Can Tougher Workouts Boost Your Gut Health?

5 MIN READ

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Vigorous exercise balances your gut bacteria favorably. But you also need lower-intensity days to maximize your microbiome.

If you've ever dealt with runner's gut mid-race, you'd be forgiven for thinking that intense exercise is the last thing your microbiome needs. And with fermented foods, fiber, and probiotics dominating the gut health conversation, exercise rarely gets much credit anyway.

But the research tells a different story. Active people typically have measurably **richer microbiomes** than sedentary people, and a closer look reveals that different types of exercise affect the gut in different ways. A **study** recently published in the *Journal of the International Society of Sports Nutrition* found that the right combination of high- and low-intensity training, paired with smart nutrition, can meaningfully shift your gut health in the right direction.

"Keeping your digestive system moving through movement and high-quality food is important for long-term health," **Vijaya Surampudi, MD**, associate professor of medicine at the David Geffen School of Medicine at UCLA, tells Super Age.

The question isn't whether you should exercise. It's which kind of movement and how much.

Tough Workouts Are Good for Short-

Chain Fatty Acids

When gut bacteria ferment **dietary fiber**, they produce short-chain fatty acids (SCFAs). These serve a range of **important functions** that ultimately benefit gut health.

For one, these compounds help lower the pH of the gut, creating an environment that's inhospitable to harmful bacteria.They also serve as the primary fuel source for colon cells, keeping the gut wall intact and reducing permeability, meaning less of what should stay in your intestines leaks into the bloodstream, **driving inflammation**. SCFAs also help regulate **homeostasis**, **immune function**, and **mucus production** in the intestines. More fiber, more SCFAs, stronger gut, the chain of causation is about as clean as it gets in nutrition science.

With these **gut benefits** in mind, a team of researchers collected stool samples from **23 elite rowers** during two distinct training phases, one high-intensity, one low, and tracked how their gut microbiome changed between the two.

During the harder training block, the rowers were going to the bathroom more frequently, and their levels of two beneficial short-chain fatty acids (propionate and butyrate) were significantly higher.

"When you exercise, your muscles produce a byproduct called lactate. Your bloodstream carries this lactate down to the gut," Surampudi said. Good bacteria in the gut may use this lactate to produce butyrate and other **SCFAs**.

The microbiome picture was more nuanced. During high training load, the rowers had less microbial diversity overall, but a more favorable bacterial balance, specifically **a lower ratio of Firmicutes to Bacteroidota** bacteria, which is generally considered a marker of better gut health in athletes.

Harder training appeared to produce a more active, productive gut environment, meaning more beneficial metabolites, more regular bowel movements, and better bacterial balance, even though overall microbial diversity dipped. The researchers are careful to note that what exactly drives these changes, and whether they're unambiguously good, still needs more investigation.

Long, Intense Workouts Speed Up Digestion

Back to you, runners. You already know the gut can be the weakest link on a multi-mile haul. The cramping, the urgency, the desperate scan for a port-a-potty, runner's gut is one of the sport's least glamorous realities. **This study offers some clarity on why it happens**.

During high-intensity efforts, the body makes a choice: feed the muscles. To do that, it pulls blood away from the digestive tract. With less blood supply, the gut lining gets temporarily starved of oxygen and that stress causes tiny gaps to open in the intestinal wall. Normally those walls are sealed tight, keeping bacteria and waste products where they belong. When the seal loosens, some of that material leaks into the bloodstream, which the immune system treats as an intruder. Meanwhile, everything is moving faster than usual, meaning food is rushing through before your gut has had a chance to process it properly. Less blood, faster transit, a compromised barrier. That's the combination behind the cramps and the urgency.

"In the high load, a lot of blood goes to the muscles, and you need readily available nutrients, which means that you can't spend time digesting your food, so the transit time and bowel movements increase," explains **M. Maya Kaelberer, PhD**, a sensory neuro-gastroenterologist and assistant professor of physiology at the University of Arizona.

Flip the intensity and the dynamic reverses. Lower efforts give the gut more time to process, and your microbiome more time to work with what you've eaten. But intensity alone doesn't explain everything. **Research** points to heat, pre-run nutrition, and nerves as significant contributors, too — which means runner's gut is as much a logistics problem as a physiological one.

Balance Exercise and Diet to Improve Gut Health

If you're feeling inspired to lace up in support of your gut health, here's how to get the biggest microbiome boost, according to the health experts:

Focus on duration, not intensity. This study showed that both high *and* low intensity workouts are important for gut health. High-intensity workouts boosted SCFA concentrations, but lower intensity days led to more bacterial diversity in the gut and allowed for more time to digest.

"Steadily increase biking from 20 to 30 minutes, and so forth, to allow the gut to adjust to changes, as well as not overly taxing or stressing the gut," **Karan Rai, MD**, a sports medicine and family medicine doctor at OSF HealthCare in Bloomington and team physician for Illinois State Redbird Athletics and Illinois Wesleyan Athletics, tells Super Age. "This would also lessen gut inflammation risk. High-intensity activity, when prolonged, has been shown to thin the gut mucosa, causing less nutrient absorption, which can lead to more gut inflammation as well."

Pay attention to "rest week" nutrition. Our health habits often go hand-in-hand: when we make the effort to exercise, **we also tend to eat better**. But if gut health is your end goal, you need to eat well even during the off-season. The *less* you're exercising, the more important your diet actually is.

“If you are taking a break from the gym or recovering from an illness, make a conscious effort to increase your intake of colorful, whole foods. Do not let “less movement” equal “more junk food,” Surampudi said.

Get enough fiber and stay hydrated. Those colorful, whole foods we just mentioned are essential sources of fiber that help boost SCFA production.

If you want to support your athletic activities and microbiome, stay hydrated and get plenty of resistant starches from things like potatoes and bananas, insoluble fibers from foods like broccoli and whole grains, and soluble fibers from beans and oats, advises **Sarah Wick, RD, CSSD, LD**, director of sports nutrition at The Ohio State Jameson Crane Sports Medicine Institute.

To avoid gastrointestinal discomfort, stop eating any high-fiber foods about three hours before your high-intensity event, Wick adds.

Zooming out, short-chain fatty acids may help lower the risk of certain **chronic diseases**, including Type 2 diabetes, hypertension, chronic kidney disease, colon cancer, and more, meaning their reach goes way beyond the gut. **Previous research** has found a link between greater gut microbiome diversity and better cognitive health and longevity.

“Getting these short-chain fatty acids would not be just for the race or game. It is for long-term health and wellness,” says Wick.

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