THE OCCLUSION

Jennifer Smits, RDH, AAS
University of Michigan Degree Completion
Occlusion

- Relationship of the teeth in the maxillary and mandibular arch as they are brought together
- Knowledge of occlusion can contribute to complete care/instruction
- Adapt instrumentation technique to malpositioned teeth
Facial Profiles
NORMAL, MESIOGNATHIC, PROGNATHIC
Facial Profiles
retrognathic, normal, prognathic

CLASS II
CLASS I
CLASS III
Normal Occlusion

- Ideal occlusion=all teeth in max/mand arch are in maximum contact with definite pattern
- Max teeth slightly overlap mandibular teeth on facial surfaces
- Why is normal occlusion important?

Arrows are where they should be. Has ideal overjet and overbite.

Adult Class I (Lateral view)
Mid-line is in the middle of the mouth / smile.

Adult Class I (Anterior view)
Malocclusion

- Mal (Bad)
- Faulty occlusion
- Irregular contact between maxillary and mandibular teeth, resulting in faulty bite
- Misalignment
Malocclusion Class II Division 1

• AKA *retrognathic* facial profile—prominent maxilla; mandible posterior to its normal relationship

Arrows should be aligned opposite to each other.
Malocclusion Class II Division II

Mandible retracted

Maxillary incisors retruded

Class II, Division 2 (Lateral view)

Class II, Division 2 (Anterior view)

Arrows should line up opposite each other.

Note slant of upper 4 anterior teeth.
Malocclusion Class III

Class III (Anterior view)

Class III (Lateral view)

Arrows should line up.
Malocclusion Class III continued

Prognathic profile
Protruding
Lower lip and mandible prominent
Fractured Restorations
Notching at the gumline, due to enamel breakdown

Fractured Crown

Red line represents enamel lost
Sometimes I feel that I have the worst job in the world!
Crossbite

- **POSTERIOR**: Maxillary or mandibular posterior teeth are either facial or lingual to normal position
  - Can be unilateral or bilateral
- **ANTERIOR**: maxillary anteriors lingual to mandibular anteriors

In ‘B’, upper teeth are ‘inside’ lower teeth - due to a narrow arch.
Edge to Edge Bite

• Incisal surfaces occlude instead of overlapping as with a normal occlusion

• What else do you notice in this picture?
End to End Bite

- Molars in cusp-to-cusp occlusion when viewed from the facial
Open Bite

- Lack of incisal contact
- Posterior teeth in normal occlusion
YOU FORGOT TO FLOSS.
Overjet

- Maxillary incisors are labial (closer to the lips) than mandibular incisors
- Periodontal probe used to measure for recording distance
Underjet

- Maxillary incisors are lingual to the mandibular incisors
Moderate Overbite

Overlap middle

$\frac{1}{2}$
Deep Overbite

• Overlap within cervical third of tooth
Occlusal contacts

- Functional contacts: normal contacts made when maxillary teeth and mandibular teeth during chewing and swallowing

- Parafunctional contacts: outside of normal range
  - causes: occlusal habits/neuroses
  - potential injurious to the periodontal supporting structures
  - can create wear facets (shiny, flat, worn sport on the surface of the tooth, frequently on the side of a cusp)
Premature Extraction of Teeth

- Primary teeth act as space maintainers for permanent teeth
- Crowding can occur
- Painful eruption with little space
- Increase cost for ortho
Periodontal Involvement

• Degenerative disease that affects the supporting structures of the teeth (gingival tissues, bone, PDL)

• Characteristics
  – Pocket formation
  – Mobility
  – Bone loss
  – Inflammation
  – Redness
  – Bleeding
  – Malodor/halitosis

• Why does malocclusion increase risk for periodontal disease?
Orthodontics

• How does a tooth move?
  – Pressure is put onto a tooth in order to move through bone
  – PDL is stretched and compressed while moving teeth
  – Orthodontists will use special appliances depending on where tooth needs to be moved
  – Slow is better- WHY?
3 categories of ortho treatment

• 1. preventive: early tx ages 6-11
  – Correction of habits or genetic/congenital abnormalities

• 2. interceptive: ages 9-13
  – Taking care of problems as they develop, watching primary and permanent teeth as they erupt

• 3. corrective: ages 12-adult
  – When all permanent teeth erupted
Ortho Visit

• Visit to ortho consists of:
  – initial exam, functional analysis of teeth and face, photographs, radiographs, study models, case presentation (financial arrangements, go over tx in detail, etc)
Health. Beauty. Confidence

Smiles designed to last a lifetime