Effects of prolonged chewing upon the functional symptoms of internal derangements of the temporomandibular joint

Published: 11-02-2008
Last updated: 10-05-2024

To test the hypothesis that oral parafunctioning, viz. prolonged gum chewing, has an effect upon the functional symptoms of internal derangements of the temporomandibular joint. To test the hypothesis that the effect of the above-mentioned oral...

Ethical review	Approved WMO
Status	Pending
Health condition type	Joint disorders
Study type	Interventional

Summary

ID

NL-OMON31483

Source
ToetsingOnline

Brief title
Effects of prolonged chewing upon TMJ internal derangements

Condition

- Joint disorders

Synonym
anterior disc displacement, clicking jaw, TMJ hypermobilty

Research involving
Human

Sponsors and support

Primary sponsor: Academisch Centrum Tandheelkunde Amsterdam (ACTA)

Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: anterior disc displacement, mandibular movement recording, temporomandibular joint, TMJ hypermobility

Outcome measures

Primary outcome

Study parameters are measured with a so-called mandibular movement recording.

Study parameter for TMJ anterior disc displacement is a change in the relative

distance (in %) on which joint clicking (i.e. disc reduction) during mouth

opening occurs, measured on sagittal condylar traces. Study parameter for TMJ

hypermobility is the acceleration of the condyle (in mm/sec2), related to the

joint click during mouth closure (i.e. snapping of the condyle along the

articular eminence), measured on sagittal condylar traces.

Secondary outcome

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Study description

Background summary

Clicking of the temporomandibular joint (TMJ) is one of the typical clinical manifestations of internal derangements (IDs) of the TMJ. The two main types of IDs are anterior disc displacements (ADD) and hypermobility. IDs are, in general, not a source of complaints, and are therefore not treated, except in cases when (temporary) joint locking occurs. However, the cause or trigger of locking is not known. Certainly, the presence of an anatomic predisposition is required, i.e., a presence of a displaced disc, or a condyle traveling beyond the eminence. But besides these anatomical features, an additional factor is needed. It has been suggested that masticatory muscle hyperactivity may modulate the symptoms of IDs, and therefore may play an important role in the onset of locking. Such hyperactivity is exerted mainly during oral

parafunctional activities.

Study objective

To test the hypothesis that oral parafunctioning, viz. prolonged gum chewing, has an effect upon the functional symptoms of internal derangements of the temporomandibular joint. To test the hypothesis that the effect of the above-mentioned oral parafunction is greater in ID- patients, i.e. subjects diagnosed with an ID, and having signs of intermittent locking, than in ID- participants, i.e. subjects, diagnosed with an ID, and not having such signs.

Study design

Experimental study.

Intervention

Prolonged, bilateral gum chewing at a constant, controlled natural chewing pace for a period of maximum 60min.

Study burden and risks

By participating in this study with duration of only two hours, the participants benefit from the movement recording, as it is a diagnostic procedure, as well as from the explanation, which they receive about their internal derangement. Throughout the chewing phase of the experimental study, a chance exists that fatigue and/or pain from the masticatory muscles arises. These adverse events are, however, mild and transient, and besides a short relaxation period, they require no further treatment. In case effects are registered from prolonged gum chewing upon the functional characteristics of IDs, i.e. upon the relative distance of disc reduction (for ADD) and upon the acceleration of the condyle (for TMJ hypermobility), then these results will form the rationale for a trial of treatment (i.e. counselling to avoid parafunctions) in ID- patients, which is lacking so far. Therefore, gathering data and obtaining results in this study will not only be beneficial to the participating patients, but also to future ones.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

Diagnosis of a TMJ internal derangement (anterior disc dispalcement or hypermobility)

Exclusion criteria

- Intense pain from the masticatory system;
- Impaired general health or complicated dental situation, that can limit the performance of the experiment for practical reasons;
- Younger than 18 years.

Study design

Design

Study type:	Interventional
Intervention model:	Other

Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Basic science

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	01-01-2008
Enrollment:	60
Type:	Anticipated

Ethics review

Approved WMO

Date:	11-02-2008
Application type:	First submission
Review commission:	METC Amsterdam UMC

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
CCMO	NL20772.029.07