

# Winning formula for women

## Sports supplement may have more than one benefit, writes Sarah Berry

A supplement once only used by elite athletes and bodybuilders, creatine may be as useful to all of us as it is to those competing on the world stage. In fact, at certain stages of life women might benefit the most.

Creatine, which comes from the Greek word for flesh and was first extracted from the skeletal muscle of meat in the 1830s, became popular after the 1992 Olympics when British gold medallists Sally Gunnell and Linford Christie attributed their success to it.

By the 1996 Atlanta Olympics, an estimated 80 per cent of athletes were taking the supplement, which supplies energy to cells, supporting recovery, muscle growth and performance by reducing fatigue.

The substance, which is formed naturally in our bodies, is found in milk, fish, red and white meat or can be taken as a synthetic supplement, also provides energy to the cells that build new bone and prevent bone break-down.

Phil Chillibeck, a professor of kinesiology at the University of Saskatchewan in Canada, initially began studying creatine supplementation in older men and found some benefits for markers of bone health.

But osteoporosis is much more common in women – it affects about 15 per cent of women and 3 per cent of men over the age of 50 in Australia. So, he wondered whether it might also benefit bone health in women.

“I’ve been interested in ways to

make older adults stronger to preserve ability to carry out

everyday functions, so creatine seemed like the ideal nutritional supplement,” says Chillibeck, who adds that creatine doesn’t work on its own. Rather, it enhances the effect of exercise.

In a preliminary study in 2015, he found 12 months of supplementation improved bone mineral density in post-menopausal women.

They wondered if longer-term supplementation might lead to even greater effects so, for a new study, they took 237 women with an average age of 59 and randomly put them in a group where they took a placebo or a group that took creatine daily for two years. Both groups did resistance training classes three days a week.

Although Chillibeck was disappointed that, in this cohort, there was no effect on bone mineral density, there were improvements in bone geometry, a predictor of fracture risk and bone

strength. They also found that despite a high dose (10 grams a day) there were no more adverse effects in the creatine group than there were in the placebo group.

Dr Stacey Ellery, a research scientist at the Hudson Institute of Medical Research, says it is the largest randomised clinical trial of its kind and the findings are “the kind to hang our hat on”.

She adds: “Beyond it showing some benefit for these older women in terms of their muscle integrity, it adds data to debunk any safety concerns around the use of creatine.”

Ellery’s own work examines creatine and its effect on women, who metabolise it differently mainly because of differing sex hormones. In one review, she found that creatine supplementation may be more

beneficial to women suffering from depression than men.

“We’re learning more about how

many different tissues in the body are using this creatine pathway for energy production and how it then ties in with lots of other different diseases where tissues not producing enough energy is at the heart of any complications that arise,” says Ellery.

For instance, her preliminary research suggests it may be useful as a supplement during pregnancy to supply the fetus with an “energy reserve” if it is starved of oxygen because of a cord accident or a long, protracted labour.

At the other end of the spectrum, she has been looking at the way the uterus might use creatine through the menstrual cycle and its potential to benefit women during the preconception period.

Chillibeck believes that anyone who wants to build muscle mass (or improve bone strength) could benefit from creatine. But perhaps women have the most to gain.

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Age, Melbourne



**Creatine has been shown to be of some benefit to women's bone geometry and muscle integrity.**