

**Jacob Bonafiglia**, MSc Candidate in muscle physiology, School of Kinesiology and Health Studies at Queen's University discussed his research on exercise non-responders in *Men's Journal*, Health & Fitness Section, Jan 2017.

Men's Journal (*snipped 17 Jan 2017*) Health & Fitness

## What to Do When Your Workout Isn't Working

By [Melaina Juntti](#)



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It's infuriating to break a sweat every day and not get leaner, stronger, or faster. But research has shown that certain people's bodies, for whatever reason, simply do not get the desired adaptations from exercise. They call these folks "nonresponders." All too often, when nonresponders don't see results, they get fed up, throw in the towel, and let their gym membership go to waste.

If this is you, don't give up yet. A first-of-its-kind study suggests that your body can in fact respond favorably to exercise — maybe just not to the exact workouts you've been doing.

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Researchers from Queen's University in Ontario recruited 21 active adults to test two types of cycling training. Four times a week for three weeks, everyone completed either a steady-pace endurance regimen (30 minutes of continuous pedaling at 65 percent aerobic capacity) or high-

intensity intervals (eight 20-second all-out sprints separated by 10 seconds of rest). After the first testing period, everyone took three months off to let their fitness fall back to baseline.

The volunteers then returned to the lab for three more weeks to complete whichever protocol they didn't do the first time. The researchers assessed each individual's fitness gains by VO<sub>2</sub>peak (maximal aerobic capacity), lactate threshold (ability to tolerate exercise), and heart rate (which should ideally not increase as much after exercise the more fit you get). They saw wild variation among volunteers.

Pooling the three fitness measures, the researchers noted that 24 percent of the participants were nonresponders to sprint interval training. Five percent did not respond to the endurance cycling program, although all but one person did improve in at least one of the three fitness markers. Therefore, for those participants, endurance training wasn't the ideal workout, but it wasn't totally worthless, either.

However, the biggest takeaway is that every single participant who didn't respond to one protocol did benefit from the other. In other words, there's some kind of exercise out there for everyone. "Nonresponders to one type of exercise can in fact respond positively to another," says lead researcher **Jacob Bonafiglia**. "For example, if your fitness doesn't improve following three weeks of endurance training, our research suggests you can increase fitness by completing three weeks of sprint interval training."

While it's unclear why some of us don't respond to certain workouts, the exercise's level of difficulty may factor in. "Despite prescribing intensities relative to a person's fitness, the actual and perceived difficulty of the exercise can be very different between individuals," Bonafiglia says. "Perhaps nonresponders aren't being challenged enough during each bout to prompt a response." Additionally, he says several studies have shown that genetics play a key role in dictating individual adaptations to training, although it's not known exactly how.

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Fortunately, you don't need a research laboratory to tell you if you're a nonresponder. "The easiest way to gauge if something is working for you is to complete some sort of exercise test, such as running a certain distance or climbing stairs," Bonafiglia says. "Measure a few performance and physiological variables, such as the time it takes to complete the test, heart rate afterward, and how you feel overall afterward."

Then, after three weeks, repeat the exercise test and reassess these variables. "If your time improves, your heart rate decreases, or you feel better after it's finished, then this exercise is likely working for you," Bonafiglia explains. "If not, you could be a nonresponder, so try switching it up. If you were primarily completing an endurance-style exercise, for example, experiment with high-intensity interval training."

Alternatively, if you're not quite ready to give up on one type of training, stick it out even longer, up to 10 weeks. "Some recent evidence suggests your likelihood of not responding decreases if you increase the number of weeks or the amount that you exercise," says Bonafiglia.

Whichever route you choose, the main message here is to not give up on exercise altogether. “A great take-home from our study is that every participant responded in some way to the training programs,” Bonafiglia says. “What’s most important is finding an exercise routine you enjoy and keeping an open mind to trying out alternate types.”