

INPLASY202510124

doi: 10.37766/inplasy2025.1.0124

Received: 31 January 2025

Published: 31 January 2025

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### ADMINISTRATIVE INFORMATION

**Support** - n/a.

**Review Stage at time of this submission** - Data analysis.

**Conflicts of interest** - None declared.

**INPLASY registration number:** INPLASY202510124

**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 31 January 2025 and was last updated on 31 January 2025.

### INTRODUCTION

**Review question / Objective** Are occlusal splints effective in reducing pain, improving jaw mobility and improving the quality of life in patients with TMD compared to other treatment modalities or no treatment?

**Rationale** The rationale for this review is to evaluate the effectiveness of occlusal splints in managing TMDs by synthesizing existing evidence from the literature. It will focus on key outcomes, including pain reduction, improved jaw function, and enhanced quality of life, in addition to their potential risks and benefits associated with their use. The findings from this review will add to the body of knowledge, provide evidence-based recommendations for healthcare professionals and improve management strategies thereby enhancing patient care and outcomes.

**Condition being studied** Patients with TMD including: pain, restricted movement of the mandible, muscular spasm and joint sounds.

### METHODS

#### Search strategy

Data base:  
Pubmen and Cochrane>  
Following Medical Subject Heading (MeSH) terms will be used and then combined with Boolean Operator "AND"  
• "Occlusal splint",  
• "Temporomandibular joint OR Temporomandibular Disorders"  
• "Pain OR Pain Management"  
("Occlusal splint" AND ("Temporomandibular joint" OR "Temporomandibular disorders") AND ("Pain" OR "Pain management"))).

**Participant or population** Patients diagnosed with TMD; any gender, age, and severity of TMD.

**Intervention** Use of occlusal splint of any type, material and/or thickness.

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**Comparator** Placebo, no treatment, surgery, medications, exercise or any treatment intervention for TMD.

**Study designs to be included** RCT.

**Eligibility criteria** • Any patient diagnosed with TMD.

**Information sources** Pubmed and cochrane.

**Main outcome(s)** • Reduction in pain, improvement in jaw mobility or jaw function and improvement in quality of life.

#### **Data management**

Searching the literature in each database using the agreed-upon search strategy.

Reviewing of the identified studies to determine inclusion and exclusion as well as eligibility through screening of title, abstract, and reading of the full article.

Summarizing each included study in a table and synthesizing the findings qualitatively.

**Quality assessment /Risk of bias analysis** Study quality assessment will not be conducted.

#### **Strategy of data synthesis**

We will summarize key information of all included studies in a table. The table will capture the name of the article, the year of publication, the study design, study population, intervention used and duration of the intervention. Meta-analysis will not be conducted, as such, a narrative synthesis will be conducted by identifying similarities and differences across studies.

**Subgroup analysis** Placebo, no treatment, surgery, medications, exercise or any treatment intervention for TMD.

**Sensitivity analysis** n/a.

**Language restriction** n/a.

**Country(ies) involved** Lebanon /Italy.

**Keywords** Occlusal splint, temporomandibular disorders, orofacial pain, oral appliances, pain management.

#### **Contributions of each author**

Author 1 - mehdi chahrour - Designing the review including developing research question, objectives, and search strategy.

Searching the literature in each database

Reviewing of the identified studies to determine inclusion and exclusion as well as eligibility through screening of title, abstract, and reading of the full article. Managing communications, submitting manuscript and addressing reviewers' comments.

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Author 2 - Bachar Reda - Designing of the review including developing research question, objectives, and search strategy. Reviewing of the identified studies to determine inclusion and exclusion as well as eligibility through screening of title, abstract, and reading of the full article. Reviewing the draft manuscript for clarity, coherence and completeness.

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