

Forty is not too old or too late to start endurance training

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Amsterdam, 9 May. A study of healthy senior men has found that "relatively intensive" endurance exercise confers benefits on the heart irrespective of the age at which they began training. The benefits were evident and comparable in those who had started training before the age of 30 or after the age of 40. As a result, said the investigators, 40 is not too old to start endurance training.

The study, which was performed in France, was reported today at the EuroPrevent congress 2014 in Amsterdam by David Matelot, from the Inserm 1099 unit in Rennes, France.

The study was performed in 40 healthy men (without [cardiovascular risk factors](#)) aged between 55 and 70 years who were divided for assessment according to the level of exercise they took and the ages at which they began. Thus, 10 of the men had never exercised for more than 2 hours a week throughout their lives, and 30 had exercised for at least 7 hours a week for over five years, either beginning their programmes before the [age](#) of 30 (T30, n=16) or after the age of 40 (T40, n=14).

The regular exercise they took was either running or cycling. Those beginning before the age of 30 had been training for an average of 39 years (since the age of 22) and those starting at 40 for 18 years (since the age of 48). Each of the men was assessed by maximal exercise testing, echocardiography at rest and during submaximal exercise, and heart rate analysis.

First, resting heart rate was found to be similar between the two [exercise](#) groups (T30 56.8 bpm, T40 58.1 bpm), but significantly faster in the non-exercising men (69.7 bpm).

Maximal oxygen uptake was also similar between the T30 (47.3 ml/min/kg) and T40 groups (44.6 ml/min/kg), but significantly lower in the non-exercising men (33.0 ml/min/kg). "We think this result is of interest," said Matelot, "because it is related to cardiovascular health and well-being."

Echocardiography showed that the [left ventricle](#) and both atria were bigger in the T30 and T40 [men](#) than in the non-trainers, who also exhibited significantly thicker vessel walls than trainers. "Thus," said Matelot, "cardiac remodelling seems to be different between both of the trained groups and the non-trained subjects." Diastolic function (the ability of the left ventricle to fill with blood when the heart is relaxed) and other measures of [heart rate](#) were also better in the T30 and T40 subjects.

The study also found no difference between T30 and T40 in cardiac echocardiography tests. "Thus," said Matelot, "despite biological changes with age, the heart still seems - even at the age of 40 - amenable to modification by endurance training. Starting at the age of 40 does not seem to impair the cardiac benefits.

"However, endurance training is also beneficial for bone density, for muscle mass, for oxidative stress. And these benefits are known to be greater if training was started early in life."

Matelot pointed out that ageing is associated with adverse structural and functional changes to the cardiovascular system. And, while physical activity is unable to prevent these changes, it is able to slow them down. However, it remains unknown whether [endurance training](#) started later in

life can reverse the effects of earlier sedentary behaviour on the heart.

"But it's never too late to change your way of life and get more physically active," said Matelot. "This will always be beneficial for the heart and well-being. And there's no need for a high level of training for many hours a week. Using the stairs rather than the elevator, or gardening regularly, can also be beneficial."

More information: Matelot D, Schnell F, Ridard C, et al. Cardiac benefits of endurance training: 40 years old is not too late to start. Please see the details of the session here: [spo.escardio.org/SessionDetail ... 13824&subSessId=3190](https://spo.escardio.org/SessionDetail...13824&subSessId=3190)

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