

Exercise - is more better?

by Ross Walker - Sydney Cardiologist

I have repeatedly suggested that the ideal amount of exercise every week is somewhere between three to five hours. So, is this just my gut feeling or is there any good evidence for these comments?

I would like to review three recent interesting studies around exercise which address this important issue.

A recent, long term study of 25 years followed just over 5100 people aged between 18 to 30 years old at the entry of the study. For various reasons, the final analysis reviewed 3175 participants who had undergone eight examinations over the 25-year period and answered at least three questionnaires regarding the amount of exercise they performed along with other lifestyle factors as well.

A coronary calcium score was performed at some stage between age 43 to 55 and the participants were divided into three groups.

1. Those who exercised less than two and a half hours per week
2. Those who exercised between three to five hours per week
3. Those who exercised more than seven and a half hours per week.

The results were quite surprising and in many ways, somewhat disturbing. When the group who exercised more than seven and a half hours were compared to the other groups there was a 27% increase in coronary artery calcification, suggesting lack of protection from heavy exercise for heart disease risk.

Interestingly, and somewhat difficult to explain, is the fact that white males in the third group had an 86% increased risk for coronary artery calcification. The higher-level exercise group, for some reason, did not appear to affect cardiac risk in black men or all women. Although there is no clear explanation for this difference I would like to propose the following explanations.

Atherosclerosis, which is the progressive build-up of fat, inflammatory tissue and calcium in the walls of arteries, tends to occur later in women (on average

10 years) and a coronary calcium score performed between age 43 to 55 is too early to detect significant atherosclerosis in a female population.

People who exercise for more than seven and a half hours per week are typically (although not always) joggers or cyclists, or professional athletes. There is no doubt that African Americans do make up a significant proportion of the high-level athletes in America, not to mention the Africans who tend to win most of the marathons. It could be that people with darker skin are more physiologically adapted to exercise for longer periods and thus have less evidence of cardiovascular disease.

Regardless, it does appear for those of us who are not professional athletes (i.e. sport being their major source of income) that if you are exercising for good health, the three to five-hour dose per week appears to be the healthiest level.

The second study was fascinating in that it looked at the type of exercise which may be important for specific disease prevention. There are two basic types of exercise, aerobic - cardio, or anaerobic - strength and resistance training. This study of 80,000 people, older than 30 years, commenced in 1994 and continued until 2008 with an average follow-up of around nine years. It looked at strength and resistance training for 50 to 60 minutes per week as opposed to moderate intensity exercise 50 minutes per week e.g. walking, as opposed to high-intensity exercise such as running or cycling for 75 minutes per week.

In all these groups, compared with people who were inactive there was around an 18% lower risk of early death purely by performing the various types of exercise. But, with resistance and strength training there was a 31% reduced cancer risk whereas with aerobic exercise a 21% reduction in cardiovascular risk. The reduction in cancer death has been repeated in a number of studies in people who regularly perform some form of resistance training.

My suggested reason for this is that cardio exercise improves cardiovascular efficiency through more efficient pumping of the heart and better blood flow to muscles. Because of the more efficient cardiovascular system there is logically a reduction in cardiovascular death. Interestingly, strength and resistance training increases the fitness and size of muscles thus improving muscle metabolism and requiring a much higher level of blood flow to the muscles. Logically, this would redirect blood flow away from tumours and thus help prevent cancer death.

Finally, a study in the American Journal of Preventive Medicine reviewed 140,000 people participating in the Cancer Prevention Study II Nutrition cohort. It found that as little as two hours per week of walking compared with those

who did no exercise reduced overall death risk from all causes. Those who performed the recommended 150 minutes of walking demonstrated a 20% reduction in all-cause death. Interestingly those who walked for more than six hours per week had a 35% reduction in death related to respiratory causes, a 20% reduction in cardiovascular death and a 9% reduction in cancer death.

Probably the most disturbing statistics from all the studies is that 27% of people are inactive and only 50% of people meet the guidelines for recommended exercise.

I have stated on numerous occasions that exercise is the second-best drug on the planet after happiness but it also appears that the correct dose of exercise is important along with the type of exercise to reduce specific conditions. This is why I constantly say that the suggested dose is three to five hours per week which should be divided into two thirds cardio and one third resistance training. Just as the real estate agents say the most important principle is “location, location and location”, those of us involved in preventative medicine state “movement, movement and movement”.

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