

【挑战TIME】09期：Study:TheBestExerciseforDiabetes PDF转换可能丢失图片或格式，建议阅读原文

https://www.100test.com/kao_ti2020/273/2021_2022__E3_80_90_E6_8C_91_E6_88_98T_c81_273611.htm 【Introduction】加拿大

一项新研究发现，患二型糖尿病的病人，若能同时做有氧及重量训练运动，将可显著地降低血糖。【Section One

】 ArticleIts no secret that exercise is key to controlling type 2 diabetes and many doctors already urge their diabetic patients to get active. But its a vague directive: How much exercise is enough? How often? And what kind? The simple answer is that any is better than none in sum, thats what a new study published in the Sept. 18 issue of the journal Annals of Internal Medicine found. But it also found that not all exercise is created equal and that the combination of aerobic exercise and weight training is significantly better for controlling blood sugar than either alone. The elegantly designed study, led by researchers at the University of Calgary and the University of Ottawa, involved 251 patients aged 39 to 70, with type 2 diabetes. The patients, none of whom were regular exercisers, were randomized to one of four groups: aerobic exercise, resistance training, a combination of both, or none. For 22 weeks, the aerobic group worked out for 45 minutes three times a week on the treadmill or stationary bicycle. the resistance-training group spent an equal amount of time on weight machines. The combination group was at the gym twice as long as the other two exercise groups, doing the full aerobic plus weight-training regimens. "We built up gradually to 45 minutes, but its certainly vigorous," says Dr. Ronald Sigal, lead

author of the study and associate professor of medicine and cardiac sciences at the University of Calgary. "It's not sprinting or maximal exercise like a marathon trainer would do, but for someone who's middle-aged and older and very overweight, it's fairly strenuous." Overall, researchers saw improvements in blood-sugar control in all the patients who worked out. Compared with controls, patients in the aerobic group had a reduction of .51% in their hemoglobin A1C values—a test that measures blood-sugar control over the previous two to three months (lower is better). The weight-training group had a .38% reduction compared with controls. But the combined exercise group showed further improvements: in those patients, the A1C values went down an additional .46% over the aerobic group, and .59% over the weight-training group. Compared to controls, the combo exercisers had a nearly 1% lower A1C reading. The benefits of a 1% drop aren't small, and they go beyond blood-sugar control: That reduction translates to a 15% to 20% decrease in heart attack and stroke risk and a 25% to 40% lower risk of diabetes-related eye or kidney disease. "To envision the importance of exercise, imagine an inexpensive pill that could decrease the hemoglobin A1C value by 1 percentage point," write Dr. William Kraus of Duke University Medical Center and Dr. Benjamin Levine of the University of Texas Southwestern Medical Center at Dallas, in an accompanying editorial. "Diabetes experts would be quick to incorporate this pill into practice guidelines and performance measures for diabetes." Across all three exercise groups, data suggested that

working out could improve blood pressure, triglyceride and cholesterol levels in people with diabetes. However, there was no significant difference in the changes among the groups. Exercising also led to modest weight loss even though patients were put on diets specifically designed to maintain weight and a reduction in belly fat. What's more, CT scans of patients' muscles suggested that exercise could improve their internal structure and function. "So, even if you're not losing weight, don't get discouraged just because of that," says Sigal. "There's still additional value [of exercise] independent of weight loss." Until a few years ago, says Sigal, American Diabetes Association guidelines recommended against weight training for diabetic people, particularly for older and longtime patients, "out of a fear that blood pressure may go too high and may cause problems strokes or some kind of acute event during exercise... That wasn't based on any real evidence." Today, the Association advises patients to exercise 30 minutes a day at least five days a week, and recommends routines similar to the ones Sigal studied: aerobic workouts (such as walking, swimming, biking), with weight training (with weights or bands) and practice in flexibility (gentle stretching to reduce the risk of exercise-related injuries). But before you hit the gym for the first time, Sigal cautions, see your doctor particularly if you're overweight, middle-aged or older, or have any other health issues, like smoking, high cholesterol or high blood pressure. You should get a stress test and make sure you create a safe workout program geared to your abilities. Sigal is currently studying the benefits of exercise in insulin-dependent patients with type 1

diabetes. Next year, he plans to launch another study on exercise and type 2 diabetes to find a way to get "people into the gym and, perhaps more importantly, get them to continue doing it once they've started."

【Section Two】 Vocabulary

1. aerobic involving, utilizing, or increasing oxygen consumption for metabolic processes in the body
2. treadmill a device having an endless belt on which an individual walks or runs in place for exercise or physiological testing
3. regimen a regular course of action and especially of strenuous training
4. sprint to run or go at top speed especially for a short distance
5. strenuous vigorously active
6. hemoglobin an iron-containing respiratory pigment of vertebrate red blood cells that consists of a globin composed of four subunits each of which is linked to a heme molecule, that functions in oxygen transport to the tissues after conversion to oxygenated form in the gills or lungs, and that assists in carbon dioxide transport back to the gills or lungs after surrender of its oxygen
7. envision to picture to oneself
8. triglyceride any of a group of lipids that are esters formed from one molecule of glycerol and three molecules of one or more fatty acids, are widespread in adipose tissue, and commonly circulate in the blood in the form of lipoproteins

【Section Three】 Related Articles

1. PC Home News

【Section Four】 Homework

1. Please translate the blue sentence into Chinese. "To envision the importance of exercise, imagine an inexpensive pill that could decrease the hemoglobin A1C value by 1 percentage point, diabetes experts would be quick to incorporate this pill into practice guidelines and performance measures for diabetes.
2. What is the main idea of this

Article? 3. Please give at least 3 examples of aerobic exercise. 4. What is the "exact" percentage that the combination group can decrease the risk of diabetes? 5. What is the meaning of "geared" in the last two paragraphs? 参考答案及解析：1. 为了显现运动的重要性，想像有一颗能够降低1%血糖的药锭，糖尿病专家会很快地将这颗药锭加入运动指标和工作指标来治疗糖尿病。2. The combination of aerobic exercise and weight training is significantly better for controlling blood sugar--the guideline of diabetes --than either alone.3. walking, swimming, biking4. 0.97% (0.51 0.46 or 0.38 0.59)5. to adjust so as to match, blend with, or satisfy something

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