

Study shows impact of Montmorency tart cherries on inflammation and oxidative stress after high-intensity cycling

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Cyclists who drank Montmorency tart cherry juice concentrate before a three-day simulated race experienced less inflammation and oxidative stress compared to those who drank another beverage, according to a recent UK study published in the journal *Nutrients*. Credit: Cherry Marketing Insitute

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A research team led by Dr. Glyn Howatson with PhD student Phillip Bell at Northumbria University gave 16 well-trained, male cyclists about 1 ounce (30 ml) of Montmorency [tart cherry](#) juice concentrate mixed with water (equivalent to 90 whole Montmorency tart cherries per serving), or a calorie-matched placebo, twice a day for seven days. On days five, six and seven, the participants performed prolonged, high-intensity cycling intervals – exercise that was designed to replicate the demands of a three-day race.

The researchers collected blood samples and found that markers of inflammation and oxidative stress were significantly lower in the cyclists who consumed the tart cherry juice concentrate compared to those who did not. At one point during the trial, oxidative stress was nearly 30 percent lower in the tart cherry group compared to the other group.

Strenuous exercise can cause temporary inflammation and oxidative [stress](#) that can lead to muscle damage, muscle soreness and reduced capacity to recover quickly, explains research lead Glyn Howatson, Ph.D., laboratory director at the Department of Sport, Exercise and Rehabilitation at Northumbria University. He attributes the recovery benefits shown in the study to the natural compounds in Montmorency tart cherries. One of the natural compounds found in Montmorency tart cherries is anthocyanins.

"Previous studies have looked at tart cherries and the effect on recovery following weight lifting exercise and marathon running, but until now there hasn't been information on recovery following [strenuous exercise](#) from cycling," said Howatson. "We found that those cyclists that consumed Montmorency tart cherry juice had statistically significant

lower indices of inflammation and metabolic [oxidative stress](#), which is the first time it has been demonstrated following this type of [exercise](#)."

Tart cherries are available year-round in dried, frozen and juice forms—including juice concentrate, which was the form used in this new study. Montmorency tart [cherry juice](#) concentrate can be mixed with water or consumed as a "shot." It can also be used to make smoothies, mixed with frozen tart cherries or other fruits.

More information: Bell PG, Walshe IH, Davison GW, Stevenson E, Howatson G. Montmorency cherries reduce the oxidative stress and inflammatory responses to repeated days high-intensity stochastic cycling. *Nutrients*. 2014; 6: 829-843. www.mdpi.com/2072-6643/6/2/829

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