

# High-Intensity Exercise Helps Patients With Anxiety Quit Smoking

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DENVER — High-intensity exercise may help patients with anxiety quit smoking, new research shows.

Results from a randomized study of 150 participants reporting symptoms of anxiety showed that among daily smokers who received a personalized, high-intensity aerobic intervention, rates of smoking abstinence were nearly twice as great as for those who received a lower-intensity exercise intervention.

"We are encouraged in the sense that we feel we have a targeted [smoking cessation] intervention to tailor to people with high anxiety sensitivity," lead author Jasper A. Smits, PhD, professor at the Institute for Mental Health Research and the Department of Psychology, the University of Texas at Austin, told attendees during a presentation of the findings here at the Anxiety and Depression Association of America (ADAA) 2022. The findings were [recently published](#) in *Addiction*.

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## Effective as CBT

Previous research shows that relatively short periods of exercise, lasting as little as 2 weeks, were associated with reductions in anxiety equivalent to 12 weeks of cognitive-behavioral therapy (CBT).

In light of these earlier findings, Smits and colleagues investigated the effect of an exercise intervention for smoking cessation based on the knowledge that individuals with [anxiety disorders](#) are more likely to smoke and less likely to succeed in quitting.

The initial study, which [was published](#) in 2016, included 136 smokers with high "anxiety sensitivity," a heightened sensitivity to normal sensations associated with anxiety, potentially leading to panic attacks or other disorders

Results showed that participation in the researchers' Smoking Treatment Enhancement Program (STEP) was associated with significant improvements in prolonged smoking abstinence among those with high anxiety sensitivity but not those with low anxiety.

Building on these results, the new study evaluated the exercise program at a community level at four YMCA centers. This time all participants had high anxiety sensitivity, defined as a score of 23 or higher on the Anxiety Sensitivity Index-3.

The study included 150 adult participants who had high anxiety, were daily smokers, were motivated to quit smoking, and who reported that they did not currently participate in regular moderate exercise.

All participants (67.3% women; mean age, 38.6 years) took part in STEP, which included a 15-week exercise intervention with a personal trainer. Of the participants, 77 individuals were randomly assigned to receive high-intensity aerobic training that targeted 60% to 85% of their heart rate reserve (HRR), while the other 73 were assigned to a lower-intensity control group in which training was only targeted to 20% to 40% of their HRR.

All participants also received standard behavioral support with phone- or text-based CBT and nicotine replacement therapy (NRT).

The centers' fitness instructors served as case managers who oversaw the smoking cessation exercise regimens of high-intensity vs low-intensity exercise. A broad array of aerobic exercise options were permitted, with the instructors working with participants to personalize their regimens.

"It's important to take into consideration patients' preferences [and] to work with the fitness instructors to find the right activity," Smits said. He noted that options may include intense yoga or swimming. "So I think we just need to be creative in thinking about exercise as being more than just running," he noted.

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## Abstinence Rate Doubled

The study's primary endpoint was abstinence, defined as biologically verified 7-day point prevalence abstinence.

Results at 6-month follow-up showed that the primary endpoint was achieved by 27.6% of the higher-intensity intervention group, compared with just 14.8% of the lower-intensity group (odds ratio, 2.2;  $P = .005$ ).

"It was encouraging to see we roughly doubled the abstinence rate at the 6-month follow-up," Smits said. "Those receiving the high-intensity exercise intervention had greater abstinence rates spanning the entire study period vs the standard treatment."

Of note, declines in anxiety sensitivity, as measured on the Reiss-Epstein-Gursky Anxiety Sensitivity Index, were observed in both groups. However, there was no significant difference in changes between the two groups.

Smits noted the investigators initially speculated that exercise would improve cessation success in individuals with anxiety sensitivity by providing exposure to the types of sensations that may trigger their anxiety, such as sweating and an accelerated heart rate, providing an opportunity for "extinction training" by desensitizing them to these experiences.

In addition, high-intensity exercise may also mitigate other anxiety symptoms, including [panic disorder](#), pain, depression, overeating, and [posttraumatic stress disorder](#), Smits said.

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## Real-World Evidence

Commenting on the findings for *Medscape Medical News*, Sahib S. Khalsa, MD, PhD, director of clinical operations at the Laureate Institute for Brain Research and associate professor at the University of Tulsa, Oklahoma, noted that the real-world nature of the study suggests its results are widely applicable.



Dr Sahib Khalsa

It is also important to note that both the current and previous studies conducted by the investigators included NRT, "and thus the effects are more likely to be reflective of a grouping of therapies, something that is more reflective of current practice," said Khalsa, who was not involved in the research.

He noted that initiating as well as maintaining exercise motivation over longer periods is challenging.

"The study likely addressed this challenge by using fitness instructors, which may be an important criterion for successful deployment of the intervention. We also don't know whether maintaining an active exercise regimen is critical to maintaining smoking cessation," Khalsa added.

*Smits is a consultant for Big Health Ltd. Khalsa has reported no relevant financial relationships.*

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