

## **Effects of glucosamine, chondroitin, or placebo in patients with osteoarthritis of hip or knee: network meta-analysis.**

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**Source** : Institute of Social and Preventive Medicine, University of Bern, Switzerland.

### **Abstract**

**OBJECTIVE:** To determine the effect of glucosamine, chondroitin, or the two in combination on joint pain and on radiological progression of disease in osteoarthritis of the hip or knee. Design Network meta-analysis. Direct comparisons within trials were combined with indirect evidence from other trials by using a Bayesian model that allowed the synthesis of multiple time points.

**MAIN OUTCOME MEASURE:** Pain intensity. Secondary outcome was change in minimal width of joint space. The minimal clinically important difference between preparations and placebo was prespecified at -0.9 cm on a 10 cm visual analogue scale.

**DATA SOURCES:** Electronic databases and conference proceedings from inception to June 2009, expert contact, relevant websites. Eligibility criteria for selecting studies Large scale randomised controlled trials in more than 200 patients with osteoarthritis of the knee or hip that compared glucosamine, chondroitin, or their combination with placebo or head to head.

**RESULTS:** 10 trials in 3803 patients were included. On a 10 cm visual analogue scale the overall difference in pain intensity compared with placebo was -0.4 cm (95% credible interval -0.7 to -0.1 cm) for glucosamine, -0.3 cm (-0.7 to 0.0 cm) for chondroitin, and -0.5 cm (-0.9 to 0.0 cm) for the combination. For none of the estimates did the 95% credible intervals cross the boundary of the minimal clinically important difference. Industry independent trials showed smaller effects than commercially funded trials ( $P=0.02$  for interaction). The differences in changes in minimal width of joint space were all minute, with 95% credible intervals overlapping zero.

**CONCLUSIONS:** Compared with placebo, glucosamine, chondroitin, and their combination do not reduce joint pain or have an impact on narrowing of joint space. Health authorities and health insurers should not cover the costs of these preparations, and new prescriptions to patients who have not received treatment should be discouraged.