

Exercise as Potent Medicine

By Gretchen Reynolds

Exercise can be as effective as many frequently prescribed drugs in treating some of the leading causes of death, according to a new report. The study raises important questions about whether our health care system focuses too much on medications and too little on activity to combat physical ailments.



For the study, which was published in October in *BMJ*, researchers compared how well various drugs and exercise succeed in reducing deaths among people who have been diagnosed with several common and serious conditions, including heart disease and diabetes.

Comparative effectiveness studies are a staple of science, of course, especially in pharmaceutical research. Scientists often track how well one drug treats a condition compared with the outcome if they use a different drug. But few studies have directly compared drugs with exercise, and even fewer have compared outcomes in terms of mortality or whether the intervention significantly lessens the chance that someone with a disease will die from it, despite treatment.

So Huseyin Naci, a graduate student at the London School of Economics and Political Science, and Dr. John Ioannidis, the director of the Stanford Prevention Research Center at the Stanford University School of Medicine, decided to create a comprehensive comparison of the effectiveness of drugs and exercise in lessening mortality among people who had been diagnosed with one of four diseases: heart disease, chronic heart failure, stroke or diabetes. They chose these particular conditions because those were the only ones for which they could find studies that had examined whether exercise lessened the risk of death among patients with that disease, Mr. Naci said.

He and Dr. Ioannidis then gathered all of the recent randomized controlled trials, as well as previous reviews and meta-analyses of older experiments relating to mortality among patients with those diseases, whether they had been treated with drugs or exercise.

They ended up with data covering 305 past experiments that, collectively, involved almost 340,000 participants, which is an impressive total. But most of the volunteers had received drugs. Only 57 of the experiments, involving 14,716 volunteers, had examined the impact of exercise as a treatment.

Still, the numbers were large enough that Mr. Naci and Dr. Ioannidis could create an elaborate network of cross-references, comparing the outcomes when people received certain drugs, followed exercise regimens or, occasionally, both. The exercise routines, typically part of rehabilitation programs, usually involved walking or other aerobic routines but sometimes consisted of weight training or other exercises.

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The researchers compared mortality risks for people following any of the treatment options.

The results consistently showed that drugs and exercise produced almost exactly the same results. People with heart disease, for instance, who exercised but did not use commonly prescribed medications, including statins, angiotensin-converting-enzyme inhibitors or antiplatelet drugs, had the same risk of dying from — or surviving — heart disease as patients taking those drugs. Similarly, people with diabetes who exercised had the same relative risk of dying from the condition as those taking the most commonly prescribed drugs. Or as the researchers wrote in statistics-speak, “When compared head to head in network meta-analyses, all interventions were not different beyond chance.”

On the other hand, people who once had suffered a stroke had significantly less risk of dying from that condition if they exercised than if they used medications — although the study authors note that stroke patients who can exercise may have been unusually healthy to start with.

Only in chronic heart failure were drugs noticeably more effective than exercise. Diuretics staved off mortality better than did exercise.

Over all, Dr. Ioannidis said, “our results suggest that exercise can be quite potent” in treating heart disease and the other conditions, equaling the lifesaving benefits available from most of the commonly prescribed drugs, including statins. Statins are at the center of a debate about new treatment guidelines that could vastly expand the number of people taking the drugs.

The results also underscore how infrequently exercise is considered or studied as a medical intervention, Dr. Ioannidis said. “Only 5 percent” of the available and relevant experiments in his new analysis involved exercise. “We need far more information” about how exercise compares, head to head, with drugs in the treatment of many conditions, he said, as well as what types and amounts of exercise confer the most benefit and whether there are side effects, such as injuries. Ideally, he said, pharmaceutical companies would set aside a tiny fraction of their profits for such studies.

But he is not optimistic that such funding will materialize, without widespread public pressure.

For now, Mr. Naci said, he hopes that this new study will prompt smaller-scale negotiations. “We are not suggesting that anyone stop taking their medications,” he said. “But maybe people could think long and hard about their lifestyles and talk to their doctors” about whether exercise could and should be incorporated into their care.