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[Mil Med.](#) 1999 Feb;164(2):85-91.**Glucosamine, chondroitin, and manganese ascorbate for degenerative joint disease of the knee or low back: a randomized, double-blind, placebo-controlled pilot study.**[Leffler CT](#)¹, [Philippi AF](#), [Leffler SG](#), [Mosure JC](#), [Kim PD](#).⊖ **Author information**¹Medical Department, Naval Special Warfare Group Two, Naval Amphibious Base Little Creek, Norfolk, VA 23521, USA. occdr@aol.com**Abstract**

OBJECTIVE: A 16-week randomized, double-blind, placebo-controlled crossover trial of a combination of glucosamine HCl (1,500 mg/day), chondroitin sulfate (1,200 mg/day), and manganese ascorbate (228 mg/day) in degenerative joint disease (DJD) of the knee or low back was conducted.

METHODS: Thirty-four males from the U.S. Navy diving and special warfare community with chronic pain and radiographic DJD of the knee or low back were randomized. A summary disease score incorporated results of pain and functional questionnaires, physical examination scores, and running times. Changes were presented as a percentage of the patient's average score.

RESULTS: Knee osteoarthritis symptoms were relieved as demonstrated by the summary disease score (-16.3%; $p = 0.05$), patient assessment of treatment effect ($p = 0.02$), visual analog scale for pain recorded at clinic visits (-26.6%; $p = 0.05$) and in a diary (-28.6%; $p = 0.02$), and physical examination score (-43.3%; $p = 0.01$). Running times did not change. The study neither demonstrated, nor excluded, a benefit for spinal DJD. Side effect frequency was similar to that at baseline. There were no hematologic effects.

CONCLUSIONS: The combination therapy relieves symptoms of knee osteoarthritis. A larger data set is needed to determine the value of this therapy for spinal DJD. Short-term combination therapy appears safe in this setting.

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