



**TITLE:** Treatment for Temporomandibular Joint Dysfunction: Guidelines

**DATE:** 17 May 2010

**RESEARCH QUESTION:**

What are the guidelines for the treatment of patients with temporomandibular joint dysfunction?

**METHODS:**

A limited literature search was conducted on key health technology assessment resources, including PubMed, the Cochrane Library (Issue 4, 2010), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI (Health Devices Gold), EuroScan, international health technology agencies, and a focused Internet search. The search was limited to English language articles published between January 1, 2005 and May 5, 2010. Filters were applied to limit the retrieval to health technology assessments, systematic reviews, meta-analyses, and guidelines. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

**RESULTS:**

HTIS reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by and evidence-based guidelines.

Eleven systematic reviews and one evidence-based guideline were identified pertaining to the treatment of patients with temporomandibular joint (TMJ) dysfunction. No relevant health technology assessment reports were identified. Additional information that may be of interest has been included in the appendix.

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**OVERALL SUMMARY OF FINDINGS:**

Overall, there is evidence from systematic reviews that acupuncture,<sup>1-3,9</sup> occlusal appliances,<sup>3</sup> behavioural therapy,<sup>3</sup> physical therapies,<sup>3,9,10</sup> some pharmacological therapies<sup>3</sup> (selective serotonin reuptake inhibitors,<sup>7</sup> tricyclic antidepressants,<sup>5</sup> naproxen<sup>7</sup>), low-<sup>9</sup> and mid-level<sup>10</sup> laser therapy, electromyography,<sup>10</sup> and biofeedback (alone<sup>9</sup> or in combination<sup>10</sup>) may be effective treatments for patients with TMJ dysfunction. Occlusal adjustment<sup>3</sup> and atherocentesis and lavage<sup>6</sup> were reported as likely not effective. The identified guideline does not recommend prosthetic replacement of the temporomandibular joint due to inadequate evidence regarding long-term effectiveness and safety.<sup>12</sup> Many of the systematic reviews listed lack of long-term effectiveness,<sup>1,2,11</sup> low methodological quality,<sup>6,9,10,11</sup> variation in methodology,<sup>3,4,7,10</sup> and small study samples<sup>1,2,11</sup> as limitations. Table 1 provides more detail into the effectiveness of the identified treatments for TMJ dysfunction.

<b>Table 1: Effectiveness of treatments for temporomandibular joint dysfunction</b>	
<b>Type of treatment</b>	<b>Results reported in the various systematic reviews</b>
Acupuncture	<ul style="list-style-type: none"> <li>• Seems to improve TMD pain<sup>3,9</sup></li> <li>• Is more effective than placebo<sup>1,2</sup></li> <li>• Is more effective than indomethacin plus vitamin B1<sup>1</sup></li> <li>• Is more effective than physical therapy<sup>1</sup></li> <li>• Has similar effectiveness to occlusal splinting<sup>1</sup></li> </ul>
Occlusal appliances	<ul style="list-style-type: none"> <li>• Occlusal appliances seem to improve TMD pain<sup>3</sup></li> <li>• Similar effectiveness compared to acupuncture<sup>1</sup></li> <li>• Not enough evidence to recommend for or against the use of stabilization splint therapy<sup>11</sup></li> <li>• Multimodal therapies that include splints are no more effective than single therapies<sup>8</sup></li> </ul>
Behavioural therapy	<ul style="list-style-type: none"> <li>• Seems to improve TMD pain<sup>3</sup></li> </ul>
Physical therapy	<ul style="list-style-type: none"> <li>• Not as effective as acupuncture<sup>1</sup></li> <li>• Jaw exercises and postural training may help improve TMD pain<sup>3</sup></li> <li>• Postural exercises, as well as manual exercises in combination with active exercises are likely effective at reducing pain, improving function, and improving oral opening<sup>9</sup></li> <li>• Postural exercises are likely more effective in combination with other therapies<sup>10</sup></li> <li>• Muscular awareness relaxation therapy improves oral opening<sup>9</sup></li> <li>• Proprioceptive re-education might be more effective than placebo or than occlusal splints<sup>10</sup></li> </ul>
Pharmacological treatment	<ul style="list-style-type: none"> <li>• Some pharmacological treatment may be effective<sup>3</sup></li> <li>• Tricyclic antidepressants are effective in treating TMD<sup>5</sup></li> <li>• Naproxen seems to be more effective than celecoxib at improving oral health related quality of life (OHQoL)<sup>7</sup></li> <li>• Selective serotonin reuptake inhibitors in combination with psychotherapy may improve TMJ pain<sup>7</sup></li> </ul>

<b>Table 1: Effectiveness of treatments for temporomandibular joint dysfunction</b>	
<b>Type of treatment</b>	<b>Results reported in the various systematic reviews</b>
Electrophysical treatment	<ul style="list-style-type: none"> <li>• Insufficient evidence regarding effectiveness<sup>3</sup></li> <li>• Low-level laser therapy improves oral opening<sup>9</sup></li> <li>• Mid-level laser therapies are likely more effective than other electrotherapies<sup>10</sup></li> <li>• Electromyography training is likely more effective than placebo or occlusal splints<sup>10</sup></li> </ul>
Surgical interventions	<ul style="list-style-type: none"> <li>• Insufficient evidence regarding surgical interventions to draw strong conclusions<sup>3,4</sup></li> <li>• Orthognathic surgery seems to result in reduced TMD pain in patients undergoing surgery for dentofacial deformities<sup>4</sup></li> <li>• Surgical interventions may not improve OHQoL<sup>7</sup></li> </ul>
Occlusal adjustment	<ul style="list-style-type: none"> <li>• No effect on TMD pain<sup>3</sup></li> </ul>
Atherocentesis and lavage	<ul style="list-style-type: none"> <li>• Insufficient evidence to draw conclusions<sup>6</sup></li> </ul>
Biofeedback	<ul style="list-style-type: none"> <li>• Improves oral opening<sup>9</sup></li> <li>• Biofeedback in combination with relaxation techniques are likely more effective than placebo or occlusal splints<sup>10</sup></li> </ul>
Multimodal therapies	<ul style="list-style-type: none"> <li>• Patients with major psychological involvement require multimodal and interdisciplinary therapies<sup>8</sup></li> </ul>
Prosthetic replacement of the temporomandibular joint	<ul style="list-style-type: none"> <li>• Efficacy in the short to medium term is adequate<sup>12</sup></li> <li>• Not enough evidence to make conclusions regarding long-term efficacy or safety<sup>12</sup></li> <li>• Should only be used in special circumstances, consent and audit, or research<sup>12</sup></li> </ul>

OHQoL = oral health related quality of life, TMD = temporomandibular disorder, TMJ = temporomandibular joint

## REFERENCES SUMMARIZED:

### Health technology assessments

No literature identified.

### Systematic reviews and meta-analyses

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25. [PubMed: PM16649894](#)
10. Medlicott MS, Harris SR. A systematic review of the effectiveness of exercise, manual therapy, electrotherapy, relaxation training, and biofeedback in the management of temporomandibular disorder. *Phys Ther.* 2006 Jul;86(7):955-73. [PubMed: PM16813476](#)
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#### **Guidelines and recommendations**

12. *Total prosthetic replacement of the temporomandibular joint* [Internet]. London: National Institute for Health and Clinical Excellence (NICE); 2009. [cited 2010 May 14]. (Interventional procedure guidance 329). Available from: <http://www.nice.org.uk/nicemedia/live/12136/46672/46672.pdf>

#### **PREPARED BY:**

Health Technology Inquiry Service

Email: [htis@cadth.ca](mailto:htis@cadth.ca)

Tel: 1-866-898-8439

**APPENDIX – FURTHER INFORMATION:**

**Guidelines**

13. De Boever JA, Nilner M, Orthlieb JD, Steenks MH, Educational Committee of the European Academy of Craniomandibular Disorders. Recommendations by the EACD for examination, diagnosis, and management of patients with temporomandibular disorders and orofacial pain by the general dental practitioner. *J Orofac Pain*. 2008;22(3):268-78. [PubMed: PM18780539](#)

**Clinical policy bulletin**

14. *Temporomandibular joint syndrome (TMJ) and temporomandibular disorders (TMD)* [Internet]. Hartford (CT): Aetna; 2010. [cited 2010 May 14]. (Clinical Policy Bulletin 0028). Available from: [http://www.aetna.com/cpb/medical/data/1\\_99/0028.html](http://www.aetna.com/cpb/medical/data/1_99/0028.html)

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