

Put the baking soda back in the bottle: Banned sodium bicarbonate 'milkshakes' don't make racehorses faster

November 3 2020, by Joshua Denham, Adam Hulme



Credit: kgbo/Wikimedia Commons, [CC BY-SA](#)

The controversial and banned practice of giving horses baking soda "milkshakes" before a race doesn't work, according to our analysis of the available research.

Racing folklore says [sodium bicarbonate](#) milkshakes can boost racehorses' endurance because the alkalinity of the baking soda helps

counter the buildup of lactic acid in the blood when running.

But our systematic research review, [recently published in the *Journal of Equine Veterinary Science* reveals milkshakes don't boost horses' athletic performance.](#)

[This means any trainer still tempted to flout the ban on this tactic would be endangering their horses' welfare and risking heavy sanctions over a practice that is basically snake oil.](#)

[Despite the fun-sounding name, milkshakes are anything but. The process involves inserting a tube up the horse's nose, down its throat and into the stomach, and then pumping in a concentrated solution of sodium bicarbonate](#) dissolved in water.

This can be stressful to the horse, and potential [side-effects](#) include lacerations to the nasal cavity, throat and esophagus, gastrointestinal upset, and diarrhea. It can even be fatal if the tube is mistakenly inserted into the trachea and the solution is pumped into the lungs.

It's little wonder Racing Australia has [banned](#) the use of "alkalising agents" such as milkshakes on race day, with potentially career-ending ramifications for trainers caught doing it.

No boost after all

The effect of baking soda on athletic performance has been studied in [human athletes](#) for decades with [inconclusive results](#), but has only been analyzed in horses since the late 1980s.

Our analysis included data from eight experimental trials featuring 74 horses. Overall, sodium bicarbonate administration in the hours before

treadmill tests or simulated race trials did not improve horses' running performance in either type of test.

In fact, in treadmill exercise tests in which horses were not ridden by jockeys, sodium bicarbonate actually had a very small negative effect on running performance, albeit not a statistically significant one.

Whereas human athletes might gain a [placebo effect](#) from sodium bicarbonate, this is unlikely to apply to horses who don't understand the intended point of the milkshake. And while some racehorse trainers may be educated in [exercise physiology](#) and the importance of blood pH, others may believe they work simply because received wisdom and racing folklore say so.

Racing aficionados steeped in tradition might respond with skepticism, or argue that research can't replicate the unique conditions of race day. But given that our comprehensive analysis of a range of research trials shows no evidence that milkshakes work, we argue any recalcitrant trainers have a moral responsibility to listen to the science.

Milkshakes are already banned. But our research shows they deliver no benefit anyway. Trainers who are happy to continue this illicit practice and run the gauntlet of potential sanctions should consider whether it is worth it at all, and whether instead they should reconsider on moral, medical and scientific grounds.

Provided by The Conversation

Citation: Put the baking soda back in the bottle: Banned sodium bicarbonate 'milkshakes' don't make racehorses faster (2020, November 3) retrieved 25 April 2024 from <https://phys.org/news/2020-11-soda-bottle-sodium-bicarbonate-milkshakes.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.