

# Marathon running could trigger pulmonary oedema development in the lungs

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A new study has found evidence that marathon running could trigger pulmonary oedema, where fluid builds up in the lungs.

The study will be presented today at the European Respiratory Society's Annual Congress in Vienna.

Despite mounting evidence of the link between [strenuous exercise](#) and pulmonary oedema, experts still debate whether the two factors are linked. Researchers from the United States and Italy aimed to investigate the link by assessing whether running a marathon triggers pulmonary oedema which causes breathlessness, severe cough and even heart attacks or [respiratory failure](#) in serious cases.

The team analysed 26 [runners](#) who had completed the 2011 Steamtown Marathon in the USA. They took chest radiographs of the runners the day before the race and then at 19, 56 and 98 minutes after the race. By monitoring these different stages, the researchers were able to ensure that any increase in [blood volume](#) would return to normal, so they could objectively assess the level of oedema.

Three readers evaluated the radiographs to interpret the image. Two readers were experts in reading chest films, a third was a general [radiologist](#). They weren't told which radiographs were taken before or after the race, but they scored each image on the level of oedema present so that the total score ranged from 0 (no oedema) to 8 (severe oedema). The oedema scores from each reader was averaged.

About 50% of runners had some level of pulmonary oedema at about 20-minutes post-race. 20% of those runners had moderate to severe pulmonary oedema. Pulmonary oedema was still present 1 hour after the marathon was completed.

Women were at much higher risk compared to men in the development of pulmonary oedema. There was also no relation between marathon time and the development of pulmonary oedema, suggesting that the development of oedema is prevalent across all abilities.

Lead author, Dr Gerald Zavorsky from the Marywood University, USA, said: "Marathon running is linked to an increased risk of pulmonary oedema, and it seems that women are at higher risk than men regardless of marathon finishing time. While pulmonary oedema can be a negative consequence of marathon running, regular exercise can also keep you fit and healthy. We do not yet know the impact of this finding on long-term health of runners."

Provided by European Lung Foundation

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