

Don't waste your time taking antioxidant supplements after exercise

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Credit: Pexels

The antioxidant market is big business and millions of pounds are spent every year on antioxidant supplements – such as vitamin A, C and E – as well as fruit and vegetable extracts and juices.

Antioxidants are so popular – particularly among people who do a lot of exercise – because it is believed they help to reduce [muscle](#) soreness after exercise. It is thought that by taking [antioxidant supplements](#) in

doses much higher than the recommended amounts, muscles recover quicker by reducing some of the harmful effects of exercise. And this is why so many people swear by antioxidants – such as cherry juice or pomegranate juice – after a workout.

Some people also take antioxidant supplements to improve their general health or protect against certain cancers but the scientific evidence for this is poor. And similarly, our recent analysis of the existing scientific literature found similar results.

We recently published a [Cochrane review](#) which included 50 studies looking at the link between antioxidant use and reduced muscle soreness. And we discovered that there is no solid evidence that antioxidants works.

Aching muscles

[Muscle soreness](#) typically occurs following unaccustomed or intense exercise and usually peaks two days afterwards. This can obviously impair future athletic performance, so it's not surprising that various interventions have been put forward to reduce exercise related muscle aches and pains.

These range from a number of different techniques, including [whole body cryotherapy](#) – which involves getting exposure to extremely cold temperatures for several minutes in a special chamber where temperatures can range from -110 to -140°C. Then there is also the use of [compression garments](#) and [massage](#), as well as antioxidant supplementation.

Some athletes also strategically take antioxidant supplements to accelerate recovery during periods of intense competition rather than taking them every day. In professional football for example, when there

can often be periods of fixture congestion (a team may play three matches in an eight day period), dietary antioxidants are used to reduce inflammation and muscle soreness. The belief is this will allow the players to recover more quickly in preparation for the next match.

Similarly, in professional cycling, a [Tour de France rider](#) may take antioxidant supplements to accelerate recovery after each stage. The belief is this will help them to recover more quickly for the following day's riding.

Antioxidants debunked

Our recent review compared high-dose antioxidant supplementation with a placebo (a dummy pill or drink with no antioxidant). Various antioxidants were used in the studies ranging from single vitamins to extracts and juices. These included [cherry juice](#), [pomegranate juice](#), vitamins C and E, black tea extract and others in various doses.

The review included 1,089 participants, nearly nine out of ten of these were male and most participants were recreationally active or moderately trained. The age range of the participants varied from 16 to 55 years.

Although we found antioxidant supplementation may very slightly reduce muscle soreness in the first three days after exercise, these reductions were so small, it was unlikely they made any difference at all.

So ultimately, we found that high dose antioxidant supplementation – in excess of the normal recommended daily dose for antioxidants – does not appear to reduce muscle soreness after exercise.

More harm than good?

Of the studies we looked at, only nine reported on adverse effects. Two of these found some people who took antioxidants experienced gastrointestinal distress – such as diarrhoea, indigestion and bloating.

On top of our findings, more recently, there has been an emergence of studies showing that chronic antioxidant supplementation may actually be counterproductive. For instance, it has been shown that antioxidant supplements may delay healing and recovery from [exercise](#), hinder adaptations to [training](#), and may even increase [mortality](#).

Taking all of this into consideration, the main take home message is to steer clear of [antioxidants](#) supplements and save your money. Instead, just try and move more, exercise regularly, and eat a balanced diet that includes at least five or more portions of rainbow coloured fruits and vegetables. Because for now at least, there is no quick fix to easing muscle soreness after [exercise](#).

In fact, it seems [muscle soreness](#) is an important part of the recovery process and can help to make your muscles stronger and bigger over time. And that will ultimately help to [make you fitter and stronger](#) in the long run.

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