

Open bite Malocclusion

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Plan

- 1-Introduction-Definition
- 2-Open bite Classification
- 3-Prevalence Openbites
- 4-Problems related to Openbite
- 5-Etiologic Factors
- 6-Diagnosis
- 7-Open bite traitement
- 8-Open bite: stability

1- Introduction - Definition

Anterior open bite (AOB) is generally defined as a condition where the upper incisor crowns fail to overlap the lower incisor crowns when the mandible is brought into full occlusion.

An openbite could range from a mild case of 'edge to- edge' incisor relationship to a severe skeletal open bite with only the molars in contact.

Simple open bites are usually confined to the teeth and alveolar process where as **complex openbites** are based primarily on vertical **skeletal dysplasias..**

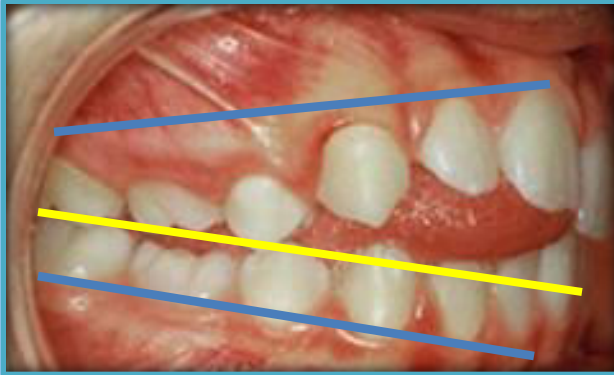


Simple Openbite



Severe Anterior Open-Bite

2-Open bite Classification



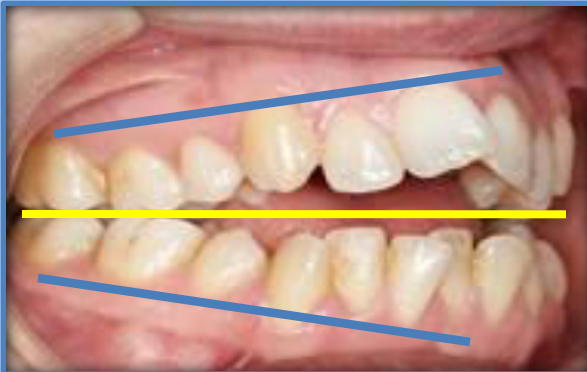
Dentoalveolar open bite (**Functional**)



Anterior open bite



Open bite - Deciduous teeth



Skeletal Open Bite (**Hereditary**)



Posterior Openbite



Openbite-Permanent teeth

3-Prevalence Openbites

- The prevalence of skeletal long face malocclusion is unknown, but has been estimated to be **0.6% or 1,350,000 U.S. citizens.**
- The prevalence of dental open bites in U.S. **children is approximately 16% in the black population and 4% in the white population,**
- All children experience anterior open bites during the transition from the primary to permanent dentitions

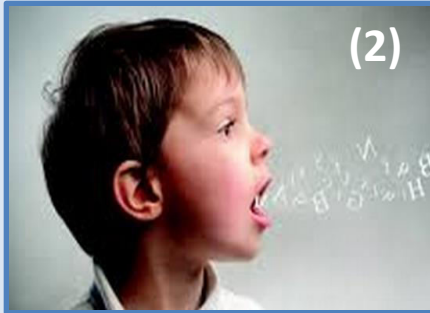


4-Problems related to Openbite

- **Masticatory (1) and speech (2) is problems** have been attributed to open bites.
- **The inability to incise is the chief complaint (3)** often voiced by open bite patients.
- Other patients indicate **displeasure with their facial esthetics and smile (4).**



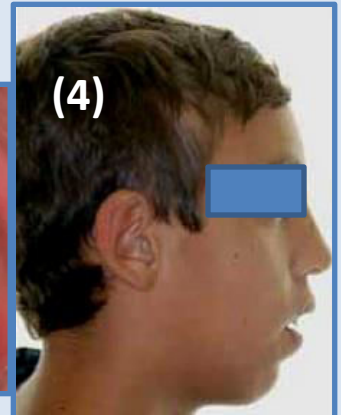
(1)



(2)



(3)



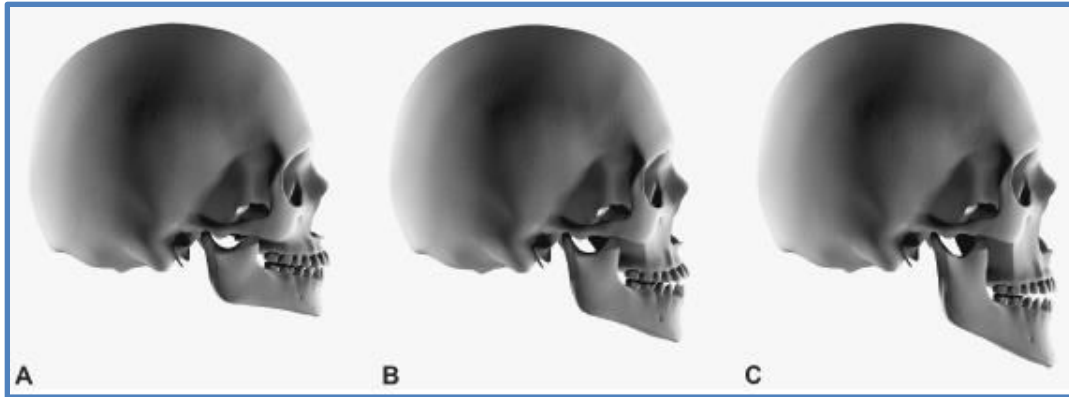
(4)

5-Etiologic Factors

- **Because of their multifactorial etiologies, dental and skeletal open bites are among the most difficult malocclusions to treat to a successful and stable result.**
- Etiologic factors include vertical maxillary excess, skeletal pattern, abnormalities in dental eruption, and tongue-thrust problems, any other malocclusion, can be either hereditary or environmental in origin
- **1. Heredity**
- **2. Environmental Factors**
 - a-**Thumb**, finger or foreign body **sucking**
 - b- **Abnormal tongue function**.
 - c -**Airway pathology**.
 - d- **Iatrogenic factors**, e.g. extruding molars during treatment
 - e- **Trauma or pathology** to one or both **condyles**
 - f- **Orofacial Muscles Dysfunction**

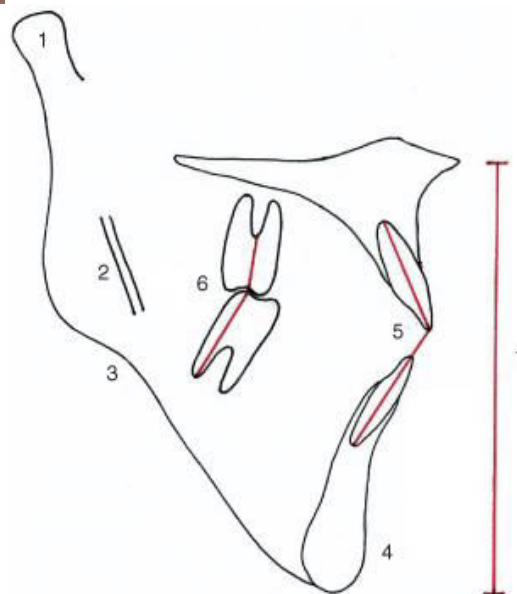
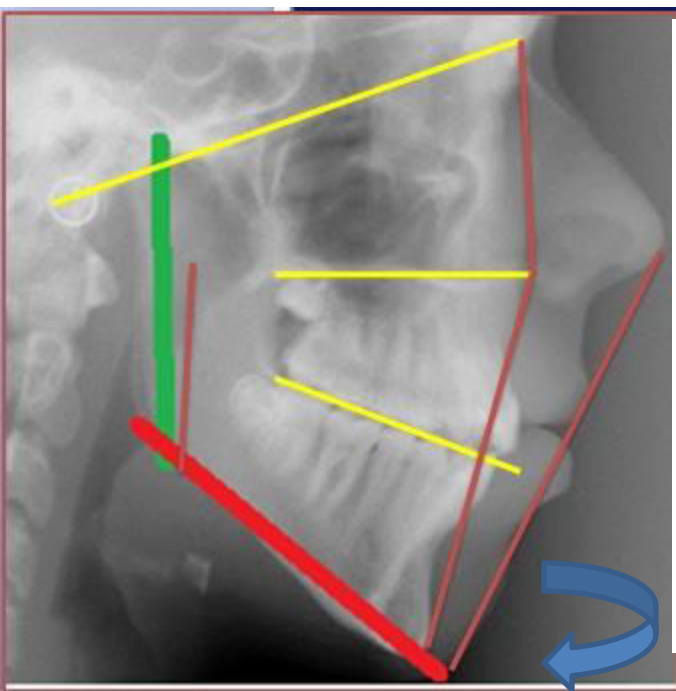
1- Genetics Factors – Open bite

Skeletal growth abnormalities- Hyperdivergent Skeletal Pattern



The patient may often has a long and narrow face.

- Divergent cephalometric planes
- Steep anterior cranial base
- Downward and forward rotation of the mandible.
- Vertical maxillary increase
- Increased lower anterior facial height
- Decreased upper anterior facial height
- Increased anterior and decreased posterior facial height
- A steep mandibular plane angle
- Small mandibular body and ramus
- The patient may have short upper lip with excessive maxillary incisor exposure



2-Environmental Factors

a- Thumb and finger sucking or pacifier use

In younger children, the major **cause of anterior open bite** (excluding open bites associated with the transition from the primary to mixed dentitions) are non-nutritive sucking habits.

By **adolescence**, environmental causes of anterior open bite are less important than **skeletal factors**.
A surprisingly large percentage (10-15%) children continue to suck a thumb, finger, or other object well into the elementary school years.



2-Environmental Factors Or Genetics Factors ?

b-Increased tongue size and position-Tongue thrusting

Abnormal tongue function : Abnormal Swallowing / Tongue thrust habit
and size (Macroglossia)



Horizontal Posture



Macroglossia



Tongue thrusting

C-Nasopharyngeal Airway Obstruction associated Mouth Breathing

Airway pathology, An oral breathing pattern is generally considered to be an aetiological factor
In the presence of some nasal obstruction the air flow is impaired or obstructed, and the child begins to breathe through the mouth.

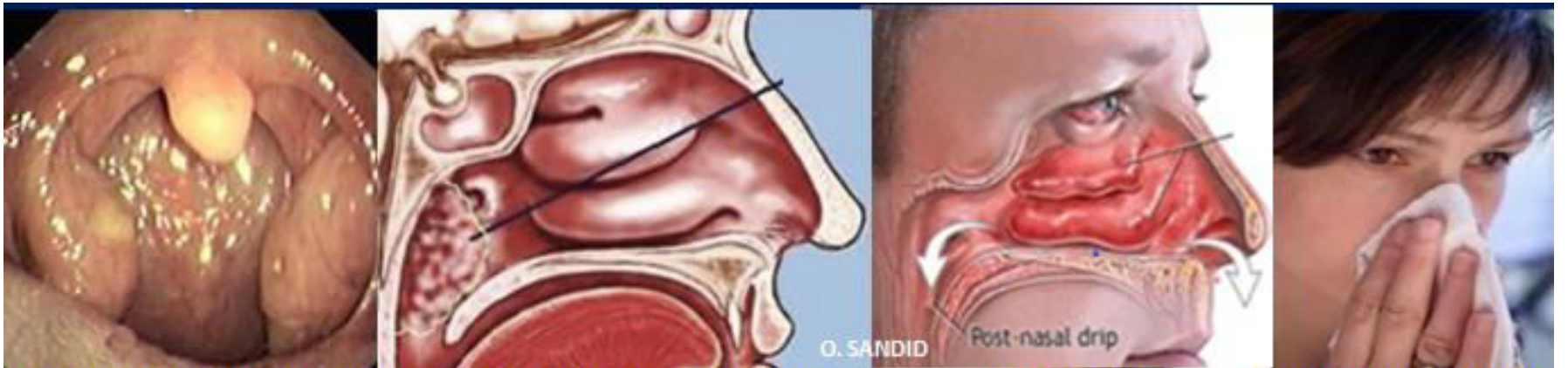
Airway permeability requiring advanced tongue



C-Mouth breathing: causes and adverse effects on facial growth and dental occlusion

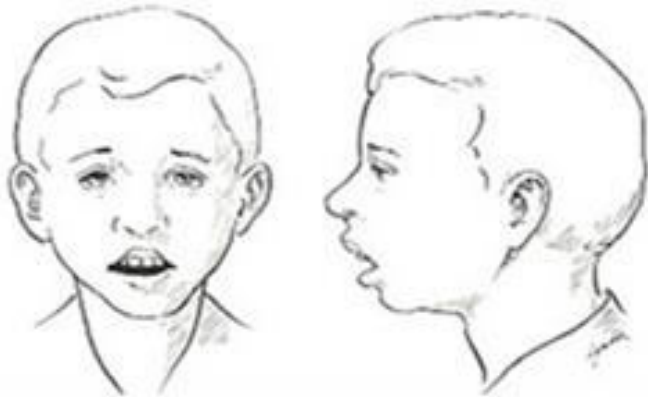


NORMAL NASAL BREATHING ----- MOUTH BREATHING ----- CAUSES: SEPTUM DEVIATION --- NASAL OBSTRUCTION



TONSILLAR HYPERTROPHY -- HYPETROPHIC ADENOID ----- SINUSITIS ----- ALLERGIC RHINITIS

Prevention: Mouth breathing - causes and adverse effects on facial growth and dental occlusion



ADENOIDS FACIES



MAXILLARY CONSTRICTION



OPENBITE



TONSILLECTOMY



ADENOIDECTOMY



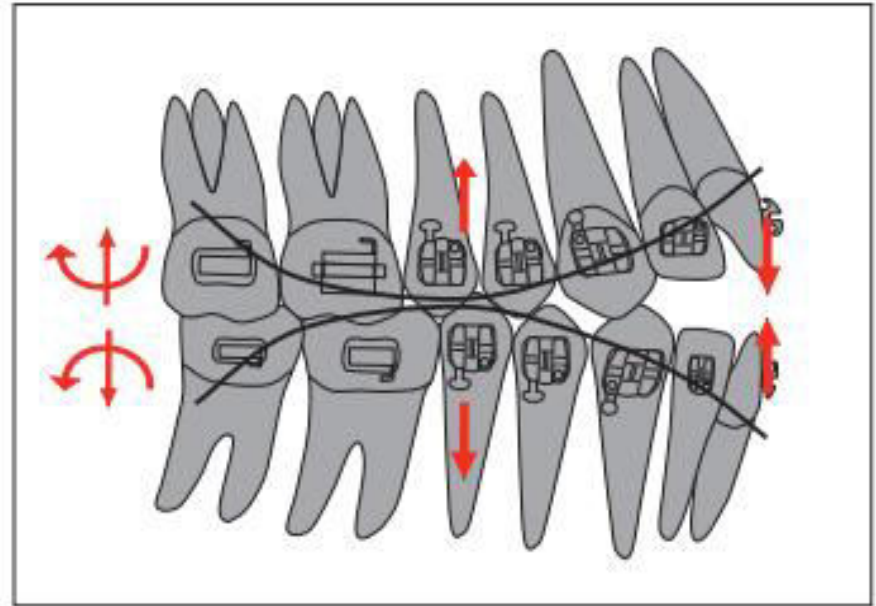
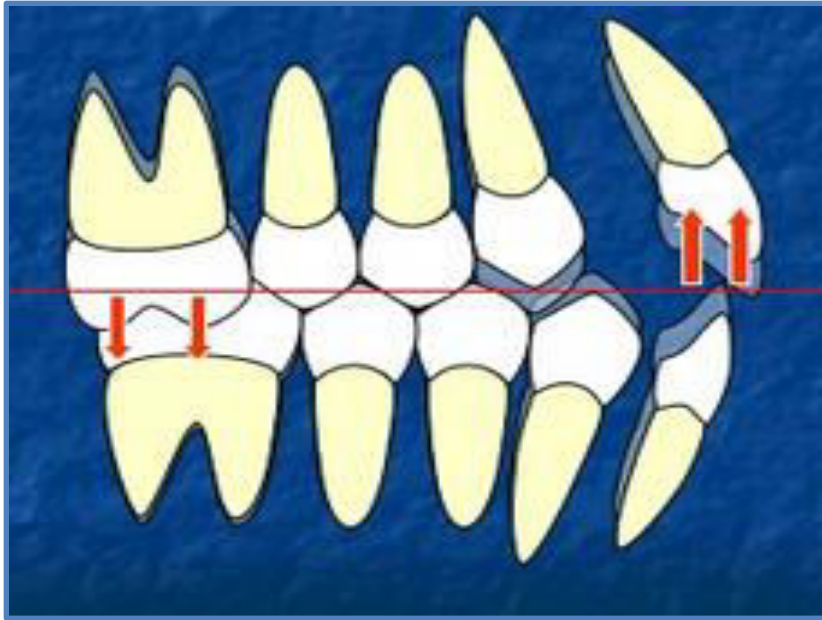
SINUSITIS TRT



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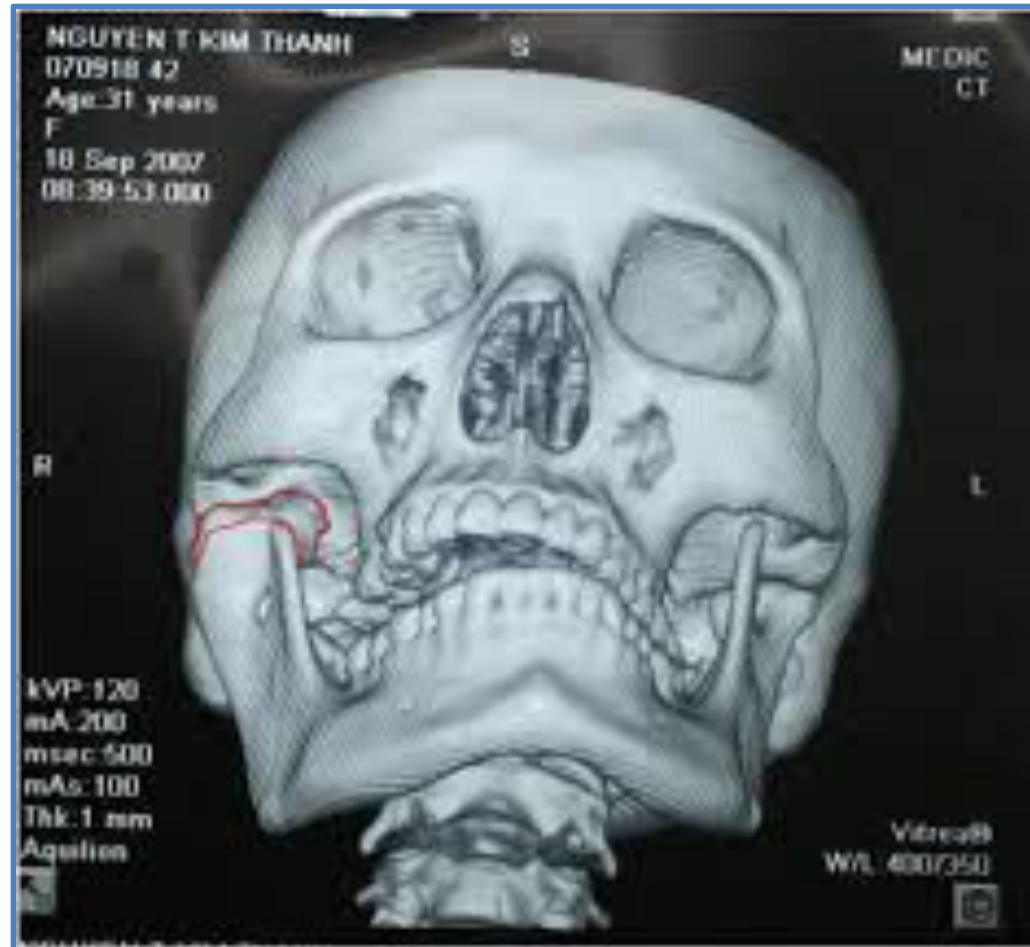
BREATHING RE EDUCATION

d-latrogenic factors, extruding molars during treatment, intruded incisor



No cooperation for anterior elastics

e-Trauma or pathology to one or both condyles



f-Failure of eruption of the upper left first permanent molar-Posterior Openbite

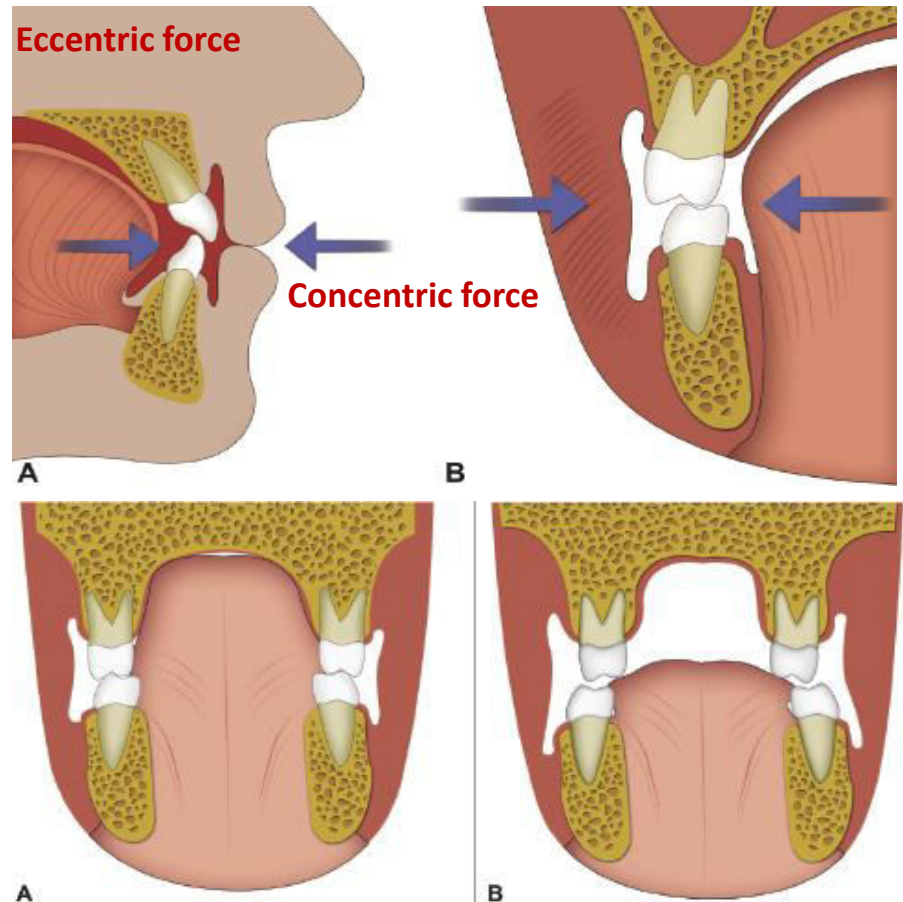
Abnormalities
in dental
eruption



g- Orofacial Myofunctional Disorders

Orofacial functional matrices Balanced forces between the tongue, lips, and cheeks on the teeth and bone structures.

In a normal occlusion, there is a balanced relationship among the oral structures, basal bones, teeth, and intra and extraoral musculature, reflecting in a correct function of the stomatognathic system. This is denominated the buccinator mechanism. Thus, the teeth are in a balanced position receiving opposing forces arising internally by the tongue and externally by the lips and cheeks



6-Diagnosis: Dental Openbite

Patients generally exhibit **normal facial features** with only intra-oral abnormalities related to the aetiology, eg. **Thumb sucking, tongue function/posture**. The openbite is generally confined to the incisor region and maybe asymmetric. In cases of digit sucking the **maxillary arch** may also be **narrow** with **proclination of the upper incisors and retroclination of the lower incisors**. In patients with a forward tongue posture proclination and spacing of the upper and lower incisors is often seen, Esthetically Unattractive Particulary during speech When Tongue pressed between the teeh and lips



Anterior Dental Openbite



Asymmetric Openbite

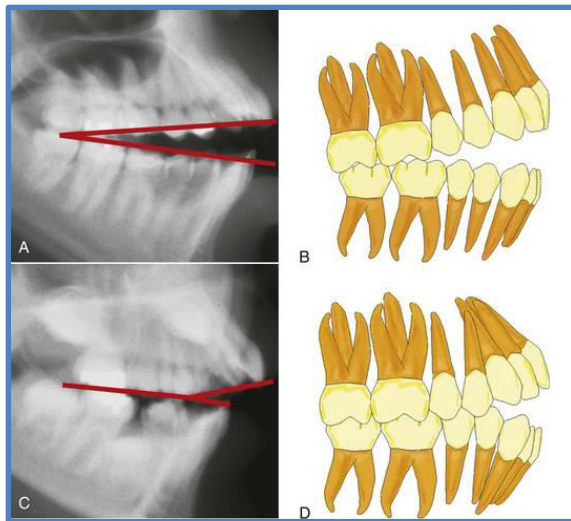
6-Dental Openbite - Skeletal Open Bite

Ravindra Nanda, Flavio Andres Uribe, Nandakumar Janakiraman

-Studies have indicated that skeletal open bites are often related to **excessive vertical growth of the dentoalveolar complex, especially in the region of the posterior maxillary molar** .

- **Conversely, dental anterior open bites are primarily due to reduced incisor dentoalveolar vertical height** .

The difference between these two types of open bites is also reflected in the occlusal planes. The skeletal type of malocclusion generally has occlusal contacts only at the molar level, with both occlusal planes diverging anteriorly, whereas the occlusal planes in the dentoalveolar open bite usually diverge from the first premolar forward

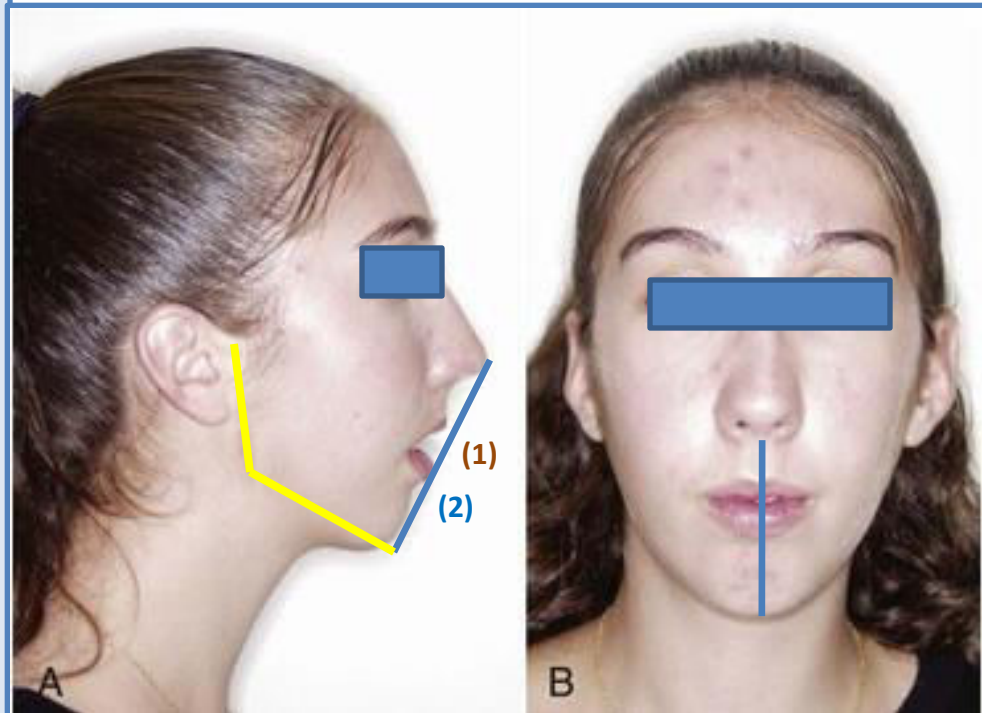


6-Characteristics of Anterior Open Bite

Ravindra Nanda, Flavio Andres Uribe, Nandakumar Janakiraman

Björk description Morphological

- Patient may often has a **long and narrow face**
- A large interlabial gap (1) Lip incompetence
- Long lower facial height (2)
- Long anterior facial height
- Distal condylar inclination
- Short ramus
- Obtuse gonial angle
- Excessive maxillary height
- Straight mandibular canal
- Thin and long symphysis
- Short posterior facial height
- Steep mandibular plane,
- Divergent occlusal planes
- Acute intermolar and interincisal angulation
- Anteriorly tipped-up palatal plane
- Extruded molars
- Steep mandibular plane
- Antegonial notching

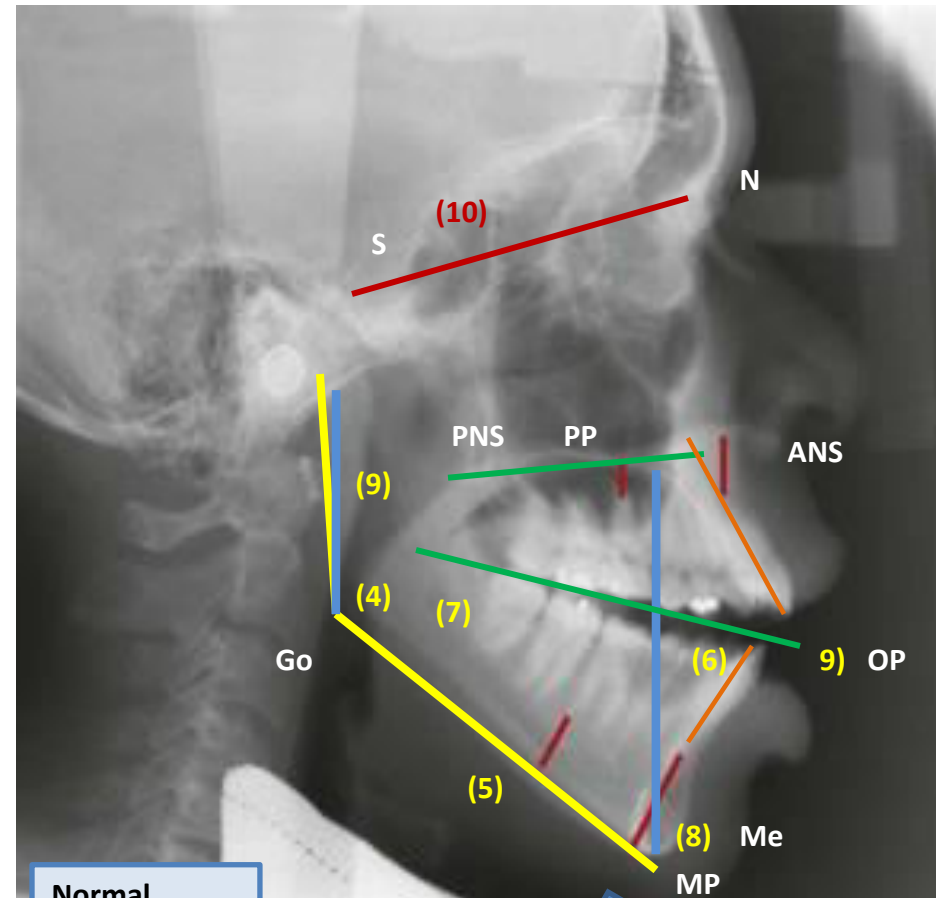


6-Cephalometric Evaluation of Patients with Anterior Open-bite

Ravindra Nanda, Flavio Andres Uribe, Nandakumar Janakiraman

Björk description Morphological

- Patient may often has a **long and narrow face**
- **A large interlabial gap, Lip incompetence**
- Long lower facial height
- Distal condylar inclination
- **Obtuse gonial angle (4)**
- Short ramus (5)**
- **Excessive maxillary height (6)**
- **Straight mandibular canal (7)**
- **Thin and long symphysis (8)**
- **Short posterior facial height (9)**
- Steep mandibular plane (5)**
- Divergent occlusal planes (9) Planes of face are diverging**
- Steep anterior cranial base (10)**
- **Acute intermolar and interincisal angulation**
- **Anteriorly tipped-up palatal plane**
- **Extruded molars**
- Steep mandibular plane**
- Excessive vertical growth of the dentoalveolar complex, Region of the posterior maxillary molar**
 - **Reduced incisor dentoalveolar vertical height .**
 - **Tend to exhibit class II malocclusion and mandibular deficiency**
- **Tend to exhibit a narrow maxilla and posterior cross bite**
- **Tend to exhibit crowding in the lower arch**
- Downward and backward rotation of the mandible**
- Long anterior facial height**



Normal

*SN-MP = 32 °

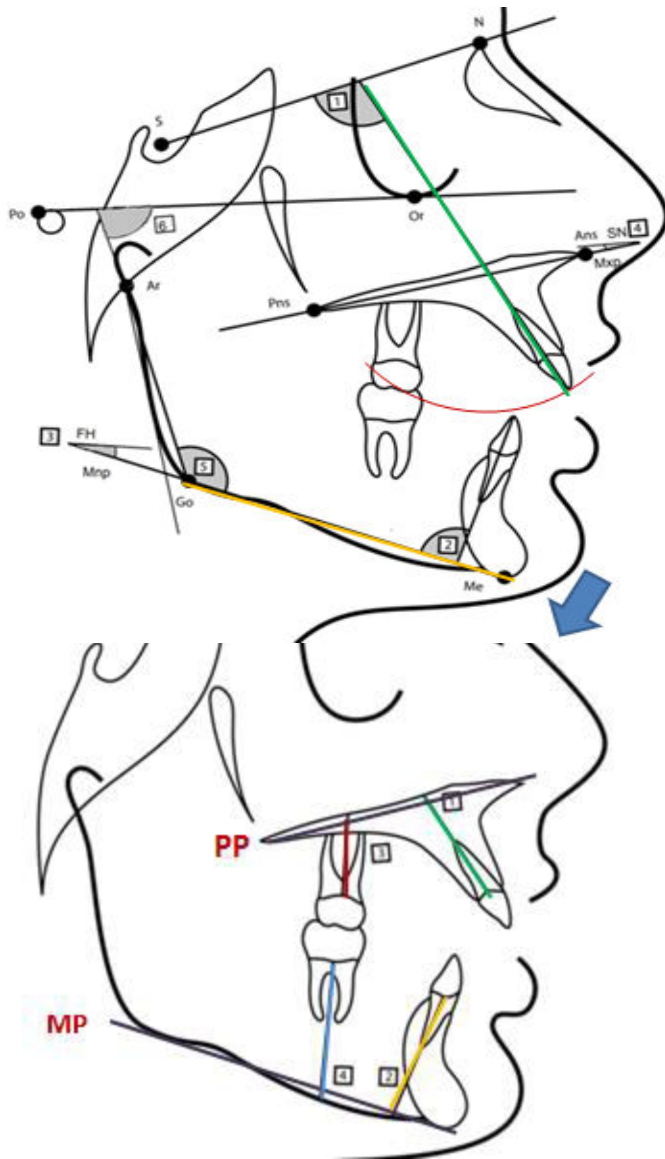
*PP-MP = 28 °

*FH-MP = 20 °

*MP-OP

6-Cephalometric Evaluation of Patients with Anterior Open-bite

<http://oatext.com/Open-bite-malocclusion-Analysis-of-the-underlying-components.php>



1- U1/SN

2- L1/MP)

3-FH/Mnp,

4-Mxp-SN

5-gonial angle (Ar-Go-Me)

6-Ramus/FH).

1a-Anterior alveolar and basal height (Mx-AABH,mm)

2a-Anterior alveolar and basal height (Md-AABH, mm)

3a- Posterior alveolar and basal height (Mx-PABH,mm)

4a- Posterior alveolar and basal height (Md-PABH, mm.)

The highest contributing components in open bite

- The increased downward and backward rotation

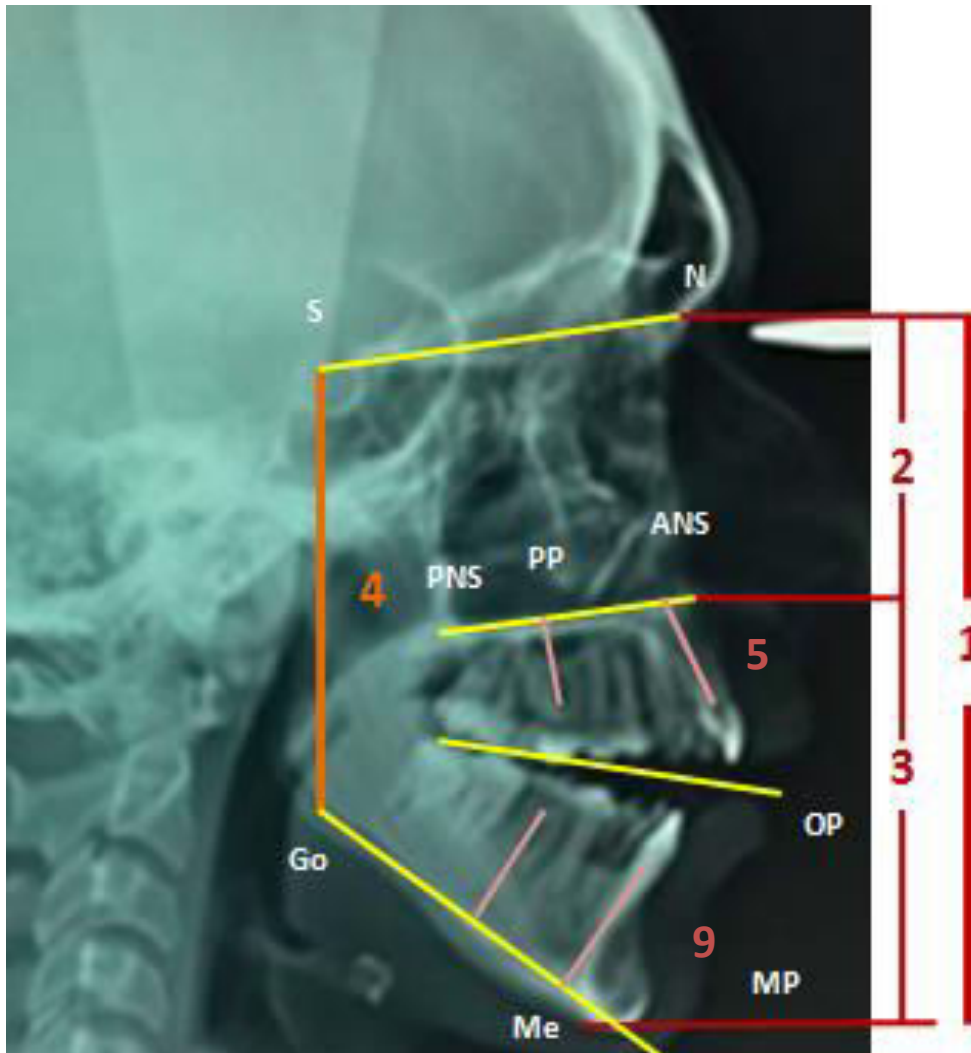
-The reverse curve of Spee

-The proclination of the upper incisors

- The steep mandibular plane

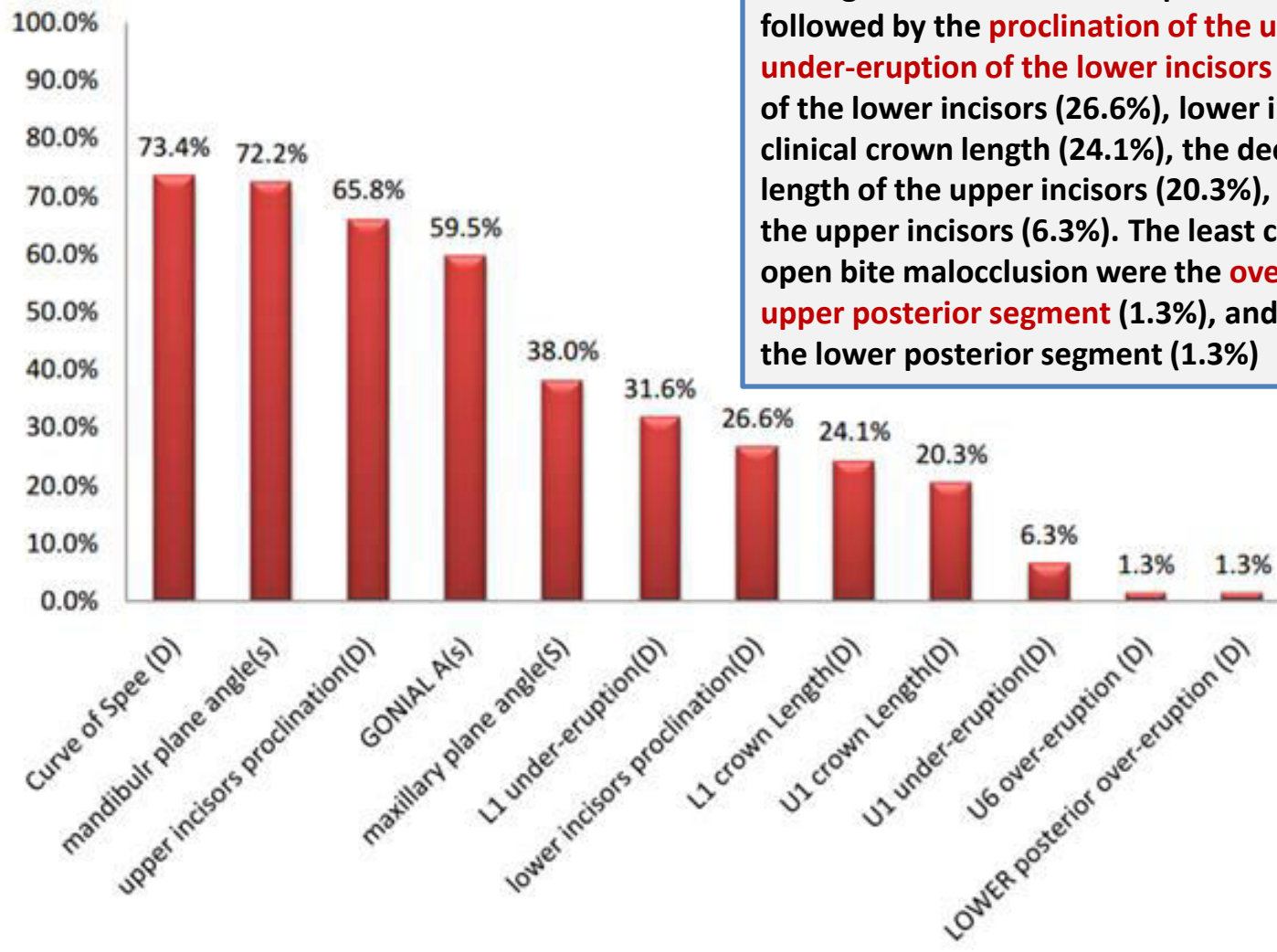
- The gonial angle

6-Cephalometric Evaluation of Patients with Anterior Open-bite



1. **Total anterior facial height (TAFH):**
distance from point N to point Me= 113
2. **Upper anterior facial height (UAFH):**
distance from point N to point ANS.= 49
3. **Lower anterior facial height (LAFH):**
distance from ANS to Me= 64.
4. **Posterior facial height (PFH):**
distance from point S to point Go= 78
5. **Maxillary anterior alveolar and basal height (MxAABH)= 18**
7. **Maxillary posterior alveolar and basal height (MxPABH) = 15**
9. **Mandibular anterior alveolar and basal height (MdAABH)= 28**
10. **Mandibular posterior alveolar and basal height (MdPABH)= 23.**

The Percentages of occurrence of dental components in open bite malocclusion

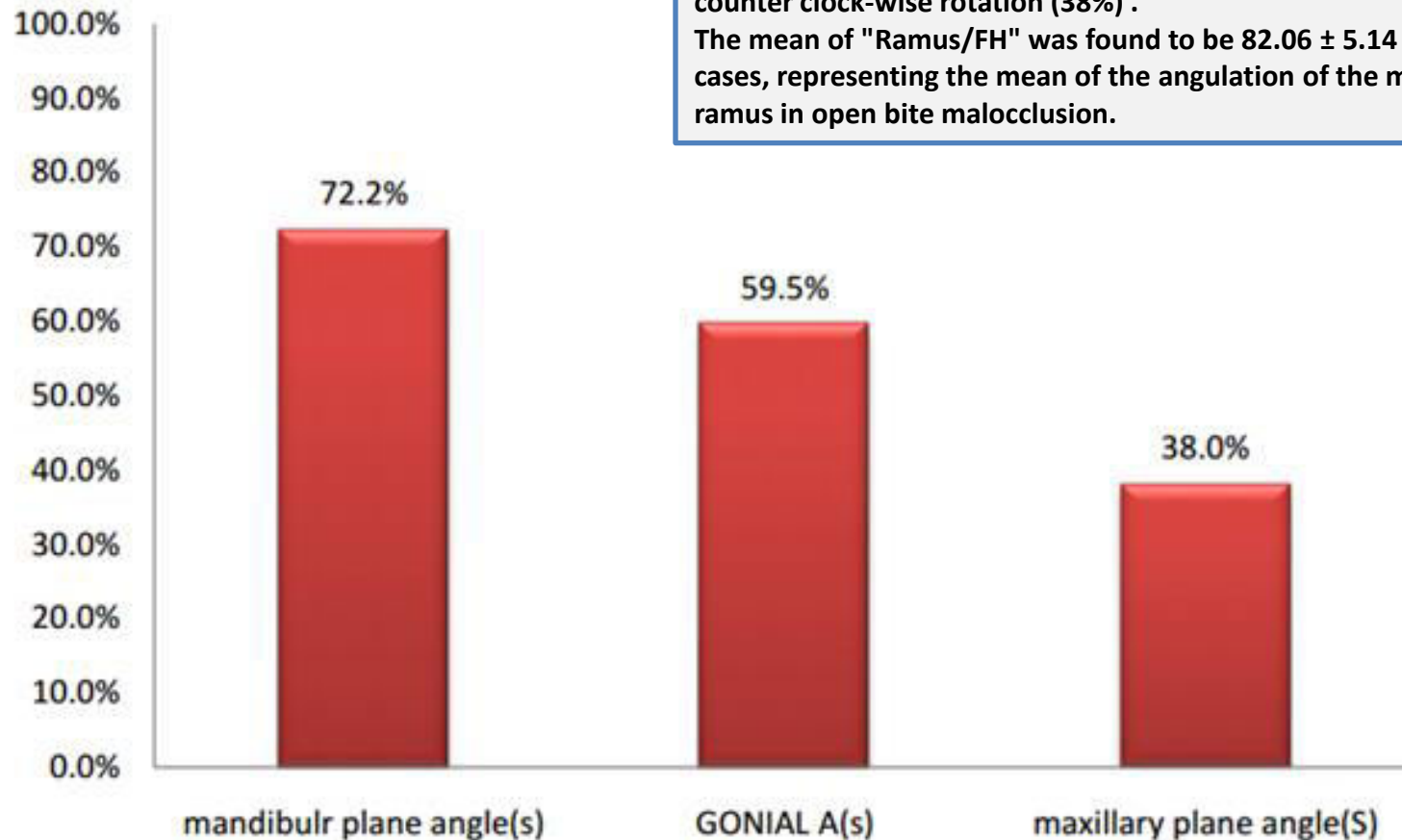


Dental components: The flattened **curve of Spee** showed the highest contribution in open bite malocclusion (73.4%) followed by the **proclination of the upper incisors** (65.8%), **under-eruption of the lower incisors** (31.6%), proclination of the lower incisors (26.6%), lower incisors decreased clinical crown length (24.1%), the decreased clinical crown length of the upper incisors (20.3%), the under-eruption of the upper incisors (6.3%). The least contributing factors in open bite malocclusion were the **over-eruption of the upper posterior segment** (1.3%), and the over-eruption of the lower posterior segment (1.3%)

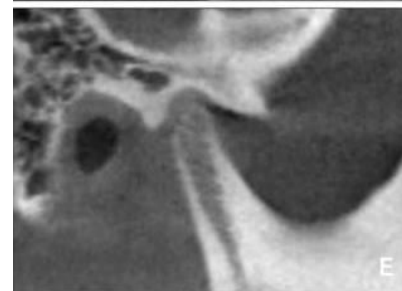
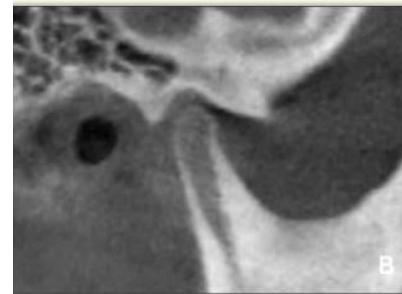
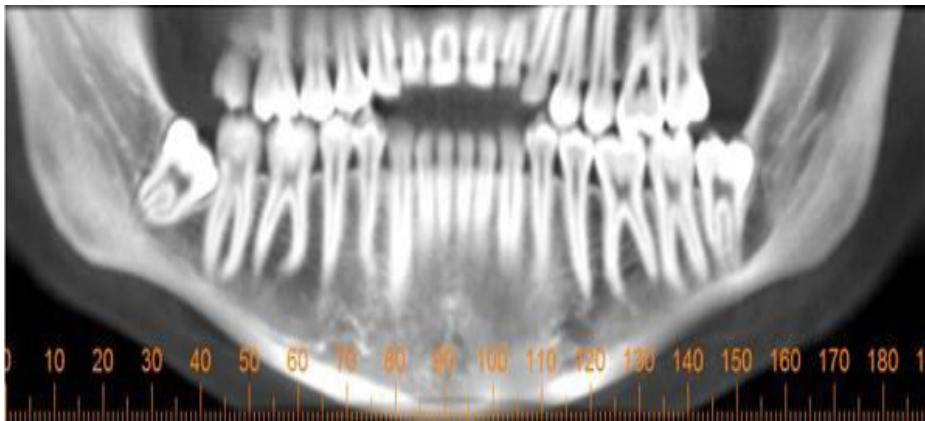
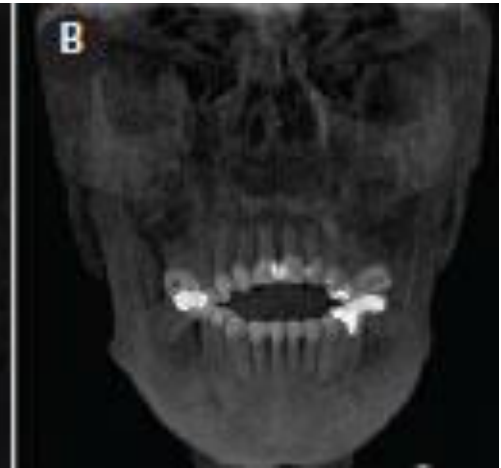
The percentages of occurrence of skeletal components in open bite malocclusion

Skeletal components: The steep mandibular plane angle was found to be the most skeletal component contributing to open bite malocclusion (72.2%) followed by the increased gonial angle (59.5%), and the least sharing skeletal component was maxillary plane counter clock-wise rotation (38%) .

The mean of "Ramus/FH" was found to be 82.06 ± 5.14 in open bite cases, representing the mean of the angulation of the mandibular ramus in open bite malocclusion.



6-Cone-beam computed tomographic-3D – Open bite



7-Open bite traitement

7a-Dental Open bite Treatment- Principes

7b-Correction of Minor Open Bite -Incisor Extrusion

7c-Dental Openbite Treatment with tongue crib or tongue spurs

7d-Dental Openbite - Treatment with elastics

7e-Open bite treated by intruding posterior teeth-miniscrews

7f-Early tooth extraction in the treatment of anterior openbite in hyperdivergent patients

7g-Open bite, treated with extraction of permanent teeth

7h-Treatment of Airway Obstruction

7i-Orthodontics-surgical combination therapy for class III skeletal open bite

7j-Treatment of Anterior Open Bite with the Invisalign System

7k-Class III mechanics employed for vertical control- J-hooks

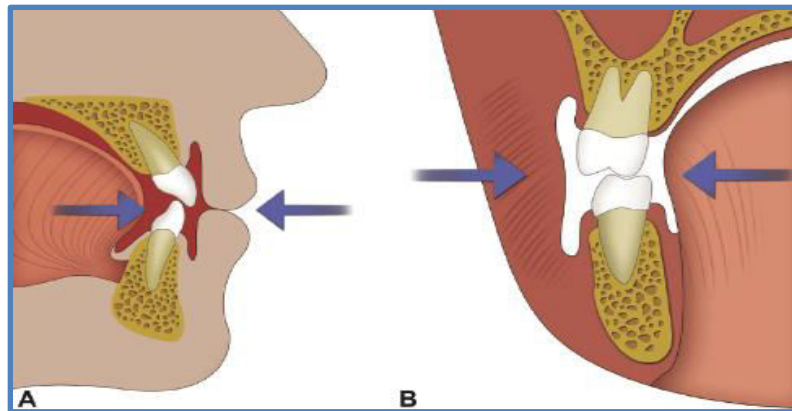
7l-Bracket placement for treatment of open bites

7m-Using reverse-curved archwires to close an anterior open bite

7a-Open bite traitement- Principes

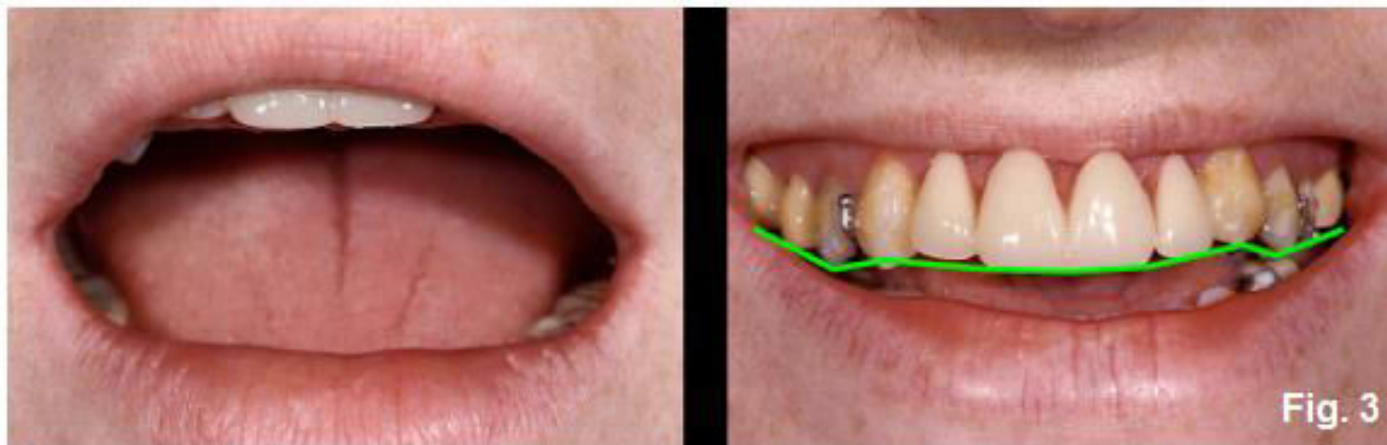
Ravindra Nanda, Flavio Andres Uribe, Nandakumar Janakiraman

Achieving an ideal treatment outcome depends on an **accurate diagnosis in three dimensions**, a good understanding of the interaction between the **neuromuscular components** of the orofacial region and the **craniofacial skeleton, vertical maxillary excess, vertical facial pattern**, and the ability to provide individualized treatment mechanics.

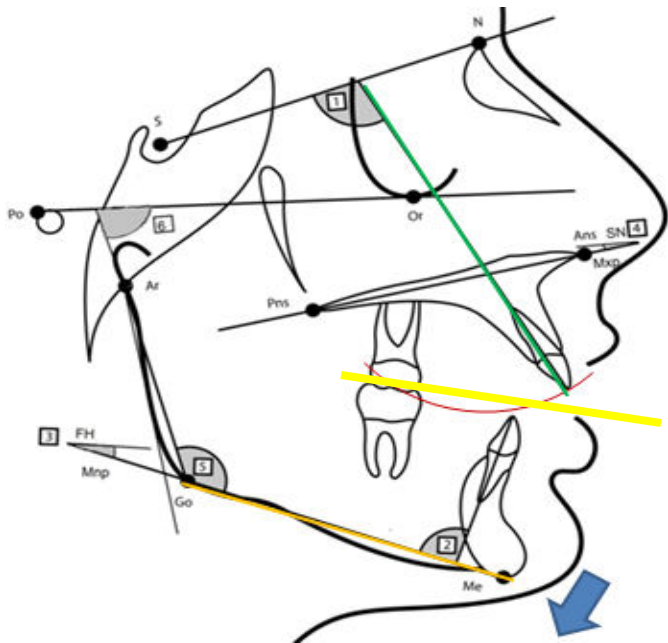


7a-Dental Open bite Treatment- Principles

Molar ingression, Incisor extrusion, Tongue Thrust Therapy



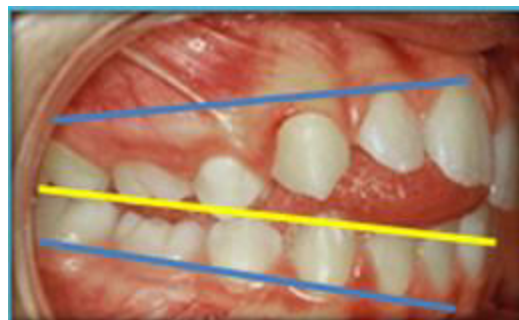
Therapeutic decisions- Definition of problem-Questions ?



- Intrusion incisor, upper or lower ?
- Extrusion molars, upper or lower ?
- Cephalometrics analysis occlusal plan ?



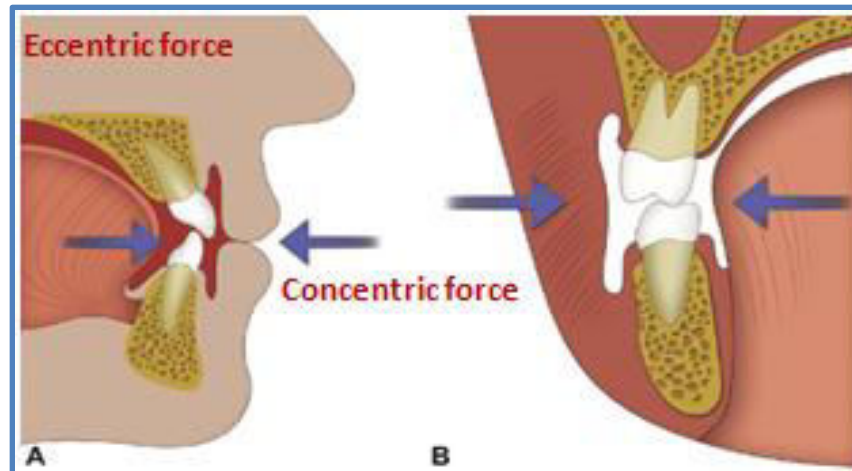
Esthetic Smile and Evaluation ?



Dentoalveolar openbite or skeletal openbite ?

7a-Dental Open bite Treatment- Principles

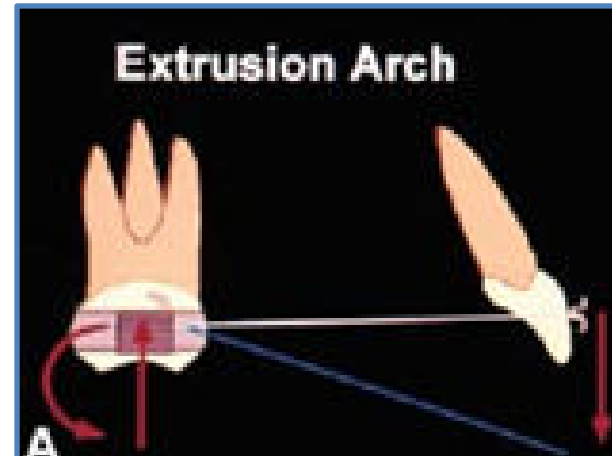
Correction oral habits: Tongue thrust (Neuromuscular re-education), Thumb sucking, Mouth breathing



7b-Correction of Minor Open Bite (Incisor Extrusion)

RAVINDRA NANDA, ROBERT MARZBAN, ANDREW KUHLBERG, JCO, VOLUME 32 : NUMBER 12 : PAGES (708-715) 1998

Connecticut Intrusion Arches



7c-Treatment of Thumb-Sucking or Finger-Sucking

Ravindra Nanda, Flavio Andres Uribe, Nandakumar Janakiraman

Children should be encouraged by their parents to stop the **sucking habit** before the age of 4 years. Before this age, most adverse dental and skeletal effects caused by the habit usually return to the original state, creating a favorable environment for the eruption of permanent teeth.

To help a child stop the habit, parents should note the time of the day at which the behavior occurs and then try to intervene. For example, if a child sucks a thumb or finger during sleep, mechanically obstructing the hand with a sleeping gown may be helpful.

If initial attempts are unsuccessful, an intraoral appliance that acts as a mechanical obstruction and reminder can be used.



Tongue Crib

7c-Treatment of Tongue Thrusting- 5c-Dental Openbite Treatment with Quadhelix -tongue Crib

Ravindra Nanda, Flavio Andres Uribe, Nandakumar Janakiraman



Tongue spurs



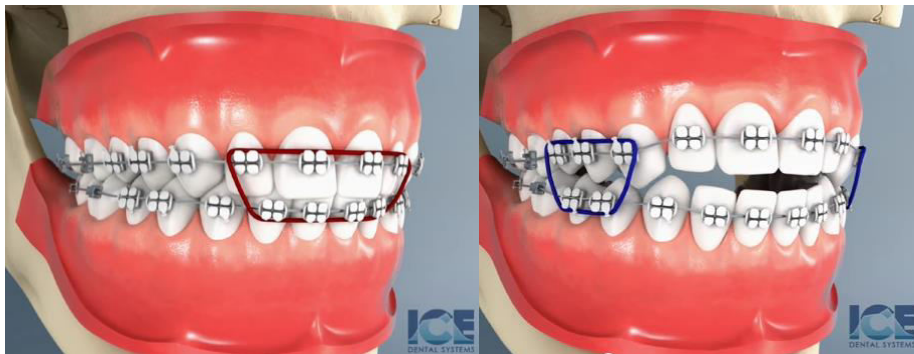
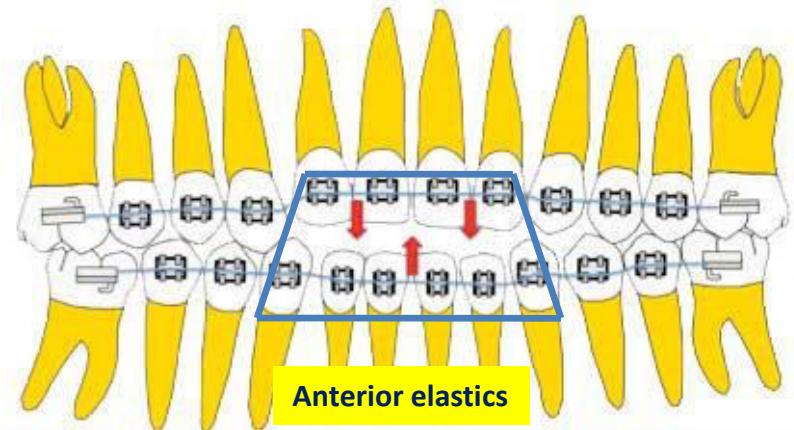
Patients with **tongue thrusting** can be treated effectively in the same manner as that used for patients who suck on a thumb or finger ,although different appliances, such as the habit appliance with **lingual spurs or cribs** , have been suggested, In one study, immediately after crib placement the tip of the tongue was positioned posteriorly during all stages of deglutition.

This altered tongue posture aided in the correction of an anterior open bite through an increase in overbite of 3.6-mm.



7d-Dental Openbite Treatment with elastics

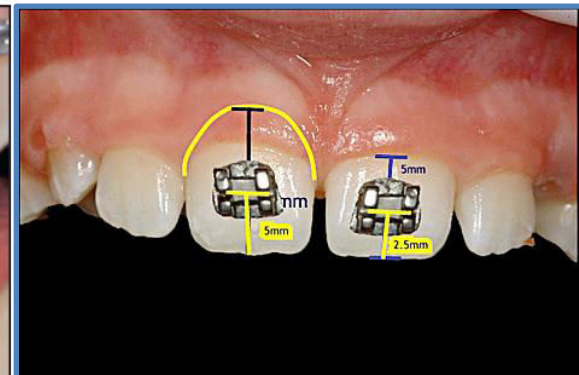
For mild open-bite malocclusions (1 to 3 mm), placing step bends and **meticulous bracket positioning** can help reduce the open bite without any significant side effects. In this patient, the **anterior brackets were placed more gingivally** as compared to the posterior brackets, to aid in correction of the open



7-Bracket placement for treatment of open bites



In patients with open bite, the bracket height for the maxillary anterior teeth, which are out of occlusion, is increased by 0.5 mm. The bracket height for posterior teeth, which are in occlusion, is decreased by 0.5 mm. The amount of curve of Spee in the mandibular arch can be used to determine if any change in bracket height is necessary. If there is significant reverse curvature to the mandibular occlusal plane, then the bracket heights are adjusted in both the maxillary and the mandibular arches.



7e-Open bite treated by intruding posterior teeth-miniscrews

Placement of a miniscrew Palatal miniscrews

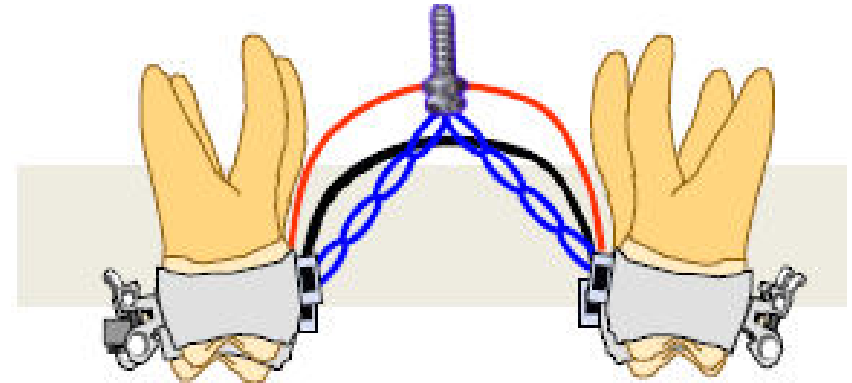
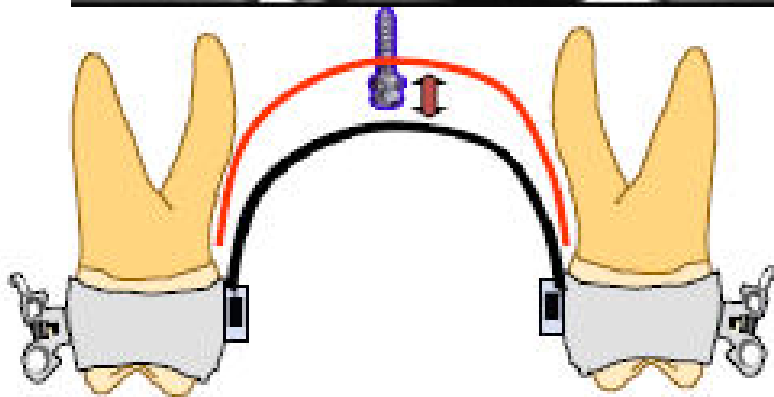
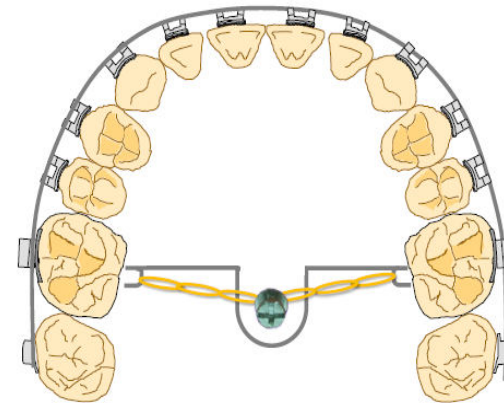
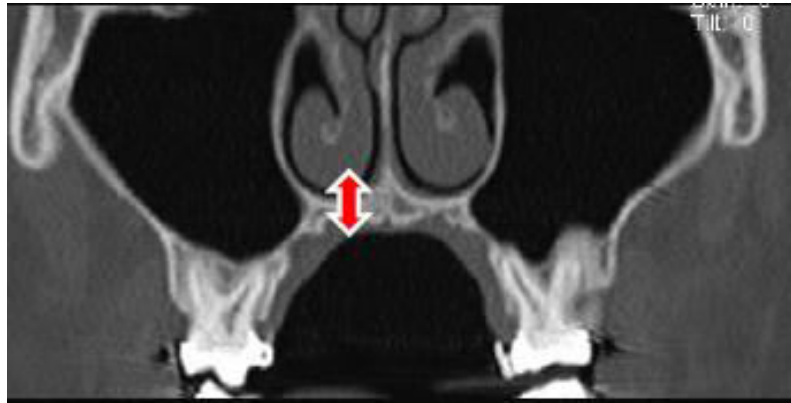


TPA with a mid-palatal mini-implant



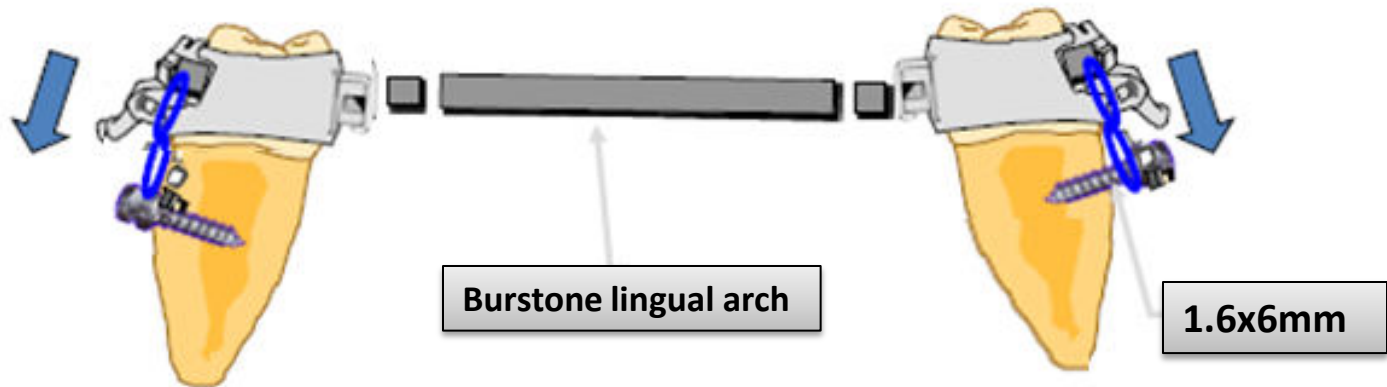
Buccal and palatal inter-radicular mini-implants

7e-Open bite treated by intruding posterior teeth-miniscrews- Palatal miniscrews



Take a **CT** and measure a **mid-palatal bone thickness**. A mid-palatal mini-implant, **1.6x6mm**, is used, There should be **some space between the TPA and palatal tissue**, which prevents the palatal bar to impinge the palatal tissue as the molars are being intruded.

7e-Open bite treated by Intruding posterior teeth- miniscrews- lower molar intrusion

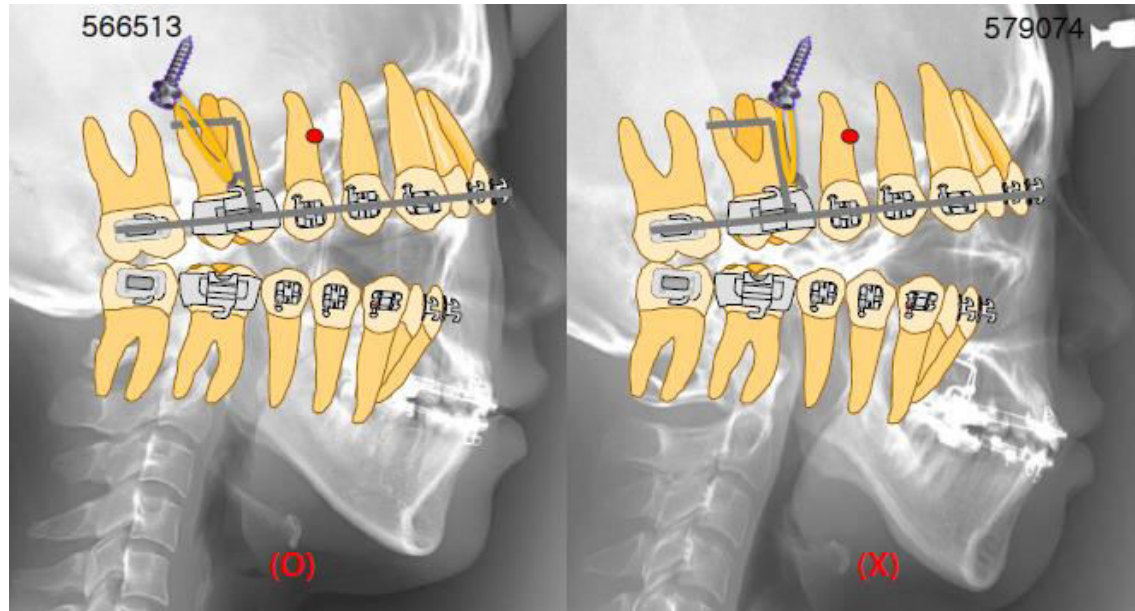


Burstone lingual arch with lingual crown torque and a buccal mini-implants to intrude the lower molars.

- 1) Mini-implants are placed between 5 & 6.
- 2) Burstone Lingual Arch is placed with lingual torque

**7e-Open bite treated by
Intruding posterior teeth- miniscrews - Clinical Tip for a mid-palatal mini-
implant; Place the mini-implant more distally !**

Open-bite
was
closed
efficiently



Intrusion
of total
dentition
was
obtained



7e-Nonextraction treatment of an open bite with microscrew implant anchorage



Pretreatment



Retention records at 8 months.



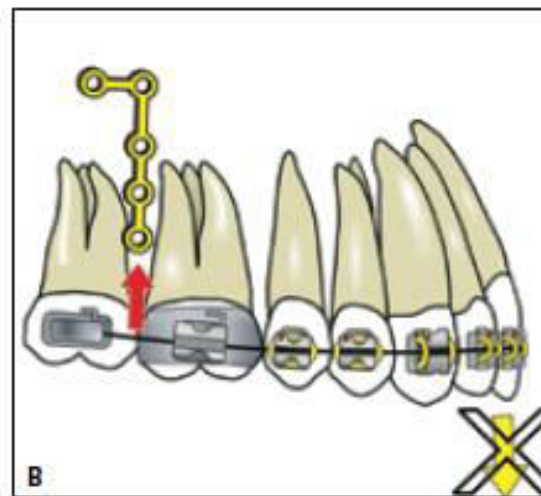
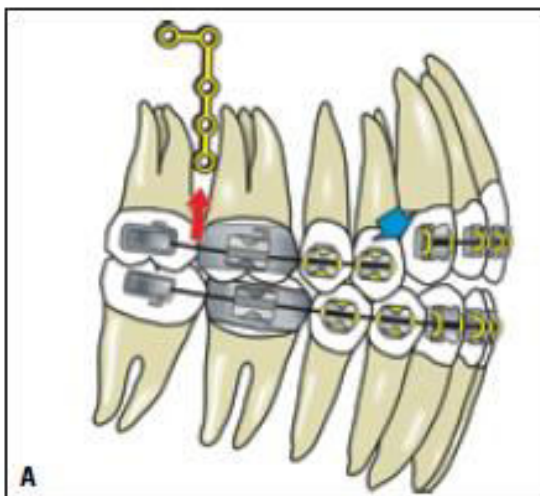
Synergic effect of TAD, muscle training and extraction of 3rd molars



After closing of the mandibular plane angle, direction of the bite force became closer to the tooth axis, which could reduce the extrusion (relapse).

7e-Miniplates treatment of anterior open bites

Segmented arch wires



Intrusion-related mechanical issues. A) Both continuous arch wires and segmented arch wires can be utilized. **Segmented arch wires** (blue arrow) are best suited for open bites restricted to the anterior region. B) When continuous arch wires are used, incisor extrusion does not occur (X on the yellow arrow)

Close an open bite by intruding over- erupted posterior teeth.

The Fisher BCA (Bite Closing Appliance) is a maxillary appliance designed to close an open bite by intruding over- erupted posterior teeth, This appliance, utilizes a bonded posterior bite plate fitted with 4 special ball-end hooks which attach with closed coil springs to TADS (temporary anchorage devices) placed in the zygomatic process, When anchored against the TADS the force of the closed coil springs on the posterior bite plate is directed in a superior direction affecting the intrusion of posterior teeth., A rapid palatal expansion option is available. Transpalatal wires (or RPE screw) are positioned a minimum of 5 mm off of the palate to allow for intrusion



7f-Early tooth extraction in the treatment of anterior openbite in hyperdivergent patients



Initial intraoral photographs

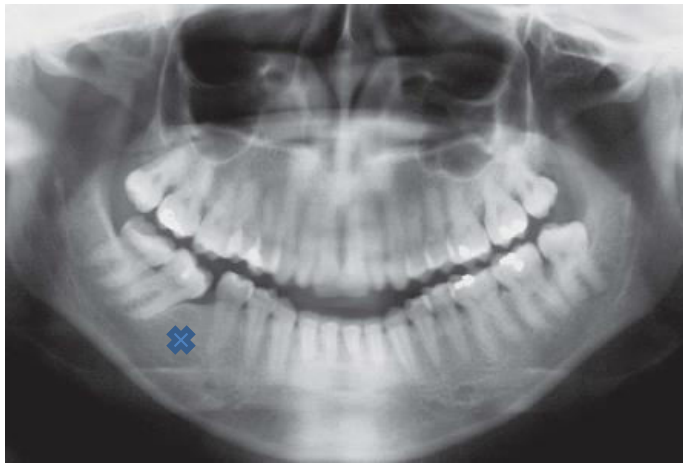


Quadhelix and Bihelix



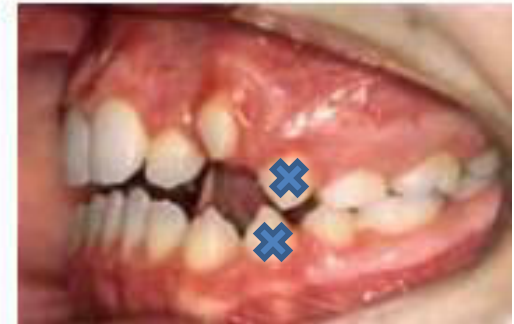
Open bite correction after expansion

7g-Open bite treated with extraction of permanent teeth-extraction of maxillary first premolars (#14 and #24), one mandibular first premolar, tooth #34.



7g-Open bite, treated with extraction of permanent teeth

Extraction of the first upper and lower premolars.



Initial intraoral photographs



Final intraoral photographs.

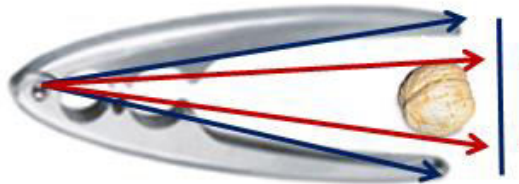
7g-Open bite, treated with extraction of first permanent molars



Initial



Final



7h-Treatment of Airway Obstruction

Ravindra Nanda, Flavio Andres Uribe, Nandakumar Janakiraman

Procedures that promote better breathing through the nose (**turbinate surgery, adenoid and tonsil removal, allergy treatment**) may help to reestablish normal growth patterns. However, the growth direction of the mandible among patients varies greatly after any of these procedures. This variability makes the decision to intervene with a resective surgical procedure difficult. Therefore the diagnosis of upper airway obstruction and the decision for surgical intervention should always be made by an appropriate team of specialists.



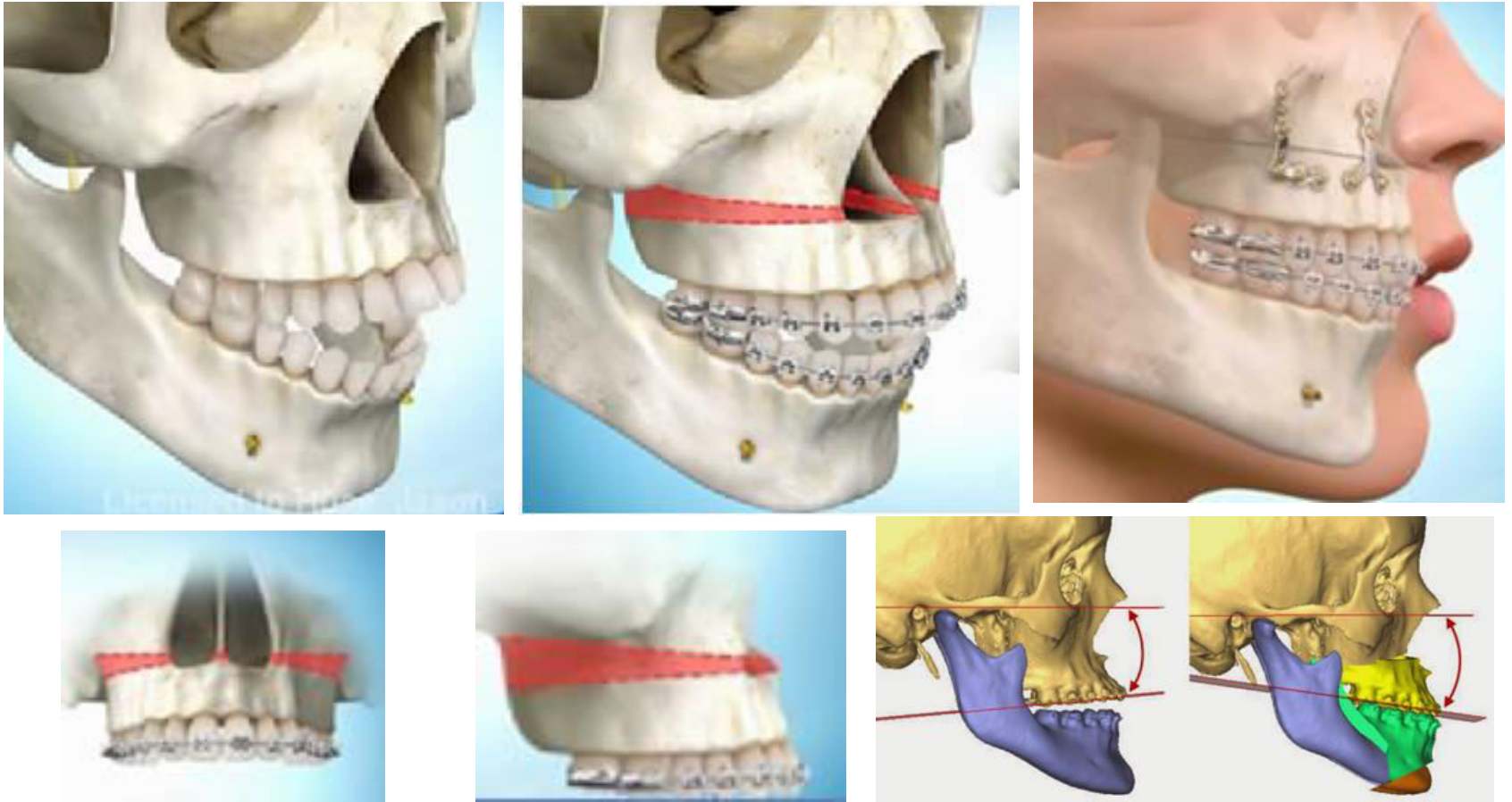
----- TONSILLECTOMY -----

--- ADENOIDECTOMY -----

SINUSITIS TRT -----

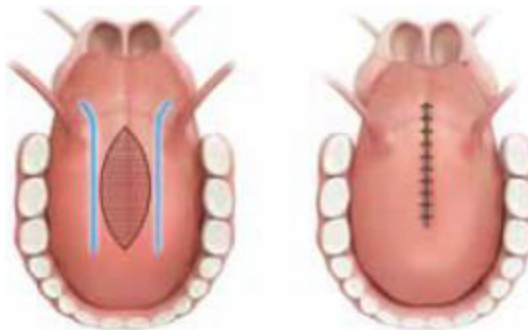
BREATHING RE EDUCATION

7i-Anterior Open Bite Correction with Maxillary Impaction Surgery



In adults, the mechanical treatment options are limited. Orthognathic surgery is indicated in adult patients with severe open bite and unesthetic facial proportions.

7i-Glossectomy as an adjunct to correct an open-bite malocclusion



7i-Treatment of Macroglossia

Ravindra Nanda, Flavio Andres Uribe, Nandakumar Janakiraman



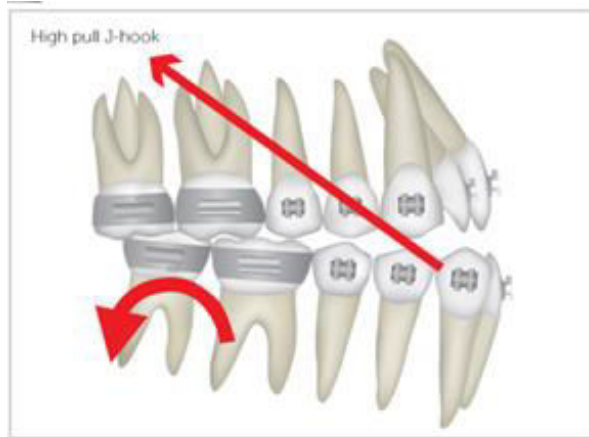
A–E, Intraoral views of a patient with a unilateral left **cleft lip and palate**. Significant spacing is observed in the lower arch due to a **large tongue**. F, Keyhole-design **glossectomy**. G–I, Lateral borders of the tongue to be approximated after tissue mass reduction. J, Anterior open-bite closure after surgical orthodontic treatment. K–M, Intraoral views illustrating 9-year stable result.

7i-Orthodontics-surgical combination therapy -open bite



Before and After treatment

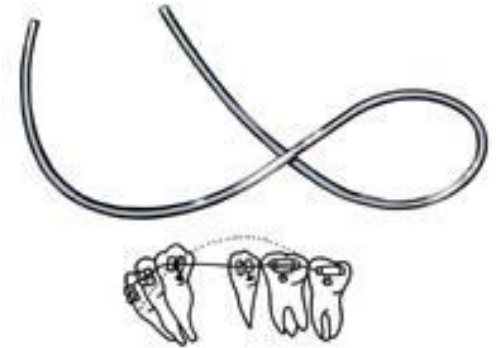
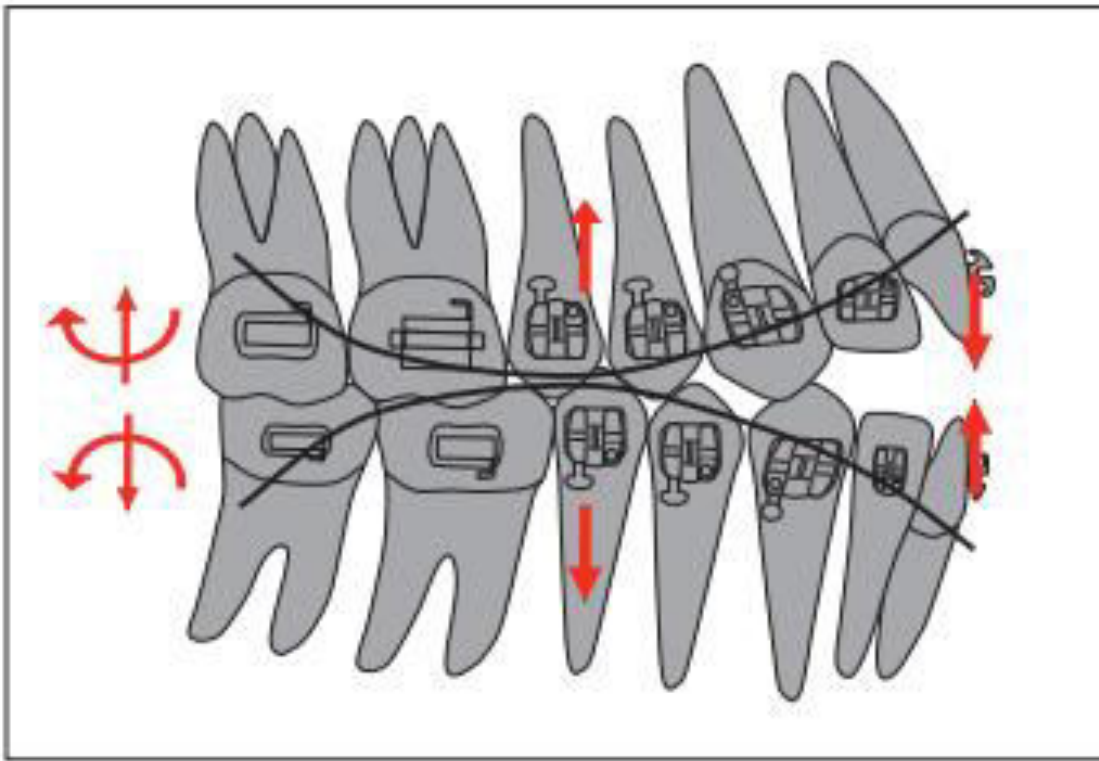
7k-Class III mechanics employed for vertical control- J-hooks



Class III mechanics employed for vertical control, anchored on J-hooks in the lower arch.

7m-Using reverse-curved archwires to close an anterior open bite

Ram S. Nanda, Yahya S. Tosun



Using reverse-curved archwires to close an anterior open bite. The strong anterior box elastics prevent the premolars from erupting, while the molars intrude and tip back and the incisors extrude. These mechanics work quite effectively in a very short time, but they are heavily dependent on **patient cooperation**. Elastics must be worn all day, otherwise the bite may open with quick extrusion of the premolars.

Dentoalveolar comparative study between removable and fixed cribs, associated to chincup, in anterior open bite treatment



Chincup with the force vector directed to the condyle

7j-Treatment of Anterior Open Bite with the Invisalign System

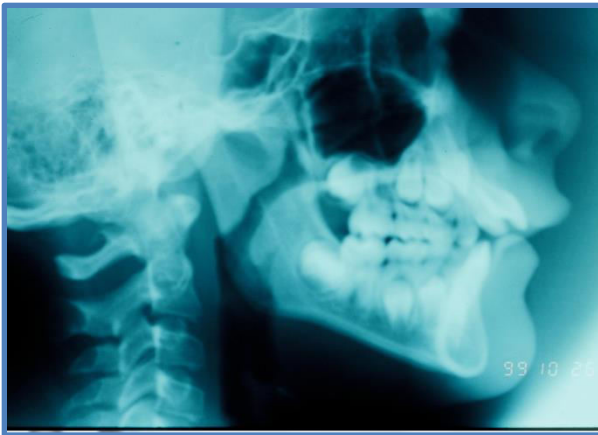


Anterior OpenBite (Tongue-Trainer)



7-Treatment an Anterior Open Bite with Two Different Functional Appliances- Frankel or Binator

O.Sandid

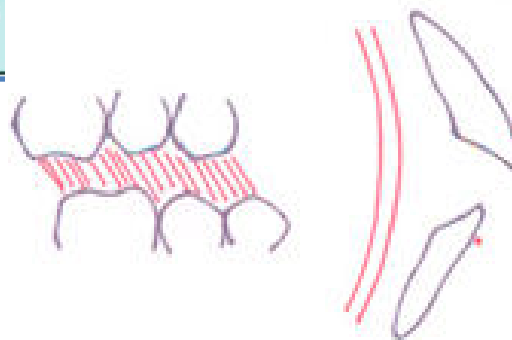


Before

Retrusion of the incisors



Frankel



Binator



After

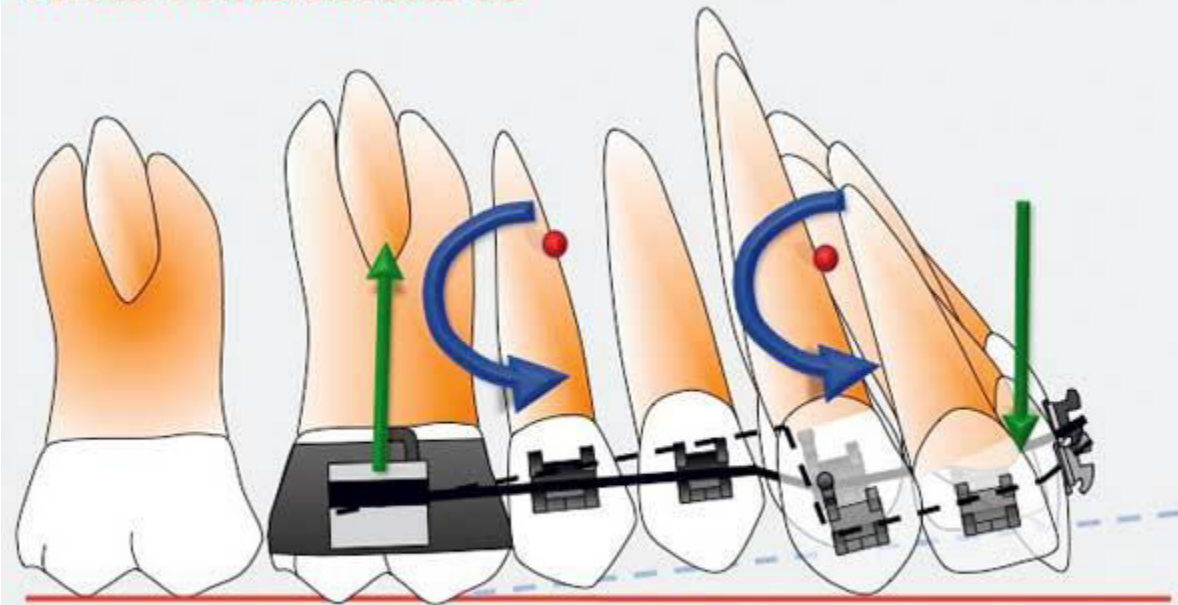
Vertical control: acrylic contact prevent extrusion of molars

Biomechanics of open-bite treatment

Ravindra Nanda

The step bend creates equal and opposite forces on the anterior and posterior segments (green arrows). However, the moments (in blue) are in the same direction, causing worsening of the open bite condition by canting the posterior occlusal plane

Vertical Forces: Reduces OB

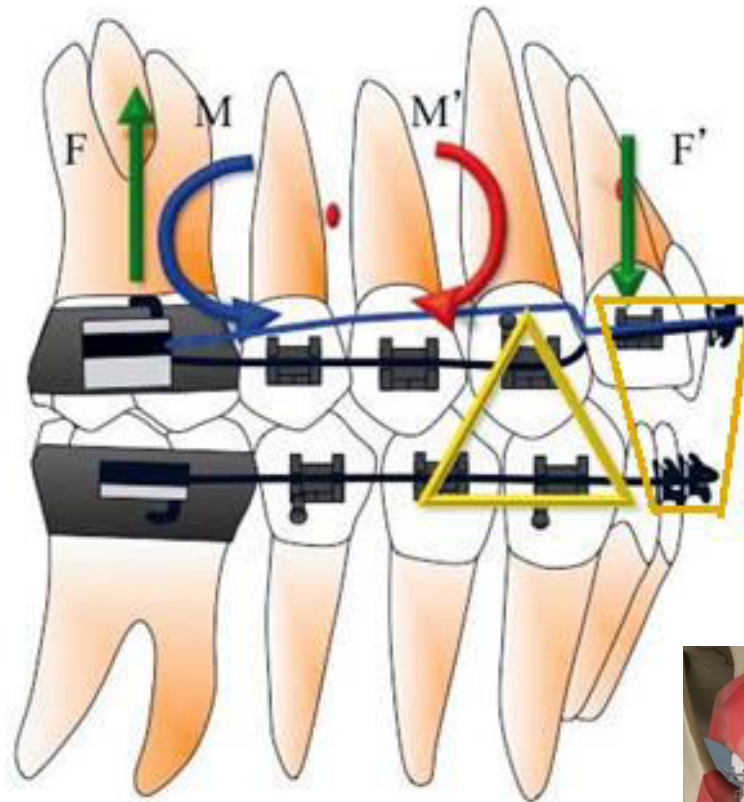


**Tip Forward Moment: Worsens
Posterior OP; Flares Incisors**

Biomechanics of open-bite treatment

Ravindra Nanda

An extrusion arch (in blue) tied to a rigid anterior segment creates a one-couple force system that generates a single force (F) anteriorly (in green). The moments (M) generated (in blue) are counteracted by another set of moments (in red) using elastics (yellow) as shown. This example is assuming that the center of resistance of the posterior segment is between the roots of the premolars.



Anterior elastics



Biomechanics of open-bite treatment

Ravindra Nanda

A case report based on Figure illustrating the application of elastics and an extrusion arch in the successful management of an open-bite malocclusion. Note how the judicious application of elastics in combination with the extrusion arch results in the correction of the open bite and also provides the necessary overcorrection for long-term retention



8-Open bite: stability- Tongue posture and a hyperdivergent facial growth

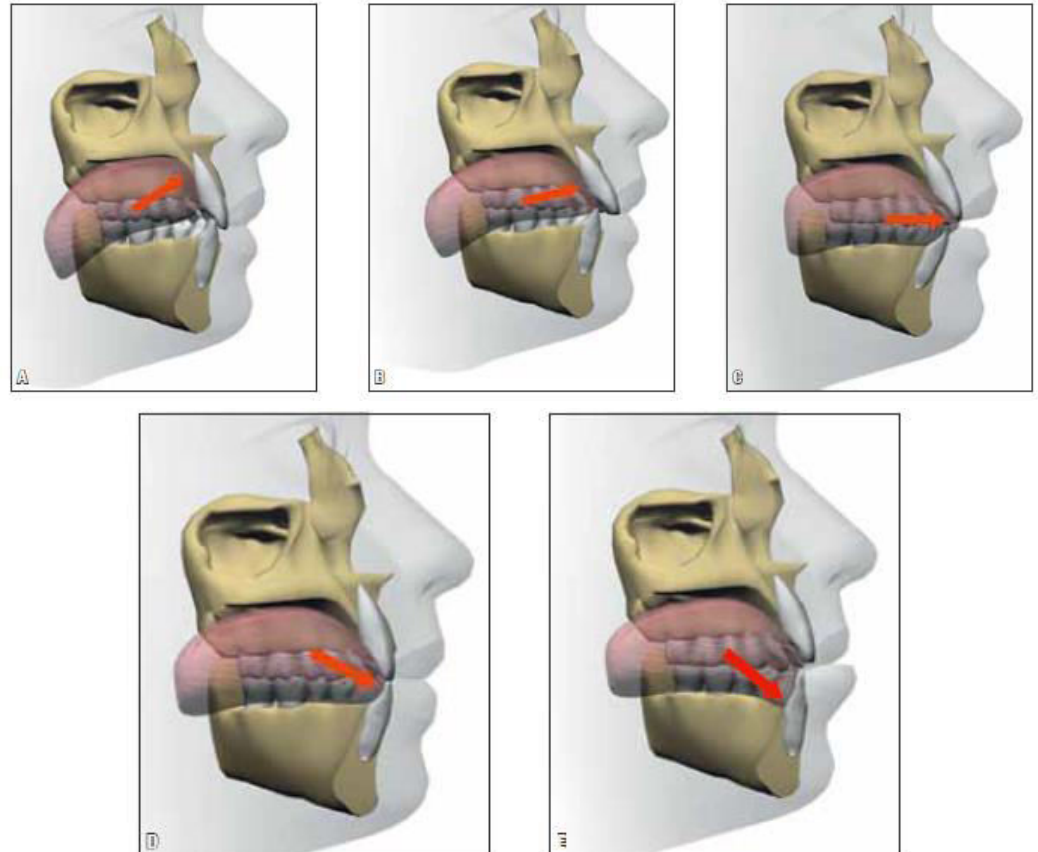
The difficulties encountered in obtaining **stable results** for AOB correction can be justified by the fact that their true **etiology still defies understanding**.

Reassess whether or not **tongue posture and a hyperdivergent facial growth** can be considered as an etiological factor of AOB.

There is more than one possible resting position for the tongue. It can position itself on a higher or lower level, producing open bite with different morphological characteristics and severity.

Once the posture of the tongue has been corrected, the etiological factor is extinguished and treatment stability is ensured.

Appropriate treatment should be selected based on these characteristics, and can be conducted by either restraining or orienting the tongue



Classification for posture of the tongue at rest: (A) Normal, (B) high, (C) horizontal, (D) low and (E) very low.

8a-Treatment stability in the deciduous and mixed dentitions

Treatment with tongue crib or tongue spurs



Treatment stability in the deciduous and mixed dentitions
Clinical stability is close to **100%**.

8b-Stability of non-extraction open bite treatment- permanent dentition

Open-bite non-extraction treatment



Stability of non-extraction open bite treatment
Clinical stability is of **61.9%**.

8c-Stability of extraction open bite treatment- permanent dentition



Stability of extraction open bite treatment
Clinical stability is of **74.2%**.

8d-Stability of anterior open-bite treatment by posterior teeth intrusion- permanent dentition



Stability of anterior open-bite treatment by posterior teeth intrusion
Molar intrusion has a relapse rate of **20 to 30%**.

8e-Stability of open bite treatment with occlusal adjustment



Stability of open bite treatment with occlusal adjustment
Clinical stability is of **66.7%**.

8f--Stability of orthodontic-surgical anterior open bite correction



Stability of orthodontic-surgical anterior open bite correction
Clinical stability is over **75%**.

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- <http://www.slideshare.net/drnabilmuhsen/management-of-deep-bite-dr-nabil-alzubair?related=1>