

Physical performance enhanced by beetroot 'superjuice'

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Dr Peeling says a 70mL beetroot supplement was effective in improving the task economy of the male kayakers—with a given work output able to be sustained for less of an oxygen cost. Credit: iStock

Next time you're making your morning nutribullet with fruit and veg, adding some beetroot may well help to enhance your day's physical performance, according to scientists.

A research group involving UWA School of Sport Science, Exercise and Health's Dr Peter Peeling is examining the influence beetroot supplements have on physiological and performance outcomes in elite kayakers.

The study measured the performance of six national-level male kayakers undertaking laboratory-based four-minute ergometer tests, and five international-level female kayakers competing in a field-based kayaking time trial after swallowing beetroot 'shots'.

Dr Peeling says a 70mL beetroot supplement was effective in improving the task economy of the male kayakers—with a given work output able to be sustained for less of an oxygen cost.

And using a double shot (140mL) among female

participants during a 500 metre time-trial, resulted in a performance improvement of 1.7 per cent.

"Given that the margin between gold and silver medals in the Men's K1-1000m and the Women's K1-500m races at the 2012 London Olympic Games was 0.3 per cent and 1.0 per cent respectively, the relatively small [performance](#) changes that we recorded are clearly relevant," he says.

Dr Peeling says [beetroot juice](#) is now commercially available in supermarkets—similar to sport drinks like Gatorade.

It's the nitrate in beetroot juice that improves the efficiency of the cell's energy factory—the mitochondria—allowing the cell's energy currency 'ATP' to be spared during muscular activity, resulting in a decreased oxygen cost for a given task.

He says they found consuming the juice two to three hours pre-race benefitted the athletes.

But similar benefits may be possible just from increasing the dietary consumption of other good natural sources of nitrate—such as rocket, spinach, strawberries and cherries—for a few days prior to racing, he says.

"If you can get 300-400mg of nitrate-containing vegies [two to three cups] in a nutribullet, you could have yourself a natural super juice."

Dr Peeling says the findings can extend beyond kayaking to activity that takes a similar duration of two to four minutes, as well as cycling time trials up to 16km.

He says beetroot juice can be good for longer endurance events such as marathons, and the effect may be greater when athletes suffer increased levels of hypoxia (oxygen deprivation).

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