

- High sodium chloride content in glucosamine sulphate raw material that is used to manufacture tablets. Patients taking low-salt diet should be cautious when taking glucosamine.
- In animal models of diabetes, glucosamine increases insulin resistance through a mechanism that is not yet understood. This raised the concern of the use of glucosamine in the treatment of patients with osteoarthritis of the knee; a population which statistically has higher BMIs than the community average thus putting them at a risk of developing insulin resistance. The use of glucosamine will add a further risk of developing insulin resistance although it is difficult to conclude whether an increase in insulin resistance does in fact occur in humans as it was not yet proven clinically (Rottapharm, 2009). Likewise, glucosamine may alter glucose metabolism as it is an aminomonosaccharide which should also be considered with hypo- or hyperglycemic patients (MHRA, 2009).
- The concomitant intake of glucosamine with warfarin has caused an increased INR (MHRA, 2006). Consequently, a warning has been issued on this regard.

In an attempt to search for the advantages of concomitant use of glucosamine with analgesics and/or anti-inflammatory drugs, an in vivo study reported recently using rats administered glucosamine and paracetamol concomitantly. This study showed that glucosamine increased the bioavailability of paracetamol via the inhibition of its metabolism. As a result, paracetamol would give the same efficacy with lower side effects as the necessary dose to achieve the needed therapeutic effect would be lower (Shubbar, 2011).