

# In Adults with Medial Knee OA, Does Wearing a Valgus Knee Offloading Brace Reduce Pain and Improve Function Compared with No Brace or Alternative Bracing?: a Critically Appraised Topic

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**Clinical Bottom Line:** In adults with medial knee OA (osteoarthritis) valgus offloading bracing effectively reduces pain when compared to no bracing or the majority of alternative braces, with its effect on functional outcomes remaining inconclusive. However, the current evidence is insufficient to make a strong recommendation. Prescription should be guided by the patient's presentation and goals, with outcomes monitored over time.

Search Strategy		
A Boolean/Phrase search was completed using 5 databases. MeSH headings (MH) and synonyms were selected within the PICO (Population, Intervention, Comparison, Outcome) search strategy and combined using the AND function.		
P	Adults with medial knee OA	MH "Osteoarthritis, Knee" OR "OA"
I	Valgus knee offloading brace	MH "Braces" OR MH "Splints" OR MH "Orthotic Devices" OR "Offload*" OR "Unload*"
C	No brace or alternative bracing	
O	Pain and function	MH "Pain Management" OR MH "Pain" OR MH "Gait" OR MH "Walking" OR MH "Walking Speed" OR MH "Gait Analysis" OR MH "Activities of Daily Living" OR MH "Human Activities"

**Justification of the Selected Study**  
The study was chosen because it directly evaluates the overall effectiveness of offloading braces in individuals with medial knee OA, with particular emphasis on the two key outcomes of the clinical question: pain reduction and functional improvement.

- Study Characteristics (Gohal et al., 2018)**
- **Design:** Systematic review
  - **Studies included:** 13 randomised control trials and 18 non-randomised studies (31 total)
  - **Aim:** To analyse effectiveness of valgus knee offloading brace in treatment of medial knee OA compared to alternative treatment / absence of treatment.
  - **Databases:** PubMed, MEDLINE, and EMBASE
  - **Outcomes:** Pain, gait, function, stiffness, and activities of daily living (ADL)

Study Conclusions				
Outcome	Improvement with offloading brace compared to:			
	No brace	Lateral wedging	Neoprene sleeve	Neutral brace
Pain	✓	✓	✗	✓
Function	Heterogeneous results			✓
Stiffness	Heterogeneous results			✓
Gait	✓	✓	✗	✓
ADL	Heterogeneous results			

Table 1: Clinical outcomes of an offloading knee brace vs a comparison. The authors note that poor patient compliance could be a barrier to effectiveness of offloading bracing.

**Summary of Critical Appraisal**

According to AMSTAR 2 (Shea et al., 2017), this paper had a **critically low** overall confidence rating caused by failure of multiple critical domains.

**WEAKNESSES**

- No protocol was identified prior to the study being conducted
- Failure to list and justify excluded studies
- Inadequate risk-of-bias evaluation
- Conflict of interest
- Inadequate PICO formulation
- High heterogeneity
- Results placed primarily in the appendix as supplementary material

**STRENGTHS**

- Comprehensive search strategy
- Study selection and data extraction done in duplicate
- Transparency around conflict of interest and low quality studies

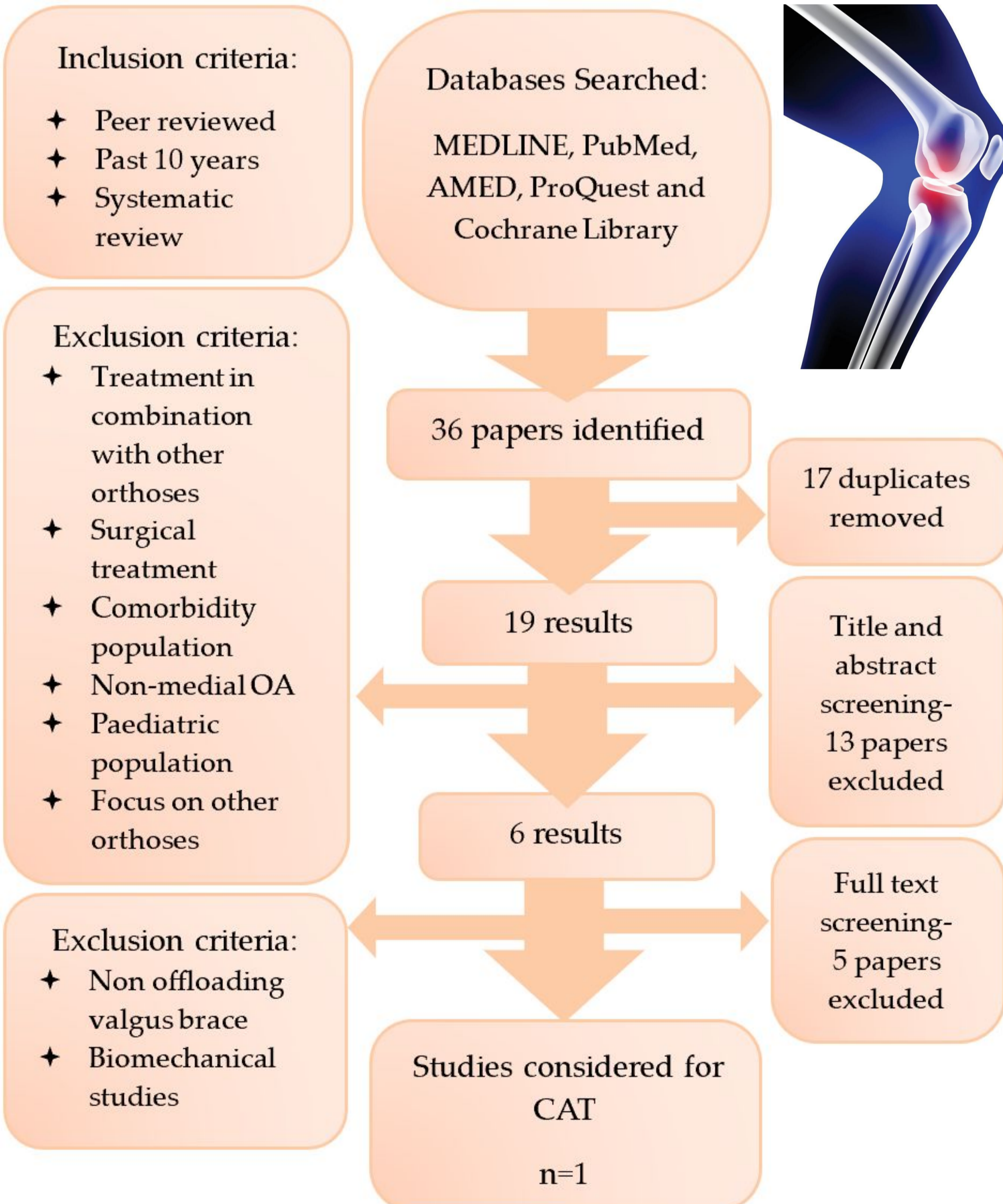


Figure 1: Flow diagram of the inclusion and exclusion of studies.