Neuromuscular Occlusion for Temporomandibular Joint Disorders

Context
Temporomandibular disorder (TMD) is a group of clinical problems involving the chewing muscles, the temporomandibular joint (TMJ), and related structures. Symptoms may include headache, muscle and joint pain, difficulty chewing, and TMJ clicking or stiffness. TMD may be diagnosed using a clinical examination called the Research Diagnostic Criteria for TMD that groups people into three categories depending on the results of the examination and their symptoms (muscular, disc displacement in the TMJ, or arthralgia/osteoarthritis/osteoarthrosis).

Technology
The term dental occlusion refers to the way in which the teeth come together. Neuromuscular occlusion (NMO) considers the entire system that controls the positioning and function of the jaw — the teeth, muscles, and joints — and seeks a balanced relationship between them. This is done through various means including transcutaneous electrical nerve stimulation (TENS), electromyograms (EMG), computerized mandibular scans, electrosonography, and kinesiography. Using these techniques, the rest position of the jaw is determined and is then used as a reference to establish the ideal mandibular position. The dental occlusion is then altered or adjusted to produce the new mandibular position. This can be achieved by surgery, an occlusal splint (an appliance that stabilizes the occlusion in a particular position), or other means.

Issue
Whether the neuromuscular occlusion approach is effective for diagnosing and treating TMD is uncertain. A review of the clinical evidence on the use of NMO for the diagnosis and treatment of TMD will help to inform clinical decisions about its use.

Methods
A limited literature search of key resources was conducted, and titles and abstracts of the retrieved publications were reviewed. Full-text publications were evaluated for final article selection according to predetermined selection criteria (population, intervention, comparator, outcomes, and study designs).

Key Messages
For the Diagnosis of TMD:
- The use of EMG is not supported by evidence.
- There is insufficient evidence to determine the diagnostic value of kinesiography.

For the Treatment of TMD:
- Electrical stimulation is not supported by evidence.
- The efficacy of occlusal splints is uncertain.

Results
The literature search produced 596 citations, of which 15 were deemed potentially relevant. An additional 6 articles were identified from the grey literature. Of these 21 reports, 15 met the criteria for inclusion in this review.

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January 2013