The researchers conclude that moderate caloric restriction for 6 months does not negatively affect the bone health of young individuals, provided that their intake of vitamin and minerals is adequate. Nevertheless, long-term studies that include assessments of bone architecture are warranted to confirm that caloric restriction has no negative effects on bone health.

Original article Redman LM *et al.* (2008) Calorie restriction and bone health in young, overweight individuals. *Arch Intern Med* **168:** 1859–1866

Vitamin C protects against bone loss in elderly men

Vitamin C can potentially decrease the oxidative stress associated with bone-resorptive processes, and is also essential for collagen formation. This vitamin might, therefore, help to prevent osteoporosis; however, studies of its effects on BMD have provided mixed results. A new study suggests that high vitamin C intakes have a protective effect on bone health in elderly men.

Sahni *et al.* assessed data from 334 men and 540 women (mean age of whole group 75 years) enrolled in the Framingham Osteoporosis Study. Vitamin C intake (total, dietary, and from supplements) was recorded using a diet questionnaire, and changes in hip, spine and forearm BMD were measured using dual-photon absorptiometry and, at 4 years' follow-up, dual-energy X-ray absorptiometry.

No associations between vitamin C intake and BMD were observed in women. High dietary intakes of vitamin C conferred a protective effect against BMD losses in men, whereas high total intakes of vitamin C only showed this protective effect in men with low calcium or vitamin E intakes. Total vitamin C intake was positively associated with femoral-neck BMD among male nonsmokers. Total and supplemental vitamin C intakes both inversely correlated with trochanter BMD in male current smokers; these findings suggest that such individuals are particularly likely to take vitamin C supplements.

Adjustment for potassium intake attenuated these protective effects of vitamin C, however, which suggests that other factors derived from fruit and vegetable consumption contribute to the observed outcomes.

Original article Sahni S *et al.* (2008) High vitamin C intake is associated with lower 4-year bone loss in elderly men. *J Nutr* **138:** 1931–1938

Nasal insulin does not prevent type 1 diabetes in children

Prophylactic administration of insulin reduces the incidence of type 1 diabetes in mouse models. However, a study conducted in Finland has found that nasal insulin does not prevent diabetes in children genetically susceptible to the disease. This study was prematurely terminated in its 10th year, because the treatment lacked efficacy.

Among 116,720 children who were screened at birth, Näntö-Salonen *et al*. identified 224 with *HLA-DQB1* alleles associated with high risk for type 1 diabetes and multiple diabetes-associated autoantibodies. These children (aged >1 year) were randomly assigned either nasal insulin or placebo. Of the 83 insulin-treated children who completed the study, 42 developed type 1 diabetes, compared with 38 of 85 placebo-treated children. Annual rates of progression to diabetes were 16.8% and 15.3%, respectively. The study also included 40 siblings of index participants, among whom similar outcomes were observed. Across all children included in the randomization, the hazard ratio for insulin treatment versus placebo was 0.98 (95% CI 0.67–1.43). However, in a subgroup of 68 children who presented with three or four different autoantibodies, the corresponding hazard ratio was 1.50 (95% CI 0.90–2.40), which raises the worrying possibility that nasal insulin could accelerate the development of diabetes in such children.

Although the insulin intervention was ineffective, the authors noted that study participants benefited from early HLA screening because diabetes was diagnosed promptly, which facilitated the achievement of metabolic control and prevented ketoacidosis.

Original article Näntö-Salonen K *et al.* (2008) Nasal insulin to prevent type 1 diabetes in children with HLA genotypes and autoantibodies conferring increased risk of disease: a double-blind, randomised controlled trial. *Lancet* **372:** 1746–1755