THE UNIVERSITY OF WESTERN AUSTRALIA

Treatment Timing and Extractions

When should a child start orthodontic treatment?

THE UNIVERSITY OF WESTERN AUSTRALIA

Depends on the malocclusion

1. *Class I*
2. *Class II*
3. *Class III*
4. *Posterior x-bites*
5. *Impacted canines*

Class I crowding and protrusion

THE UNIVERSITY OF WESTERN AUSTRALIA

- Mild crowding or spacing?
  - Treatment should start in the permanent dentition
  - Why?
- Moderate to Severe crowding?
  - When the primary 2nd molars are ready to exfoliate (late mixed dentition)
  - Why?
    - So we can use the leeway space to alleviate crowding





Class I crowding and protrusion

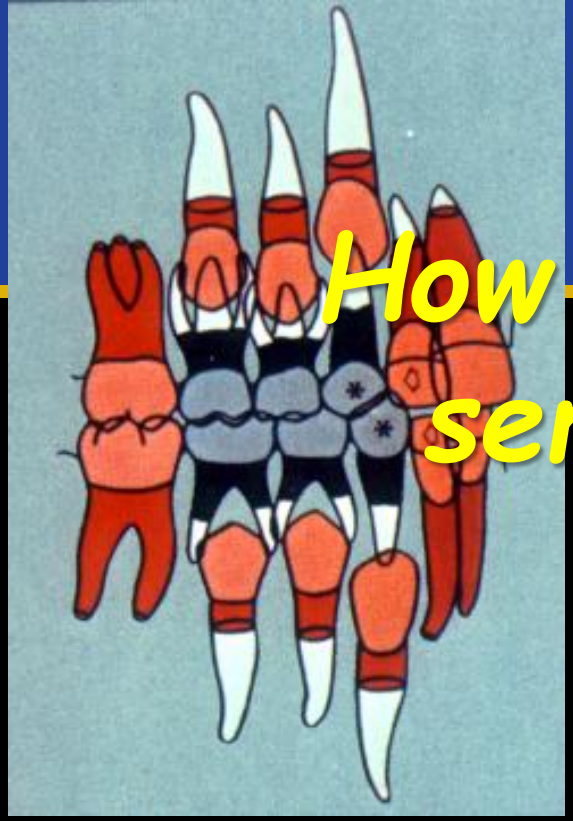
THE UNIVERSITY OF WESTERN AUSTRALIA

- Severe crowding?
  - Depends on the severity
  - Early treatment with serial extraction is an option

  If you see more than 7mm of crowding in the mixed dentition, refer to orthodontist

What are the guidelines for serial extraction?

- ≥10 mm of crowding in both arches
- Normal facial proportions (Class I with good vertical thirds)
- Phase 2 treatment will likely be needed
  - Why?
    - Alignment is improved but not perfect
    - Some extraction space remains
    - Overbite is usually increased

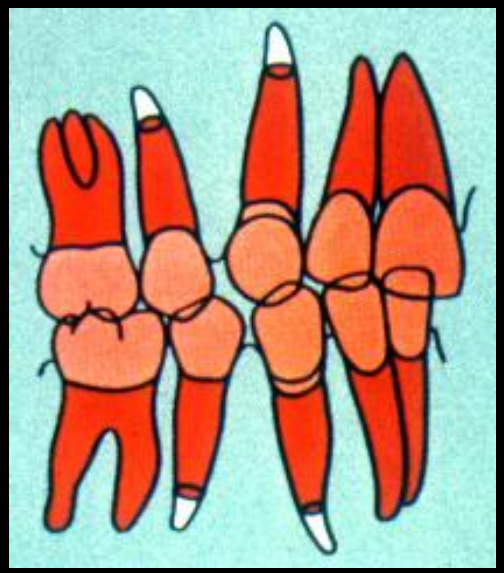


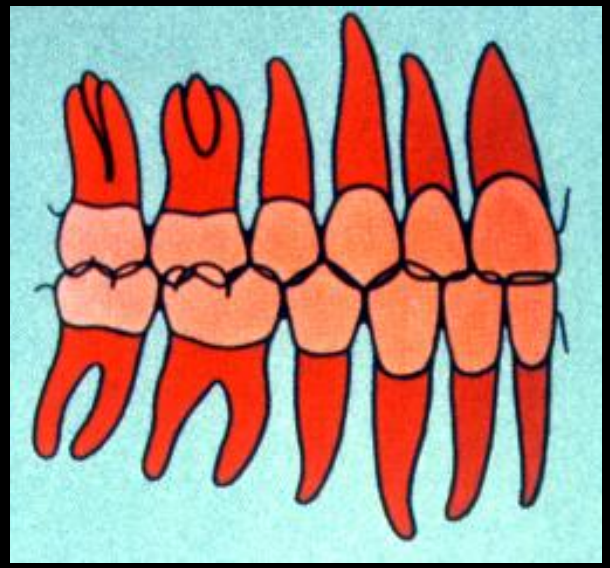




How would we perform serial extraction??

(Sequence of extraction)







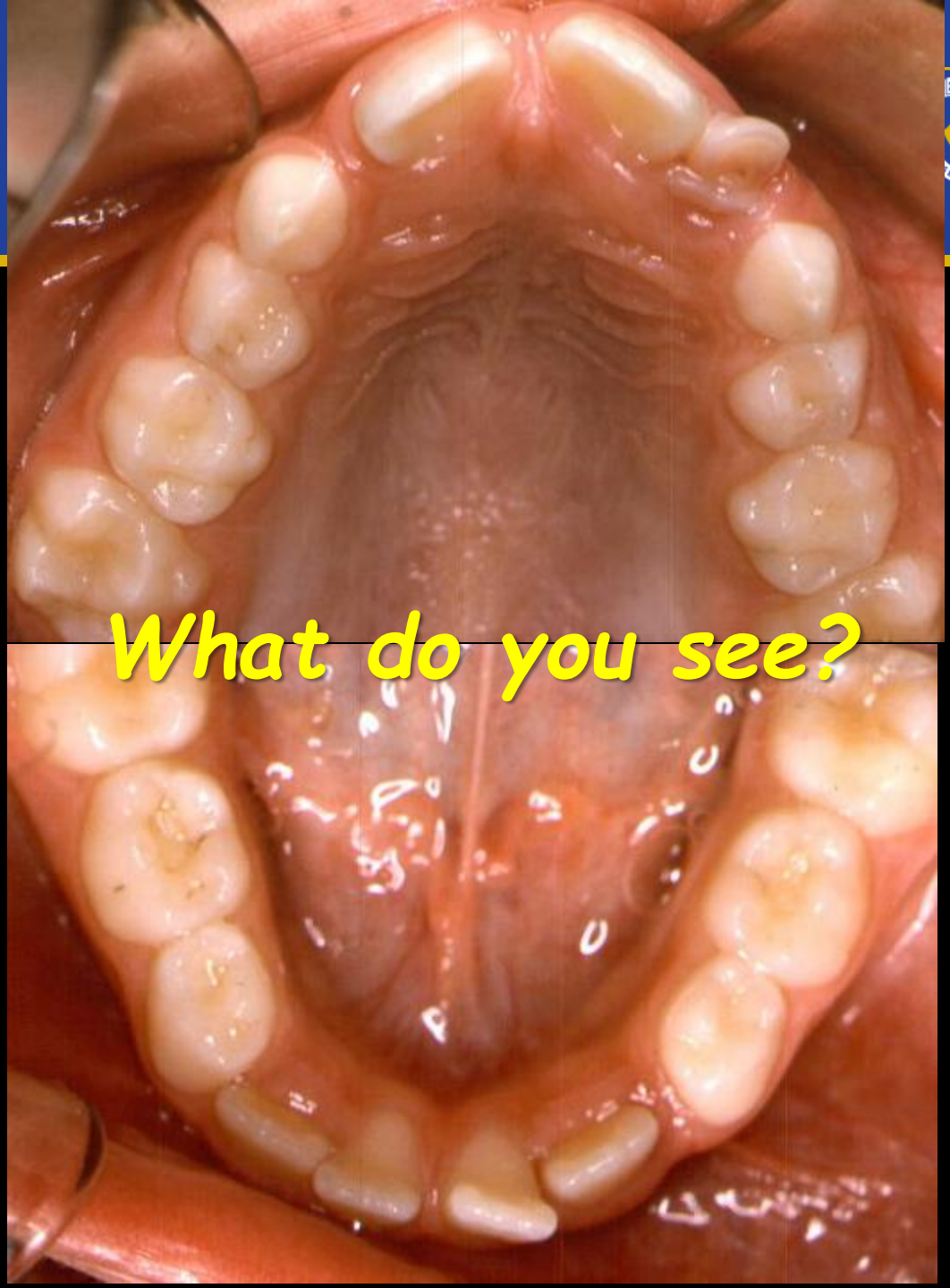
THE UNIVERSITY OF WESTERN AUSTRALIA



What do you see?







THE UNIVERSITY OF WESTERN AUSTRALIA

Is she a good candidate for serial extraction?

THE UNIVERSITY OF WESTERN AUSTRALIA



THE UNIVERSITY OF WESTERN AUSTRALIA

How do you decide if serial extractions is an appropriate treatment?

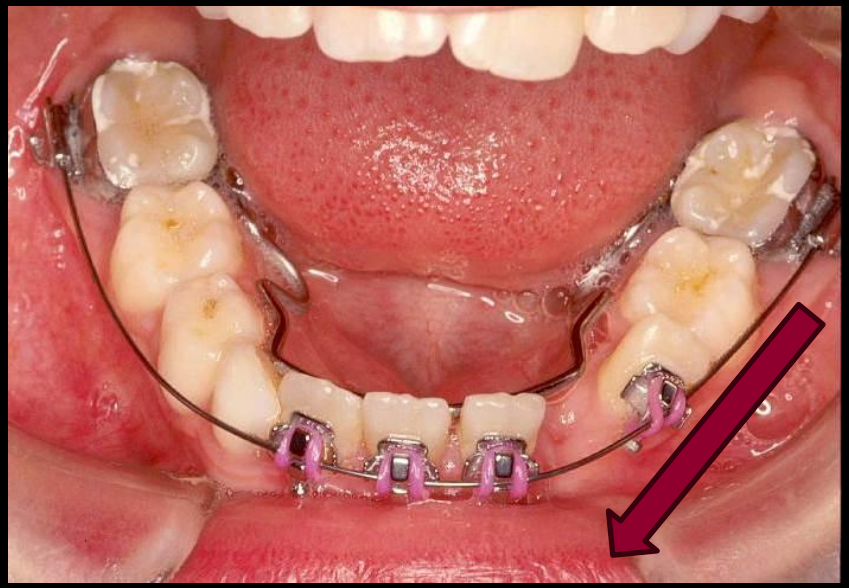
- Refer to an orthodontist and let them make that decision for you

THE UNIVERSITY OF WESTERN AUSTRALIA

What will happen if we do nothing? What do you see? What should be done?



Space regaining with Partial Fixed appliances?



not the same patient

- When a mandibular primary canine is lost prematurely and the lower midline shifts, *consider* extracting the contra-lateral primary canine and place a LLHA

- OR refer to an orthodontist to make the decision.

Class II Malocclusion

THE UNIVERSITY OF WESTERN AUSTRALIA

When is the best time to treat these patients?

- Start during the adolescent growth spurt and
- End treatment about the time growth spurt ends

The UNC studies showed that early Class II treatment was

THE UNIVERSITY OF WESTERN AUSTRALIA

- No more effective than later treatment . . . . and . . . .
- Considerably less efficient

When is early treatment for Class II malocclusion indicated?

THE UNIVERSITY OF WESTERN AUSTRALIA

- Psychological problems produced by teasing, etc.
- Trauma to teeth or soft tissue
- Severe problems

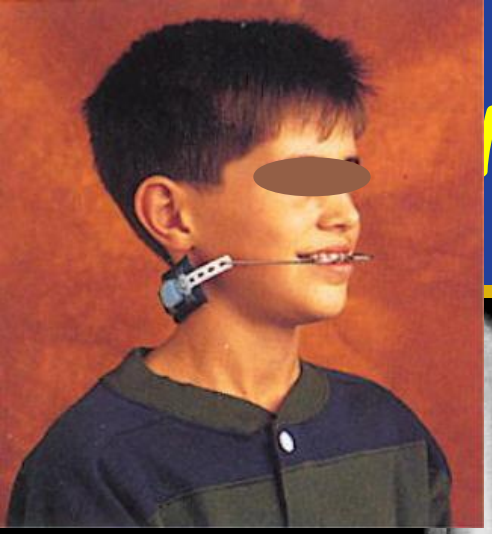
Class II growth modification

THE UNIVERSITY OF WESTERN AUSTRALIA

What treatment options do we have?

- Headgear
- Herbst (fixed functional appliance)
- Functional appliances

  Activator, Frankel, Twin Blocks



loes headgear work?

THE UNIVERSITY OF WESTERN AUSTRALIA

Headgear restricts the growth of the maxilla and allows the differential mandible growth to catch up

Headgear treatment

THE UNIVERSITY OF WESTERN AUSTRALIA



Herbst treatment

(fixed functional appliance)











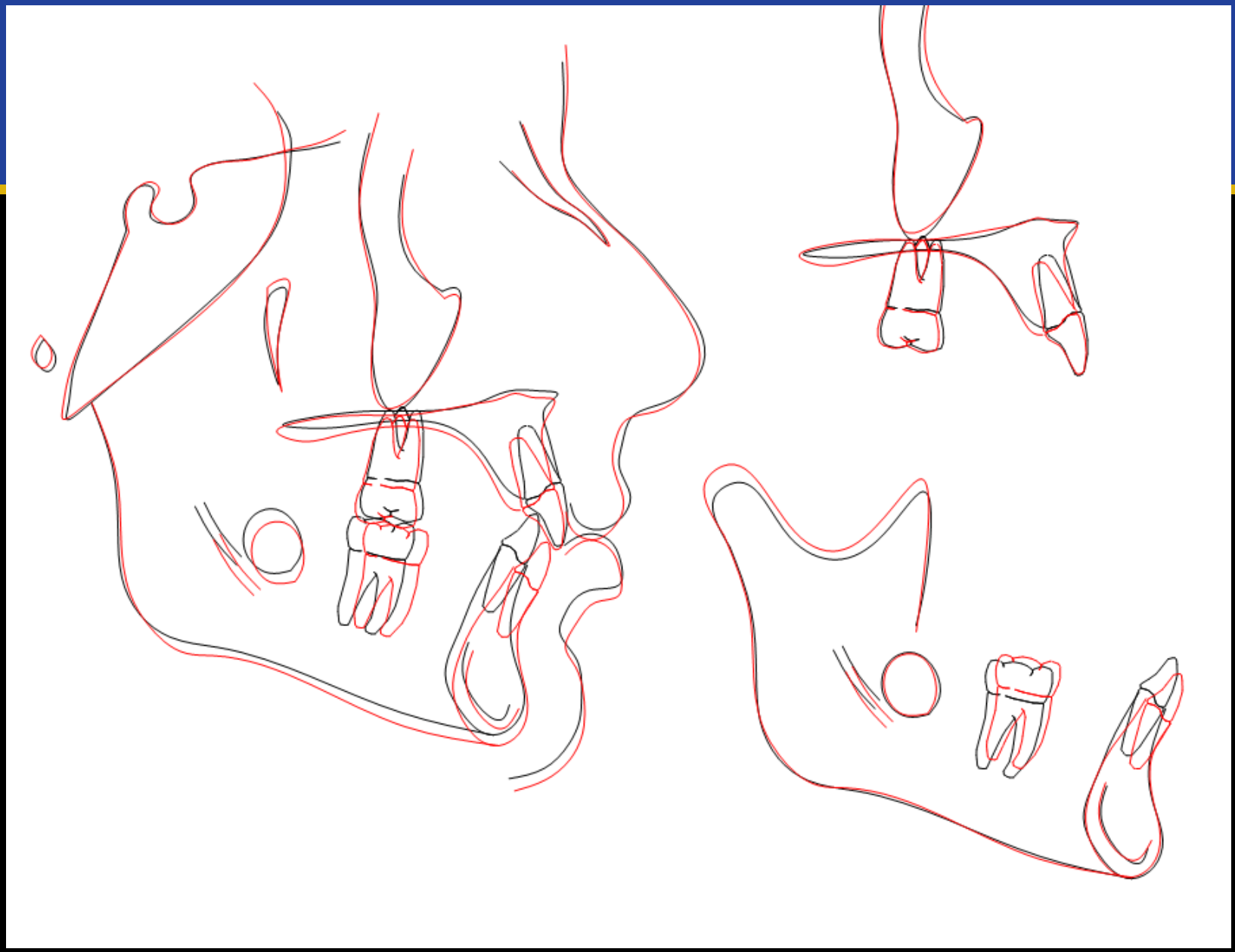








How does it work?

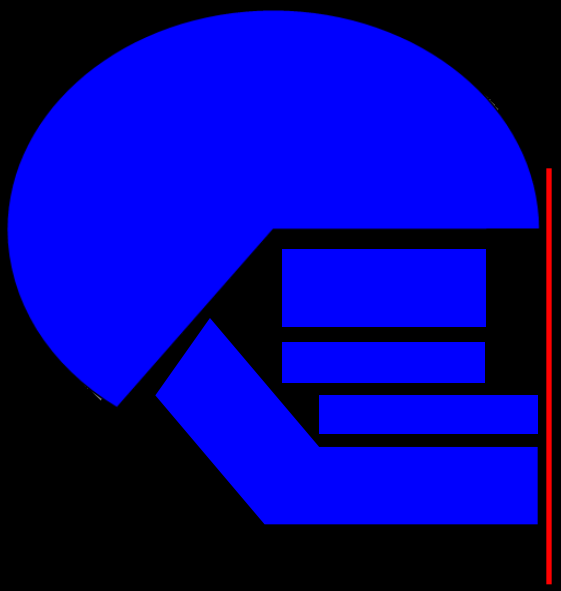


What changes do you see?

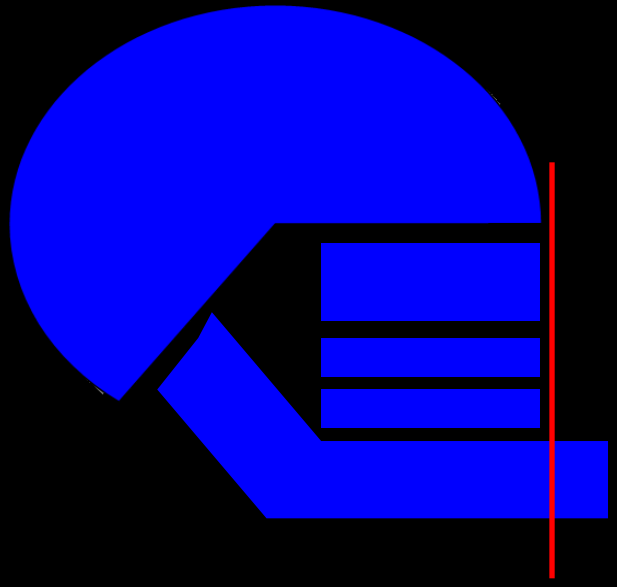
Class III Malocclusion

THE UNIVERSITY OF WESTERN AUSTRALIA

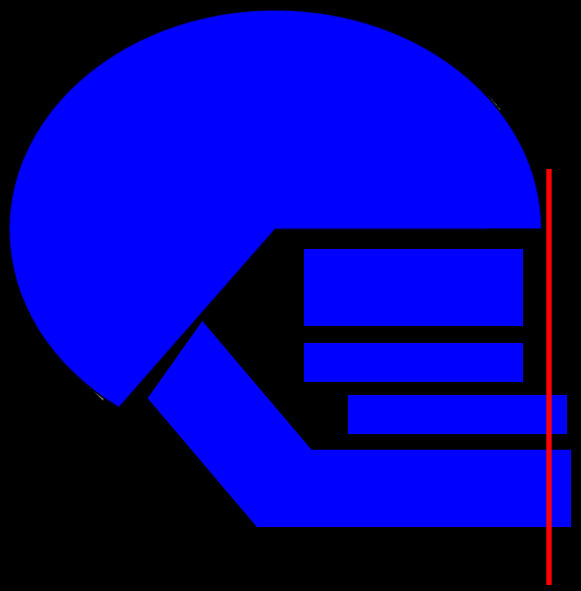
What are the different forms of skeletal Class III malocclusion?



Retrusive Maxilla



Prognathic Mandible



Combination Maxilla & Mandible

Class III Retrusive Maxilla

THE UNIVERSITY OF WESTERN AUSTRALIA

When do you treat/ refer?

Treatment is more effective if initiated during pre-adolescence (around age 7-10*)





THE UNIVERSITY OF WESTERN AUSTRALIA

How do we treat this patient?

Maxillary Protraction - reverse-pull Headgear or Protraction Facemask

THE UNIVERSITY OF WESTERN AUSTRALIA













Reverse Pull headgear protracts the Maxilla and tips the teeth forward

Class III



Skeletal Anchorage and Class III

THE UNIVERSITY OF WESTERN AUSTRALIA

- New technique to treat Class III malocclusion
- Most effective when initiated between ages of 10 to 13
- Gives more favorable orthopedic changes without dentoalveolar compensation
- No cumbersome extra-oral headgear
- Use of skeletal anchorage and elastics





Long-term use of skeletal anchorage and elastics many years after correction completed

Class III Prognathic mandible

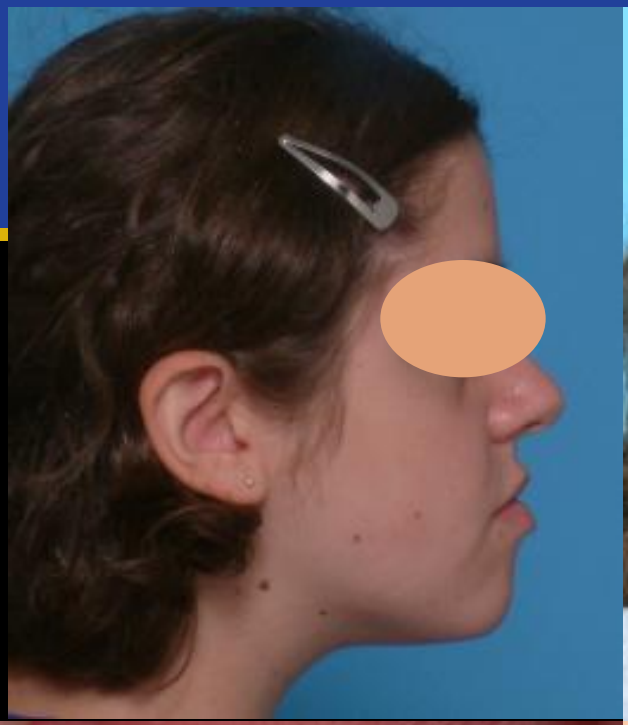
THE UNIVERSITY OF WESTERN AUSTRALIA

When do you treat/ refer?

- Treatment should be delayed to late adolescence/ cessation of growth

Why?

- The mandible tends to grow longer
- The mandible does not stop growing at the end of the adolescent growth spurt







1 year post surgery

Mandibular Prognathism- the lower jaw tends to grow longer and stops growing later

Crossbites



Functional Shift?





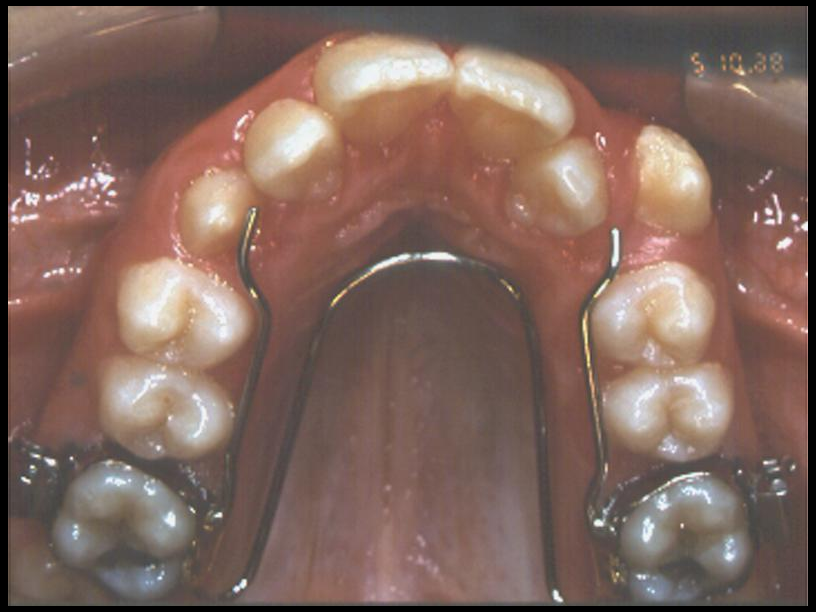
What kind of a crossbite is it?



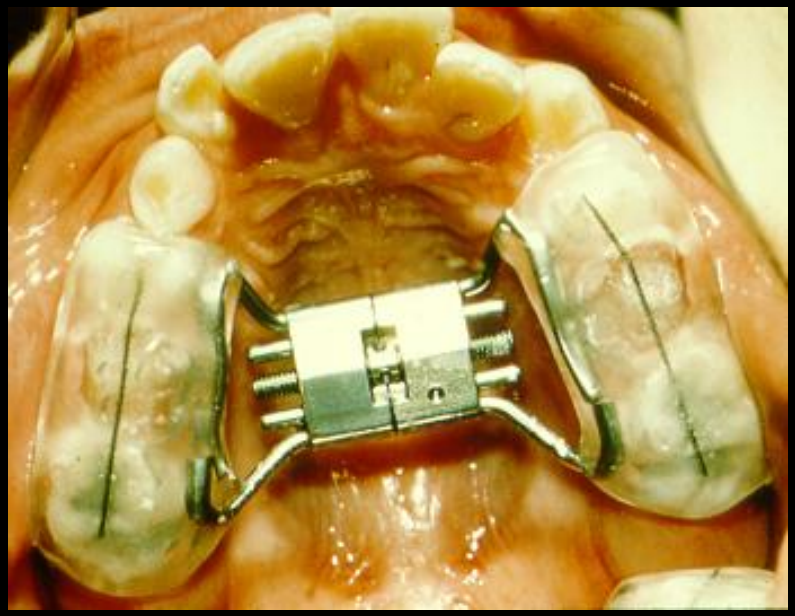
Treat crossbites with a function shift early to eliminate the shift

Maxillary expansion is used to resolve the posterior x-bite

THE UNIVERSITY OF WESTERN AUSTRALIA



For dental x-bites, the treatment of choice is to expand the arch by tipping the teeth



For skeletal x-bites, sutural expansion is recommended

Crossbite Treatment Guidelines

Class I	Mild crowding	Wait until the permanent dentition
	Mod to Severe crowding	Late mixed dentition before the Es exfoliate
	Severe Crowding	Refer to an orthodontist
Class II	→	During the adolescent growth spurt
Class III	Maxillary Retrusion	Pre-adolescence (7-10)
	Mandibular Prognathism	late adolescence/ when the mand stops growing
Crossbite	with functional shift	Treat early to eliminate the shift
	without functional shift	Can delay to the permanent dentition

Extractions

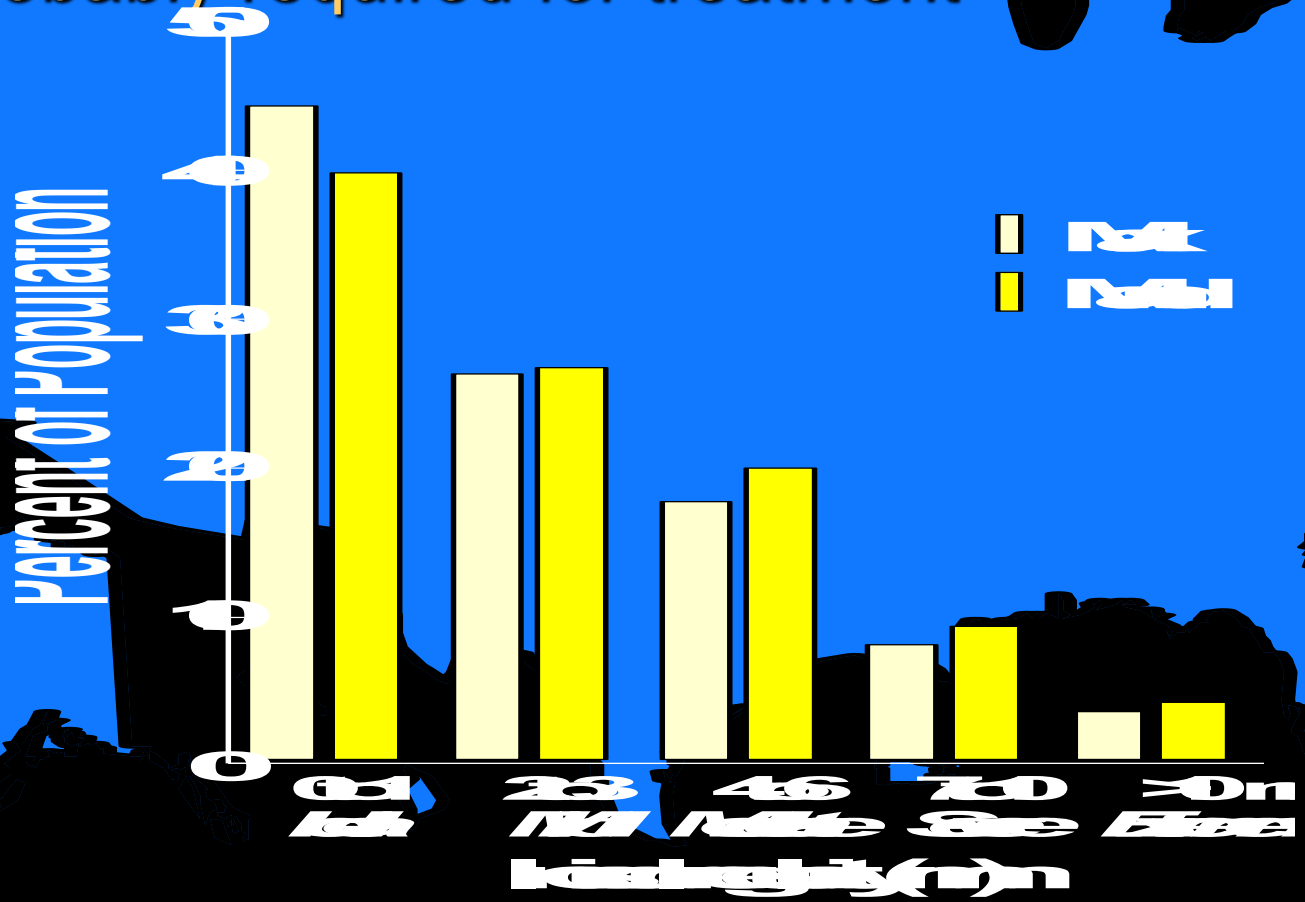
THE UNIVERSITY OF WESTERN AUSTRALIA

What are the two reasons for extracting teeth in routine orthodontic treatment?

- Correction of crowding/ protrusion (Class I)
- Camouflage (Class II or Class III)

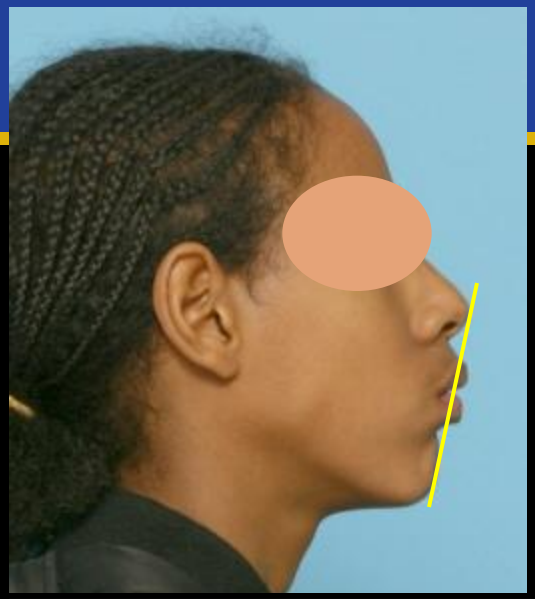
EPIDEMIOLOGIC DATA FOR MALOCCLUSION FROM NHANES III -- KEY POINTS

- About half the population have well-aligned incisors; **15%** are so crowded that extractions probably required for treatment

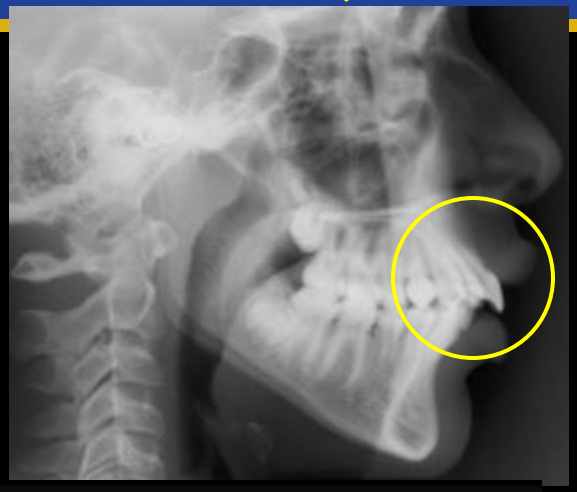


THE UNIVERSITY OF WESTERN AUSTRALIA

How do we evaluate protrusion?







Why extract teeth on a non-crowded case?











Class II Camouflage

THE UNIVERSITY OF WESTERN AUSTRALIA

What does camouflage mean?

To correct the malocclusion while making the underlying skeletal problem less apparent

How do we camouflage a Class II skeletal malocclusion?

Extractions

- *U4s* – for moderate cases
- *U4s/ L5s* – for mild cases

Class II Camouflage
Extractions – 2 Premolars

THE UNIVERSITY OF WESTERN AUSTRALIA



Class II Camouflage
Extractions – U4s, L5s

THE UNIVERSITY OF WESTERN AUSTRALIA



Class III Camouflage

THE UNIVERSITY OF WESTERN AUSTRALIA

Extractions

L1 - for mild cases

U5s/ L4s

L4s - for moderate cases







Class III camouflage

What are our options?















How did we camouflage?













Make sure you review why the trend in extractions changed



At the end of this course you DO NOT have the didactic knowledge or clinical skills to treat comprehensive orthodontic cases.