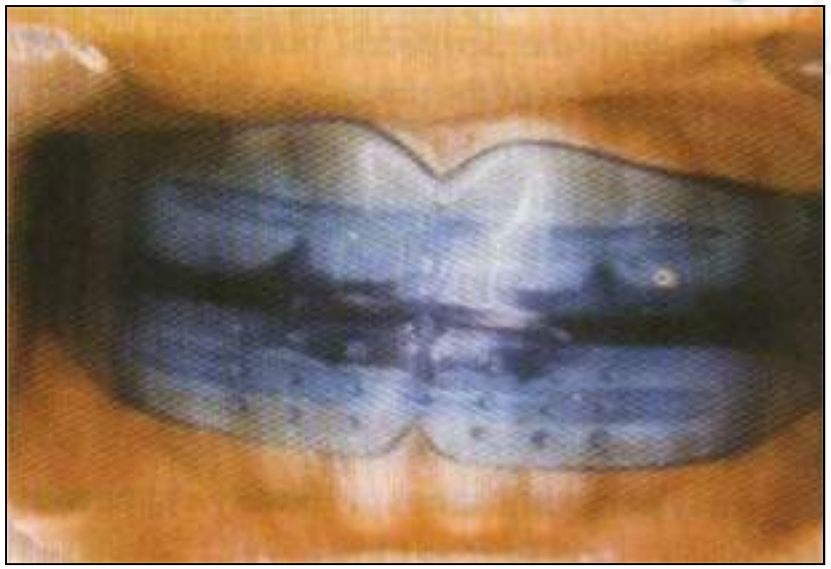
Not indicated before 8 yrs

Tongue Thrusting :Treatment

- Mechano therapy
  - Purpose
    - Reeducation of tongue position
    - Maintaining tongue in the confines of dentition
    - Maintaining the interocclusal distance
      - Prevention of over eruption and narrowing of maxillary buccal segment

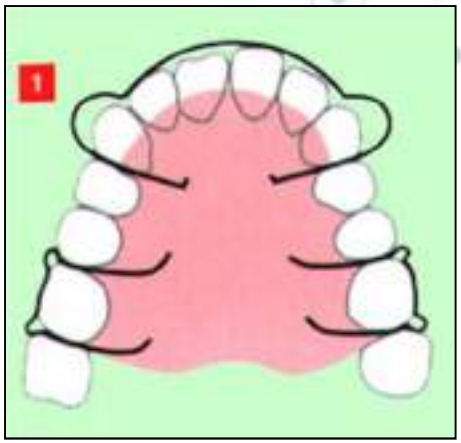
Tongue Thrusting :Treatment

- Preorthodontic trainer for myofunctional training
  - Aids in correct positioning of tongue with the help of tongue tags
  - Tongue guard



Tongue Thrusting :Treatment

- Appliance therapy
  - Removable appliance
    - Hawley's appliance
      - Modifications
        1. Active labial bow
        2. Addition of palatal crib



    - Oral screen and vestibular screen

Tongue Thrusting :Treatment

- Treatment with myofunctional appliance
  - Promote lip closure
  - Enlarge oral cavity
  - Move incisors
  - Improve relation among jaws, tongue, Dentition and soft tissue
  - E. g
    - Activator
    - Bionator

Tongue Thrusting :Treatment

- Fixed appliance
  - Tongue crib

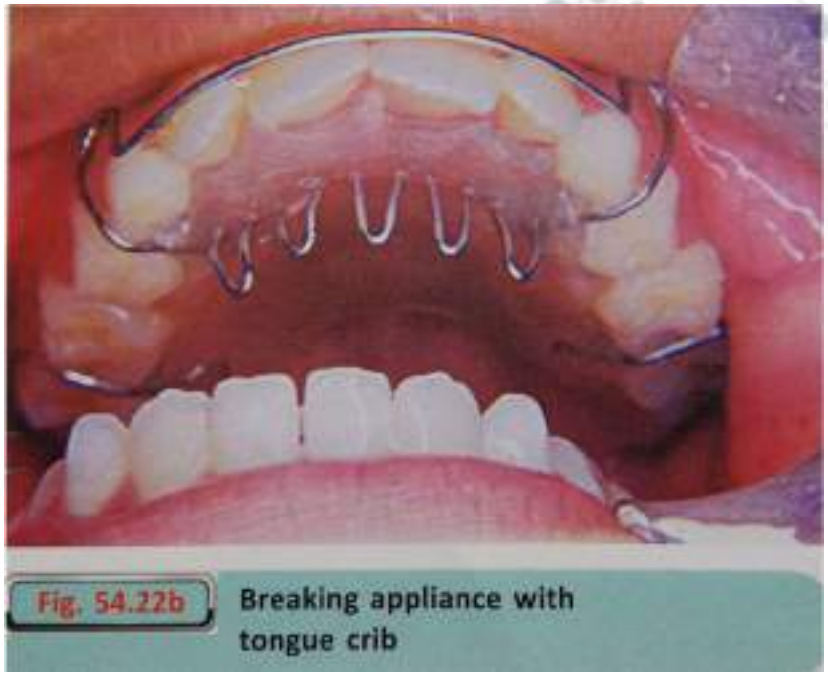


Fig. 54.22b Breaking appliance with tongue crib

Tongue Thrusting :Treatment

- Correction of malocclusion
  - Openbite
    - Removable

- Frankle IV
  - Vestibular configuration

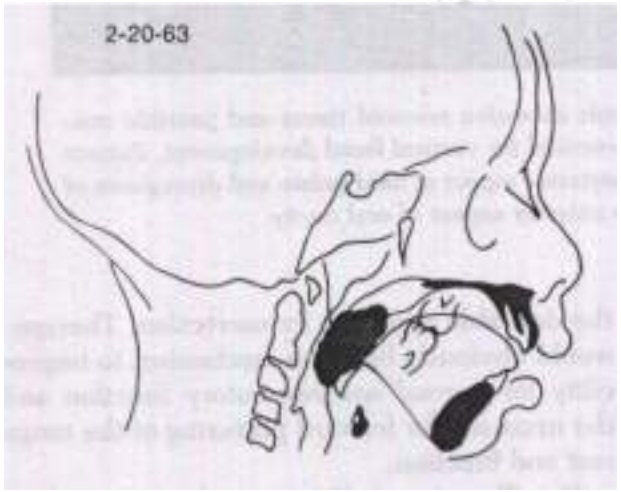
Tongue Thrusting: Treatment : Malocclusion : Openbite

- Removable appliance
  - Modified activator-intrusion of molars

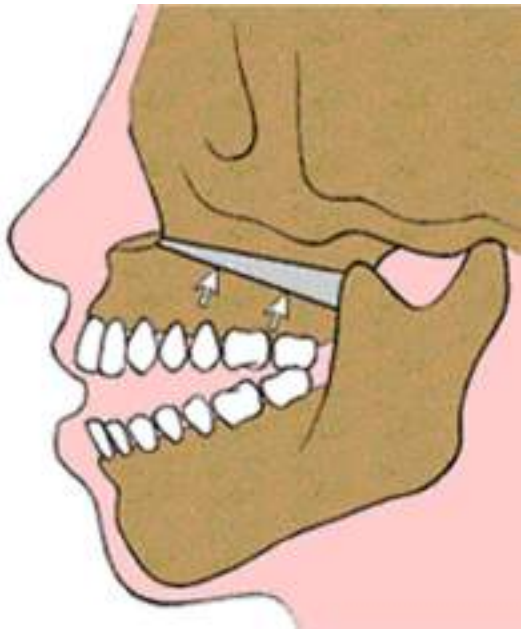
- Fixed orthodontic treatment

Tongue Thrusting :Treatment

- Surgical treatment
  - Removal of tonsils



  - Correction of skeletal malformation



New concept

- Galella habit appliance

Mouth breathing

Mouth breathing

- For normal dentofacial growth to occur, there should be normal breathing.
- Increase resistance to the flow of air through the nasal passages may be considered to be the primary cause of mouth breathing.
- The habit may interfere with the development of the chest, since mouth breathing is not as deep as nasal breathing.
- This may in turn lead to postural defects when the muscles of the chest, back and neck do not function

- This could alter the equilibrium of pressures on the jaw and teeth and affect both jaw growth and tooth position.
- In order to breathe through the mouth, it is necessary to lower mandible & tongue & extend the head
- If these postural changes are maintained, Facial height would inc.& post teeth would supra erupt
- Increased pressure from stretched cheeks might cause narrow maxillary dental arch

Mouth breathing

- Definition
  - Sassouni (1971) - Habitual respiration through the mouth instead of the nose
  - Merle (1980) - Suggested the term oro - nasal breathing instead of mouth breathing

Mouth breathing: Incidence

- Common among 5 – 15 yr

- 85% nasal breathers suffer from some degree of obstruction

Mouth breathing

- Classification
  - Finn (1987)
    - Anatomical
      - Short upper lip
    - Obstructive
      - Obstruction in nasal passage
    - Habitual

Mouth breathing

- Etiology

  1).Developmental and morphologic anomalies interfering nasal breathing

  - Asymmetry of face
  - Hereditary
    - Size of nasal passage
    - Position of nasal septum
  - Abnormal development of nasal cavity, Nasal turbinates
  - Abnormally short upper lip
  - Under developed or abnormal facial musculature

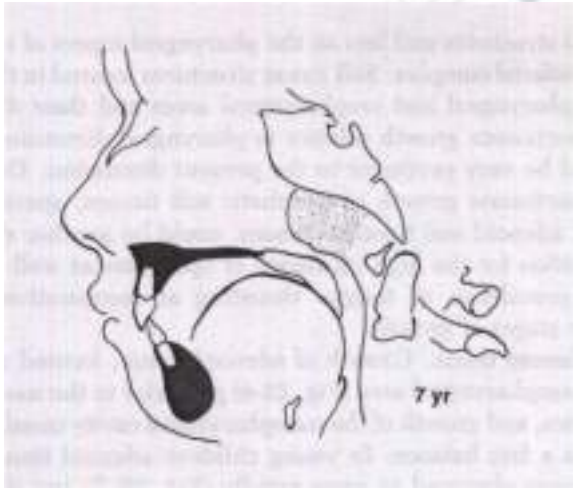
2).Partial obstruction due to

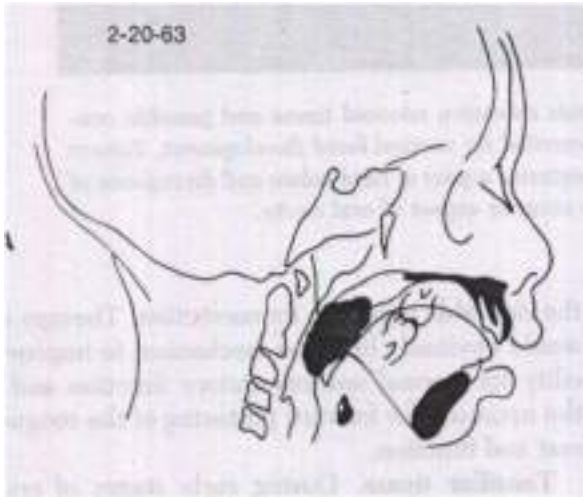
- Deviated nasal septum – Birth injury
- Localized benign tumor
- Narrow maxilla

3).Traumatic injuries to nasal cavity

4).Infection and inflammation

- Ch. Inflammation of nasal mucosa
- Ch. Allergic stomatitis
- Ch. Atrophic rhinitis
- Enlarged adenoids, tonsils
- Nasal polyps





5).Genetic factor

- Ectomorphic child

Other causes

- Common cold
- Chronic respiratory obstruction
  - Allergies
  - Chronic infection

- Deviated nasal septum
- Narrow airway

- Enlarged turbinates
- Nasal polyp
- Abnormally short lip preventing proper lip seal
- Obstruction in bronchial tree or larynx
- Obstructive sleep apnea syndrome
- Genetically predisposed individual
  - Ectomorphic child with tapering face and nasopharynx
- Thumb sucking – Instigating agent

- **Clinical features of mouth breathing**
  - General features
    - Purification of inspired air
    - Pulmonary development
      - Pigeon chest
    - Lubrication of esophagus
      - No mucous gland
      - Dry - Esophagitis
    - Blood gas constituent
      - 20 % more CO_2

Effects on dentofacial structures:

- Facial form:
  - vertical growth pattern
  - ↑ facial height
  - ↑ mandibular plane angle
  - Retrognathic maxilla & mandible

Adenoid facies:

- Long narrow face
- Narrow nose and nasal passage
- Nose tipped superiorly
- Flat nasal bridge
- Flaccid lips
- Short upper lip
- Collapsed buccal segment of maxilla
- V shaped & High palatal vault
- Dolicofacial pattern
- Expressionless face

Fig. 54.25a Adenoid facies due to mouth breathing

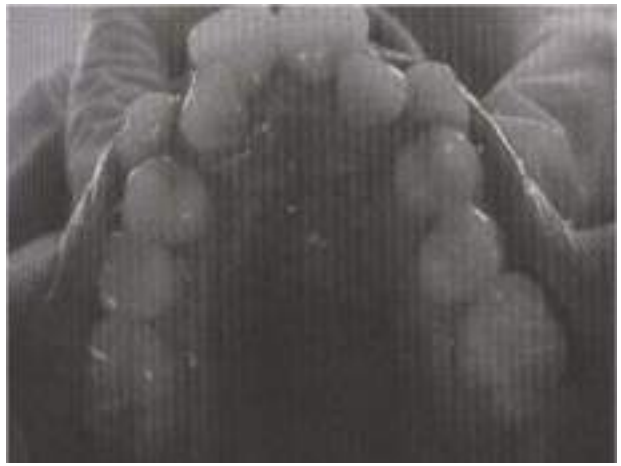
Fig. 54.25b Adenoid facies

Mouth breathing: Cl / F

- Dental effect
  - Protrusion with spacing of upper incisors
  - Decreased overbite
  - Openbite
  - Lower tongue position
  - Posterior cross bite

- Increased overjet

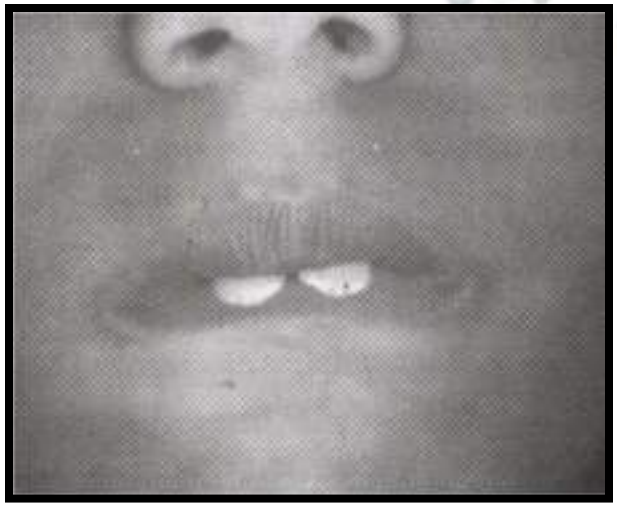
- Constricted maxillary arch



- Narrow palate and cranial vault
- Narrow long face

Mouth breathing: Cl / F

- Lips
  - Incompetent upper lip
  - Everted, heavy lower lips
  - Voluminous curled lower lips
  - Gummy smile
- External nares
  - Slit like external nares with narrow nose
  - Atrophied nasal mucosa



- Gingiva
  - Ch. Keratinized marginal gingivitis
  - Classic rolled margin and enlarged interdental papilla
  - Heavy plaque deposition
  - ↓ Salivary flow and bacterial overgrowth

Fig. 23: Effect of mouth breathing on gums and occlusion

  - Periodontal disease
    - Pocket formation and interproximal bone loss

Other effects

- Narrow maxillary sinus and nasal cavity
- Turbinates- Swollen and engorged
- Atrophic nasal mucosa
- Speech- Nasal tone
- Infection of Lymphoid tissue
- Otitis media
- Dull sense of smell
- Loss of taste

- Sleep apnea syndrome
  - Increased enlargement of lingual tonsils
  - Mechanism

Mouth breather lying on back

↓

Tongue fall posteriorly

Touch post. Pharyngeal wall

↓

Occlusion of oropharynx

Sleep apnea syndrome

- Signs / Symptoms
  - Snoring
  - Loud pharyngeal snoring with interrupted silences
  - Abnormal behavior
    - Movement of limbs
  - Morning headache

Diagnosis of mouth breathing

- History
  - Lip apart posture
  - Tonsillitis, allergic rhinitis, otitis media

Examination

- Observation of breathing
- Lip posture
- Nasal orifices

- Clinical test
  - Mirror test
  - Butterfly test
  - Water holding test
  - Inductive plethysmography
    - Airflow through nose and mouth
  - Cephalometrics

Mouth breathing: Treatment

- Symptomatic relief
  - Gingival coating
  - Periodontal consideration
    - Prophylaxis

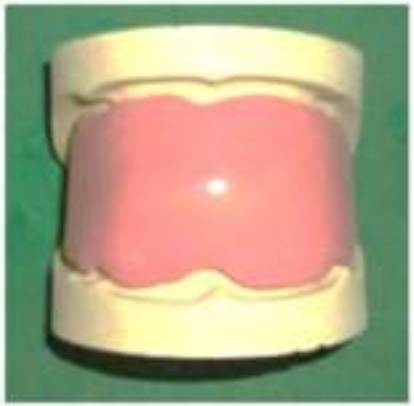
- Elimination of cause
  - Removal of nasal or pharyngeal obstruction
- Interception of habit
  - Exercises
    - Physical – deep inhalation exercise
    - Lip
      - Upper lip extension exercise
      - Upper, lower lip combined exercise
    - Playing wind pipe
    - Disc holding exercise

Oral screen

Oral screen should be constructed with a biocompatible material.

- Reduction in anterior open bite is obtained after a treatment of 3-6 months.
- Effective device during sleeping hours, this rubber membrane/acrylic plate is either cut or cast to fit over the labial and buccal surfaces of the teeth and gums included in the vestibule of the mouth.
- During the initial phase, windows are placed on the oral screen so as not to completely block the airway passage.

Construction of the membrane



- Impression of the vestibule is taken with the teeth in occlusion.
- This should extend to the posterior limits and above and below the mucobuccal fold.
- Adapt a 22-guage rubber sheet over the plaster cast, remove and trim it to size.

Construction of cast

Another direct method:

- Warming Plexiglass to moulding stage and adapting to the cast.
- Painting pure latex over the cast surface.
- The latex is applied to an even thickness of 1/8 inch and cured for 10-20 minutes at 130- 140 F, and due to shrinkage of a half of its bulk a second coat is applied and cured giving a finished overall thickness of 1/8 inch.

Correction of malocclusion

Mechanical appliances

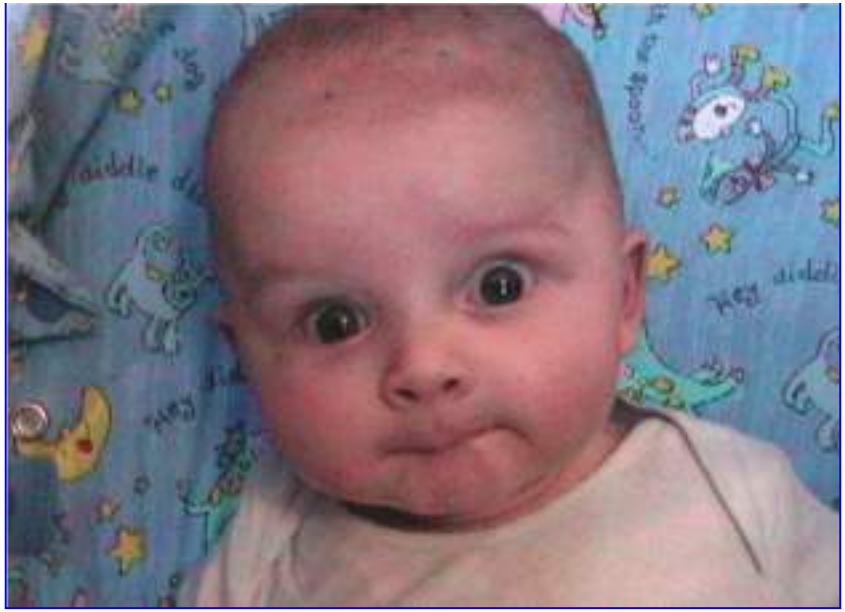
- Children with class 1 skeletal and dental occlusion and anterior spacing may fitted with clear plastic oral shield appliance.
- Allows patient to breathe through the oral cavity ,and
- Through the increased tension of the perioral musculature , it may close the anterior open bites.
- Generally worn at night but may be worn at day time to correct the open bite more quickly.

Class II division 1 dentition without crowding, and in age range 5-9 years 16

- Monobloc activator: Aids in both correction of malocclusion and deterrence of the habit.
- When worn will not allow the air to be breathed through the mouth.
- Before any appliance is given, the pediatrician and/ or otolaryngologist should examine the child and determine whether sufficient airway space is available to allow nose breathing.

Class III malocclusion:

- Interceptive methods are recommended as a chin cup.
- The child should be evaluated for a sufficient airway before treatment.
- When the mouth breathing habit is corrected, it is possible that a malocclusion may be still present.
- The pediatric dentist and orthodontist should re-examine the child for orthodontic purposes.



Lip Biting

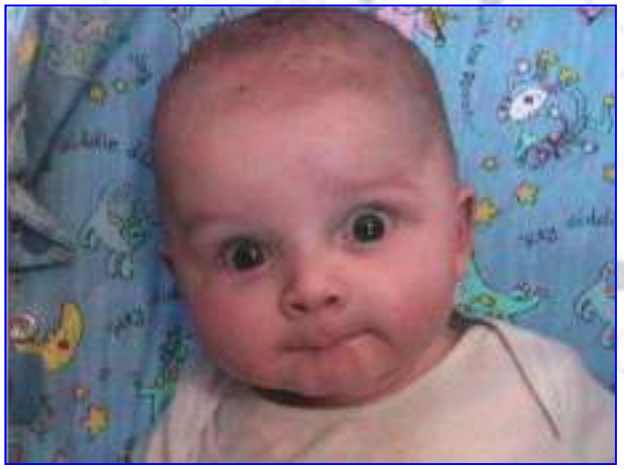
Lip Biting

- Normal lip anatomy & functions are important for speaking, eating and maintaining a balanced occlusion
- Lip sucking habit is a compensatory activity that results from excessive overjet, & the relative difficulty of closing the lips properly during deglutition

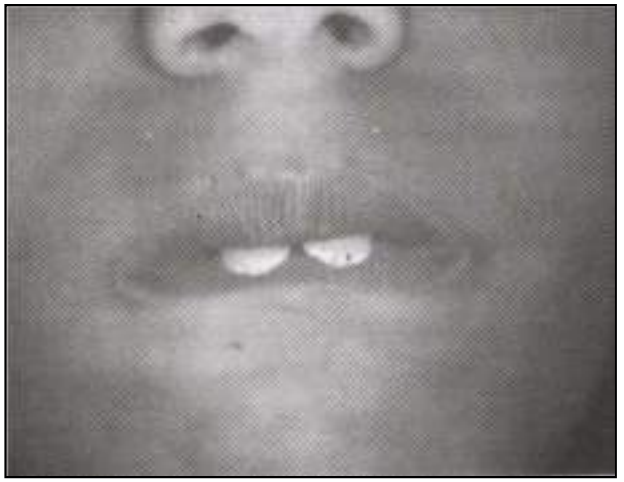
Definition:

- Habit that involve manipulation of lips and perioral structures are termed as lip hahits

Classification:



- Vary with imagination of child
  - Basic type
    - Wetting of lip with tongue
    - Pulling the lip into mouth between teeth
  - Lip sucking-
    - Entire lower lip with vermilion border pulled in mouth
  - Mentalis habit-
    - Vermilion border everted



Etiology

1).Association with digit sucking (Graber)

Increased overjet

Lip seal

Incompetent upper lip

Position of lower lip behind upper incisors

negative pressure for swallowing

2).Malocclusion

- Cl II Div-1
  - Large overjet and overbite

3).Emotional stress

- Increases the intensity and duration of lip sucking

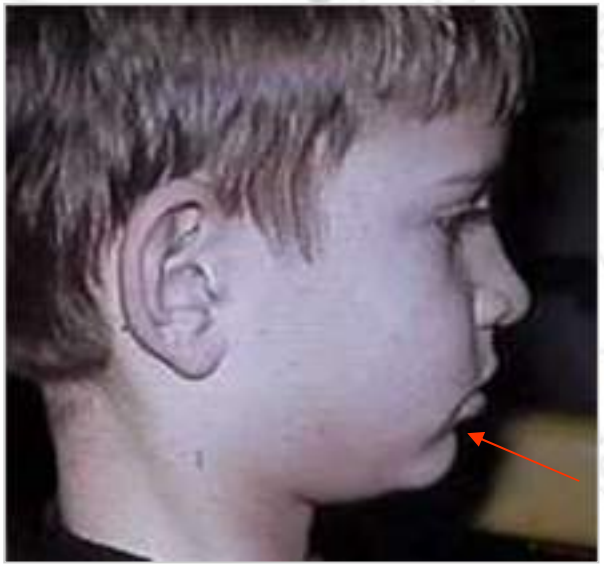
Lip habits: C / F

- Lip
  - Reddened , irritated, chapped area below vermilion border
  - Vermilion border
    - Relocation outside the mouth due to constant wetting
    - Redundant and hypertrophied
  - Ch. Herpetic infection
  - Cracking

Fig. 30.26: Reddened and chapped area below the vermilion border.

- Accentuated mentolabial sulcus
- Malocclusion
  - Winder--force equilibrium
    Lip ⟷ tongue

1. Protrusion of upper incisors
    1. Flaring with interdental spacing
2. Retrusion of lower incisors
    1. Collapse with crowding
3. Openbite



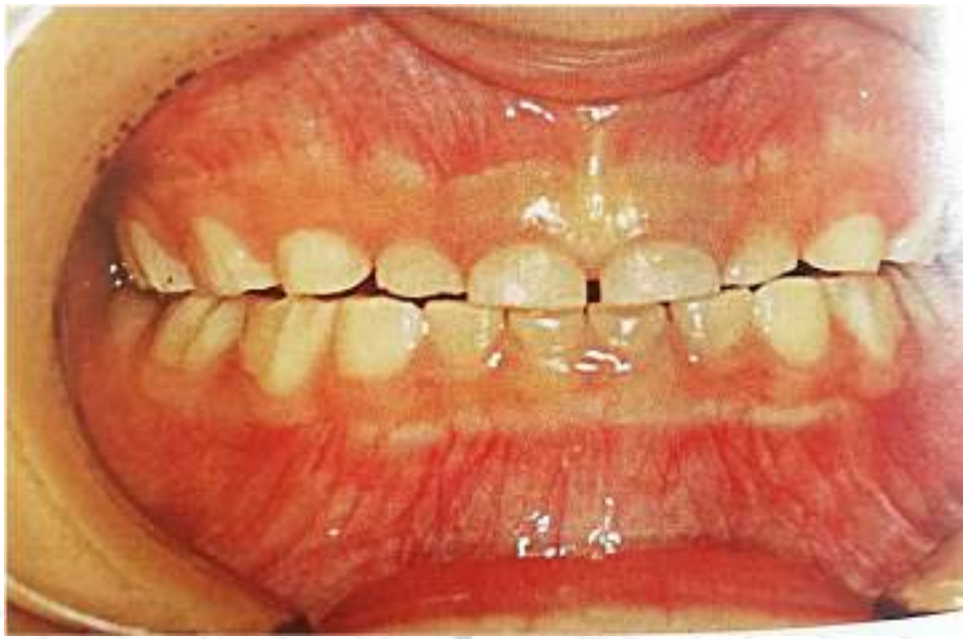
Lip habits: Treatment

- Not self- correcting
- Deleterious with age
- Treating primary habit
  - Correction of digit sucking followed by habit reminder (Hawley's appliance)
- Chemical reminder
- Correction of malocclusion
  - CII Div-1-
    - Fixed or removable appliance
      - Activator

- Appliance therapy
  - Oral shield
    - Cl I malocclusion
    - Lip exercise for improvement of lip tonus

  - Lip bumper
    - Prohibits excessive force on mandibular incisors
    - Reposition of lower lip away from upper incisors

Bruxism



Bruxism

- Definitions

Ramfjord (1966)

- Habitual grinding of teeth when the individual is not chewing or swallowing

Rubina(1986)

- Nonfunctional contact of teeth which may include clenching, gnashing and tapping of teeth

Vanderas(1995)

- Nonfunctional movement of mandible with or without an audible sound occurring during the day or night

Classification

- Okinuora(1972)
  - Bruxism associated with stressful event
  - No such association (Hereditary)

Types

- Day time bruxism / Diurnal
  - Conscious or subconscious grinding
  - Along with parafunctional habits
  - Silent
- Night time / Nocturnal
  - Subconscious grinding in rhythmic pattern of masseter

- Occurrence
  - Infants
    - Eruption of first primary tooth
  - More prevalent in mixed dentition
  - Throughout life
  - Sleep
    - Transition from deeper stages to lighter
    - REM stage

Etiology of bruxism

1).Local theory

- Reaction to an occlusal interference
  - High restoration, irritating dental condition
    - Disturbed afferent impulses from PD

2).CNS

- Cortical lesions, cerebral palsy, mental retardation

3).Systemic

- GI disturbance-from food allergy
- Enzymatic imbalance

} chronic abdominal distress

- Intestinal parasites

- Nutritional deficiencies - Mg deficiency
- Enzymatic distress
- Allergies - Food
- Endocrine disorder

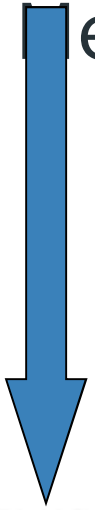
4).Psychological theory

- Associated with feeling of anger, aggregation
- Stress
- Emotional status – inability to express the emotion

5).Other causes

- Genetics
- Occupational factors
  - Overenthusiastic student , compulsive overachiever
  - Competition sports

- Causal hypothesis
  - Malocclusion can initiate and maintain forceful grinding or clenching
  - Mechanism



Occlusal discrepancies

PD mechanoreceptors

Activation of jaw closing muscles

Clenching or grinding

- Counterview
  - Removal of occlusal interference
    - Continued bruxism
  - Nocturnal bruxism
    - Protective mechanoreceptor function cancelled
    - Continuation of clenching

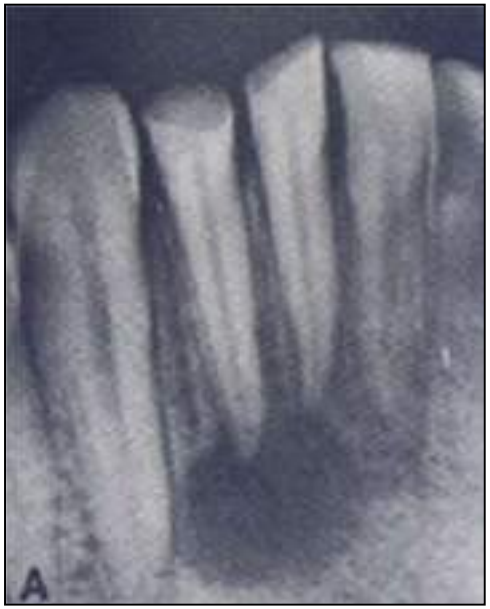
Bruxism

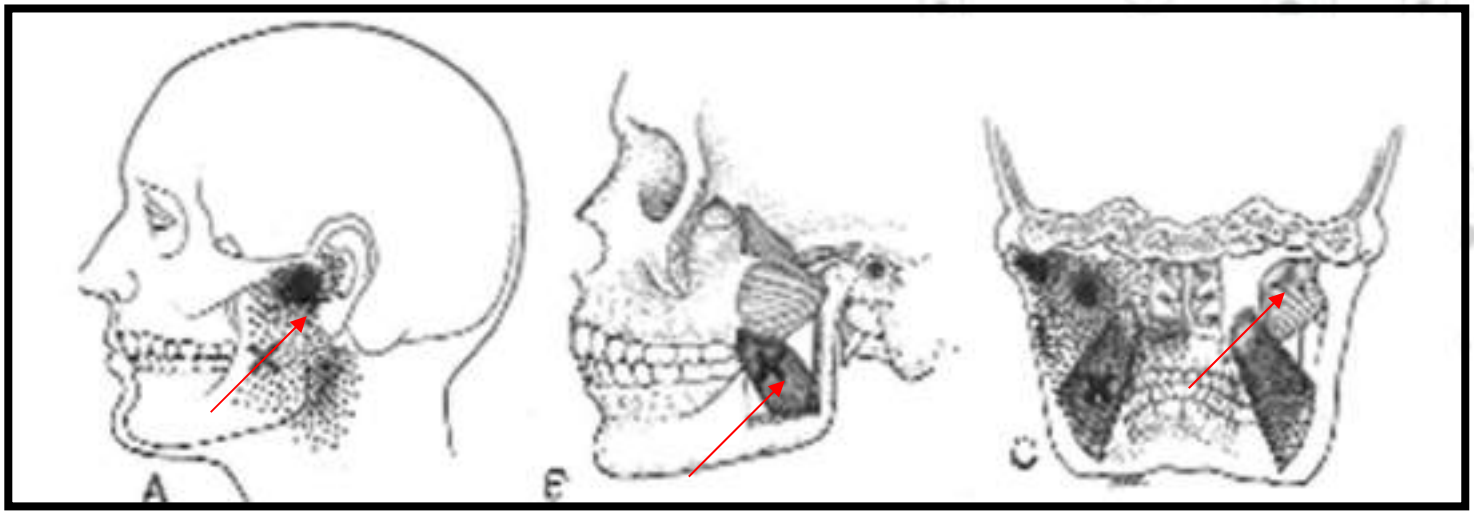
- Indicators
  - Presence of dental wear / Attrition
  - Bruxofacet
  - Grinding or clenching

Manifestation

- Signs and symptoms depend on:
  1. Frequency of bruxism
  2. Intensity with which the patient is bruxing
  3. Age of patient which may be associated with the duration of habit

- C/F
  - Occlusal trauma
    - mobility
      - Morning time
  - Tooth structure
    - Nonfunctional occlusal wear
    - Sensitivity
    - Atypical shiny wear facet with sharp edges
    - Pulpal exposure
    - # crown, restoration





- Muscular tenderness
  - Lateral pterygoid, masseter on palpation
  - Fatigue on waking
  - Hypertrophy of masseter
- TMJ disturbances
  - Crepitation , clicking ,
  - Restriction of mand. movement
  - Deviation of chin
  - Pain – Dull , unilateral

Headache

- Muscular contraction type

Other signs and symptoms

- Sounds- Grinding and tapping
- Soft tissue trauma
- Small ulceration or ridging on buccal mucosa opposite the molar teeth

Bruxism: Treatment

1).Occlusal adjustment

- Disappearance of habitual grinding
  - Coronoplasty
  - High point correction

2).Occlusal splints (Night guard)

- Vulcanite splint to cover occlusal surfaces
  - Reduction of increased muscle tone
- Soft splints –for children
- TMJ appliance
  - Prefabricated intra oral appliance for TMJ disorder

3).Restorative

- Severe abrasion
  - Pulp therapy
  - Stainless steel crown

4).Psychotherapy

- Counseling
  - Tension relief
  - Habit awareness -Increase voluntary control

5).Relaxing training

- Tensing and relaxing exercise
  - Voluntary relaxation
- Hypnosis
- Behavior Conditioning

6).Physical therapy

Musculoskeletal pain and stiffness

7).Drugs

- Placebo
- Vapocoolant – Ethyl chloride for pain -TMJ
- Local anesthetics - TMJ
- Tranquilizers, sedatives, muscle relaxants
- Diazepam – Anxiety and alteration of sleep arousal
- Tricyclic antidepressants- Reduce REM

8).Biofeedback

- Positive feedback for Learning of tension reduction

9).Electrical method

- Electro galvanic stimulation for Muscle relaxation

10).Acupuncture

11).Orthodontic correction

- Cl II,III, Ant. Openbite, Crossbite

Cheek biting

- Definition-
  - keeping or biting the cheek muscles in between the upper and lower posterior teeth
- Clinical features
  - Ulcers at the level of occlusal line
  - Open bite
  - Tooth malposition in buccal segment

Treatment of cheek biting

- Vestibular screen
- Reminders

Nail biting

- Sign of stressful condition

Incidence

Weschsher (1931)

- 43%- in adolescents
- 25%- college students

Age of occurrence

- Before 3 yr- absent
- 4-6 yr- sharp rise in incidence
- 7-10 yr- constant level
- Adolescence- sharp rise

Etiology

- Emotional problem, insecurity
- Stressful condition

Nail biting: Cl/ F

- Nail
  - Inflammation of nail beds and nail
  - Irregular nail margins
- Dental effect
  - Crowding
  - Rotation
  - Attrition of incisal edges of incisors

Management of nail biting

- Avoidance of punitive methods
- Mild case- No treatment
- Care for emotional condition
- Encouragement of stress relieving activities
- Nail polish, light cotton mittens as reminder
- Bitter or sour chemical over the finger
  - E.g. : Foul smelling Quinine, Asofoctine, Pepper , Femite etc

Self- Injurious Habits
(Masochistic, Sadomasochistic, self-mutilating)

- Patients enjoys inflicting damage to himself
- Mentally retarded child(10- 20%)

- Definition-

  Repetitive acts that result in physical damage to the individual

Etiology

1).Organic

- Lesch- Nyhan syndrome
- De Lagge's syndrome- Repetitive lip, finger, tongue, knee, shoulder biting

Fig. 54.48a Child with lesch nyhan syndrome having sadomasochistic habit

2).Functional

- **Type A-** Injuries superimposed upon a preexisting lesions
  - Finger nail biting with skin lesion
- **Type B-** Secondary to another established habit
  - Thumb sucker with rotating habit – Soft tissue injury

- **Type C-** Unknown or complex etiology
  - Greater psychological component
  - Multiplicity of symptoms with greater intensity
  - Stress releasing outlet- Castration fear, Failure to resolve oedipal conflict, repressed homosexual impulses, severe guilt, self punishment (Mallson And Robertson)

Management

- Avoidance of punitive , harassing approach by parents
- Correct diagnosis to omit physiological etiology
- Referral to Pediatrician, Psychiatrist
- Adjunctive therapy
  - For healing ulcers
    - Squibb oral bandage
    - Oral screen

Self- Injurious Habits: Frenum thrusting

- Locking of labial frenum between teeth for several hours
- Clinical features
  - Spaced maxillary incisors
- Treatment
  - Psychotherapy
  - Palliative treatment
    - Bandage for ulcers, habit reminder
  - Mechano therapy
    - Oral shield

Bobby Pin Opening

- Teenage girls

C/F

- Notched incisors
- Partially denuded labial enamel

- Treatment
  - Restraints

Postural habit

Chin propping

- It is an extrinsic pressure unintentional habit
- Causes a deep anterior closed bite
- May cause retraction of mandible

Face leaning

- Lateral pressure from face leaning which is an unintentional, extrinsic pressure habit
- May cause lingual movement of maxillary teeth on that side
- Mandible is less affected as it does not have a rigid attachment & can slide away from the pressure

Abnormal pillowing /habitual sleeping on right or left side of face

- Normally children do not lie in one position during sleep.
- The movements are largely involuntary & are produced by nervous reflexes in order to prevent pressure interferences with circulation
- Pillowing habit may cause flattening of skull, facial asymmetry in infants

Pencil Chewing

Bottle Opening

Wire chewing by electricians

Needle biting by tailors

Conclusion

- Oral habits can manifest themselves in a variety of ways, & these activities may or may not be a concern for parents.
- Likewise, the presence of an oral habit may or may not have a marked effect on the child's developing facial structures & dentition
- Hence assessment of these behaviors must include a thorough evaluation of the habit itself & the presence of the potential for oral health repercussions.
- These judgement must be coupled with a sensitive assessment of the physical & emotional status of the child & the relationship of the parent or caregiver


THANK
YOU!

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