International Platform of Registered Systematic Review and Meta-analysis Protocols

INPLASY

IMPACTS OF PHYSICAL THERAPY ON HALLUX VALGUS: A SYSTEMATIC REVIEW PROTOCOL

INPLASY202550040
doi: 10.37766/inplasy2025.5.0040
Received: 15 May 2025
Published: 15 May 2025

Corresponding author:
Gokhan Yagiz

gokhan.yagiz@amasya.edu.tr

Author Affiliation:
Amasya University.

Ekinci, Y; Okuyucu, K; Adanir, S; Yagiz, G.

ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Formal screening of search results against eligibility criteria.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202550040

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 15 May 2025 and was last updated on 15 May 2025.

INTRODUCTION

Review question / Objective This review concentrates on a pivotal question: What are the effects of physical therapy modalities on hallux valgus deformity in humans, as evidenced in randomised controlled trials? This question establishes the basis for this systematic review and meta-analysis, which aims to provide directions for future research and rehabilitation strategies.

Rationale Hallux valgus is a prevalent deformity among humans that warrants attention from health sciences for its rehabilitation. Physical therapy modalities are evolving in tandem with advancements in technology. However, there is no comprehensive systematic review or meta-analytic study available in the literature to provide a broad understanding of the effectiveness of physical therapy modalities and programs on hallux valgus deformities in humans. Therefore, this protocol aims to systematically review the literature and synthesise meta-analytic evidence, assessing the level of this evidence to provide possible directions for the rehabilitation strategies of the hallux valgus deformity.

Condition being studied Effects of Physical Therapy on Hallux Valgus Deformity in Humans.

METHODS

Search strategy On the 5th of May 2025, the PubMed, Cochrane Library, ProQuest Central, and EBSCOhost Databases were searched by using combinations of the following key terms: ("Hallux Valgus"[Mesh] OR "Bunion, Tailor's"[Mesh] OR "Metatarsal Valgus"[Mesh] OR “Tailor’s bunion” OR “Metatarsal valgus” OR “Hallux Valgus” OR “Hallux abductovalgus” OR “Hallux abducto valgus” OR “Metatarsus primus valgus” OR “Metatarsophalangeal Joint Arthrodesis” OR Bunion* OR Ganglion* OR Bursitis OR “Big toe deformity” OR “First toe deformity” OR “Second toe deformity” OR “Hammertoe deformity” OR “Metatarsal head deformity” OR Metatarsalgia OR “Medial dorsal cutaneous nerve entrapment” OR

“Metatarsophalangeal Joint Synovitis” OR “MTP synovitis”) AND ("Exercise"[Mesh] OR "Physical Therapy Modalities"[Mesh] OR “Rehabilitation” [Mesh] "Orthotic Devices"[Mesh] OR "Foot Orthoses"[Mesh] OR "Splints"[Mesh] OR Splint* OR orthos* OR Shoe* OR Analgesics OR Acetaminophen OR NSAIDs OR Ice pad OR Stretching OR “Insole” OR “Toe Separator” OR “Toe Separators” OR “Toe spreader” OR “Toe spreaders” OR “Toe spacer” OR “Toe spacers” OR Osteotomy OR Arthroplasty OR Arthrodesis OR McBride OR Acupressure OR Acupuncture OR Aquatic OR Bandag* OR Drainage OR "Dry Needling" OR “Electric Stimulation” OR “Electrical Stimulation” OR Electroacupuncture OR Electrostimulation OR Electrotherapy OR Exercis* OR Hydrotherapy OR Massage OR Manipulation OR Mobilisation OR Mobilization OR Myofascial OR NMES OR Osteopath* OR “Percutaneous Collagen Induction” OR "Physical Therapy" OR Physiotherap* OR Rehab* OR Stretching* OR Shockwave OR “Tai Ji” OR Therap* OR Training* OR Yoga).

Participant or population Humans with hallux valgus deformity.

Intervention Physical therapy modalities.

Comparator Control groups.

Study designs to be included Randomised controlled trials.

Eligibility criteria The criteria for inclusion include a) being a parallel group randomised controlled trial published in English in a peer-reviewed journal, b) implementing clearly defined physical therapy modalities as an intervention, c) being conducted for a minimum of four weeks duration, d) presenting hallux valgus-related outcomes, and e) being conducted on humans.

Information sources CINAHL, Cochrane Library, ProQuest Central and PubMed databases and reference lists of included studies.

Main outcome(s) Functional and clinical health-related parameters of hallux valgus.

Additional outcome(s) The Cochrane Collaboration's risk of bias assessment tool for parallel group randomised controlled trials will categorise the individual risk of bias for each included study. When synthesising quantitative data, the overall evidence level will be evaluated using the GRADE (Grading of Recommendations Assessment, Development, and Evaluation) approach.

Data management The reviewers will extract data while remaining blind to each other's decisions. They will utilise EndNote X21, Microsoft Excel, Microsoft Word, RevMan, and GRADEPro GDT software for data extraction and analysis.

Quality assessment / Risk of bias analysis The Cochrane Collaboration's risk of bias assessment tool for parallel group randomised controlled trials will categorise the individual risk of bias for each included study. When synthesising quantitative data, the overall evidence level will be evaluated using the GRADE approach (Grading of Recommendations Assessment, Development, and Evaluation).

Strategy of data synthesis Potential meta-analyses will be conducted using the Cochrane Collaboration's Review Manager (RevMan). Additionally, GRADEpro GDT software will classify the evidence levels.

Subgroup analysis Subgroup analyses will be conducted considering variations in population, intervention, and outcome or across the risk of bias tables when high heterogeneity is present.

Sensitivity analysis In the event that a meta-analysis indicates considerable heterogeneity among the studies, a sensitivity analysis will be performed, taking into account the methodological characteristics.

Language restriction English.

Country(ies) involved Republic of Turkey and Japan.

Keywords Bunion; Hallux Valgus; Hallux abducto valgus; Metatarsal valgus; Metatarsus primus valgus.

Contributions of each author

Author 1 - Yasin Ekinci - Reviewer.
Author 2 - Kubra Okuyucu - Reviewer.
Author 3 - Sena Adanir - Reviewer.
Author 4 - Gokhan Yagiz - Statistician and review supervisor.