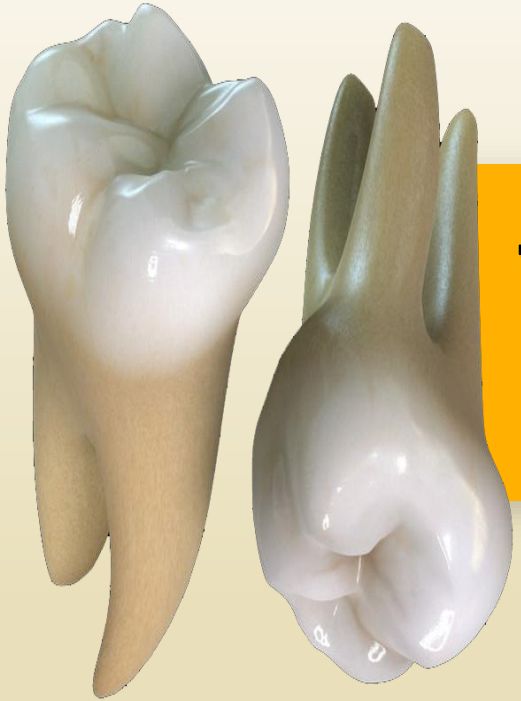


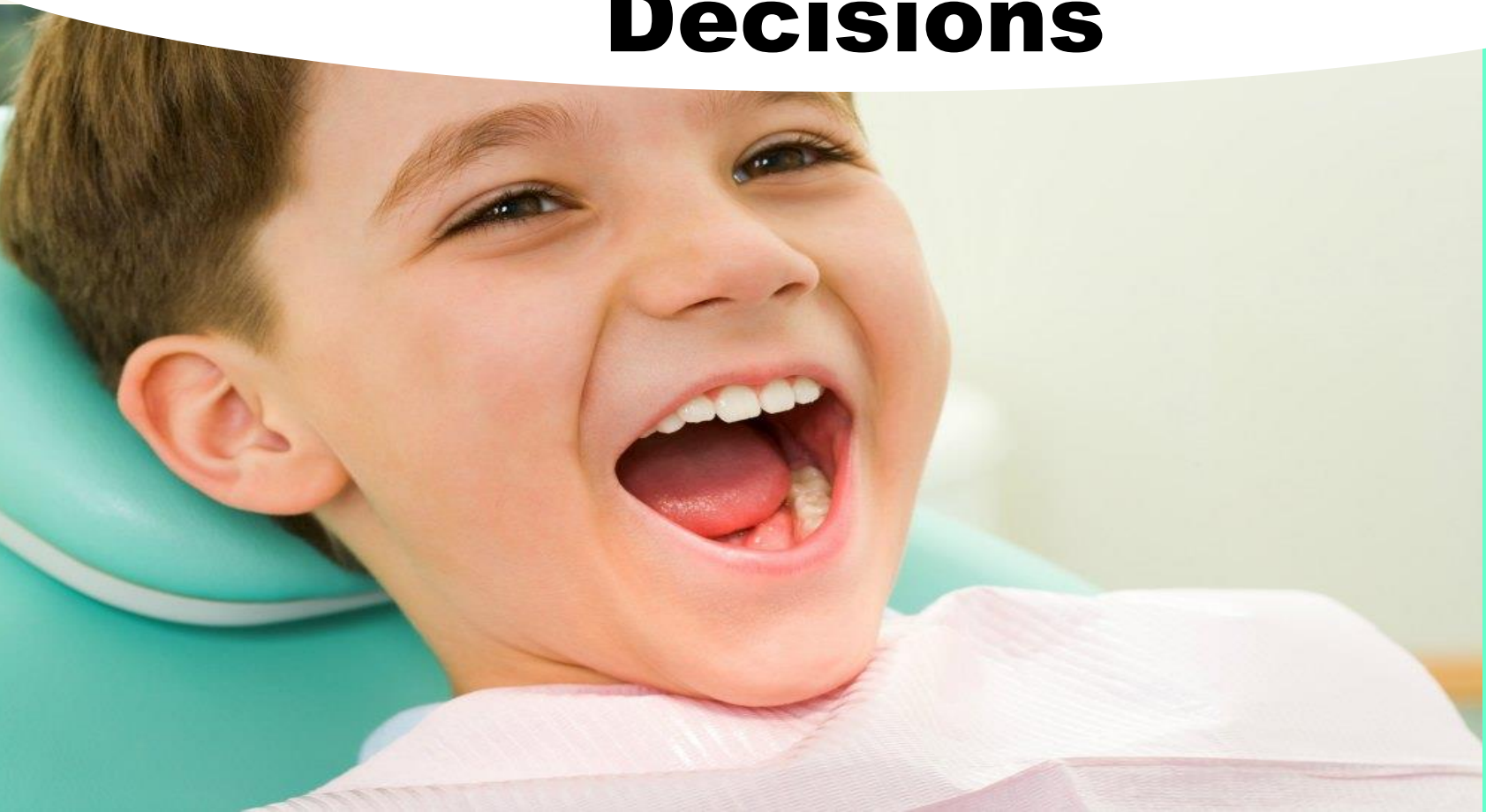
Tips for First Permanent Molars Extraction

Assist. Prof. Dr. Noor Muhammed Hasan Garma
B.D.S, MSc., Ph.D. (Ortho)

Introduction

Children can present with a developing dentition affected by one or more first permanent molars of poor prognosis, which may necessitate their enforced extraction. In the right circumstances, first permanent molar extraction can be followed by successful eruption of the second permanent molar to provide a suitable replacement, and ultimately third molar eruption to complete the molar dentition.

Treatment-Planning Decisions



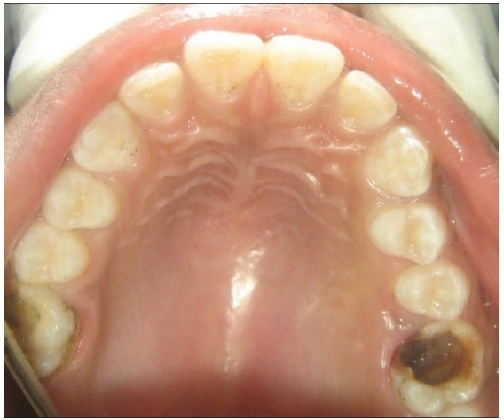
Treatment-Planning Decisions

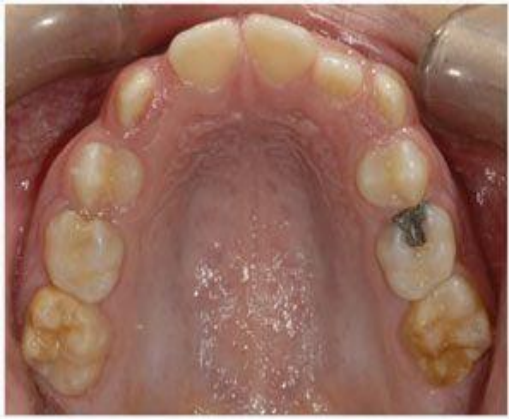
General or Paediatric Dentist

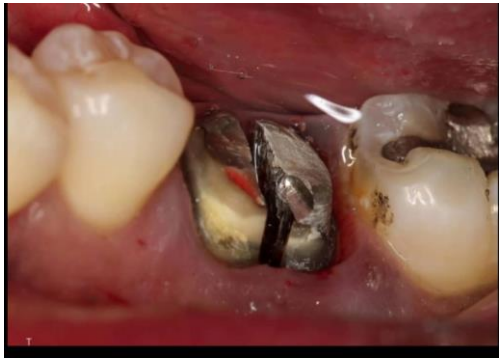
Treatment-Planning Decisions

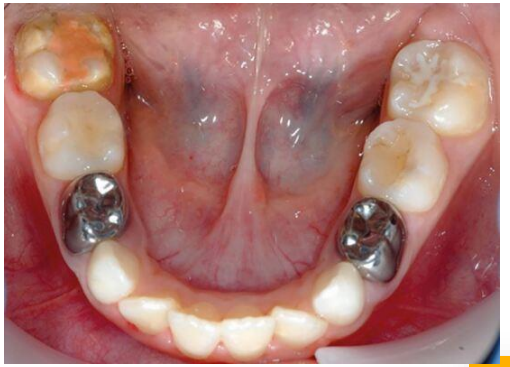
Orthodontist

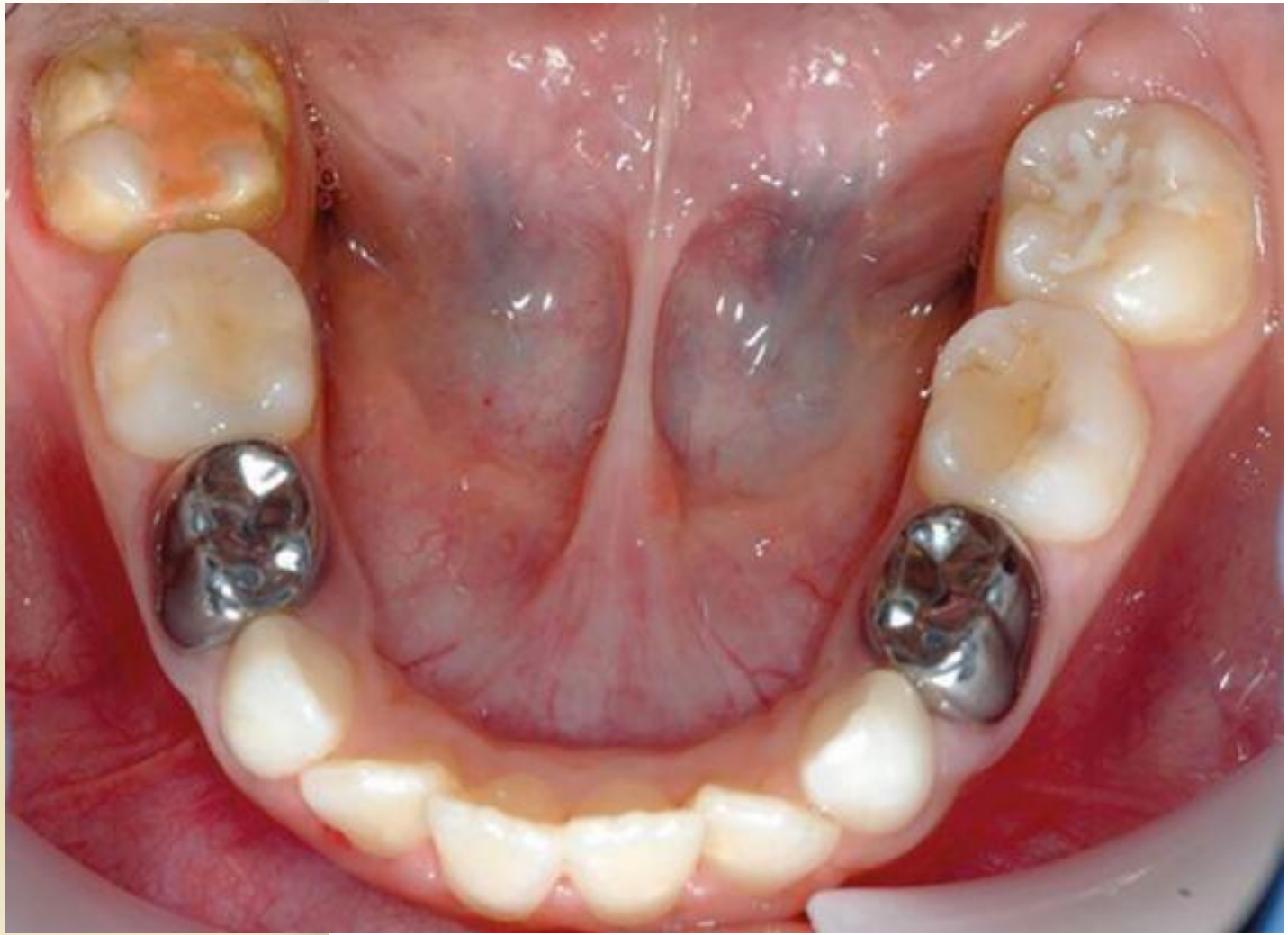
Prognosis











Development of the first permanent molar

Formation 17 week of gestation .
Hard tissue formation birth
Crown 3 year of life
Eruption 6-7 years
Root 9-10 years

- Poor
- Enforced extraction
- Elective extraction(Balancing & compensating extractions)

Balancing & compensating extractions

factors can influence whether a first permanent molar is recommended for either a balancing or compensating extraction:

- Which of the first permanent molar/s requires enforced extraction
- The overall condition and long-term prognosis of the remaining first permanent molar/s
- The teeth present and developmental status of the dentition (including third molars)
- The underlying malocclusion.

compensating extractions

Current evidence would suggest that the risk of upper first permanent molar over-eruption as a consequence of lower first permanent molar extraction is **small** . However, all available data that addresses this issue directly is based on retrospective cohort studies, often with very small sub-samples **(Mejare I etal, 2005) (Jalevik B, Moller M, 2007).**

A randomized controlled trial has been registered, which aims to investigate clinical effectiveness and quality of life associated with and without compensating extraction of upper first permanent molars in conjunction with the enforced extraction of lower first permanent molars **(Innes N *etal, 2013)*.**

More high-quality research on the topic is required to determine the necessity of this practice for achieving optimal long-term oral health in children ***(Lee J et al,2021).***

compensating extractions

When enforced extraction of lower first permanent molar is required, some consideration should be given toward compensating extraction of the upper first permanent molar if this tooth is likely to remain unopposed for a significant length of time.

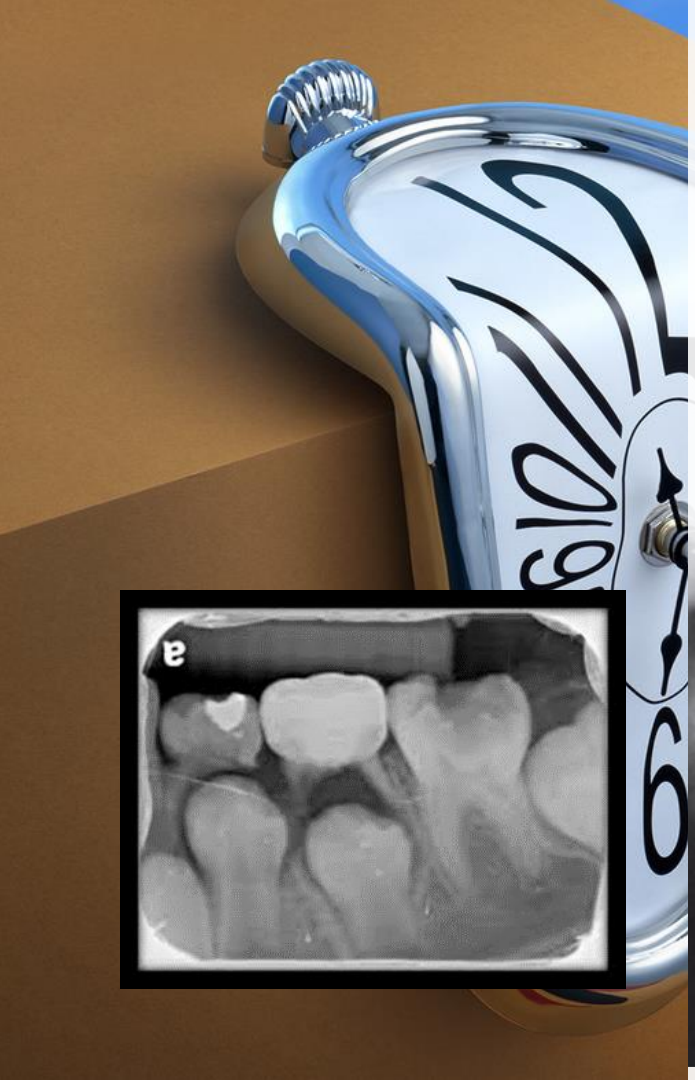
The routine compensating extraction of a sound lower first permanent molar, in conjunction with enforced extraction of the upper first permanent molar, is not recommended.

Balancing extractions

Evidence from retrospective cohort studies suggests that the dental centreline in either arch is unlikely to be affected.(Mejare I etal, 2005) (Jalevik B, Moller M, 2007)

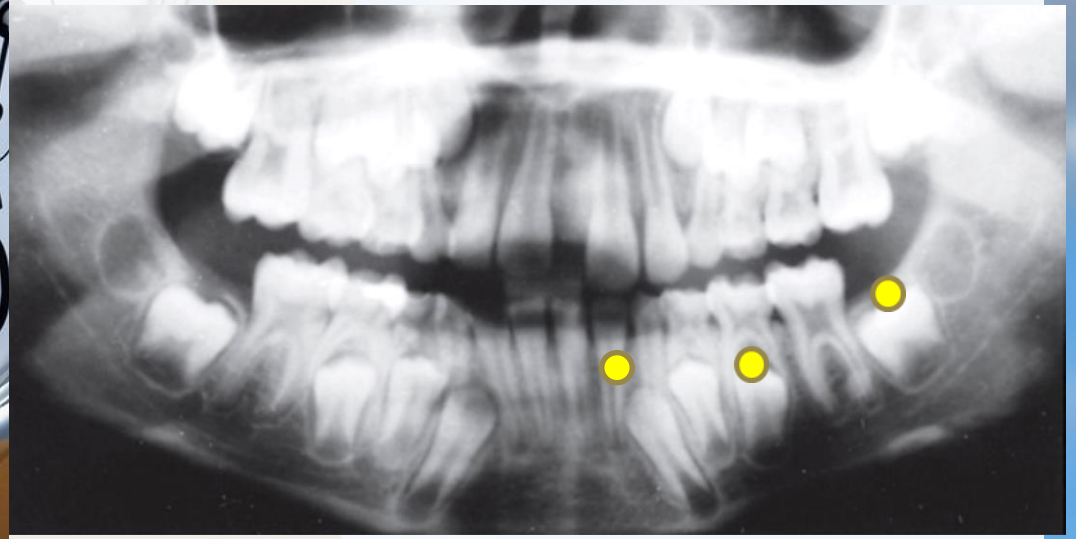
Achieving this can be complicated by a number of factors:

- Timing
- Third permanent molar development
- The developing occlusion



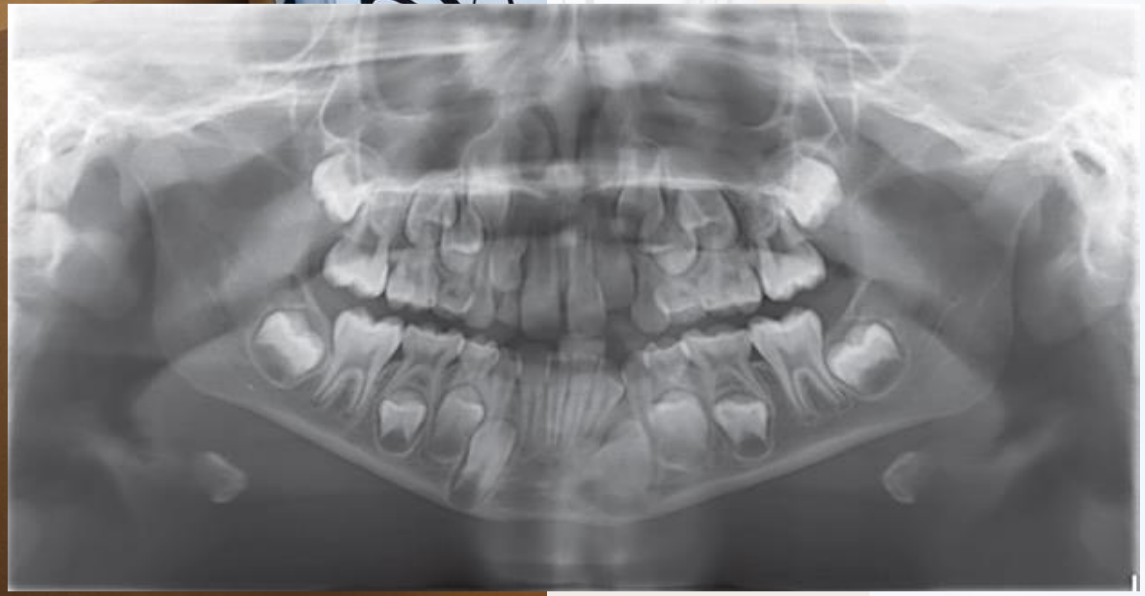
Timing

The most favourable chronological age range is 8-10 years.



before the age of 8 years

- *There is often no radiographic evidence of third molar development.*



early start

before the age of 8 years
in the lower arch:

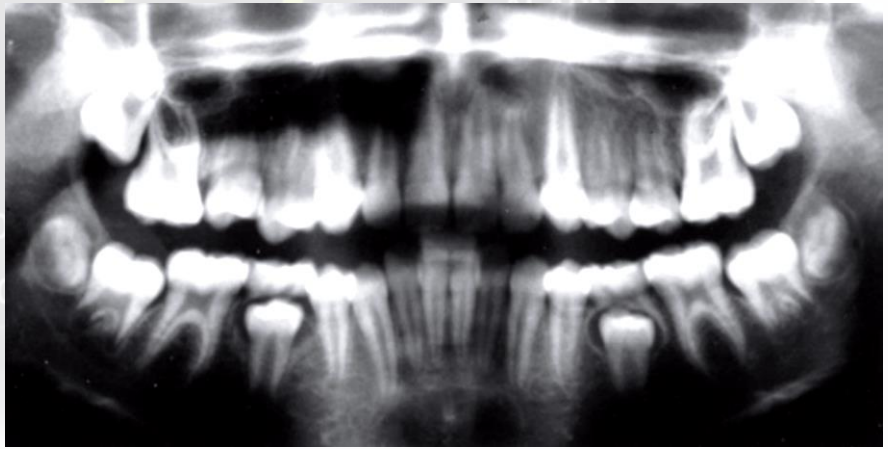
- *The second premolar can drift distally into the extraction space, tip and rotate*

early start

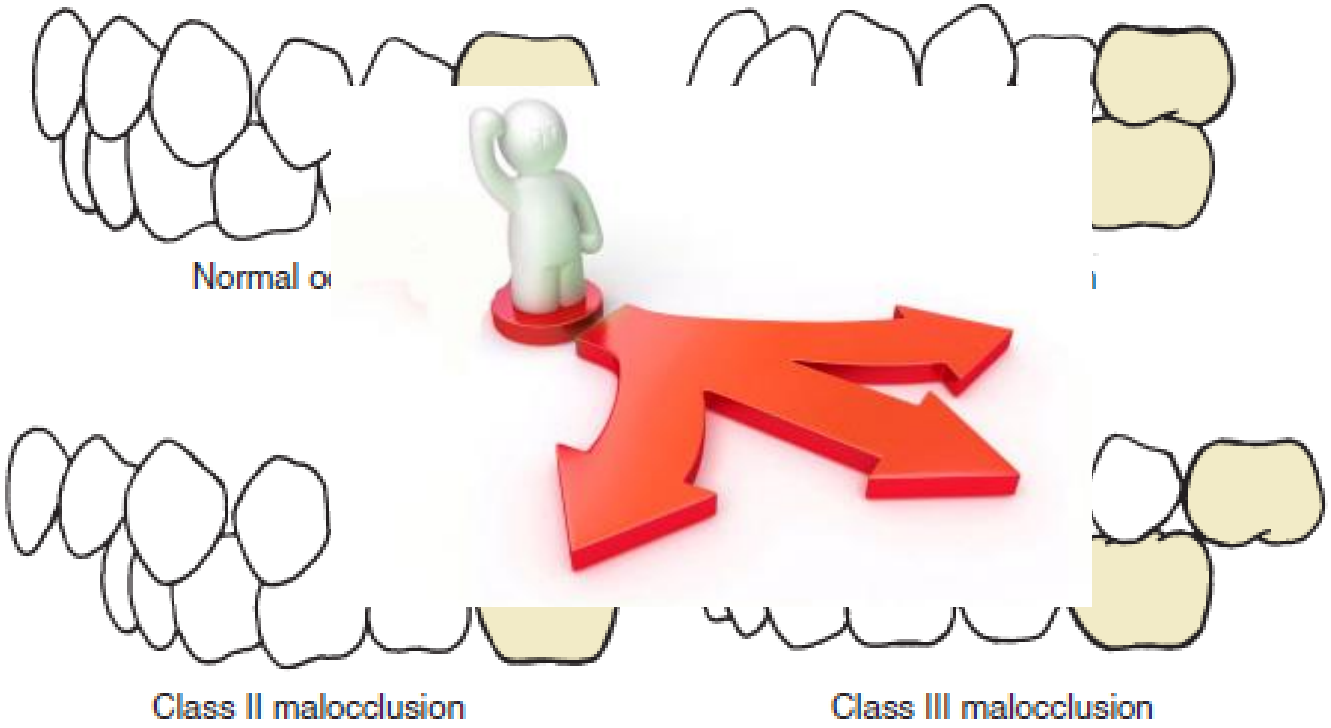
before the age of 8 years
in the lower arch:

- *The labial segments can retrocline with an accompanying increase in the overbite .*

- *There is more risk that this second permanent molar*
  - *tip*
  - *mesially rotate*
  - *Spacing*
  - *poor occlusal Contacts*
- *The erupted second premolar can migrate distally.*



Malocclusion



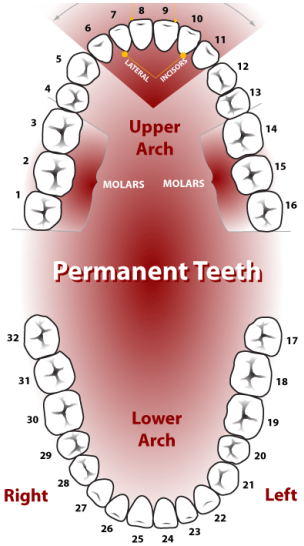

Guidelines

minimal crowding

Aim

good occlusal position.

•**Do not balance** unilateral first permanent molar extraction in either the upper or lower jaws with healthy first permanent molars

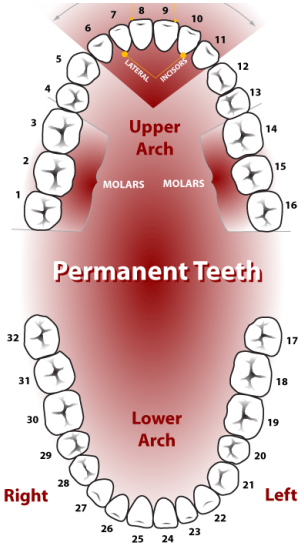


minimal crowding

Aim

good occlusal position.

•If the **lower** first permanent molar is to be lost, **compensating** extraction of the upper first permanent molar can be considered if this tooth is likely to be **unopposed** for a significant length of time

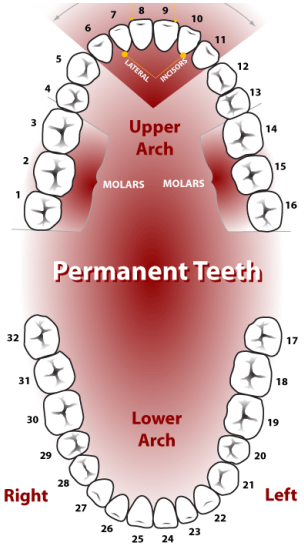


minimal crowding

Aim

good occlusal position.

•If the **upper** first permanent molar is to be lost, **do not compensate** with extraction of the lower first permanent molar if it is healthy.



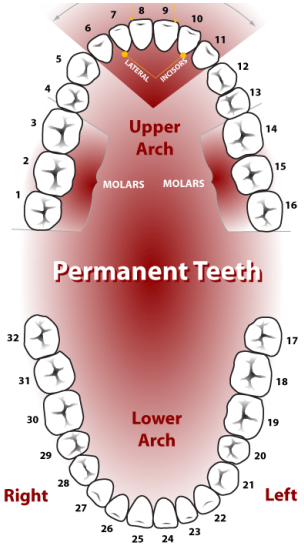
moderate crowding (buccal segment)

Aim

good occlusal position

provide some relief of crowding.

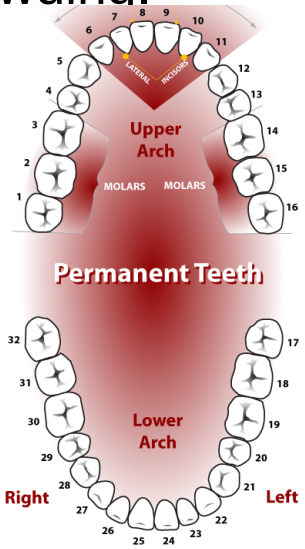
- If the buccal segment crowding is **bilateral**, consider **balancing extraction** of the contralateral first permanent molar to provide suitable relief.



moderate crowding (buccal segment)

Aim
good occlusal position
provide some relief of crowding.

- **Compensating** extraction of upper first permanent molars can be considered to relieve **premolar** crowding.



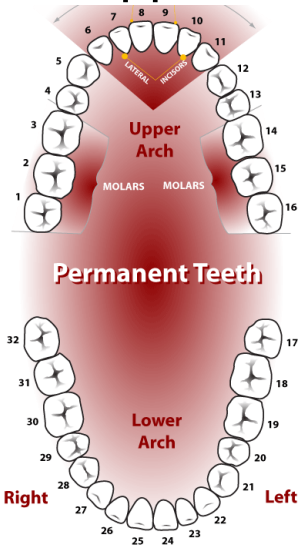
moderate crowding (Labial segment)

Aim

good occlusal position

provide some relief of crowding.

- First permanent molar extractions can be **delayed** until the **second permanent** molars have erupted and then the extraction space used for alignment with fixed appliances.



Class II cases

More difficult to plan, particularly with regard to the timing

If the upper first permanent molars require **immediate extraction:**
the buccal segment relationship
A functional appliance
removable appliance
followed by fixed appliances if required to correct the incisor relationship.

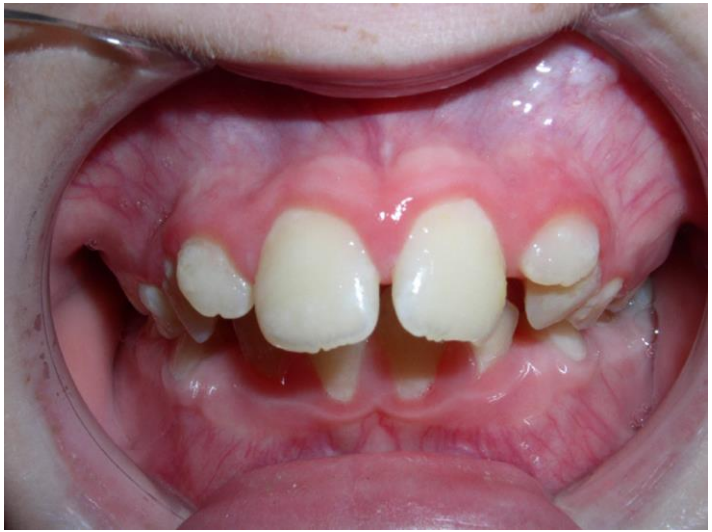
Class II cases

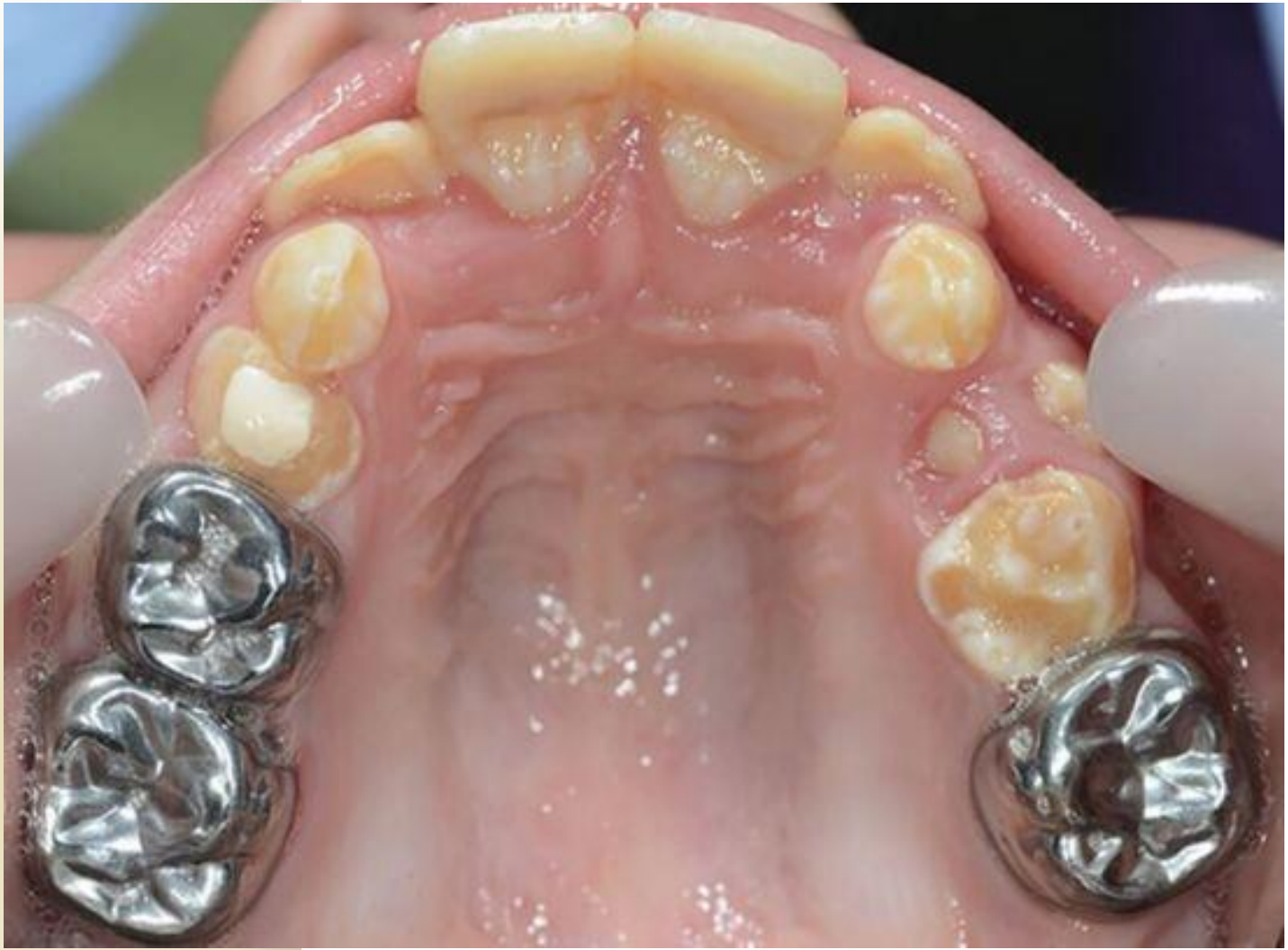
If the upper first permanent molars can be **temporised or restored**
then their extraction can be **delayed** until the **second permanent** molars have **erupted**. The extraction space can then be used to correct the malocclusion with **fixed appliances**

Class II cases

Severe crowding

If there is crowding in the upper arch or if space will be required for correction of a class II incisor relationship, consideration should be given towards temporisation of the compromised FPM until the SPM erupts

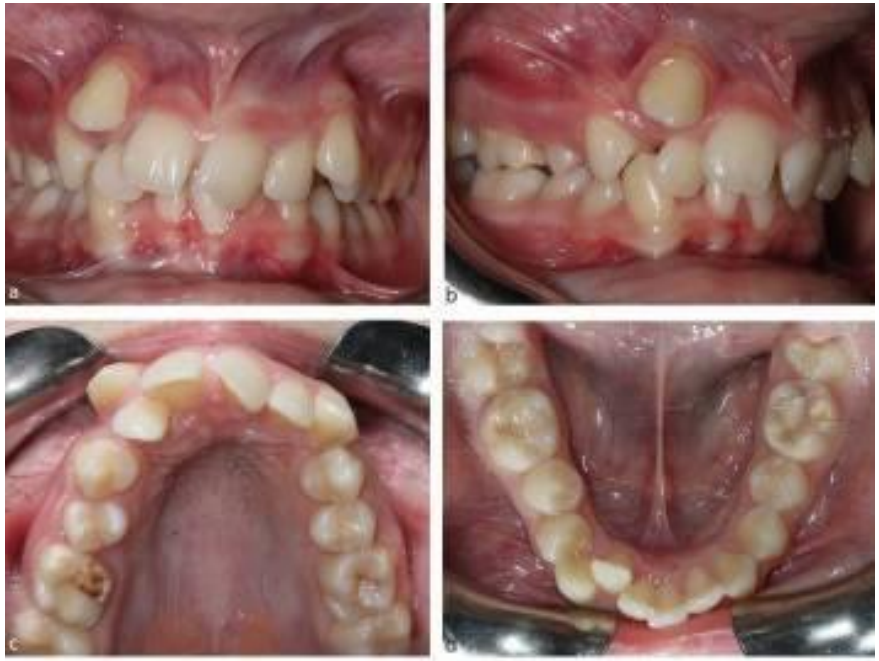




Class II cases

more difficult to plan

Severe crowding



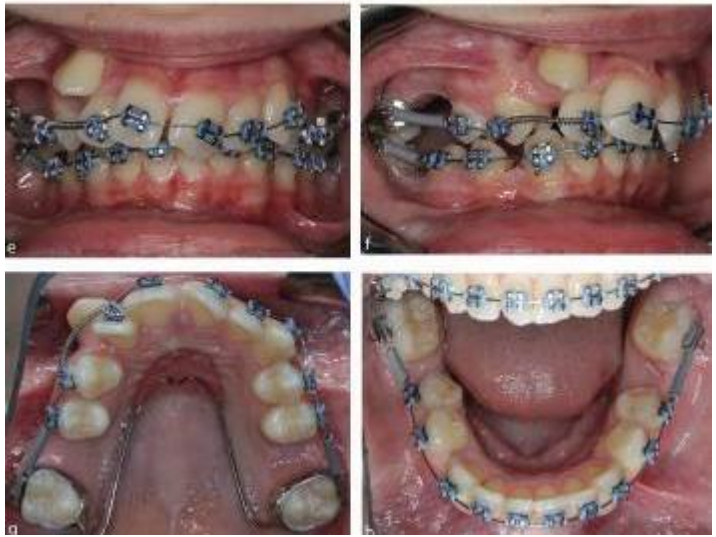
Class II cases

more difficult to plan

Severe crowding

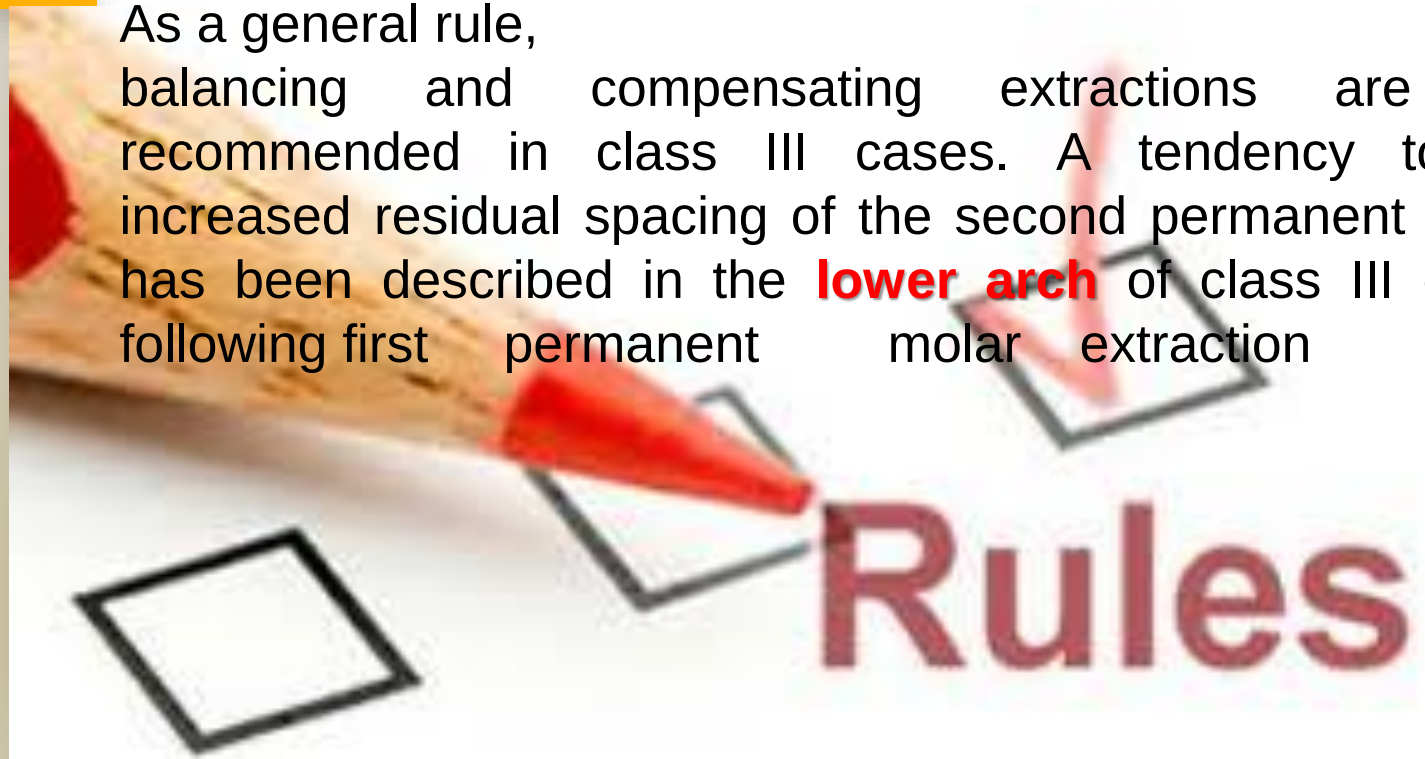
Pre molar

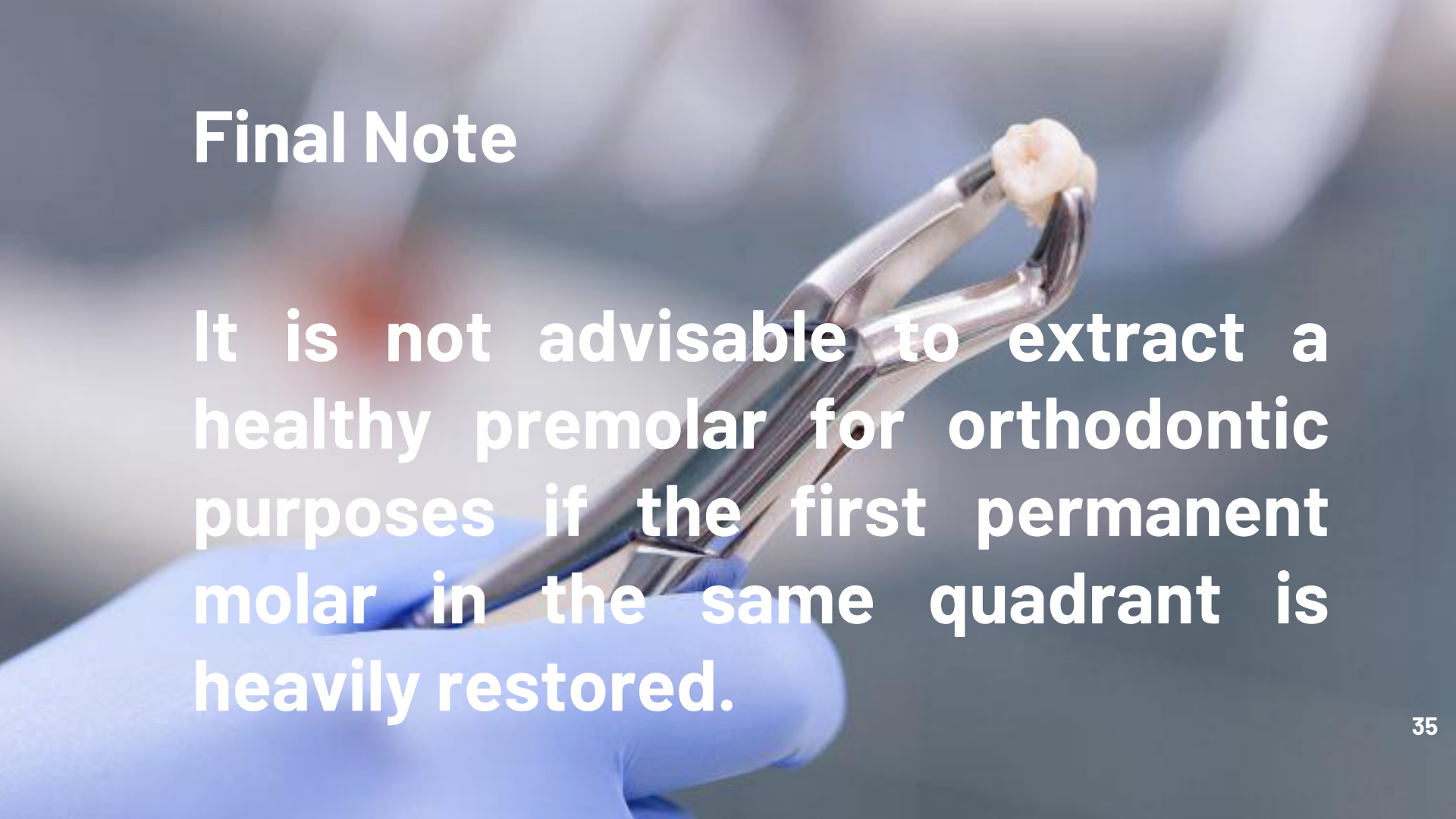
TAD



more difficult to plan, particularly with regard to the timing

As a general rule,
balancing and compensating extractions are not recommended in class III cases. A tendency toward increased residual spacing of the second permanent molar has been described in the **lower arch** of class III cases following first permanent molar extraction





Final Note

It is not advisable to extract a healthy premolar for orthodontic purposes if the first permanent molar in the same quadrant is heavily restored.

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Thank
You