**First-Time Marathoners Turn Back Clock on Vascular Aging**

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Healthy individuals training for their first marathon saw a reversal in age-related aortic stiffening, a known cardiovascular risk factor, researchers found in a prospective study.

After 6 months of unsupervised training for the London Marathon, 138 people demonstrated improved distensibility on cardiac MRI in two levels of the thoracic aorta: the proximal descending aorta (average 9% increase from baseline, *P*=0.009) and the diaphragmatic descending aorta (16% increase, *P*=0.002).

This correlates with 4 years regained in "aortic age" given the amount of distensibility known to be lost over time due to aging, reported Charlotte Manisty, MD, of Barts Heart Centre in London, and colleagues in the [*Journal of the American College of Cardiology*](http://www.onlinejacc.org/content/75/1/60).

Study participants had no previous marathon experience and were running less than 2 hours a week at baseline. Half of the enrolled cohort were men. Mean age was 37.

Their recommended exercise training regimen consisted of 6 to 13 miles of weekly running before the 2016 and 2017 London Marathons. They had central blood pressure and aortic stiffness evaluated roughly 176 days before and 16 days after finishing the marathon.

Greater reversals in aortic stiffening were observed in older individuals, men, slower runners, and those with higher blood pressure.

"This study emphasizes the importance of lifestyle to modify the aging process, particularly as it appears 'never too late' to gain the benefit as seen in older, slower runners," Manisty's group noted.

Not all thoracic aortic segments showed improved elasticity with [marathon training](https://www.medpagetoday.org/meetingcoverage/esc/21949?vpass=1), however, as no change was seen in the ascending aorta in the study.

Marathon training reduced both brachial and aortic systolic blood pressures by 4 mm Hg -- in line with the magnitude achievable on first-line antihypertensive drugs, the investigators reported.

"The improvement in [aortic stiffness](https://www.medpagetoday.com/meetingcoverage/ers/67802) was both functional due to blood pressure lowering, as well as intrinsic due to structural changes in the descending aorta. This is supported by wave separation analysis, which showed that reflection magnitude was unchanged," they stated.

That the increase in distal descending aortic distensibility was at least partially independent of the change in distending pressure suggests intrinsic changes in the material properties of the aortic wall, rather than changes in loading conditions alone.

Source Reference: [Bhuva AN, et al "Training for a first-time marathon reverses age-related aortic stiffening" J Am Coll Cardiol 2020; DOI: 10.1016/j.jacc.2019.10.045.](http://www.onlinejacc.org/content/75/1/60)