# THE DIAGNOSIS OF THE CRANIO-MANDIBULAR DYSFUNCTIONS(DCM)

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***Keywords:*** *diagnosis, occlusion, temporo-mandibular joint*

***Abstract:*** *Chronic degenerative changes of the temporo-mandibular joint including periarticular structures have a very high incidence among the population, the vast majority, still suffering from an early age in a lesser or greater extent. Research analyses biomechanics and temporomandibular joint in patients who have implants placed over a history of joint disease are following developments in post-intervention, and patients without a history of joint pathology were implanted prosthesis with support in parallel patients who underwent prosthetic teeth balances ocluzo-natural without the support implant overdenture. In equilibration and functional context of dentomaxilar device the investigation of temporomandibular joint allows early diagnosis of biomechanical dysfunction in this case, covering the literature with term „cranio-mandibular dysfunction"(DCM).The mobilizing action of jaw muscles is adapted to dentomaxilar device functions. This can be accomplished by grading the contraction force, by allowing the alternate contractions bilaterally symmetrically and asymmetrically unilateral and by the fact that these muscles may act on several planes. Rest balanced tone of all jaw mobiliser muscles keep it in „physiological rest position".*

***Cuvinte cheie:*** *diagnostic, ocluzie, articulație temporo-mandibulară*

***Rezumat:*** *Modificările cronice degenerative ale articulației temporo-mandibulare care cuprind inclusiv structurile periarticulare au o incidență foarte ridicată în rândurile populației, marea majoritate încă de la vârste fragede suferind într-o mai mică sau mai mare măsură de aceste afecțiuni. Cercetările de ultimă oră, analizează biomecanica articulației temporomandibulare la pacienți care și-au pus implante pe o afecțiune articulară în antecedente, urmărindu-le evoluția post intervenție și la pacienți fără antecedente patologice articulare care au fost protezați cu sprijin implantar, în paralel cu pacienții care au suferit echilibrări ocluzo-protetice pe dinți naturali, deci fără supraprotezare cu sprijin implantar. Investigarea articulației temporomandibulare în contextul ocluzologic și funcțional al aparatului dentomaxilar permite diagnosticarea precoce a disfuncțiilor în speță biomecanice, înglobând în literatura de specialitate termenul de „disfuncții cranio-mandibulare"(DCM). Acțiunea musculaturii mobilizatoare a mandibulei este adaptată funcțiilor aparatului dentomaxilar. Aceasta poate fi realizată prin gradarea forței de contracție, prin posibilitatea alternării contracțiilor simetrice bilaterale cu cele asimetrice unilaterale și prin faptul că acești mușchi pot acționa pe mai multe planuri. Tonusul de repaus echilibrat al tuturor mușchilor mobilizatori ai mandibulei o mențin pe aceasta în "poziție de repaus fiziologic".*

**SCIENTIFIC ARTICLE OF BIBLIOGRAPHIC SYNTHESIS**

Temporo-mandibular joint disorders are an issue of particular importance to the health and proper functioning of the default dento-maxillary. Although they represent a "routine" to some extent, being discovered only when symptoms become very "noisy", especially pain and functional impotence have important repercussions on the daily life of patient comfort. A direct consequence is the change in functional masticatory movements detectable even when symptoms are removed. Chronic degenerative changes of the temporo-mandibular joint including periarticular structures have a very high incidence among the population, the vast majority, still suffering from an early age in a lesser or greater extent in these conditions. Most diseases are characterized by a worsening trend, continues spanning many years, being quicker and more obvious with age, due to land on evolving.

Research analyses biomechanics and temporomandibular joint in patients who have implants placed over a history of joint disease are watching developments in post-intervention, and patients without a history of joint pathology wore implant prosthesis with support, in parallel patients who underwent prosthetic teeth balances ocluzo-natural without the support implant overdenture.

Biomechanics is particularly important in the implant as teeth and implants are different anchored into the bone.

The purpose of all the biomechanical research methods in implantology is mostly in the steady state analysis.

Request teeth implants, alveolar bone and the temporomandibular joint can be considered a quasi-static motion. Mechanical requirements of the cranio-mandibular system can be properly understood using principles of statics to calculate the forces and physics of solids to determine the deformations caused by forces.

Before inserting an implant prosthesis future development should be well established in terms of biomechanical, whereas the interbone insertion of an implant create a definitive relationship in terms of location, direction and axial depth of anchoring in bone.

However, following the biomechanical principles can not guarantee that the biopathological response overload (respectively outer-implant bone resorption) will be avoided.

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Article received on 27.08.2010 and accepted for publication on 28.09.2010
ACTA MEDICA TRANSILVANICA December 2010; 2(4) 294-296

Similarly, such considerations won't lead to the certainty prognostic in each clinical situation for all types of prosthetic superstructures with implant support because the individual variations of bone resistance capacity can not be calculated to different requirements. However, the main condition to make a biodinamic ideal superstructure is static position in the dental arch with favorable spatial links. Specimens will be fixed in the articulator and will be marked with the ideal implant position and orientation. Also, will be a preoperative planned layout of the superstructure to allow considerations of biomechanical system, occlusion respectively, the relationship of arm strength.

With the installation of toothless occur changes of physiological biomechanics in the temporomandibular joint level. Those are the results of joint anatomy changes such as the peri-articular muscle tone and biodynamic constituents: articular-condyle and meniscus. Toothless implant restauration produces a change of temporomandibular joint biodynamics which must be monitored quantitatively and qualitatively and compared with physiological joint biomechanics and biomechanics of the temporomandibular joint of the patient with dentures without implant.

The purpose of this paper is the investigation of temporomandibular joint in the functional context of dentomaxilar device that allows early diagnosis of the biomechanical dysfunction in this case, covering the literature with the term of „cranio-mandibular dysfunction" (DCM). Health monitoring and maintenance of temporomandibular joint allow proper performance of dentomaxilar device.

The diagnosis allows drawing a picture of collected information about history and examinations. This diagnosis of "associate" as craniomandibulare dysfunction case (Ahler et al.2003) although it highlights the causes, is nonspecific, however, and leaves no choice in choosing personalized treatments.(Gray et al. 1995; Okeson 1998; Pertes şi Bailey 1995). To develop a diagnostic to allow choosing a specific treatment plan, the methodology takes into account the following factors:

- history renounce with tiresome and irrelevant content,
- rigid waiver findings,
- thorough history, complete and without doubt or interpretation,
- systematic correlation between clinical history and examination in order to determine the diagnosis.

According the latest research in the field has developed a diagnostic scheme based on clinical results.(3)

**Table no. 1. Schematization of craniomandibulare diagnosis dysfunction**

| Diagnosis | Characteristics |
|---|---|
| Early (Initial) | It is based on clinical data and may be a determinant of the symptomatic treatment. |
| Associated | The base consists on collateral exams, such as screening tests, orthopedic diagnosis and / or psychosomatic. Data collected from this type of diagnosis, may improve DCM therapy. |
| Differential | Highlights clinical data which are not directly related to DCM. |

Craniomandibulare diagnosis (DCM) I've used in preparing the final diagnosis and the treatment plan guidance for the study group that we will present the special part, considering it eloquently in the study of biodynamic changes in temporo-mandibular joint with the support implant overdenture toothless.

**Highlight means of temporomandibular joint biomechanics**

Dentomaxilar device functions require various movements of the mandible. Arthro-miologic speaking they are the result of coordinated movements performed in the two temporomandibular joints, in mobilizing the mandible as a reflex action mandibulo-head. Complex analysis of clinical dentistry jaw movements, especially in terms of functional occlusal relationships can organize and can be followed by studying the biomechanics of the jaw at the level of:

- temporomandibular joint movements
- joint movements.

Although this is more systematic teaching, we used it to group the data and collect it for both the control group and study group for our research.

**Biomechanical principles**

- three-dimensional movements and jaw positions are determined by the jaw muscles of the jaw mobilisers, functional groups acting as a lift, and propulsion of the mandible depressants.
- any jaw movement is the result of mobilizing all groups that operate in couples as protagonists and antagonists. Mobilizing action of jaw muscles is adapted at dentomaxilar device functions.This can be accomplished by grading the contraction force, by allowing the alternate contractions bilaterally symmetrical and asymmetrical unilateral and by the fact that these muscles may act on several planes.
- rest balanced tone of all jaw mobiliser muscles keep it in „physiological rest position".(2,4,7,14)

Mandibular movements, in anatomic and functional terms can be simplified to three types of bidirectional movements, namely:

- lifting and lowering;
- propulsion and retropulsion;
- lateralpulsion (right and left).

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