

Effectiveness of Orthoses as a Conservative Treatment for Carpometacarpal Joint Osteoarthritis: A Systematic Review

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OBJECTIVES: The purpose of this research is to review the evidence regarding the impact and effectiveness of orthoses on pain, pinch, and grip strength for individuals diagnosed with CMC joint OA.

METHODS: A systematic review was conducted following Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines and then literature was gathered across nine databases. To be included in this review, studies had to be classified as a level 1 or 2 research study and the studies must include participants who were over 40 years of age, have a diagnosis of CMC joint OA, and must utilize an orthosis for their symptoms. Articles were excluded from the review if participants utilized steroids or have past surgeries on the CMC joint. Researchers analyzed the quality of studies and extracted evidence pertaining to the effectiveness of various orthosis designs based upon outcomes of pain, pinch, and grip strength for individuals diagnosed with CMC joint OA.

RESULTS AND IMPLICATIONS FOR FUTURE PRACTICE: The evidence strongly supports the use of a Butterfly orthosis to decrease pain and increase pinch and grip strength. Prefabricated Neoprene and Custom-made Thumb Splint designs are effective for decreasing pain and increasing pinch, only. A Thumb Spica Splint and Colditz Splint are effective for increasing pinch strength. There is moderate evidence to suggest the use of the Ballena Orthosis and Colditz Orthosis to decrease pain. The evidence suggests that the Neoprene Comfort Cool Splint and Custom-made Hybrid splint should not be used to address issues of pain, decreased grip strength, and decreased pinch strength. Keywords: activities of daily living (ADLs), carpometacarpal joint (CMC), instrumental activities of daily living (IADLs), interphalangeal joint (IP), metacarpophalangeal joint (MCP), occupational therapy (OT), orthoses, osteoarthritis (OA), splints, trapeziometacarpal joint (TMC). Research Question: What is the impact of using orthoses on pain and pinch/grip strength for individuals diagnosed with CMC joint OA?

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