Calcium

Some studies suggest that people who take supplemental calcium have a higher risk of developing kidney stones, and these findings have been used as the basis for setting the Recommended Daily Intake (RDI) for calcium in adults. In the Women's Health Initiative, postmenopausal women who consumed 1,000 milligrams of supplemental calcium and 400 IU of vitamin D per day for 7 years had a 17% higher risk of developing kidney stones than subjects taking a placebo. The Nurses' Health Study also showed an association between supplemental calcium intake and kidney stone formation.

Unlike supplemental calcium, high intakes of dietary calcium do not appear to cause kidney stones and may actually protect against their development. This is perhaps related to the role of calcium in binding ingested oxalate in the gastrointestinal tract. As the amount of calcium intake decreases, the amount of oxalate available for absorption into the bloodstream increases; this oxalate is then excreted in greater amounts into the urine by the kidneys. In the urine, oxalate is a very strong promoter of calcium oxalate precipitation, about 15 times stronger than calcium. In fact, current evidence suggests that the consumption of diets low in calcium is associated with a higher overall risk for the development of kidney stones. For most individuals however, other risk factors for kidney stones, such as high intakes of oxalates from food and low intakes of fluid, probably play a bigger role than calcium intake.