

Occlusion





What is Occlusion



It normally describes the way that the teeth bite together. It can also describe the way the teeth are arranged from an orthodontic point-of-view.

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OCCCLUSION

The contact of teeth in opposing dental arches
when jaws are closed
(static occ.)

And during various jaw movements
(dynamic occ)



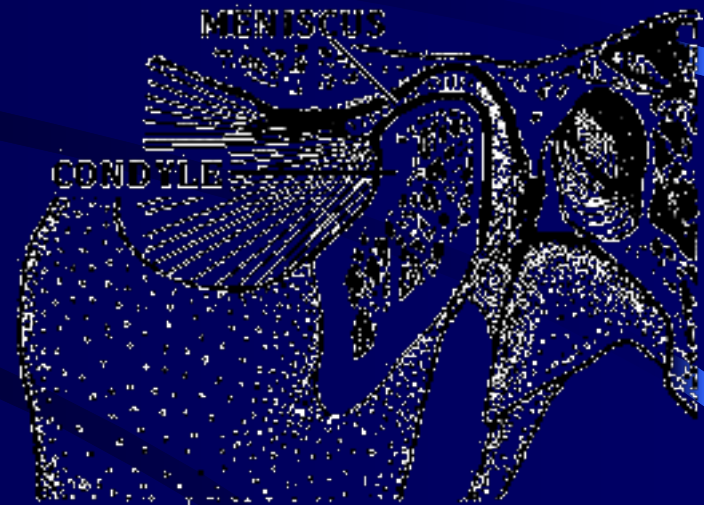
Definitions

- C.O.= centric occ.
- I.P. = inter cuspal position= M.I
(acquired occ.,habitual occ.)
- OVERJET = horizontal overlap
- OVERBITE = vertical overlap

If you walk the walk, you've got to talk the talk.

Centric Relation-

A maxillomandibular relationship in which the condyles articulate with the thinnest avascular portion of their respective disks with the complex in the anterior-superior position against the slopes of the articular eminences, independent of tooth contacts.





MI Occlusion

The occlusion with opposing teeth when the mandible is in centric relation. May or may not coincide with MI.



Cusps

- SUPPORTING CUSPS:cusps that contact the opposing teeth along the central fossa (centric holding cusp,stamp cusp)
- * NON-SUPPORTING CUSPS:cusps that overlap the opposing teeth (non centric cusp,gliding cusp)

Marginal Ridge

- Elevated rounded ridges located on the mesial and distal edges of tooth's occlusal surface

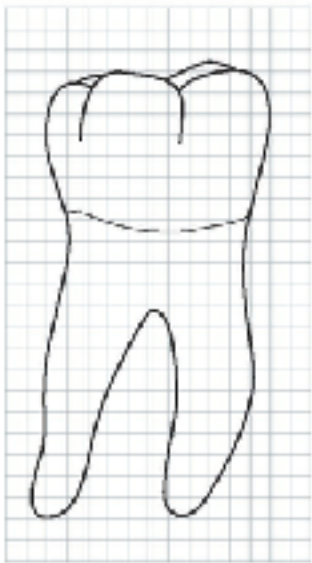


Supporting Cusp Characteristic

- 1-They contact opposing teeth in I.P
- 2-They support V.D. of the face
- 3-They are nearer the F.L center of the tooth than non-supporting cusps
- 4-Their outer incline has potential for contact
- 5-They have broader ,more rounded cusp ridges than non-supporting cusps

Non-supporting Cusp Features

- 1-Do not contact opposing cusp in I.P
- 2-Keep soft tissue of tongue or cheek off occlusal table
- 3-farther from F.L center of tooth than supporting cusps
- 4-Outer incline has no potential for contact
- 5-have sharper cusp ridges than supporting cusps



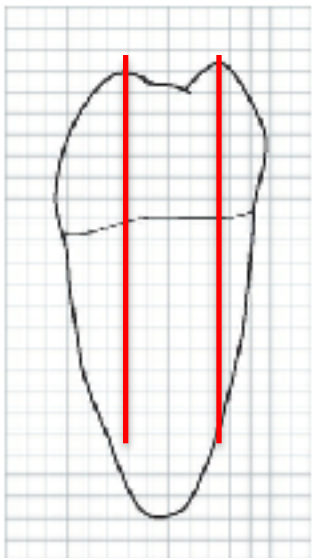
Buccal



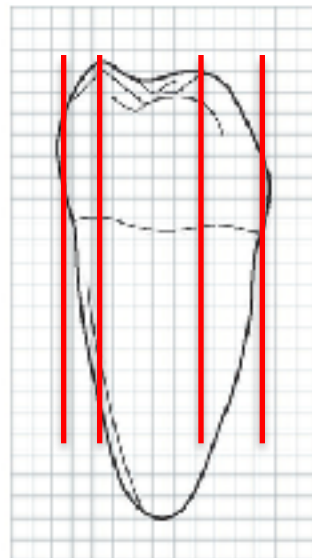
Lingual



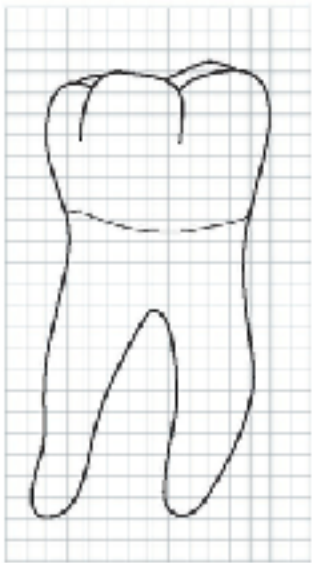
Occlusal



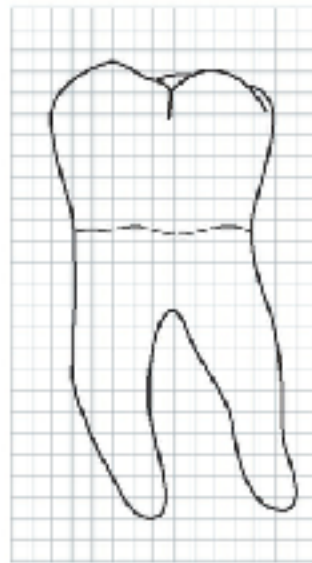
Mesial



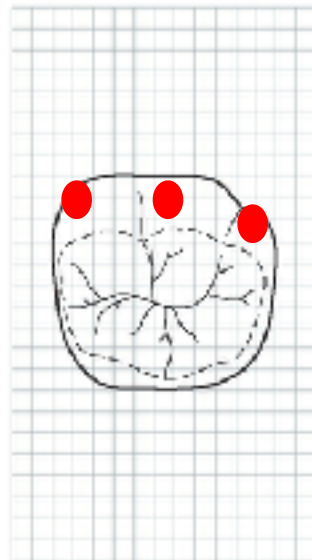
Distal



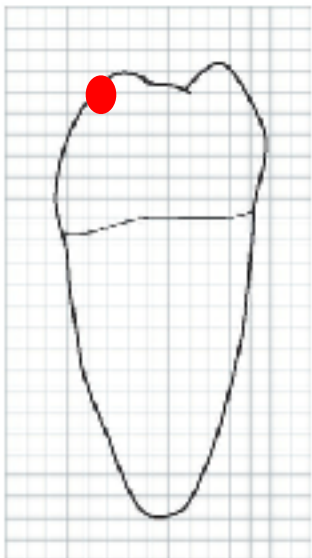
Buccal



Lingual



Occlusal



Mesial



Distal

Types of Motions

- 1-ROTATION: simple motion of an object around an axis

Rotation with the condyle stabilized under the disk superiorly in the T.M.J is called Terminal Hinge movement (T.H)

- 2-TRANSLATION: the bodily movement of an object from one place to another

Terminal Hinge movement

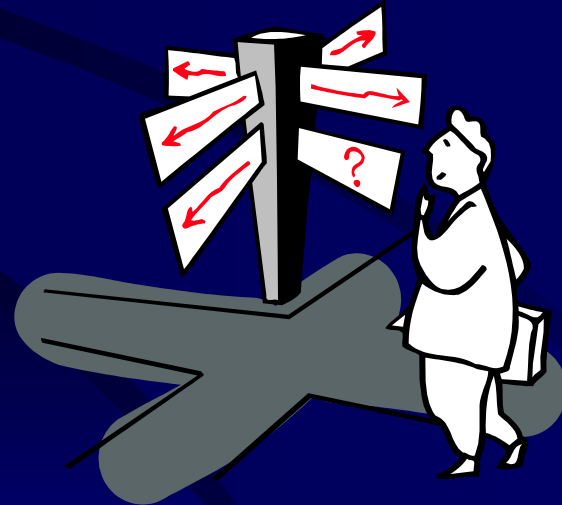


Maximum Opening



Jaw Movements

- 1-PROTRUSION: coming forward (max.10 mm)
- 2- RETRUSION: post. Movement of the mandible
- 3-LATERAL MOVEMENT: forward translation of one condyle + rotation of the other condyle
- 4-COMPLEX MOTION:rotation + translation (opening max. 50 mm)



W.S / N.W.S

WORKING SIDE:mandibular movement
directed away from midline

(latero trusion = functional)

NON-WORKING SIDE:manibular movement
directed toward midline

(mediotrusion = non-functional)



Definitions

- 1- canine guidance:

The vertical displacement of the mandible due to gliding contact of the canine teeth
(Prevent potentially damaging force)

- 2- group function:

Multiple tooth contact during lateral jaw movements

(Canine + premolars)

Mutually Protected Articulation

An occlusal arrangement in which the posterior teeth contact in maximum intercuspation, but not in lateral or protrusive movements.

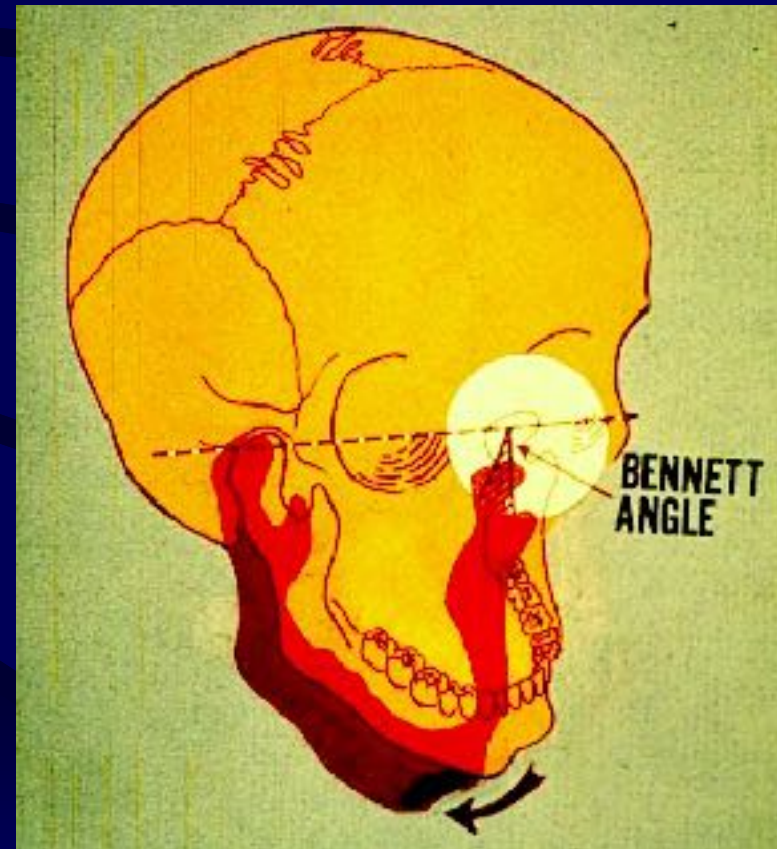
The anterior teeth protect the posteriors during eccentric contacts. The posterior teeth protect the anterior teeth in MI.

Often, the cuspids are the only teeth contacting in lateral movement and the incisors the only teeth contacting in protrusive movement. Syn: Anterior Protected Occlusion, Posterior Disclusion.



Bennett Angle

The angle formed by the **sagittal plane** (assumed straight protrusive path) and the path of the **advancing** (orbiting) **condyle** during lateral mandibular movements as viewed in the horizontal plane.



Avoiding the Non-working Side Contact Is an Important Goal

- Contact of the molar cusp on the non-working side may overload the tooth or the TMJ

Hi speed hunting



Chewing Cycle

- 1- Opening.(Hinge + Translation)
- 2- Fast closing (Translation)
- 3- Slow closing (Hinge)
(increase force
for crushing foods)



Ant. Tooth Contacts

- Multiple contacts between arches on the ant. Teeth are desirable in protrusion and lat Mand. Movements.
- Remove any overload point.

Post. Tooth Contact

- Post. Teeth should contact only in I.P
- Any movement of mandible should result in separation of post. Teeth by the combined effect of ant. Guidance + slope of articular eminence.

Premature Contact Correction

- 1- posterior

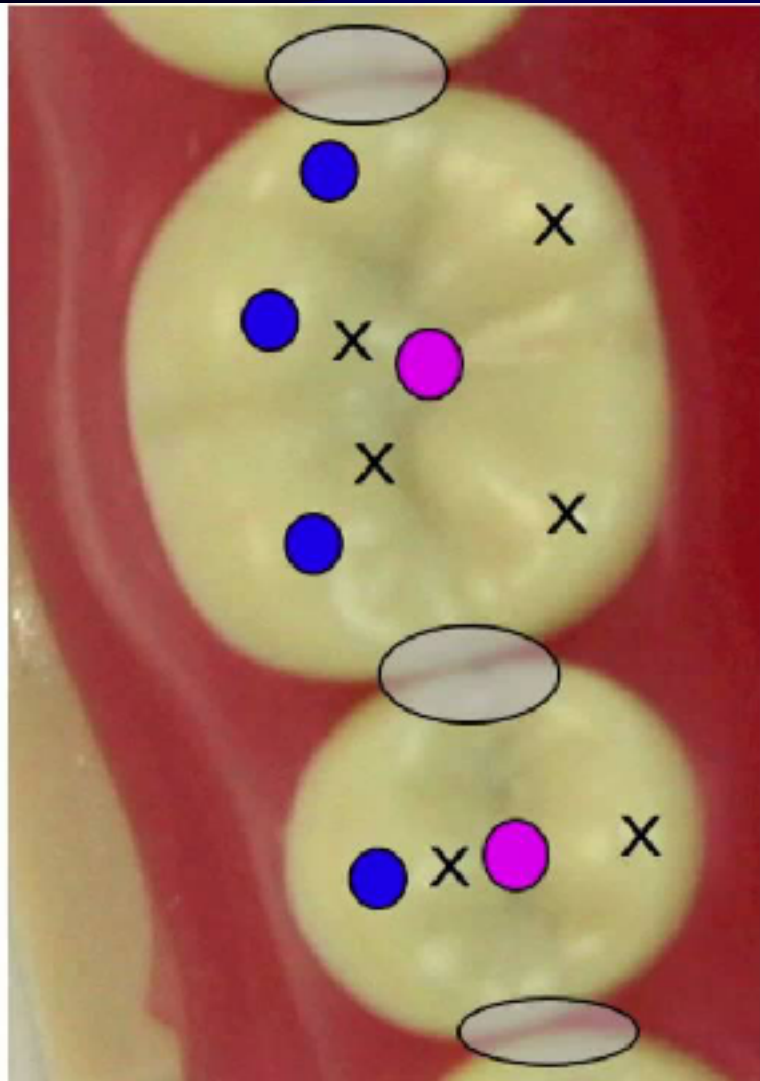
A- vision

B-articulating paper in MI+ WS +
lat.Movements (NWS/slopes/over loads)

- * 2- Anterior

A-vision

B-articulating paper in MI + protrusion +
lat.Move (overloads)



Occlusal Interferences

Working occlusal interferences (laterotrusive interference)



Occlusal Interferences

Non-working occlusal interferences (mediotrusive interference)



Do Not Interfere With Physiological Occlusion

