

Association between tension-type headache and migraine with sleep bruxism: A systematic review *



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METHODS

Eligibility Criteria. A systematic review was undertaken, including articles that classified the headaches according to the International Classification of Headache Disorders^{1,2,3} and sleep bruxism according to the criteria of the American Association of Sleep Medicine⁴. Only articles in which the objective was to investigate the association between primary headaches (tension-type and migraine) and sleep bruxism were selected.

Search. Detailed individual search strategies for The Cochrane Library, MEDLINE, EMBASE, PubMed, and LILACS were developed. The references lists from selected articles were also checked. A partial grey literature search was taken by using Google Scholar.

Study Selection. Phase 1: two reviewers independently reviewed the titles and abstracts of all citations. Phase 2: the same selection criteria were applied to the full articles. Any disagreement in study selection process was resolved again by discussion and mutual agreement between the authors.

Data Collection Process and Data Items. One author collected the required information from the selected articles. A second author crosschecked all the retrieved information. Any disagreement in data collection process was resolved again by discussion and mutual agreement between the authors.

Risk of Bias in Individual Studies. The methodology of selected studies was evaluated by using the quality in prognosis studies tool (QUIPS⁵).

Summary Measures. Any outcome measurement was considered (risk ratio (RR), odds ratio (OR) or risk difference for dichotomous outcomes; mean difference or standardized mean difference for continuous outcomes) that evaluated the association of primary headaches and SB in studies with and without a control group.

Synthesis of Results. A meta-analysis was planned since the data from the included studies was considered relatively homogeneous.

RESULTS

Of 449 identified citations, only 2 studies, both studying adults, fulfilled the inclusion criteria. **The presence of SB significantly increased the odds for headaches; although studies reported different headache types.**

CONCLUSION

There is not enough scientific evidence to either support or refute the association between TTH and migraine with SB in children. Adults with SB appear to be more likely to have headache.

Author, Year	Setting	Sample	Age (years)	Headache Criteria	Findings	Main Conclusion
Troeltzsch <i>et al</i> ⁶ 2011	Oral and Maxillofacial Surgery Private Practice, Germany	1031 consecutive subjects	49.6	ICHD	SB significantly influenced the presence of primary headache (TTH and migraine) (OD=3.12/ P=.001).	SB is associated with primary headache (TTH and migraine).
Fernandes <i>et al</i> ⁷ 2013	TMD and Orofacial Pain Clinic, Araraquara School of Dentistry, Brazil	286 consecutive subjects	37.3	ICHD-II	The association between headaches and SB was significant only for cronic migraine (CM).(OR=3.8/ P=.0005)	The presence of SB significantly increased the risk for CM.

Aim. To evaluate the association between tension-type headache (TTH) and migraine with sleep bruxism (SB).

Background. The association between SB and headaches has been discussed in both children and adults. Although several studies suggested a possible association, no systematic analysis of the available published studies exists to evaluate the quantity, quality and risk of bias among those studies.

REFERENCES
 1 - Headache Classification of the International Headache Society: Classification and diagnostic criteria for headache disorders, cranial neuralgias and facial pain. Cephalalgia. 1988; 8:1-96. (suppl 7).
 2 - Headache Classification of the International Headache Society: The International Classification of Headache Disorders, 2nd ed. Cephalalgia. 2004; 24:1-160, (suppl 1).
 3 - Headache Classification of the International Headache Society: The International Classification of Headache Disorders, 3th ed. Cephalalgia. 2013; 33: 629-808.
 4 - American Academy of Sleep Medicine (AASM) (ed). International classification of sleep disorders. Diagnosis and coding manual. Section on sleep related bruxism. 2nd edition: American Academy of Sleep Medicine. 2005; 189-192.
 5 - Hayden J, Windt DA van der, Cartwright JL, Cote P, Bombardier C. Assessing Bias in studies of prognostic factors. Ann Inter Med. 2013; 158:280-286.
 6 - Troeltzsch M, Troeltzsch M, Cronin RJ, Brodine AH, Frankenberger R, Messlinger K. Prevalence and association of headaches, temporomandibular joint disorders, and occlusal interferences. J Prosthet Dent. 2011; 105: 410-417.
 7 - Fernandes G, Franco AL, Goncalves DA de G, Specialli JG, Bigal ME, Camparis CM. Temporomandibular disorders, sleep bruxism, and primary headaches are mutually associated. J Orofac Pain. 2013; 27: 14-20.