Getting Evidence into Clinical Practice:
Critically Appraised Topic Group (CAT Group)

Specific Question:

Is exercise therapy combined with foot orthoses more effective in treating tibialis posterior tendinopathy than exercise or foot orthoses alone?

Clinical Bottom Line

There is Insufficient quality evidence to say with confidence that exercise therapy combined with foot orthoses is more effective in treating tibialis posterior tendinopathy than exercise or foot orthoses alone.

The limited evidence, from two small RCTs (N=>36, N=39) that exercise therapy combined with foot orthoses reduce pain in treating tibialis posterior tendinopathy at 12 weeks. This result should be viewed with caution.

Why is this important?

Tibialis posterior tendon dysfunction (TPTD) is a common tendinopathy. It is associated with adult acquired flatfoot deformity and is commonly treated with foot orthoses. The group wished to investigate the evidence base available behind a combined approach of orthoses with exercise for this particular tendinopathy to inform practice.

Search timeframe (e.g. 2009-2019): September 2020

Inclusion Criteria

	Description	Search terms
Population and Setting	Adults > 16 yrs Tibialis posterior tendinopathy Posterior tibial tendon dysfunction	
Intervention or Exposure	Exercise AND orthoses	Orthoses, Foot Orthoses, over the counter, Chairside, support, orthotics, taping, footwear, strengthening, stretching
Comparison, if any	Exercise OR Orthoses	
Outcomes of interest	Reduced pain Improved function Satisfaction	
Types of studies	Systematic reviews RCT	

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Routine Databases Searched

Cochrane library, Medline, CINAHL, PEDro (Physiotherapy Evidence Database)

Date of search- September 2020

Results of the search

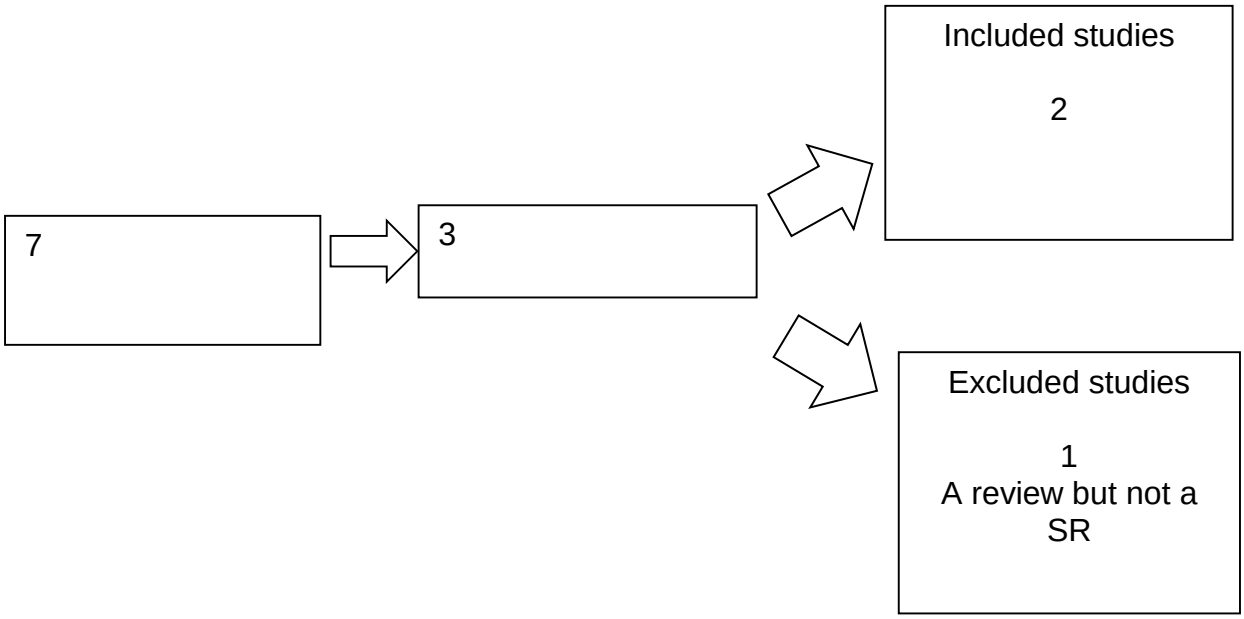

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Table 1- Detail of included studies

First Author, year and type of study	Population and setting	Intervention or exposure tested	Study results	Assessment of quality and comments
Houck, 2015 RCT	Patients included:- Those who met the studies classification criteria for Stage 2 tibialis posterior tendinopathy. All participant > 40 years Study undertaken in a University medical USA clinic	2 groups. One assigned to stretching N> 19 & one assigned to (intervention) strengthening N > 20 Participants were stratified according to their Foot Function Index. Both groups received prefabricated foot orthoses and stretching Orthoses was an Airlift TPTD ankle w/arch support Stretches consisted of a knee-extended gastrocnemius and knee-flexed soleus stretch (plantarflexion and inversion stretch) Strengthening consisted of a progression of	N > 39. Stratified block randomisation implemented. Participants were stratified according to their Foot Function Index 12 week follow up Outcome measures: Foot function Index, Short Musculoskeletal Function Assessment & isometric deep posterior compartment strength No statistical differences in characteristics found between study groups ➢ Both groups improved over time ➢ No improvement in pain in intervention group over control found (change score in FFI similar in both groups) ➢ Significant differences were found favouring the strengthening treatment group associated with Mobility and Dysfunction Index of the SMFA only at 6 weeks. ➢ Improvement and function were not coupled with improvements in pain (FFI scores) or strength	Good quality trial. No's small Study personnel not blind to the intervention but self-reported outcomes were used in this study which helps to reduce bias. Primary outcome measure not identified Physiotherapists delivered both interventions Undertaken in USA

		3 exercises – bilateral heel raises (standing), ankle plantarflexion w/foot adduction and heel inversion (using resistance band) & unilateral heel raises (standing)		
Kulig, 2009 RCT	Patients included:- Sx > 3 mths Stage 1 or 2 tibialis posterior tendinopathy based on Johnson and Strom guidelines Study undertaken at a university medical centre, USA	3 groups All groups received casted foot orthoses Control group: N> 12 Orthoses, gastrocnemius and soleus stretch (using a slant foam wedge) Group 2: N > 12 – orthoses, stretches and concentric exercises – horizontal adduction with plantarflexion (specialised equipment used – post tib loader) whilst wearing footwear and orthoses Group 3: N> 12 – Eccentric loading using specialised	N > 36 RCT Method of randomisation not described FFI (total, pain and disability) decreased in all groups after intervention Pain after 5 minute walk test significantly improved in all groups Group 3 (eccentric loading) demonstrated the most improvement in each subcategory A repeated ANCOVA identified differences among groups in all pre-test and post test categories *Self reported pain, Disability and Activity limitation but not pre and post 5 minute walk test.*	Good quality study although process of randomisation is not explained in any detail Numbers in study are small Undertaken in USA Randomisation not described No power calculation or ITT

		equipment (post tib loader – technique used differing from group 2 to ensure eccentric loading) whilst wearing footwear and orthoses		

Summary

There is insufficient quality evidence to be able to answer our CAT question with confidence. Two well designed but small RCTs employing different orthoses and different exercises regimes were available for analysis. Both studies evaluated outcomes at 12 weeks, which may be relative short follow up for this pathology. It is not possible to infer from the available evidence the effects of exercise therapy may have on more advanced tibialis posterior tendinopathy.

	Good quality evidence to support use	☐
	Insufficient or poor quality evidence	☑
	No good quality evidence, do not use until further research is conducted OR Good quality evidence to indicate that harms outweigh the benefits….	☐

Implications for Practice/research

The small numbers in the trials mean that the results must be viewed with caution. Clinicians using any combination of orthoses / exercise may see that patients improve given both interventions.

What would you tweet? (140 characters)

Insufficient evidence to say with confidence that exercise therapy in conjunction with an orthoses is better than exercise alone for patients with tibialis posterior tendinopathy

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References

https://pubmed.ncbi.nlm.nih.gov/19022863/

https://pubmed.ncbi.nlm.nih.gov/25857939/

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