

# Guiding the Developing Dentition in Pediatric Dentistry

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# Developmental periods

Predentate period



The deciduous dentition period  
-20 teeth



The permanent dentition period  
-32 teeth



The mixed dentition period  
-24 teeth





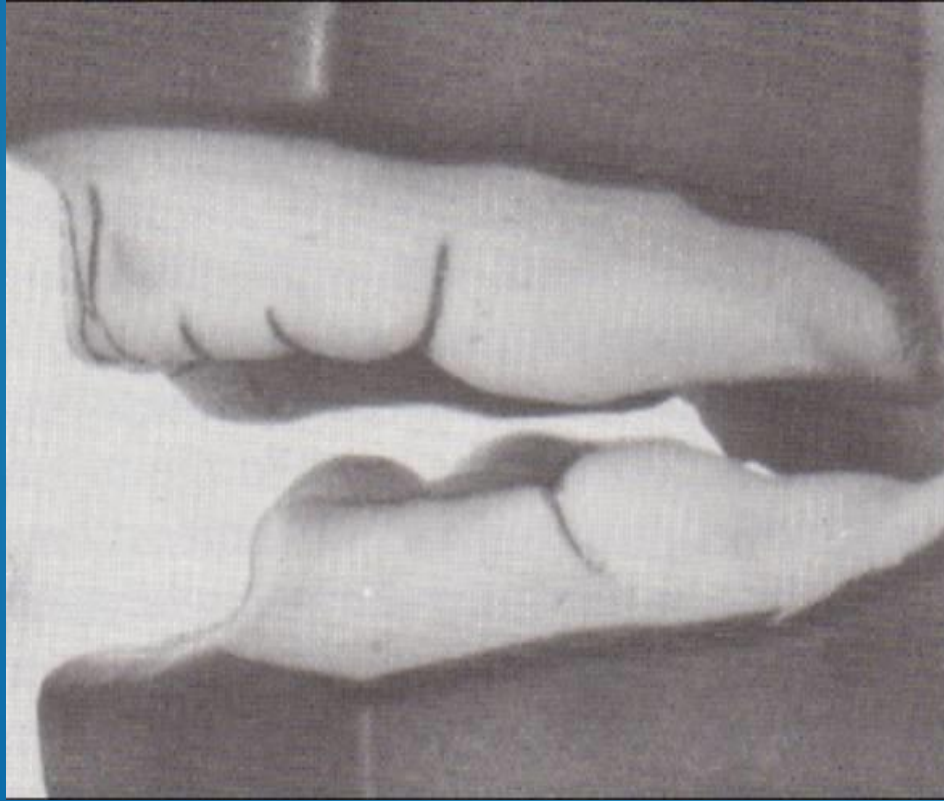
# Need to know.....?

- Normal process of development of dentition and occlusion
- Transient malocclusion and self correcting anomalies
- Guiding and correction developing malocclusion in mixed dentition
- Preventive and interceptive orthodontic procedures



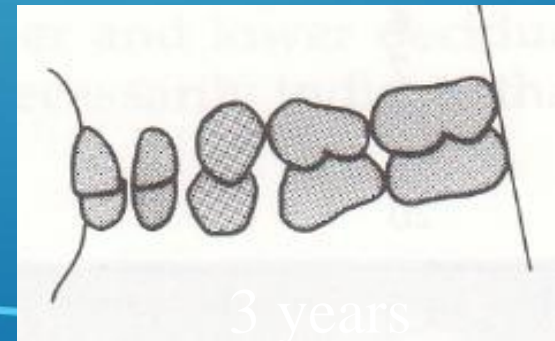
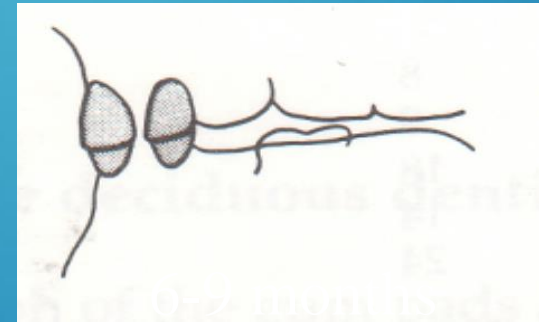
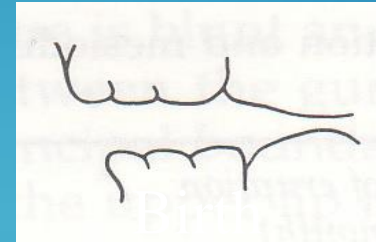


# The gum pads(birth to six months)



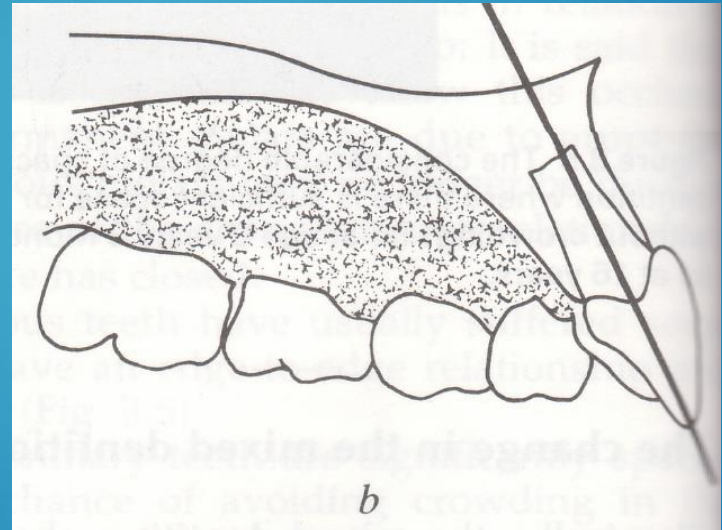
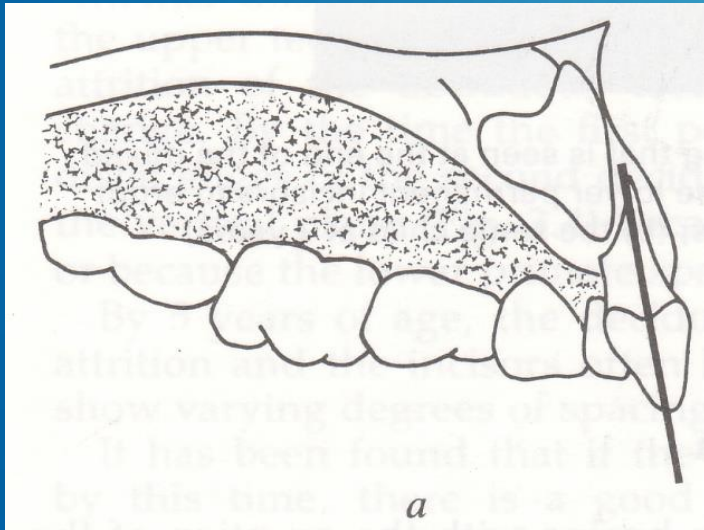
# Eruption of primary teeth: 6 months to 36 months

- Anterior teeth erupt in vertical upright position – less overjet
- Deep bite (Increased overbite)



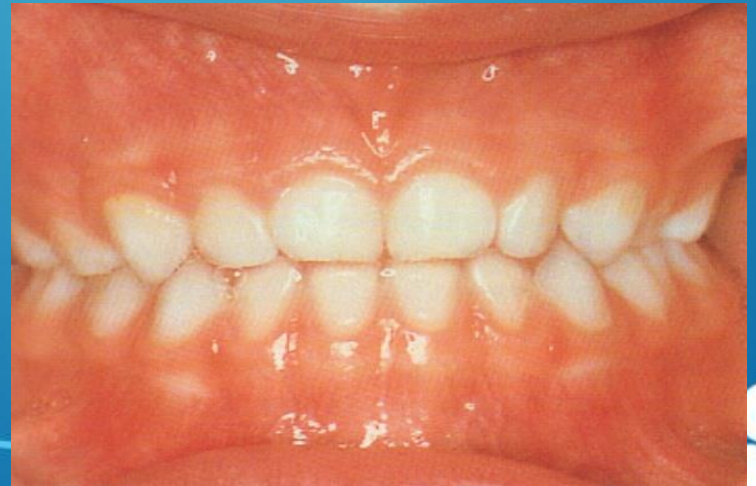
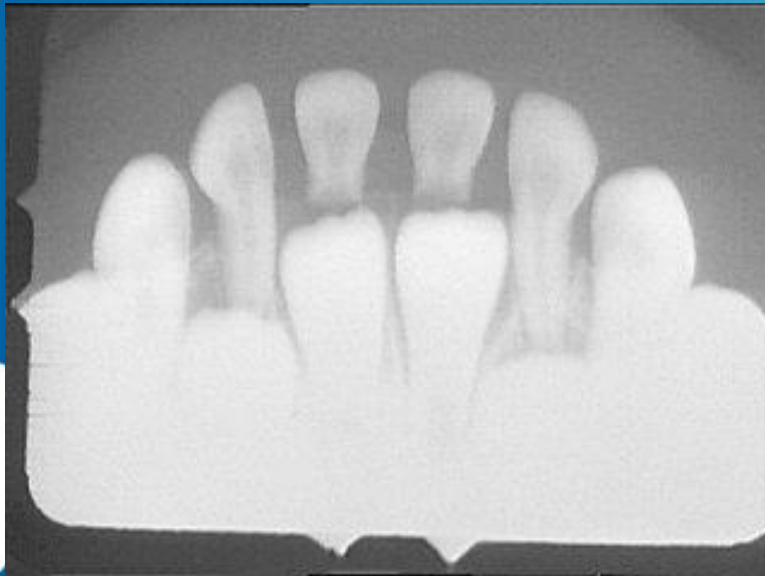


# Vertical position of the primary teeth.



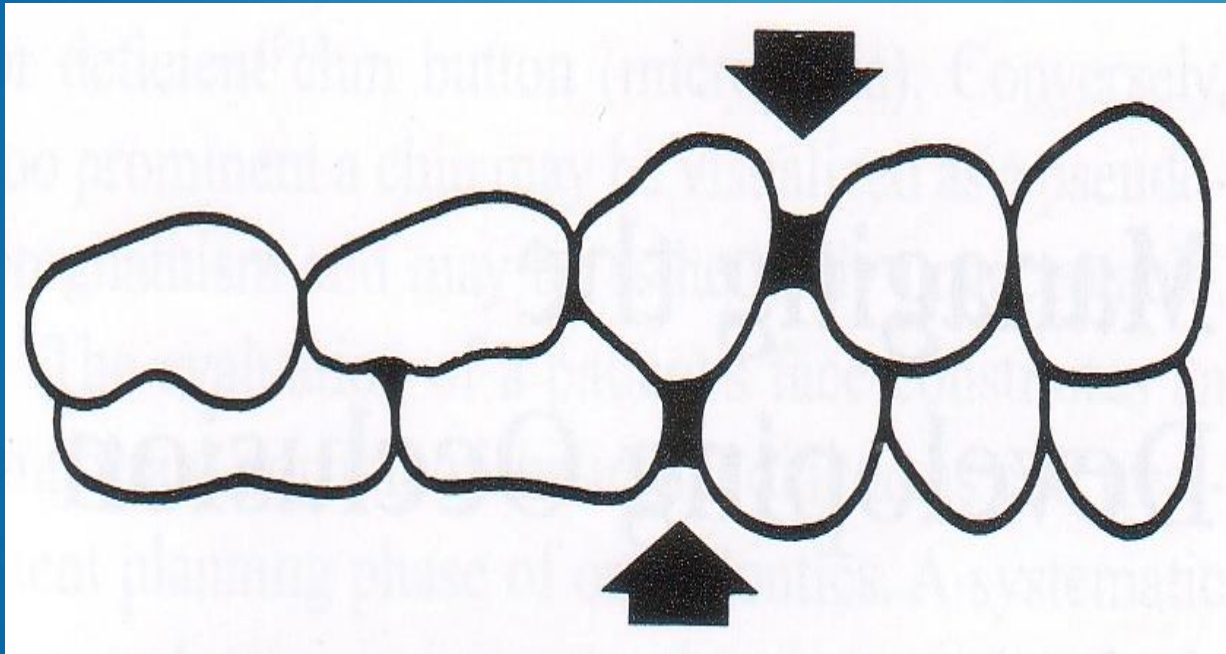
# The primary dentition

- Spaced dentition-physiological / developmental spaces
- Closed dentition





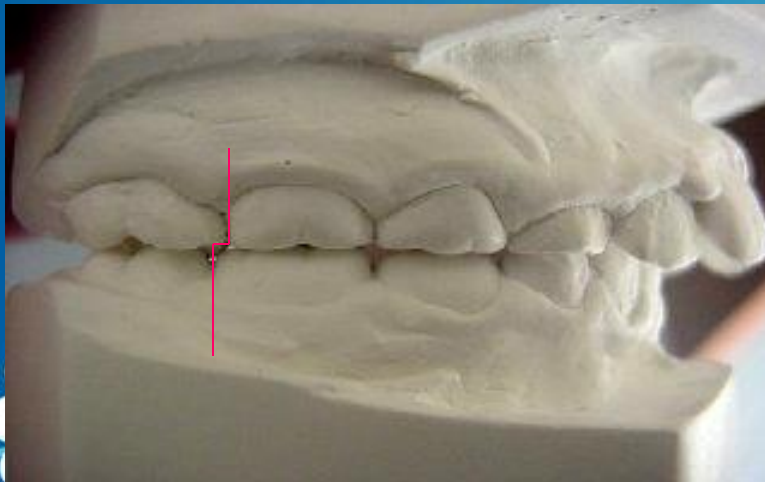
# Primate spaces



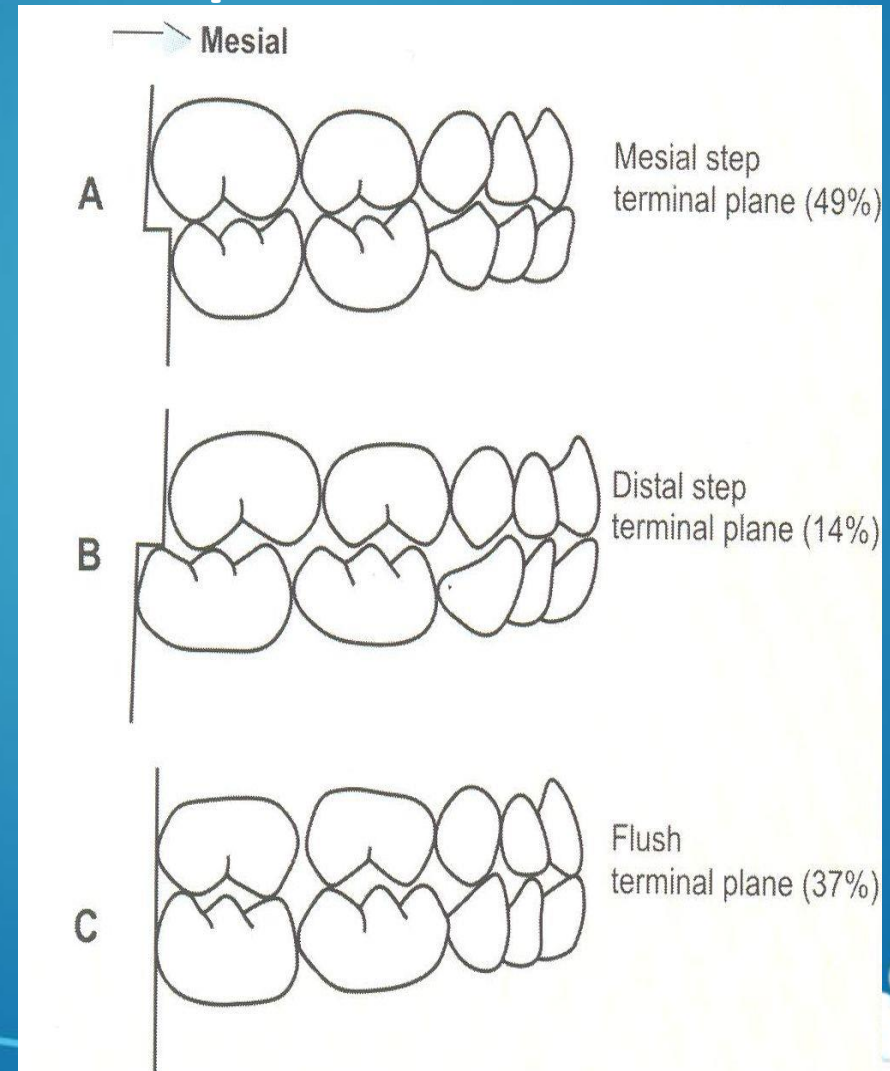


# The terminal plane

- Flush terminal plane
- Mesial step
- Distal step

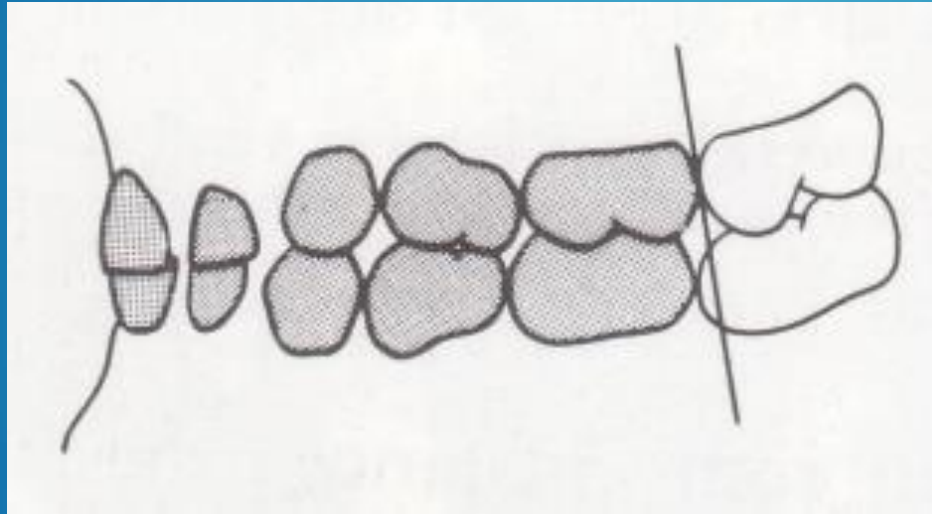


Distal step





# Early mixed dentition : 6 to 9 years

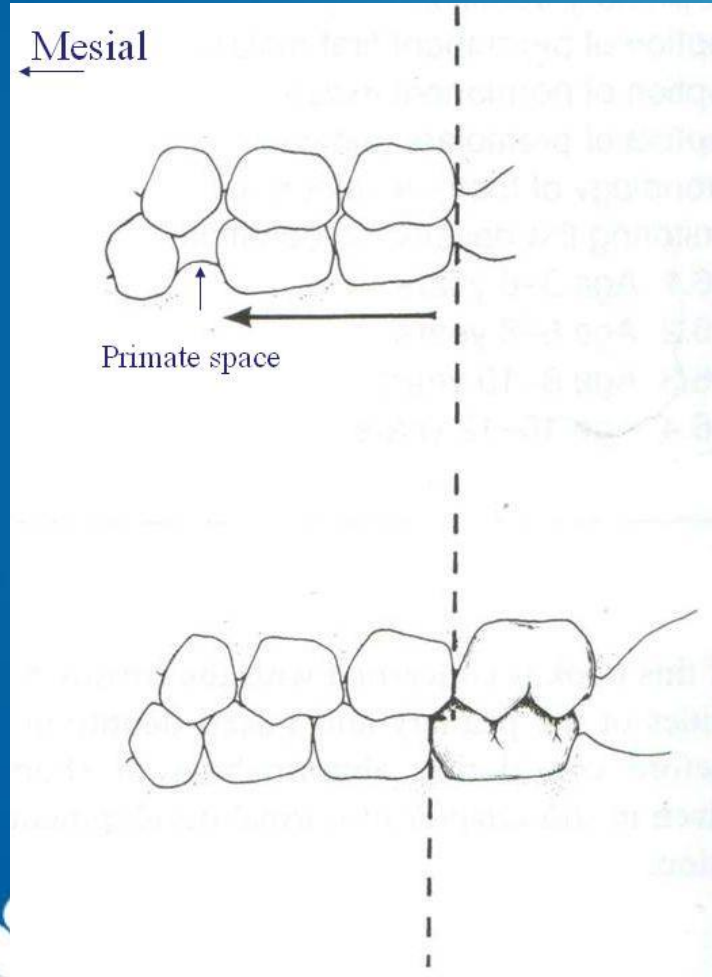


5-6 years

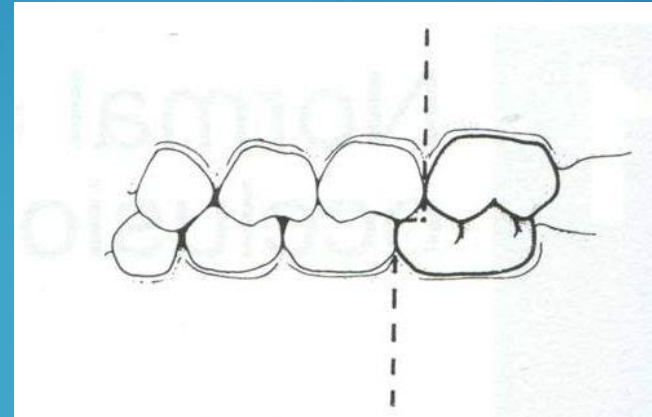


# Early mesial shift

Spaced dentition

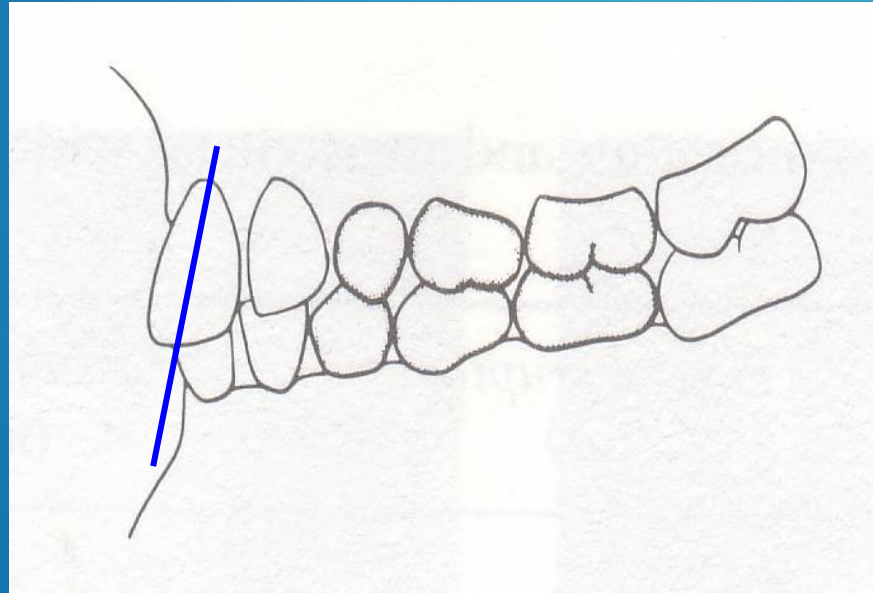


Closed dentition



No mesial shift

# Early mixed dentition : 6 to 9 years



8-9years



# Incisal liability

- Sum of MD width of  

BA	AB
----	----

 = X
- Sum of MD width of
- |    |    |
|----|----|
| 21 | 12 |
|----|----|

 = Y
- $Y > X$
- Tooth size difference is about 6-7 mm.





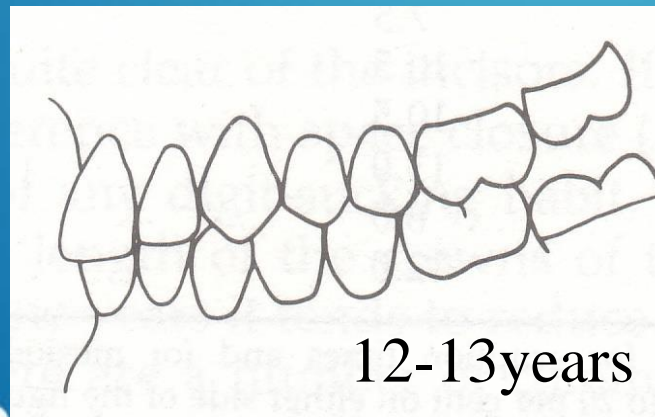
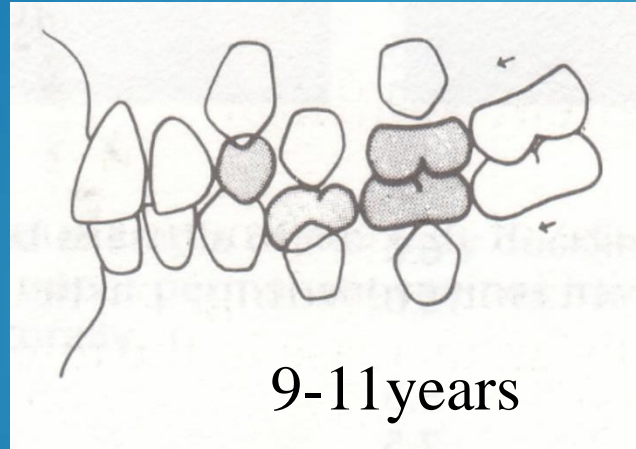
# Incisor liability adjustment:

- Interdental spacing: 2-3 mm
- Inter canine arch growth: 3-4 mm
- Incisor labiality: 1-2 mm

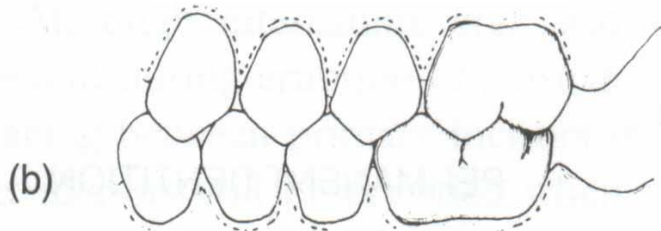
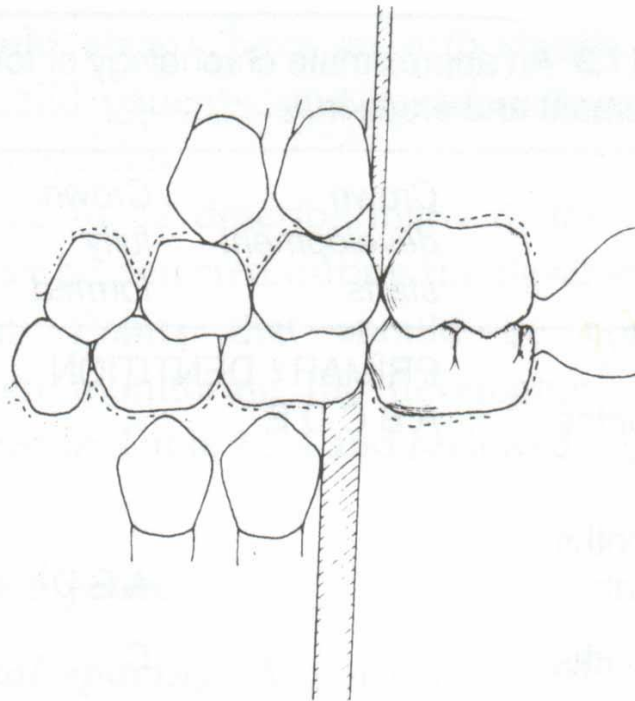




# Late mixed dentition : 9-12 years



# Leeway space of nance



- Sum of MD width of EDC  
is greater EDC  
than sum of MD width of  
543  
543

Maxilla = 0.9mm/1.8mm

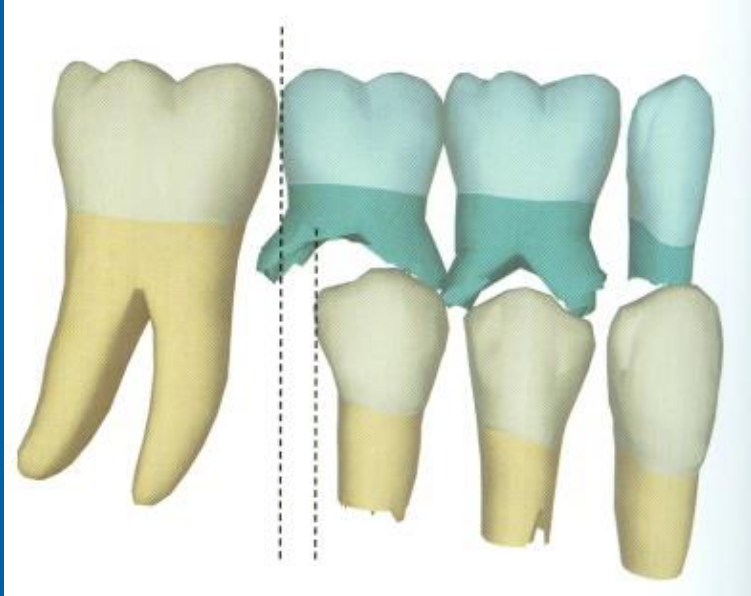
Mandible = 1.7mm/3.4mm

- Late mesial shift





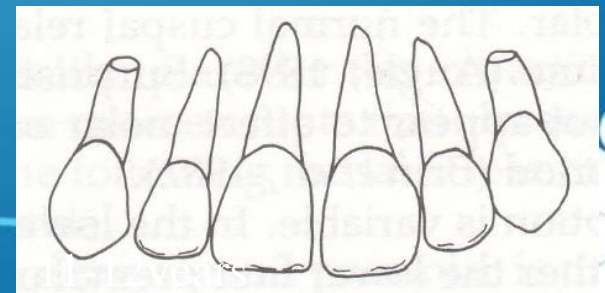
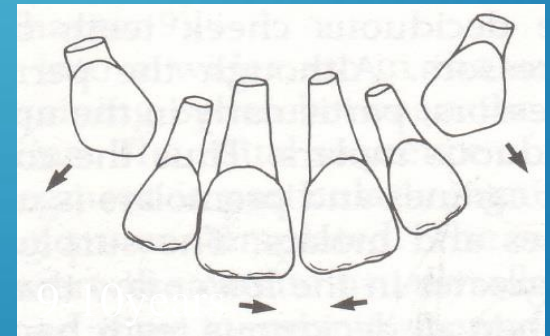
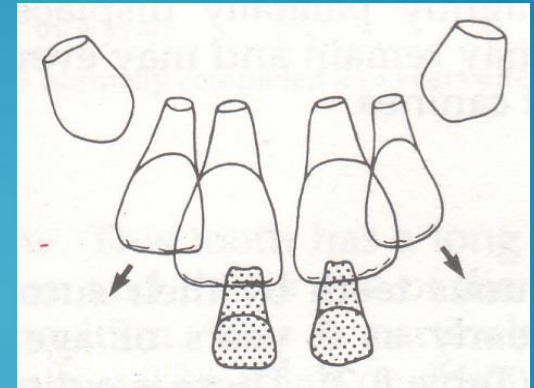
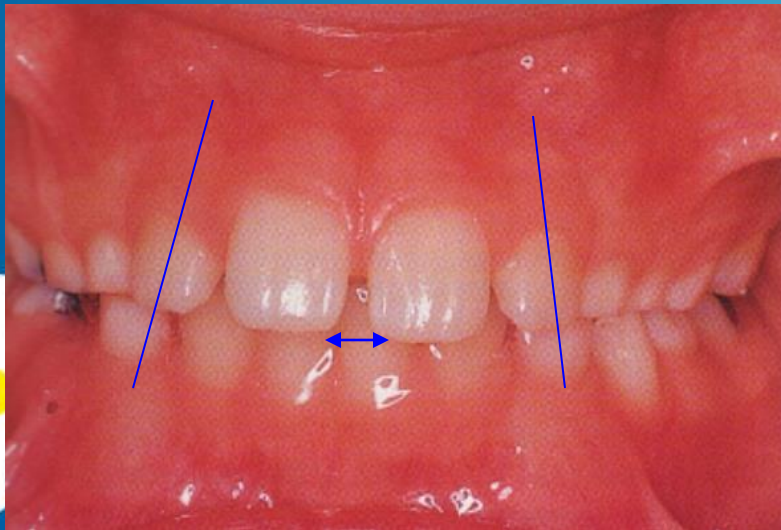
# Leeway space of Nance



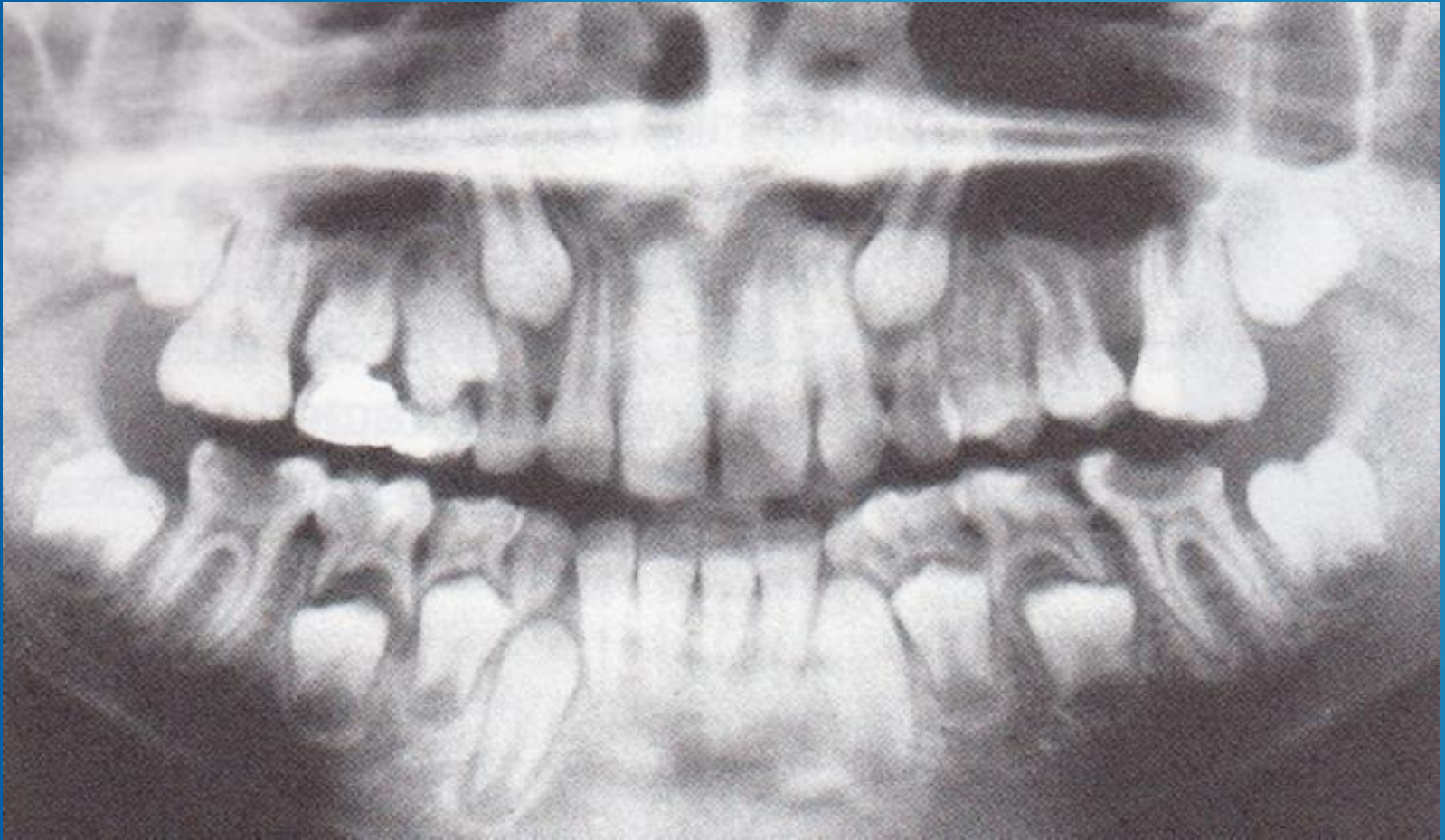


# Ugly duckling stage (Broadbent phenomenon): 9-11years

- Flaring of the upper central and lateral incisors

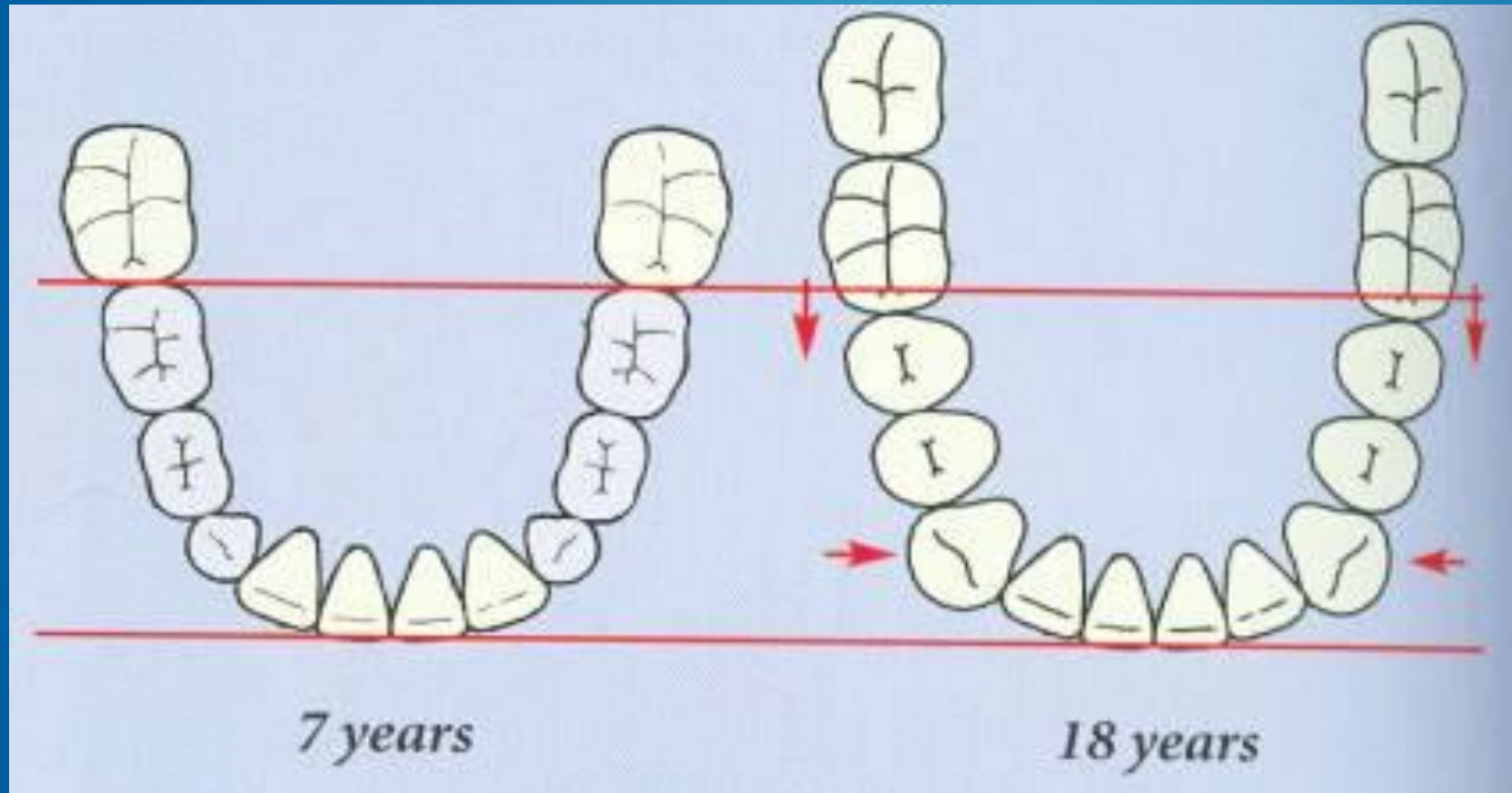


# Ugly duckling stage

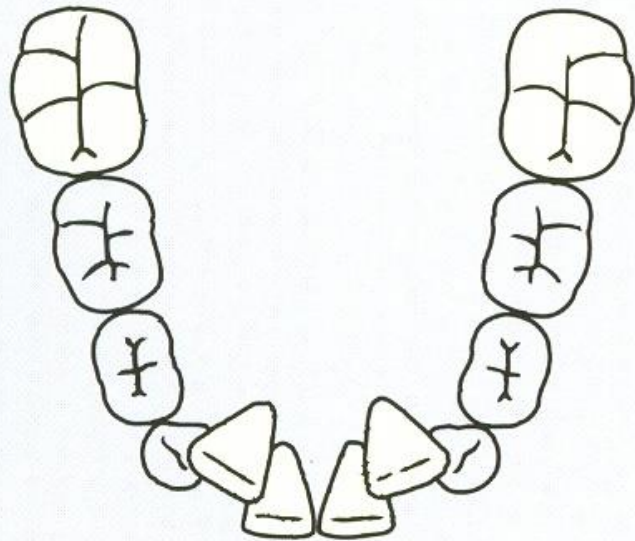
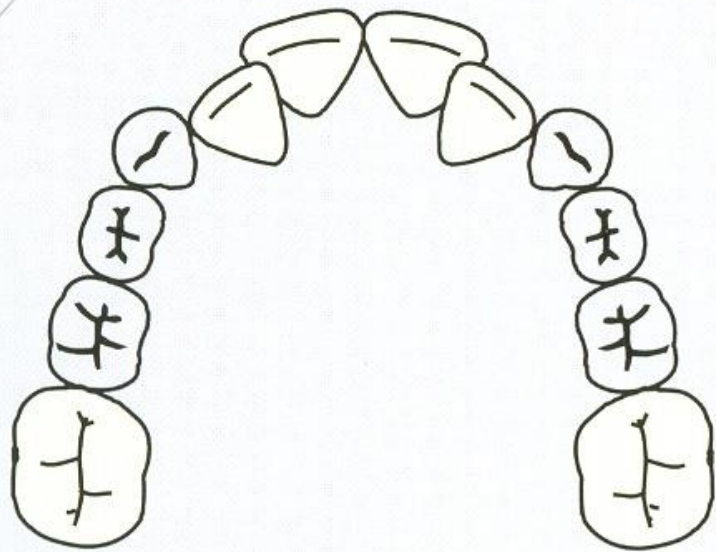




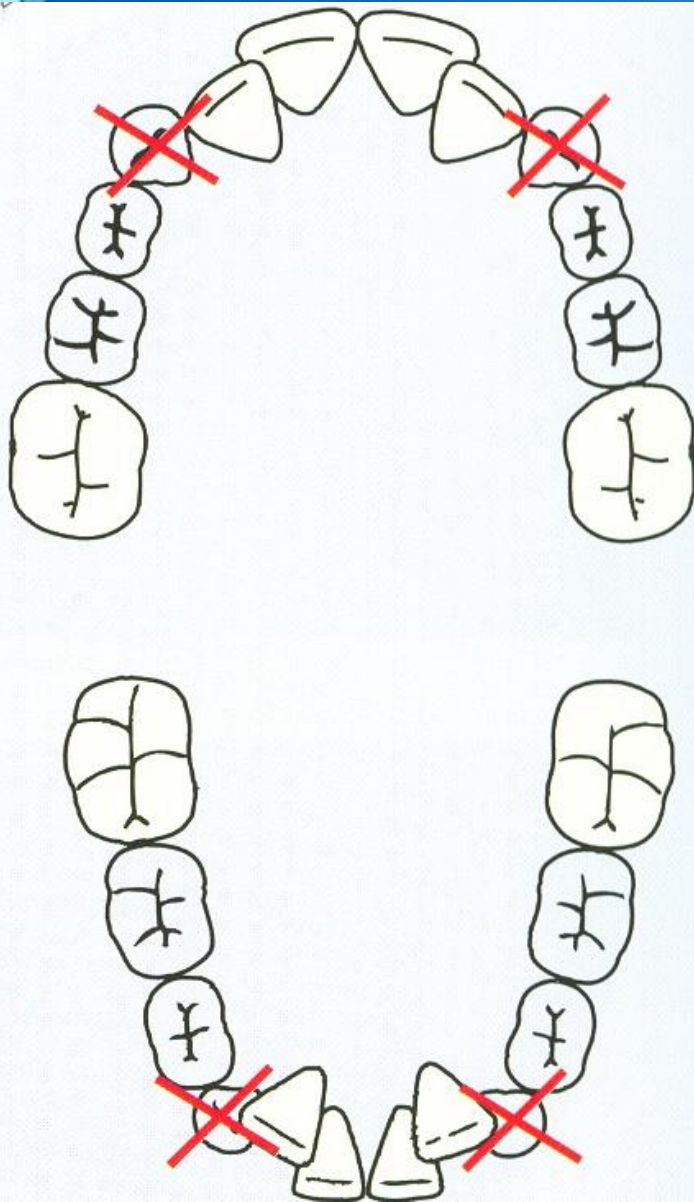
## Dimensional changes: 6-18 years





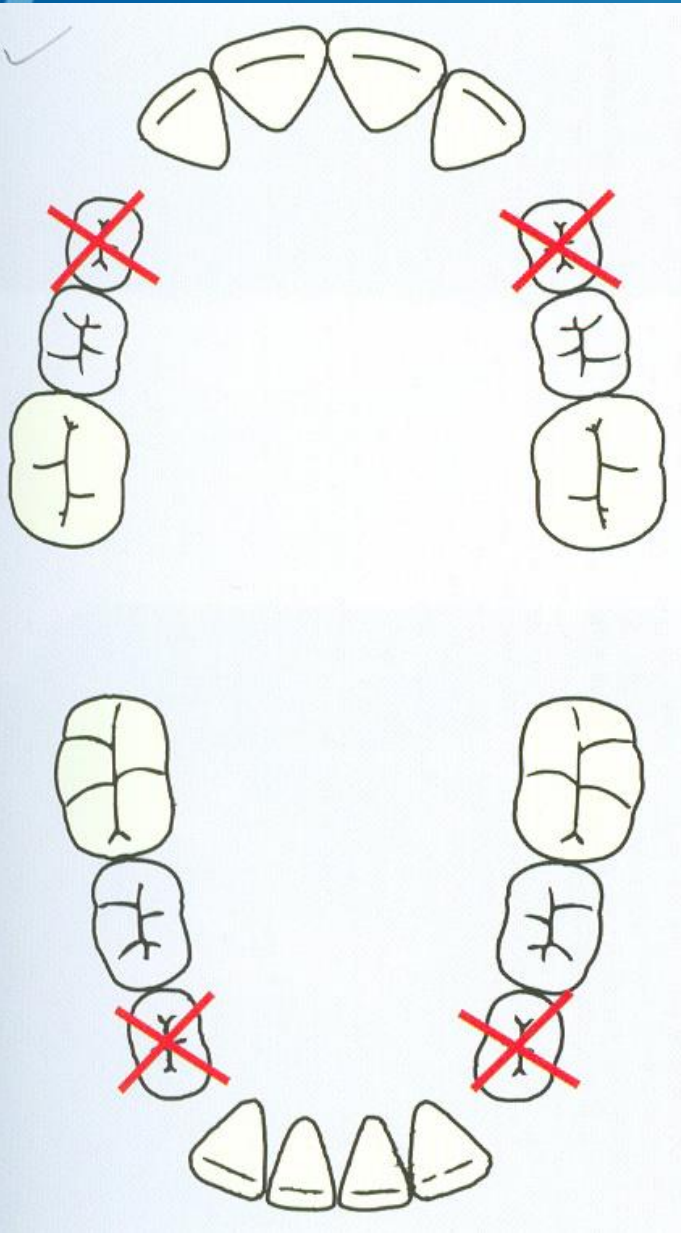


**Serial extraction**



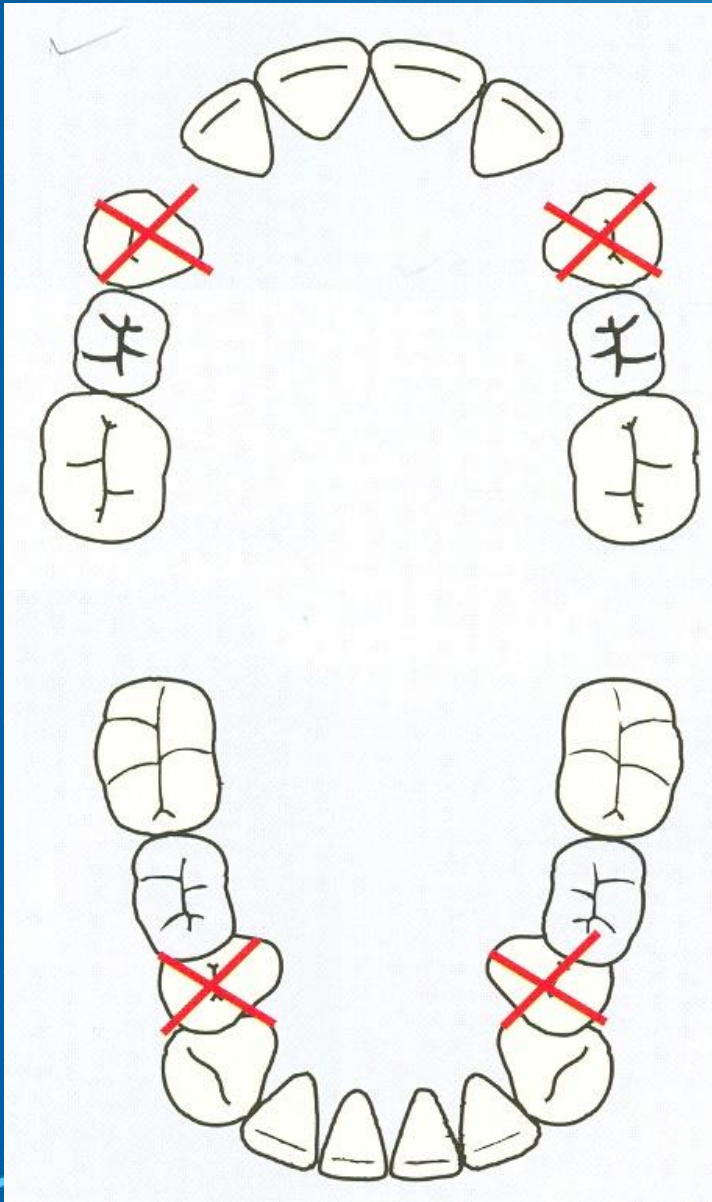
## Rationale:

- Allow eruption and optimal alignment of the lateral incisors



## Rationale:

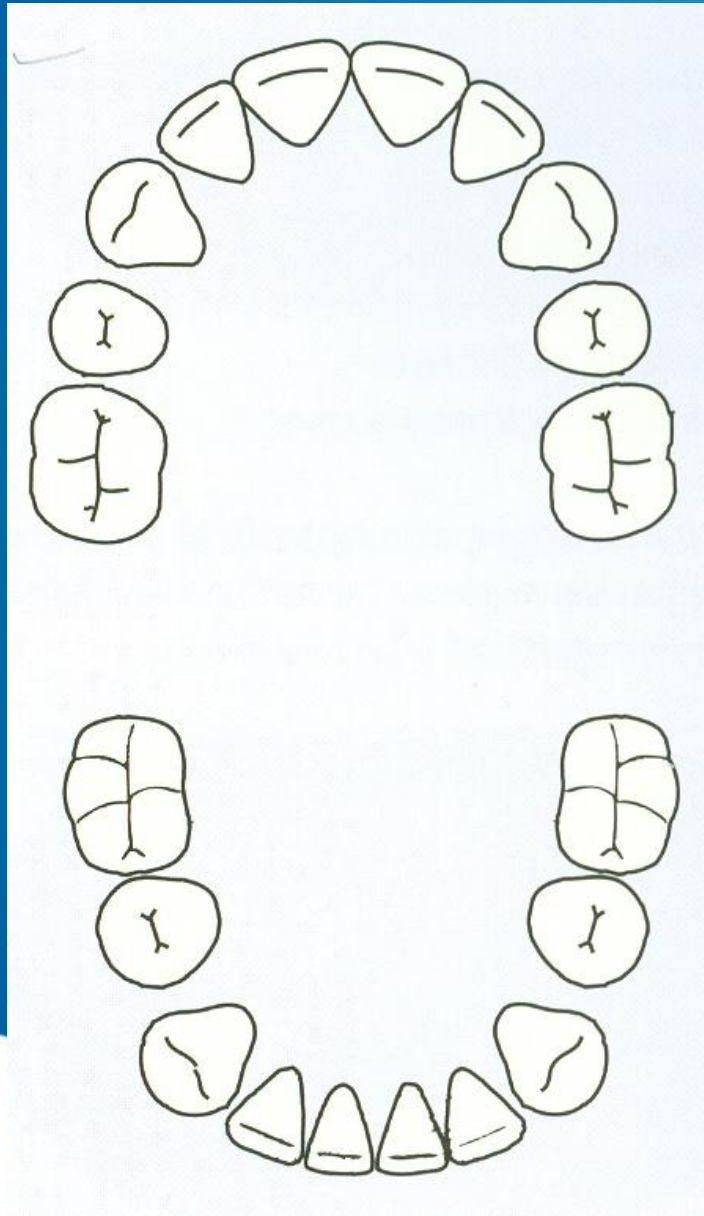
- To accelerate the eruption of 1<sup>st</sup> premolar , ahead of the permanent canines if possible



## Rationale:

- To allow the erupting canine to drift distally into the premolar space.





## Final outcome

1. Aligned incisors
2. Missing first premolar
3. Spacing in the posterior segment
4. Canine occupying space of 1<sup>st</sup> premolar



# Other interceptive procedures



# Habit breaking appliance

TONGUE THRUSTING





# Fixed intra oral appliance





# Blue grass appliance



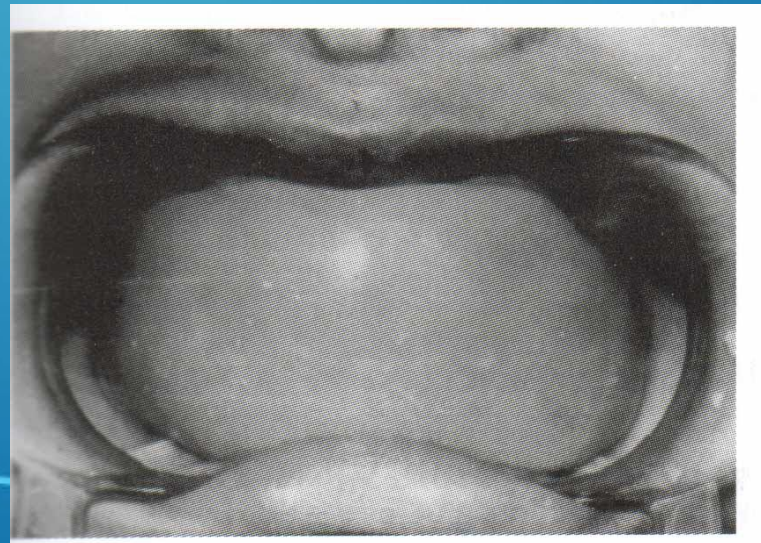
Digit sucking



# Mouth breathing

## Etiology

1. Deviated nasal septum
2. Allergic rhinitis, nasal polyps
3. Enlarged adenoids or tonsils
4. Short upper lip preventing lip seal
5. Obstruction in the bronchial tree



Oral screen





# Lip bumper

Before



After





# Anterior crossbite

- Tongue blade therapy
- Lower inclined plane(catalan's appliance)
- Removable Hawley's appliance
- Fixed appliances







# Anterior crossbite

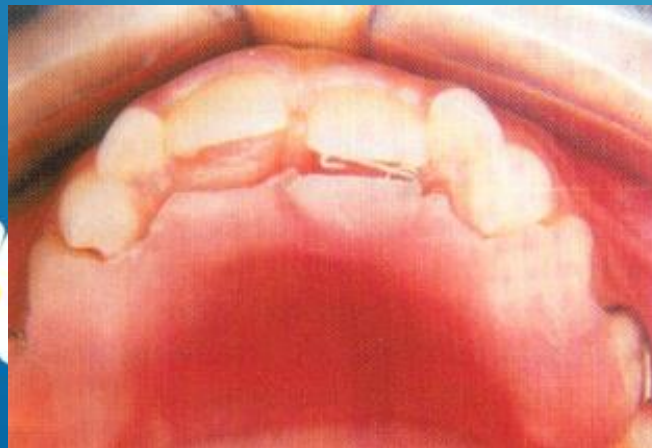
Before



After



Appliance used







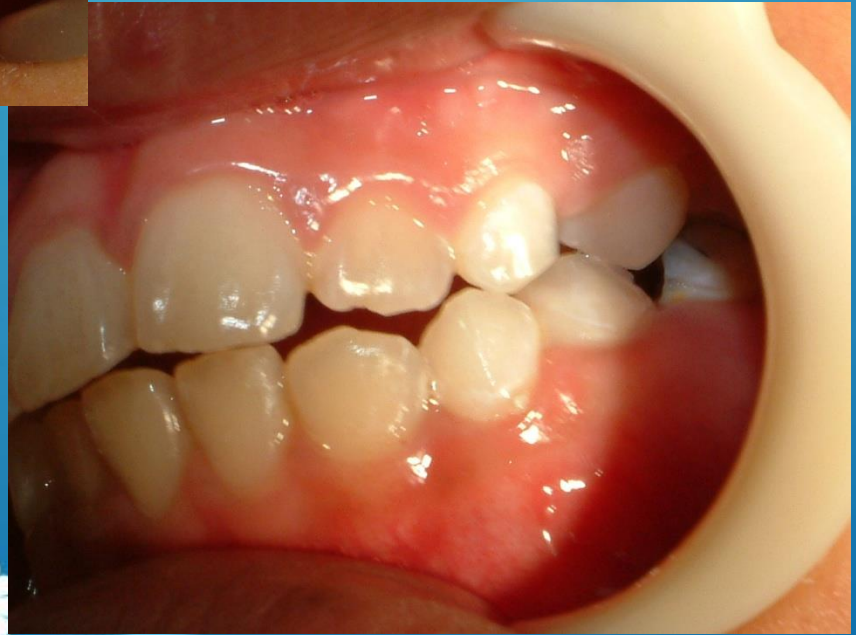
## Lower inclined plane (catalan's)







Pre treatment



Post treatment





# Developing anterior crossbite



Tongue blade therapy





# Posterior Cross bite





# Management of premature loss of primary teeth in mixed dentition

- Space supervision
- Space maintainer
- Space regainer



# Space maintainers for unilateral single tooth loss in the posterior region





# Distal Shoe Space Maintainer

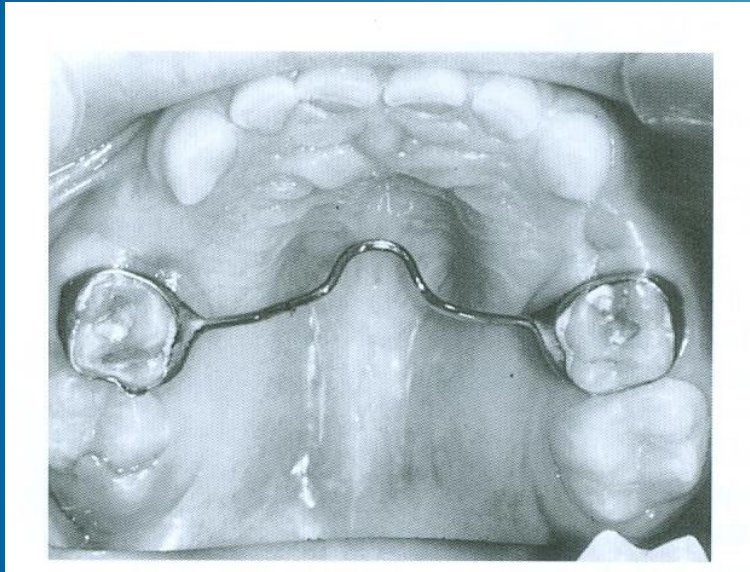


# Lower Lingual Holding Arch

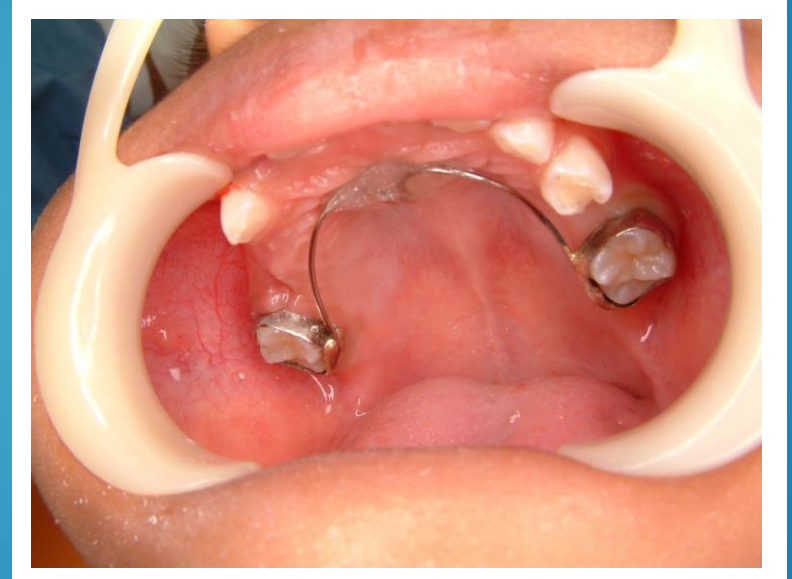
## Bilateral loss in lower arch



# Bilateral loss in the upper arch




Transpalatal Arch (Bar)



Nance Appliance





# Fixed Space Maintaining for Anterior teeth





# Bonded Space Maintainer



## Preformed space maintainer



# Fixed space regainers



**Lip bumper**





# conclusions

Guiding developing dentition from primary to permanent teeth enables clinicians to achieve proper occlusion and minimizing the need for major orthodontic intervention whenever required.



Giving



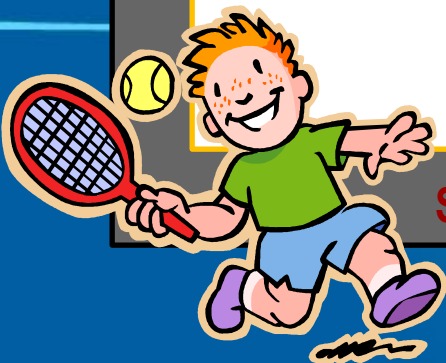
Learning



Respect



Playing



Sharing



Caring



# Great Day

## Thank you