

Keele Critically Appraised Topic (CAT Form)



Clinical Question

In patient with mallet finger deformity following acute finger extension injury or avulsion fracture does a bespoke mallet splint improve outcomes and appearance and reduce complication compared to off the self-splints?

Clinical bottom line

We did not find any recent, high-quality evidence to influence our practice at University Hospital of North Midlands (UHNM) in the management of acute mallet finger injuries.

The little evidence we found was not of high quality, only involving small sample sizes and therefore our practice remains unchanged.

Why is this important?

Following the integration to create the University Hospitals of North Midlands, differing clinical practices were apparent between the Therapies Departments of the County Hospital and Royal Stoke Hospital.

The use of bespoke Mallet splints is preferred at the County site and the clinical benefits to the patient were discussed between the teams.

The Occupational Therapy Hand team at Royal Stoke Hospital raised questions as to the potential improved outcomes for patients and so a CAT question was drawn together along with the help of the Derby Hospitals Teaching Foundation Trust (Pulvertaft Hand Unit).

Identifying the most effective splint would improve the management of patients with acute Mallet finger deformities.

Search timeframe (e.g. 2013-2013)

Up to October 2020 with no time limit

Repeated October 2022 - 2012

Search criteria

Population Intervention Comparison Outcomes (PICO) themes	Description	Search terms
Population and Setting E.g. adults with OA, primary care	Mallet deformity finger injuries	Adults with Mallet splint deformity or Avulsion extensor finger, fracture extensor zone 1 & 2 Extensor tendon injury" "baseball finger" or "drop finger" or "mallet finger" or mallet
Intervention or Exposure (i.e. what is being tested) e.g. manual therapy	Bespoke Mallet splints	Bespoke Mallet splints (thermoplastic custom made) "bespoke splints" or "bespoke mallet splints" or "thermoplastic splints" or thermoplastic OR Splint* or orthoses or orthotic devices
Comparison, if any e.g. usual care, leaflet	Prefabricated Mallet splints	Off the peg mallet splints Stack splints Zimmer splints
Outcomes of interest e.g. Visual analogue scale, Range of motion	Function Improved deformity Complications	Finger function Deformity improvements Complications Range of movements Extension lag
Types of studies	Systematic Review and RCTs	

e.g. Randomised Controlled Trails, Systematic reviews		
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Databases searched

Cochrane Systematic Reviews, NHS Evidence, HTA/NHSEED, Medline, CINAHL, AMED, Cochrane (CENTRAL), Web of Science, OT Seeker, Emcare & Embase, PEDRO, TRIP.

Date of search

October 2020 and repeated October 2022

Results of the search: include the number in each box

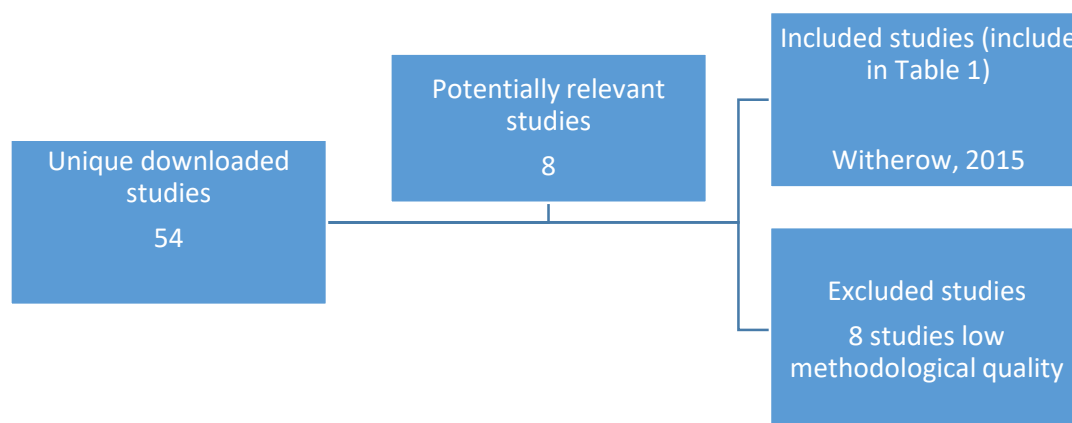


Table 1- Detail of included studies

First author, year and type of study	Population and setting	Intervention or exposure tested	Study results	Assessment of quality and comments
Witherow, 2015 Systematic Review and Meta-analysis	Review article (Meta-analysis) Control trials	Evaluating orthoses in the conservative management of mallet finger injuries in adults	Prefabricated orthoses were found to increase risk of skin complications compared with custom-made orthoses, but there were no differences in treatment success, failure or extensor lag.	Electronic databases searched, data extracted using an author-designed extraction with one reviewer and accuracy assessed by a second reviewer. The PEDro scale was used for methodological quality

Summary

The highest quality evidence found to answer the CAT question was a systematic review and meta-analysis in 2015 (Witherow), which suggested there was an increased risk of skin complications with prefabricated splints.

Implications for practice

There is no high quality evidence comparing bespoke and off the shelf splints for mallet finger deformities. Good quality research is required to help healthcare services establish the best type of splint when managing these patients with acute mallet finger injuries.

An audit of practice would be a good starting point to help answer this CAT question and the findings taking to the lead managers to help change pathways, this would allow consistency of care across units and systems.

What would you post on X (previously Twitter)?

High quality research is needed to evaluate best treatment options for mallet finger injuries; either custom or prefabricated splints.




References

Witherow et al (2015) Custom-Made Finger Orthoses Have Fewer Skin Complications than Prefabricated Finger Orthoses in the Management of Mallet Injury: A Systematic Review and Meta-Analysis. Archives of Physical Medicine and Rehabilitation 96:1913-23

[Link to doi of Witherow et al \(2015\) paper](#)

doi: 10.1016/j.apmr.2015.04.026

Please tick the box that best reflects your clinical bottom line and include the picture on page 1

CAT image	Evidence quality	Checkbox
	Good quality evidence to support use....	<input type="checkbox"/>
	Insufficient or poor quality evidence OR substantial harms suggest intervention used with caution after discussion with patient...	<input type="checkbox"/>
	No good quality evidence, do not use until further research is conducted OR Good quality evidence to indicate that harms outweigh the benefits....	<input checked="" type="checkbox"/>

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