

# OSTEOSCOOP

News on current events in osteoporosis and rheumatology

## Strontium ranelate reduces postmenopausal vertebral fracture risk independently of baseline risk factors

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Osteoporosis and its consequent increase in fracture risk is a major health problem for postmenopausal women. Strontium ranelate is an orally active agent, which has been shown to both increase bone formation and reduce bone resorption and to improve bone architecture and bone resistance. In two large multinational studies of postmenopausal women with osteoporosis (the Spinal Osteoporosis Therapeutic Intervention (SOTI) study, and the Treatment of Peripheral Osteoporosis (TROPOS) study), treatment with strontium ranelate 2 g/day orally was shown to reduce significantly the risk of vertebral, nonvertebral, and hip fractures.

Data from the SOTI and TROPOS studies were pooled, in order to assess the efficacy of strontium ranelate according to the main determinants of vertebral fracture risk (age, baseline BMD, prevalent fractures, family history of osteoporosis, baseline BMI, and addiction to smoking), in a population of 5082 (2536 receiving strontium ranelate 2 g/day and 2546 receiving a placebo), 74 years of age on average, and a 3-year follow-up [1].

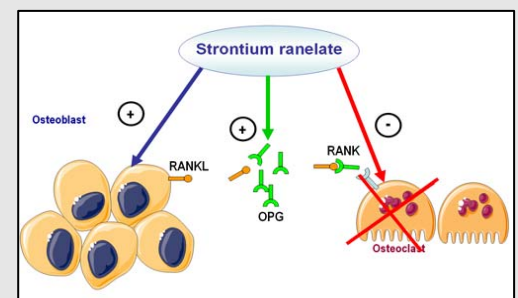
Strontium ranelate was effective at reducing the risk of vertebral fractures in absence or presence of each of the following risk factors taken separately. Strontium ranelate decreased the risk of vertebral fractures whatever the age: the risk was reduced by 37% ( $P=0.003$ ) in women <70 years, 42% ( $P<0.001$ ) for those 70–80 years of age, and 32% ( $P=0.013$ ) for those  $\geq 80$  years. Strontium ranelate was also effective against vertebral fractures whatever the level of baseline bone mineral density (BMD): the relative risk of vertebral fracture was 0.28 in osteopenic and 0.61 in osteoporotic women. Strontium ranelate reduced the risk of vertebral fractures whatever the number of prevalent vertebral fractures at baseline: in patients without previous fracture, the risk of experiencing a first vertebral fracture was reduced by 48%; in patients with previous fractures, the risk of experiencing a second vertebral fracture was reduced by 45%, whereas the risk of experiencing more than two vertebral fractures was reduced by 33%. Strontium ranelate also reduced markedly the risk according to other risk factors: age, family history of osteoporosis, BMI, and smoking.

This study shows that a 3-year treatment with strontium ranelate leads to vertebral antifracture efficacy in postmenopausal women independently of baseline osteoporotic risk factors.

1. Roux C et al. *J Bone Miner Res.* 2006;21:536-542.

### Strontium ranelate reduces vertebral fracture risk

The mode of action of this drug is dual. It stimulates bone formation by increasing the number and activity of osteoblasts. It also reduces bone resorption via a direct effect on osteoclasts. Strontium ranelate increases osteoprotegerin synthesis, thereby blunting the effect of RANK ligand on its receptors which in turn reduces osteoclast activity.



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