Your questions about complementary medicines answered: glucosamine

Sanne Kreijkamp-Kaspers, Treasure McGuire, Suzanne Bedford, Peter Loadsman, Marie Pirotta, Geraldine Moses, Mieke van Driel

This is the second article in a series providing evidence-based answers to common questions about complementary medicines from consumers and healthcare professionals.

What is glucosamine?

Glucosamine is an amino acid and precursor in the biochemical synthesis of glycosaminoglycans, which are structural components of cartilage. It is widely used to improve joint/bone health and osteoarthritis, although the evidence for its benefit is still limited.[1]

Sales of glucosamine supplements had reached a volume of over US$2 billion worldwide in 2009.[2] In a recent Australian health study, 17% of Australians over the age of 50 years reported using glucosamine in the previous 24 hours.[3]

Who asks about glucosamine?

Glucosamine was, by far, the most frequently mentioned complementary medicine in this study, involving 1670 consumers' queries (16.2% of all complementary medicine questions) and 620 healthcare professionals queries (11.5%).[4]

The average age of glucosamine callers was 63 years; 77% of callers were women and most consumer questions focused on adverse drug reactions (ADRs, 16%), efficacy (28%) and interactions (30%). Similarly, health professionals were also often concerned about interactions (43%), ADRs (22%) and efficacy (9.4%).

Common consumer questions

Is glucosamine safe to take while on blood pressure medication?

Glucosamine seems to be safe for people on blood pressure medication. In clinical studies, blood pressure was the same in participants taking glucosamine and placebo.[5,6] However, some people taking glucosamine have been reported to have increased blood pressure.[7] Therefore, it might be worthwhile to monitor blood pressure after starting glucosamine.

Is it safe to use fish oil and glucosamine together?

Yes, fish oil and glucosamine can be safely used together. If used for osteoarthritis, the combination of fish oil and glucosamine might be more effective than using glucosamine alone.[8,9] However, both agents may have anticoagulant effects.[10] Therefore, it is recommended to look out for unusual bleeding and, if this occurs, consider reducing the dose of one or both agents.

Common healthcare professional question

Can a patient with diabetes mellitus use glucosamine?

Yes, a patient with diabetes can use glucosamine. Although elevated blood sugar levels have been reported,[11] available literature suggests that people with diabetes mellitus can safely use glucosamine.[12–16] A recent meta-analysis report states: '…based on available evidence, we conclude that glucosamine has no effect on fasting blood glucose levels, glucose metabolism or insulin sensitivity at any oral dose level in healthy subjects, individuals with diabetes or those with impaired glucose tolerance.'[13]

Is it safe to use glucosamine when there is an allergy to shellfish?

It is not safe to use glucosamine when there is a history of anaphylactic reaction to seafood or shellfish. If the patient experiences an anaphylactic reaction after eating seafood or shellfish, it is recommended that glucosamine be avoided, as most glucosamine products are derived from shellfish. However, people with mild allergies only may be able to take glucosamine safely as shellfish allergies are usually a reaction to the flesh of seafood and glucosamine is made from the shells. Indeed, two studies showed no allergic reactions to glucosamine in people with confirmed shellfish allergies.[17,18]

Authors

Sanne Kreijkamp-Kaspers MD, PhD, FRACGP, MSc, Senior Lecturer, Discipline of General Practice, School of Medicine, The University of Queensland, Brisbane, QLD. s.kreijkamp-kaspers@uq.edu.au

Treasure McGuire PhD, BPharm, BSc, GradDipClinHospPharm, GCHEd, Associate Professor; Faculty of Health & Medical Sciences, Bond University, Gold Coast; Senior Lecturer, School of Pharmacy, The University of Queensland, Brisbane; Assistant Director (Practice and Development), Mater Pharmacy Services, Mater Health Services, Brisbane, QLD

Suzanne Bedford PhD, BSc, Honorary Research Fellow at Mater Research Institute, The University of Queensland, Brisbane, QLD

Peter Loadsman BPharm, BSc, Mater Pharmacy Services, Mater Health Services, Brisbane, QLD

Marie Pirotta FRACGP, PhD, NHMRC Career Development Fellow, Department of General Practice, University of Melbourne, Carlton, VIC

Geraldine Moses BPharm, DClinPharm, Senior Clinical Pharmacist, Mater Pharmacy Services, Mater Health Services, Brisbane, QLD

Mieke van Driel MD, MSc, PhD, FRACGP, Professor and Head, Discipline of General Practice, School of Medicine, The University of Queensland, Brisbane, QLD

Competing interests: The authors received an Integrative Medicine grant from the RACGP.

Provenance and peer review: Commissioned, externally peer reviewed.

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correspondence **afp@racgp.org.au**