

Determination and fixation of centric occlusion in prosthetic treatment of PA with fixed partial denture.

In mandibular-cranial reports it is necessary to distinguish two fundamental correlations:

I – position of centric occlusion

II – centric relationship

Occlusion is a static contact relationship between upper and lower dental arches not depending on mandibulocranial report. It is a position of the lower jaw at which this or that number of lower teeth are in close contact with upper teeth.

At the same time with this situation during movements of the lower jaw provided by mastication muscles will be created various mandibular-cranial reports at which lower dental arch will contact with upper realizing occlusion – this interdentally contact is appreciated as dynamic occlusion.

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The 3 GOLDEN RULES OF OCCLUSION

1. bilateral and even occlusal contact.
2. posterior teeth disocclusion, or anterior and canine guidance. Anterior and canine guidance allows for the immediate disclusion of molars and premolars when making lateral or protrusive movements, such as in chewing.
3. unobstructed envelope of function. During the chewing motion, the mandible does not only swing laterally, it swings forward (protrusively) during the closure movement, returning back into the centric stop. This is called the envelope of function.

8\*\*\*\*\*

Going from these two conceptions the modern concept determines occlusion as static or dynamic contact between dental arches irrespective from relationships between them.

That is are distinguished static and dynamic occlusion.

**Static occlusion** - contacts of teeth in usual compressed jaws' position.

Character of teeth contact in centric occlusion position is called bite.

**Dynamic occlusion** - the interaction between the teeth when moving jaw.

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From practical point of view can be determined 5 basic kinds of static occlusion:

**Centric** – that in the vertical and horizontal position of the mandible in which the cusps of the mandibular and maxillary teeth interdigitate maximally;

**Protrusive** - (anteroocclusion or forward);

- **Retrusive** - distoocclusion;

- **Lateral** (right and left) – occlusion of the teeth when the lower jaw is moved to the right or left of centric occlusion.

**The centric jaws relation** – is such mandible-cranial report when the lower jaw is installed to the maxilla in such a way that the articular condyles occupy in articular fossae unforced retrusion position in relation to the base of the slope of articular eminence, indifferent from the presence or absence of teeth in the oral cavity.

This mandibular-cranial report being equilibrated by all components of stomatognath system in

three planes (sagittal, transversal and vertical) create intermaxillary report that provide optimum vertical dimension of the lower level of the face named **physiological dimension**. From this position begin and in this position finish all movements of the mandible at realization of the main functions of stomatognath system.

**Position of centric occlusion** is a position of multiple interdental contacts between dental arches that rarely coincides with maximal intercuspitation.

**For centric occlusion at orthognatic kind of bite are characteristic several signs:**

**dental;**

- **articular;**
- **muscular;**
- **faryngo – glandular.**

**Normal occlusion** - the contact of the upper and lower teeth in the centric relationship.

**Concepts of an Ideal Occlusion**

1. Condylar position – centric relation.
2. Tooth position – maximum intercuspation.
3. Lateral movements are canine-guided.
4. Axial loading of occlusal forces.
5. In MI, posterior teeth contacts dominate.

**NEUTRAL POSITION OF MANDIBLE** – is a position of equilibrium between the muscles elevating the mandible and the muscles depressor mandible, that can be evidentiare at the level of dental arches with the presence of space between them equal from 1 till 6 mm (aproximatelly 2-3 mm).

**The rest jaw relation - is the relationship of the mandible to the maxilla when the person is seated at ease in an upright position with the Frankfort plane horisontal and the muscles controlling the mandible in equilibrium.**

**According to modern concept REST MANDIBLE POSITION**

is realised by active and passive elements of stomatognat system:

**a) active:**

- stomatognat system muscle's tonicity;

**b) passive:**

- specific action of muscle-tendon complex;

- TMJs;

- negative pressure from oral cavity that appear at mandible and tongue moving down, but cheeks keep contact between them.

**The relative physiological rest of the lower jaw by V.Burlui**

is "... the sum of correlations between the mandible and the cranium when the mandible is situated in distal (back) position to the cranium being under effect of tonic equilibrium of mastication muscles anti-gravitational"

**Maximal intercuspal position -is** the relation of opposing occlusal surfaces at which the cusps of the maxillary and mandibular teeth contact with maximum intercuspation.

It is dependent upon the presence of tooth contact (natural or artificial) in the molar and (or) premolar regions of both jaws.

In many dentulous subjects, centric jaw relation and the maximal intercuspal position do not correspond, but in the treatment of edentulous subjects they must correspond.

**The occlusal vertical dimension** refers to the distance measured between two points when the occluding members are in contact, and the rest vertical dimension is defined as the distance between two selected points measured when the mandible is in the rest physiologic position.

**Methods of Recording Jaw relations:**

- 1) **Direct Apposition of Casts.**
- 2) **Use of Record blocks attached to the Framework.**

**In case of stabile occlusion (Ene, 1981) can be present two clinical aspects:**

- a) Patients with partial edentation with stabile occlusal stops in maximal intercuspidation whose interjaws and occlusal relationships do not change after teeth preparation under microartificial prosthesis (bridge denture).
- b) Patients with partial edentation with stabile occlusal stops in maximal intercuspidation whose interjaws and occlusal relation will change after teeth preparation under microartificial prosthesis (because during teeth preparation occlusal stops will be destroyed).