

INPLASY

Assessment of Mandibular Bone Quality in People with Bruxism

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - The review has not yet started.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202660138

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 29 June 2026 and was last updated on 29 June 2026.

INTRODUCTION

Review question / Objective Is there a difference in mandibular bone quality between individuals who grind their teeth and those who do not?

Objective: To compare bone quality in the mandibles of subjects with and without bruxism.

Condition being studied Bruxism refers to individuals who exhibit repetitive activity of the masticatory muscles, characterized by clenching or grinding of the teeth, or by tension and thrusting of the jaw. This condition is not considered a disease in itself, but rather a neuromuscular behavior or a clinical sign

Although it is asymptomatic in some cases, the persistence of this activity can exceed the adaptive capacity of the stomatognathic system. As a result, individuals with bruxism often experience a range of complications, ranging from premature wear of tooth enamel and fractures of dental restorations to masseter muscle hypertrophy, tension-type

headaches, temporomandibular disorders, and changes in the bone quality of the mandible.

METHODS

Participant or population Adults diagnosed with bruxism (whether sleep bruxism, waking bruxism, or both), regardless of gender or ethnicity.

Intervention Presence of Bruxism.

Comparator Healthy Subjects Who Do Not Grind Their Teeth.

Study designs to be included Observational studies (case-control, cohort, or cross-sectional studies) that directly compare a group with bruxism to a control group (without bruxism) (RCT) Exclusion criteria: Literature reviews (narrative or systematic), clinical case reports, letters to the editor, editorials, conference abstracts, or animal studies.

Eligibility criteria Inclusion criteria: Observational studies (case-control, cohort, or cross-sectional studies) that directly compare a group with bruxism to a control group (without bruxism) (RCT) Exclusion criteria: Literature reviews (narrative or systematic), clinical case reports, letters to the editor, editorials, conference abstracts, or animal studies.

Information sources PubMed (Medline), Embase, Scopus, Web of Science, Cochrane Central databases, Gray literature.

Main outcome(s) We have not found any results yet.

Quality assessment / Risk of bias analysis Two reviewers will independently assess the risk of bias using the Cochrane Risk of Bias Assessment Tool (RoB2, version dated August 22, 2019).

Strategy of data synthesis I^2 statistic (an I^2 value of $\geq 50\%$ indicates substantial heterogeneity). The threshold for statistical significance was set at $p < 0.05$. All statistical analyses will be performed using Review Manager software (RevMan Software, version 5.4.1; The Cochrane Collaboration, Copenhagen, Denmark; 2020).

Subgroup analysis Subgroup analysis for the variables under consideration.

Sensitivity analysis By methodological quality (risk of bias): The analysis will be repeated, including only studies classified as having “low risk of bias” or “high quality,” and excluding studies with methodological deficiencies or questionable methodologies.

Country(ies) involved Spain only.

Keywords bruxism, jawbone density, mandible bone density.

Contributions of each author

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