

Stomato 202

LECTURE 1

Introduction & Dentition

#HELPER_TEAM

Introduction

❖ Stomatognathic System (also called masticatory system) :-

- Consists of the mouth, jaws and closely associated structures
- **Primary function** → sucking , swallowing, speech and mastication
- **Para-function** → nail biting, gum chewing (مش كلنا بنعملها)
- **Tongue** and **soft palate** are soft muscular structures that belong to the stomatognathic system
- The study of the system involves **3 phases** :
 - 1) **Ortho-function** which describes the harmony between form and function of the components of masticatory system
(الترابط بين الشكل و الوظيفة)
 - 2) **Patho-function** which describes the disharmony between form and function (عدم الترابط بين الشكل والوظيفة)
 - 3) **Diagnosis & Management of disorders of the system**

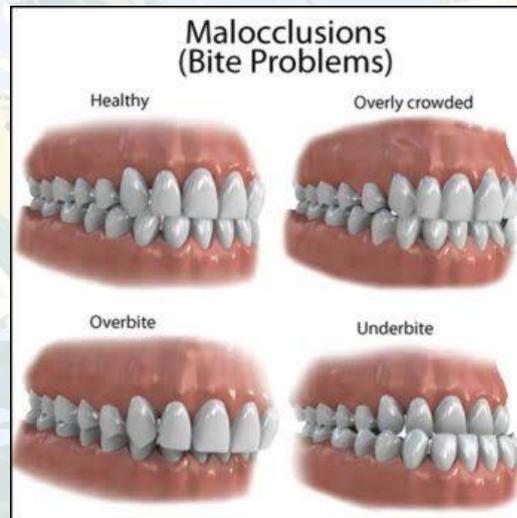
Dentition

- **Dentition** is the development of the primary (milky, baby, deciduous) and permanent teeth in the dental arch and their arrangement in the mouth
- **Deciduous teeth** -> 20 in number / start erupting at the 6th month
- **Permanent teeth** -> 32 in number / replace deciduous teeth and are fully erupted by the age of 18-25 years

➤ Occlusion:-

- It's the Contact of upper and lower teeth in different ways and at different positions in the mandible
- **Types:**
 - 1) **Ideal Occlusion**->theoretical (تَخَيُّلي) occlusion that occurs when
 - a) All teeth are perfectly placed in the arch and have normal anatomical relationship to each other
 - b) The alignment has resulted from normal growth in relation to all associated tissues
 - 2) **Physiological occlusion** ->an occlusion that deviates from ideal occlusion but is well adapted to the individual and doesn't require intervention/therapy (تدخل علاجي)
 - 3) **Non Physiological occlusion** ->an occlusion that has signs or symptoms of pathology or dysfunction and requires intervention/therapy
 - 4) **Therapeutic occlusion** ->an occlusion that has been modified to be physiological or ideal or symptom free occlusion

- 5) **Malocclusion** ->an occlusion that has some structural deviations from the ideal occlusion without functional disorders. (E.g. malalignment or incorrect relation of teeth) Therapy isn't necessary



❖ Occlusal Plane

⇒ Is the plane of maximum contact between the occlusal surface of upper and lower teeth at intercuspation (cusps of upper and lower teeth are interlocked)

1) Upper occlusal plane

⇒ Is an imaginary plane that touches the incisal edges of the **maxillary central incisors** and the tips of the disto-buccal cusps of the **maxillary 2nd molars**.

2) Lower occlusal plane

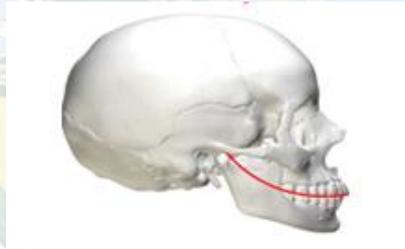
⇒ Is an imaginary plane that touches the incisal edges of the **mandibular central incisors** and the tips of the disto-buccal cusps of the **mandibular 2nd molars**.

✚ Curvature of the occlusal Plane

⇒ Curved anteroposterior and laterally

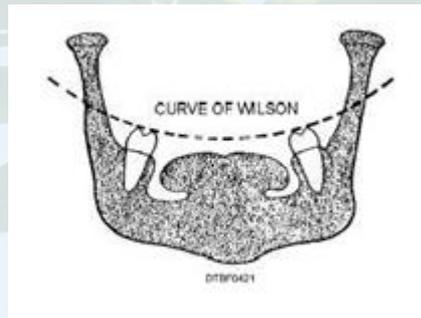
1) **Curve of Spee** -> Line from the tip of the canine touching the tips of the buccal cusps of posterior teeth.

Curve of spee = Anteroposterior



2) **Curve of Wilson** -> transverse curve joining the buccal and lingual cusps of right and left posterior teeth.

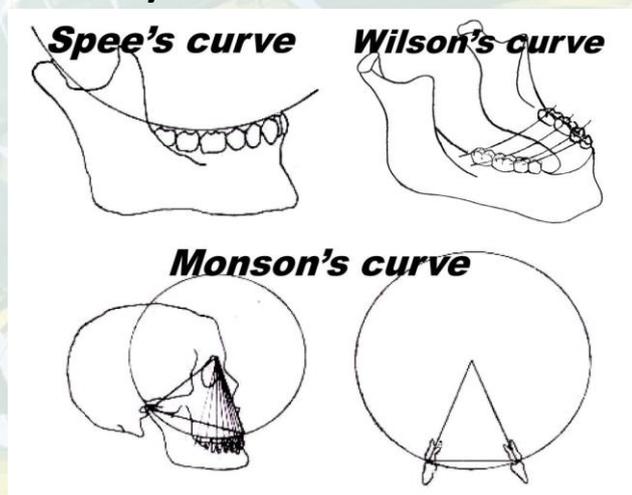
Curve of Wilson = Lateral Curvature



3) **Monson Curve** -> Combination between curve of spee and wilson. (curvatures of the occlusal plane are a part of the sphere)

->The surface is a part of a sphere with a 10 cm radius

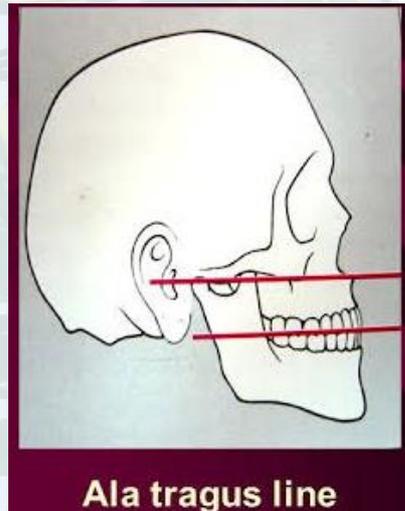
Only called monson in natural teeth, but in edentulous patients it's called compensatory curve.



✚ Orientation of the occlusal plane

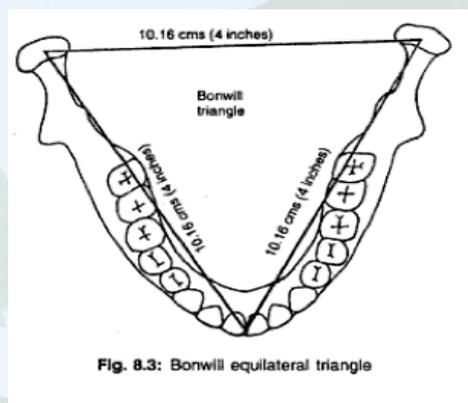
1) Cranio-occlusal relation

- **Frankfort plane**:-a plane drawn between upper edge of the external auditory meatus and the orbital. Used in craniometry
- **Camper's Plane (ala-tragus line)** :-a line drawn between the tragus of the ear and ala of the nose . It's nearly parallel to the occlusal plane



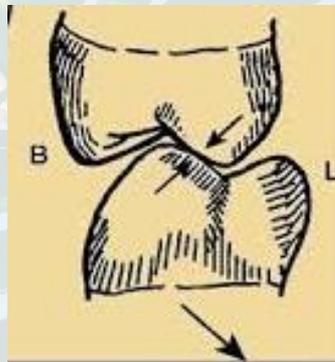
2) Mandibular-occlusal relation

- **Bonwill Triangle**:-10 cm equilateral triangle connecting the 2 condyles of the mandible with the mid-incisal point of the lower central incisors

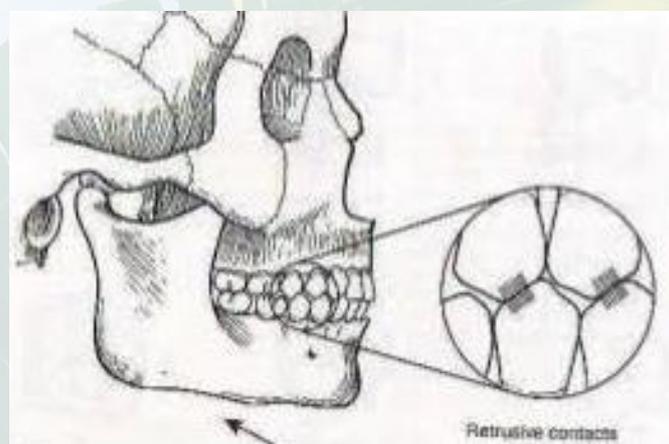


- **Blackwell Angle**:-An angle between the occlusal plane of the lower teeth and bonwill triangle, it ranges from 15 to 30 degrees.

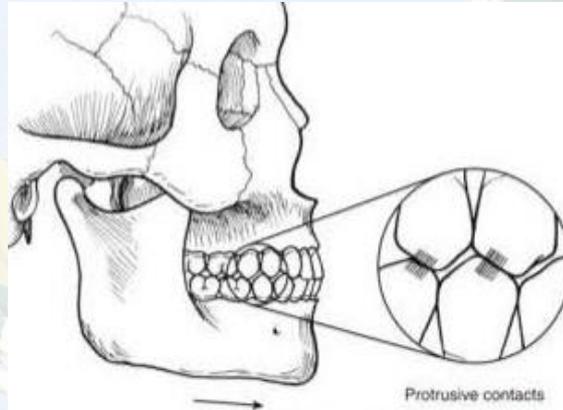
- **Arch Relationship** ->the maxillary arch is wider than the mandibular arch
- **Supporting (Functional – centric holding)** cusps are the **maxillary lingual** and **mandibular buccal** cusps . These cusps contact at centric occlusion and helps in supporting occlusal vertical dimension
- **Non-Supporting (Non-Functional – Guiding)** cusps are the **maxillary buccal** and **mandibular lingual** cusps . These cusps contact during lateral movement and don't support the occlusal vertical dimension



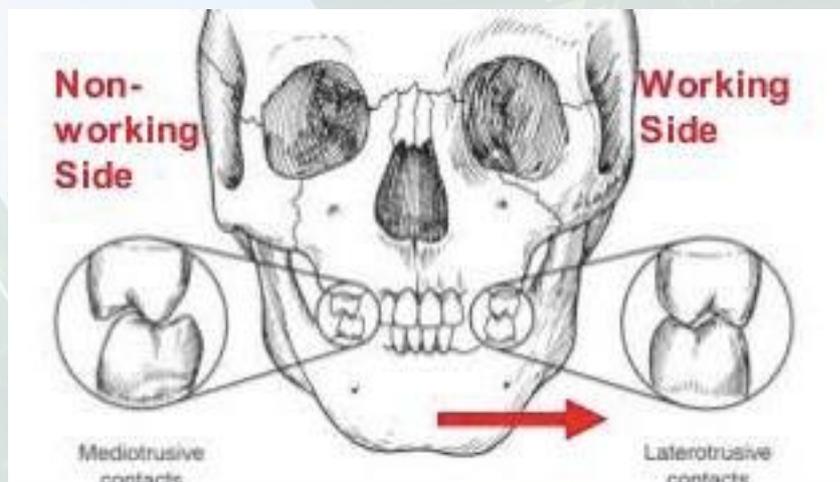
- **Cusp Inclines** ->Cusps have inclined surfaces in mesial, distal, buccal and lingual direction, these slopes are called the guiding inclines
- **Retrusive inclines:** guide the mandible during closure to centric occlusion and in retrusive (backward) movement. **Mesial** inclines of **maxillary** teeth and **distal** of **mandibular** teeth.



- **Protrusive inclines:** guide the mandible during protrusion (forward) movement. **Distal** inclines of **maxillary** teeth and **mesial** of **mandibular** teeth.



- **Working inclines (masticatory – lateral – ipsilateral) :** guide the mandible during lateral movement. **Palatal** slopes of **buccal cusps** of **maxillary** teeth and **buccal** slopes of **lingual cusps** of **mandibular** teeth.
- **Non-Working inclines (contra-lateral – balancing) :** guide the mandible during mesial movement. **Buccal** slopes of **palatal cusps** of **maxillary** teeth and **lingual** slopes of **buccal cusps** of **mandibular** teeth.



- **Centric Occlusion:**-Maximum interdigitation/intercuspatation (تشابك) between cusps of upper and lower teeth
- **Centric relation** → isn't an occlusion, it's a jaw relationship which describes a conceptual (خيالي) relationship between the maxilla and mandible (at TMJ). It's reproducible with or without teeth.
- **Eccentric Occlusion:**-occlusal contact other than centric occlusion. For example, anterior/incisal position or lateral position.
- **Balanced Occlusion:**-bilateral, simultaneous, anterior & posterior even contact between the occlusal surface of the upper and lower teeth in centric and eccentric occlusion