

DENTAL Crowding



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Overview

- Introduction
- Problems associated with crowding
- Classification of crowding
- Aetiology of crowding
- Treatments of crowding

Introduction

- Malalignment of teeth caused by **inadequate space**
- The crowded tooth is **displaced** labially or lingually and / or rotated
- The **last to erupt** within the arch tends to be affected most



Problems associated with crowding

- Difficulty **cleaning the teeth** which may lead to caries and periodontal disease
- Prevent the achievement of an **ideal occlusion**
- An unattractive smile which may lead to **low self-esteem**



Classification of crowding

- According to the **source**
- According to the time of **appearance**
- According to the **severity**

According to the source

- Hereditary crowding
- Environmental crowding

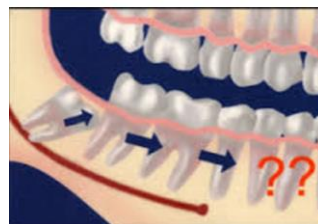
According to the time of appearance

- **Primary crowding:** Determined genetically and caused by **disproportion** between jaw size and teeth size
- **Secondary crowding:** Acquired and caused by **loss of arch length** due to environmental cause e.g. premature loss of deciduous teeth

According to the time of appearance

- **Tertiary crowding:** **Late lower incisor crowding** during and after adolescence and caused primarily by:
 - Forward mandibular growth
 - Soft tissue pressure
 - Mesial migration of posterior teeth
 - +/- Eruption of 3rd molars

Tertiary crowding



According to the severity

- **Mild**: up to 4 mm crowding
- **Moderate**: > 4 and up to 8 mm crowding
- **Severe**: > 8 mm crowding

Aetiology of crowding- Hereditary

Tooth size-jaw
size discrepancy



Aetiology of crowding- Environmental

- **Premature loss of primary teeth/ Trauma**
- Proximal caries leading to deficiency in the dental arch
- Prolonged retention of primary teeth/ ankylosed primary teeth
- Altered eruption sequence
- Discrepancy in individual tooth size
- Abnormal shape of teeth
- Abnormal eruption path
- Transposition of teeth
- Iatrogenic treatment

What is the cause of crowding? Why?



Look for dental centerlines
Look for blocked out incisors

Treatments of crowding

- Mixed dentition
- Permanent dentition

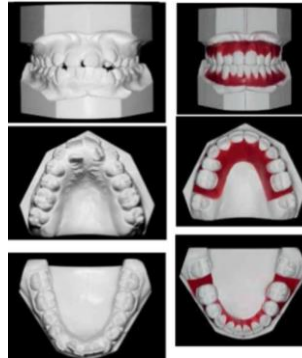
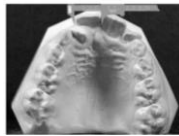
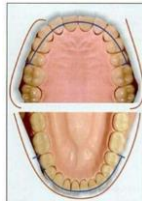
Treatments of crowding-Mixed dentition (after eruption 21/12)

Type of crowding	Timing	Treatment
Mild crowding	Wait and watch	No treatment
Moderate crowding	Can wait until premolar eruption OR	<ul style="list-style-type: none"> • Expansion • Eruption guidance
Severe crowding	Immediate treatment	<ul style="list-style-type: none"> • Expansion • Eruption guidance • Serial extraction • Extraction and ortho Tx

Treatments of crowding- Permanent dentition

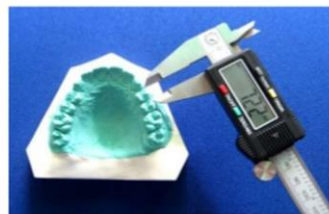
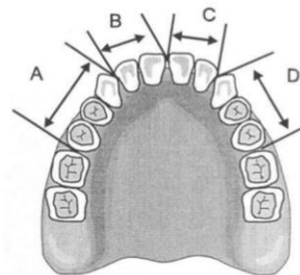
INVESTIGATION

Space analysis should be carried out e.g Carey's analysis



Treatments of crowding- Permanent dentition

Degree of crowding=
space required - space available



the Permanent Dentition

space required= total mesiodistal tooth mass
space available= A+B C+D

Treatments of crowding- Permanent dentition

Type of crowding	Treatment
Mild to Mod crowding	<ul style="list-style-type: none"> • Expansion • Distalization • Stripping/ proximal reduction
Mod to severe crowding	<ul style="list-style-type: none"> • Expansion • Extraction

Proximal reduction

- Mild crowding
- Use of removable or fixed appliance
- Not > 0.25 mm from each proximal surface to remain within enamel

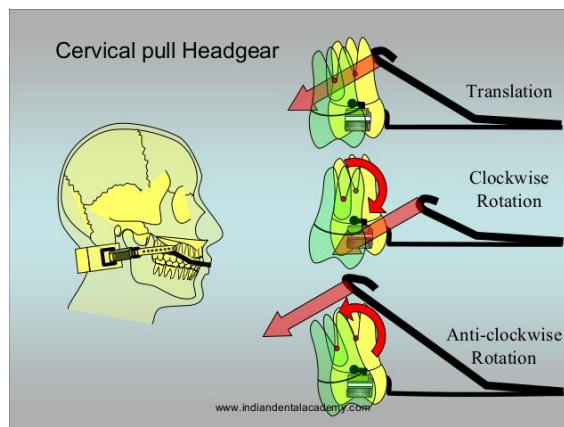


Distalization lower arch-Lip Bumper

- Keeps the adult molars at their correct position after they have erupted, preventing a possible crowding within the premolars
- Mild crowding
- Procline lower incisors



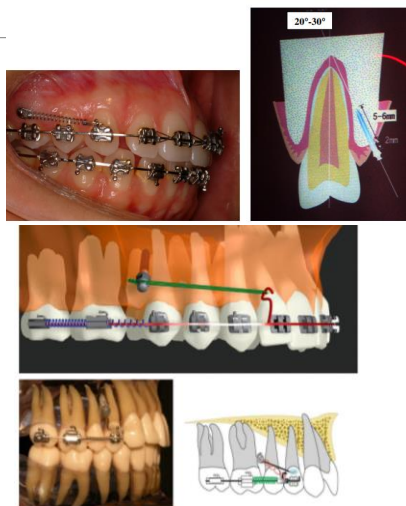
Distalization-Upper arch-HG



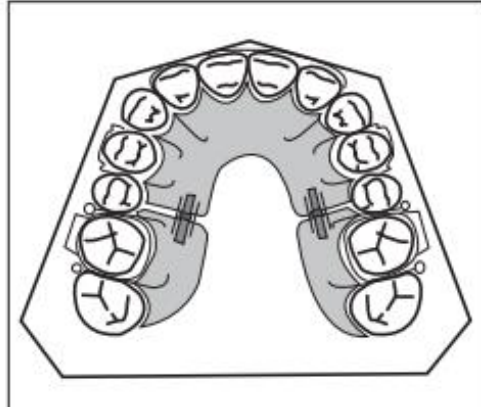
Distalization-upper arch-intra-oral devices e.g. the Frog Appliance



Distalization-upper arch-micro Implants

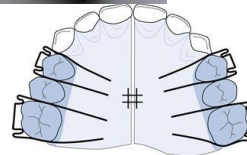


Distalization-upper arch-URA



Arch expansion

- Mild to moderate crowding
- Removable or fixed appliances



Extraction

- Moderate to severe crowding
- Usually 1st or 2nd premolars if all other teeth of good long-term prognosis

