2型糖尿病に対しては短時間の高強度運動が優れている(Abstract 18838)

2型糖尿病患者においては低強度運動よりも短時間の高強度運動の方が心血管リスクファクターを改善する

Burst exercise improves cardiovascular risk factors more than lower-intensity exercise for patients with type 2 diabetes

2型糖尿病患者において短時間の高強度運動は30分間の持続性の低強度運動よりもコレステロール、血糖および体重を改善した、と2015年American Heart Association学会で発表された。このスタディは、2型糖尿病の診断後直後にスタディに組み入れられた患者76人（男性70%、平均年齢67歳）を対象に施行された。患者は、目標とした65%の心拍数で30分間の運動を週5回行う群、または85%の心拍数で10分間の運動を週5回行う群にランダムに割り付けられた。3か月後に、10分間の短時間の高強度運動により3か月の血糖パターンが0.82%低下したのに対し、持続性の低強度運動を行った群では単に0.25%低下したのみであった。短時間運動群患者は実質的により運動する結果となり、全体でHbA1c値が2.3倍改善し、ボディーマスインデックスが3倍減少した。短時間運動患者はまた、コレステロール値や負荷試験で計測した心臓適応能の改善が大であった。

Full Text

Short bursts of high-intensity exercise improved cholesterol, blood sugar and weight among Type 2 diabetes patients more than 30 minutes of sustained, lower-intensity exercise, according to research presented at the American Heart Association's Scientific Sessions 2015.

Researchers found that after three months of high-intensity exercise in 10-minute bursts done three times per day, five days a week, led to an average 0.82 percent decrease in three-month blood sugar patterns compared with just 0.25 percent among those who performed more sustained, lower-intensity exercise also five times per week.

Exercise is known to help reduce cholesterol and weight as well as manage Type 2 diabetes - all risk factors for heart disease. Historically, diabetes management programs have focused primarily on low-intensity, sustained exercise, said lead study author Avinash Pandey, an undergraduate student at the University of Western Ontario in London, Ontario, Canada.

"However, more may be accomplished with short bursts of vigorous exercise, in which patients achieve a higher maximum target heart rate, and may be easier to fit into busy schedules," Pandey said. "We also found that these 10 minute intervals may be easier to fit into busy schedules, since people randomized to that regimen were more consistent with exercise and ended up doing more exercise per week."

The study was conducted in 76 patients with Type 2 diabetes (70 percent male, average age 67) who were recruited for the study shortly after their diagnosis. Patients were randomly assigned to either 30 minutes of exercise five days a week at 65 percent of their target heart rate or ten minutes of exercise three times a day, five days a week at 85 percent of their target heart rate.

Burst exercise patients actually ended up exercising more, and overall, experienced a 2.3-fold greater improvement in HbA1c levels as well as a three-fold reduction in body mass index. Burst exercise patients also showed greater improvements in their cholesterol levels and stronger cardiac fitness, as measured by stress testing.

Researchers said it's unclear why shorter bursts of high-intensity exercise would lead to more significant improvements compared with sustained, lower-intensity exercise. One theory is that higher intensity exercise uses energy in a different way, suggests Pandey.

"We are hoping to continue looking at burst exercise and sustained exercise in larger and more diverse patient populations. With further study, burst exercise may become a viable alternative to the current standard of care of low-intensity, sustained exercise for diabetes rehabilitation."

Pandey's co-author is Paul Poirier, M.D., Ph.D.