

Smart Ways to Cycle Safely

Three times a week, Tom Palizzi, 58, leads an hour-long cycling class for a group of people with Parkinson's disease at Apex Center in Arvada, CO, just northwest of Denver. Called Pedaling for Parkinson's, the class confers more than the usual benefits of cycling. In addition to improvements in strength, flexibility, cardiovascular fitness, and mood, cycling at a cadence of 80 repetitions per minute (rpm)—the cadence commonly used by competitive cyclists—can help mitigate the tremors, rigidity, and slowness of movement prevalent in people with Parkinson's disease and possibly other neurologic disorders, according to ongoing research.

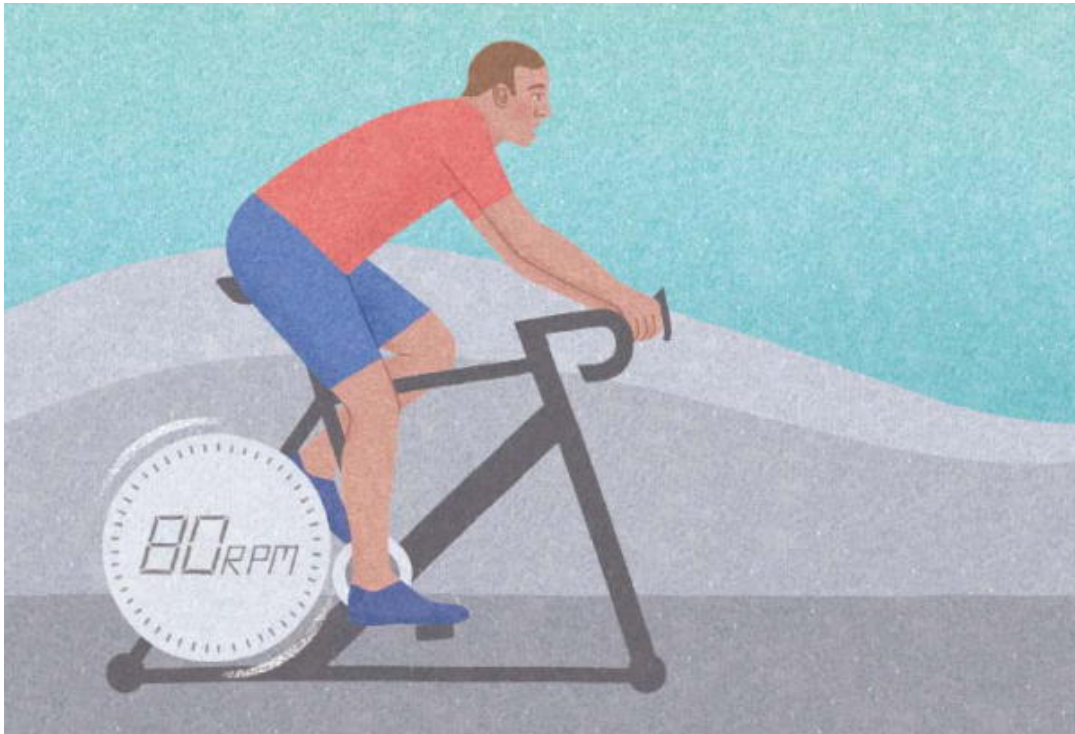


Illustration by Laurie Hastings

RPM Rx

In a 2013 study published in *Brain Connectivity*, Jay Alberts, PhD, a researcher at the Center for Neurological Restoration at the Cleveland Clinic in Ohio, and colleagues found that cycling three times per week at 80 to 90 rpm decreased the shuffling gait, tremors, and muscle stiffness of Parkinson's disease as much as medication.

And in a 2015 study published in *Frontiers in Neurology*, Angela Ridgel, PhD, an exercise physiologist and associate professor at Kent State University School of Health Sciences in Ohio, who began her research as a postdoctoral fellow with Dr. Alberts, found that cycling with either a tandem, motorized, or spinning bike while maintaining a pedal speed of 75 to 85 rpm with varied resistance for 30 minutes reduced the tremor, rigidity, and slowness of movement associated with Parkinson's not only in the legs, but also in the hands.

New Connections

That finding, she says, suggests that through neuroplasticity—the ability of neurons to modify their activity or reorganize connections in response to change—cycling leads to changes in the neural network that sends motor signals to both the arms and legs.



Bike Wheel
by
Guilherme
Simoes
from the
Noun
Project

Benefits For All Abilities

Both Dr. Alberts and Dr. Ridgel say that patients who start cycling earlier may respond slightly better and that those with more severe disease often show the most improvement. For those unable to pedal at the high rpm cadence used in the studies, Dr. Alberts suggests starting with shorter interval training, such as one minute, and potentially building up to a higher rpm over time. Dr. Ridgel points out that tandem and motorized cycling also works, and that any exercise benefits individuals with Parkinson's disease.

Future Research

Dr. Alberts says his next step is to determine whether exercise can slow disease progression and come up with optimal patient-specific prescriptions for exercise. Dr. Ridgel hopes to expand her research to other populations, including people with amyotrophic lateral sclerosis and multiple sclerosis.

10 Cycling Tips

In the meantime, both researchers, as well as Palizzi, who is an ambassador for the Davis Phinney Foundation for Parkinson's in Boulder, CO, offer these tips for getting started.

1 CHECK WITH YOUR DOCTOR. Before starting any exercise program, talk about it with your primary care physician, cardiologist, or neurologist, say Dr. Alberts and Dr. Ridgel.

2 GET THE GEAR. Palizzi recommends investing in a pair of padded cycling shorts or a seat cover to help reduce sore buttocks if you aren't used to cycling.

3 CYCLE INDOORS. Cycling indoors on a stationary bike at home or at your local gym or on a bike mounted on a home training stand reduces the risk of a fall. Palizzi suggests using a recumbent bike if balance is a problem, although no studies have been conducted with this type of bike.

4 LEARN TO MOUNT AND DISMOUNT SAFELY. Getting on and off your bike is the riskiest part of cycling, says Dr. Alberts. Practice getting on and off your bike smoothly while someone spots you and use a sturdy non-slip footstool or some other support for both feet, he suggests. If your balance is unpredictable, make sure someone spots you every time. Being able to get on and off the bike independently and safely is a requirement for the Pedaling for Parkinson's class, says Palizzi.

5 WARM UP PROPERLY. Before increasing your cadence, spend five to 10

minutes warming up your muscles. Palizzi starts his class by leading participants in stretching exercises on the bike. In Dr. Ridgel's studies, she has participants warm up by pedaling at a cadence of 40 to 50 rpm.

6 MAINTAIN A STEADY 80 RPM CADENCE. "Don't worry about the amount of resistance," says Dr. Ridgel, although varying the resistance may improve the results. She recommends playing peppy music or using a metronome or an app on your phone to help you set and keep the pace.

7 START SLOWLY. Unless you were a serious cyclist before your diagnosis, start with intervals of one to two minutes at high speed and work up to a full 30 minutes over as much time as you need.

8 ADD A SECOND, COGNITIVE TASK. People with Parkinson's disease who also did cognitive tasks while cycling showed increases in both physical and cognitive performance, according to a study published in the May 2015 issue of *PLOS One*. Palizzi and his students discuss recent developments in Parkinson's treatments or play trivia to engage their minds.

9 COOL DOWN CAREFULLY. Cool down for five to 10 minutes by gradually decreasing the pedal speed to 60 rpm before getting off the bike, says Palizzi.

10 DON'T OVERDO IT. "Cycling consistently two to three times a week is sufficient to reap the benefits," says Dr. Ridgel. "The rest periods between workouts are important," she adds.

Resource

Pedaling for Parkinson's classes are available throughout the United States. To look for a class in your area, visit <http://pedalingforparkinsons.org>.

RELATED CONTENT





5 Reasons to Try Water Exercise



Walk or Run for a Cause
