

Statins are unlikely to prevent blood clots, analysis finds

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Despite previous studies suggesting the contrary, statins (cholesterol-lowering drugs) may not prevent blood clots (venous thrombo-embolism) in adults, according to a large analysis by international researchers published in this week's *PLOS Medicine*.

In 2009, an additional analysis of data from a [randomized controlled trial](#) called the JUPITER trial reported that the statin [rosuvastatin](#) halved the risk of venous thromboembolic events among apparently healthy adults. However, this finding was based on a small number of patients who had thromboembolic events (34 vs 60). To gather more evidence about the possible benefits of statins, a group of international researchers led by Kazem Rahimi from the George Centre for Healthcare Innovation at the University of Oxford in the UK, combined the results (performed a meta-analysis) of 29 suitable published and unpublished [randomised controlled trials](#) of the effects of statins involving over 100 000 participants and more than 1000 events: Only two studies presented venous thrombotic events in the published report, but such events had been recorded as [adverse events](#) in all of the included trials, which the authors were able to include in their analysis.

In the combined analysis, the authors found that venous thrombosis occurred in 0.9% of people taking statins compared to 1% of people not taking statins, which suggests that statins have a very small, if any, effect. These results did not change when the authors excluded the findings of the JUPITER trial. The authors also found that there was no effect at all in people taking high doses and low doses of statins.

The authors conclude: "this study provides a more detailed assessment of the potential effects of statins (or higher dose statins) on venous thromboembolic events than has previously been possible. We were unable to confirm the large proportional reduction in risk suggested by some previous studies."

The authors add: "However, a more modest but perhaps clinically worthwhile reduction in venous thromboembolic events in some or all types of patient cannot be ruled out."

In an accompanying Perspective article, Frits Rosendaal from the Leiden University Medical Center in The Netherlands (uninvolved in the study) argues that even if the study cannot provide definite answers to the statin question, some tentative conclusions can be drawn. He says: "Firstly, that for the association between [statins](#) and venous thrombosis the methodologically strongest analysis shows at most a very small effect. Secondly, if we do not wish to discard the possibility of a beneficial effect for the whole class, any such effects are limited to rosuvastatin."

More information: Rahimi K, Bhala N, Kamphuisen P, Emberson J, Biere-Rafi S, et al. (2012) Effect of Statins on Venous Thromboembolic Events: A Meta-analysis of Published and Unpublished Evidence from Randomised Controlled Trials. *PLoS Med* 9(9): e1001310.

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Perspective article: Rosendaal FR (2012) Statins and Venous Thrombosis: A Story Too Good to Be True? *PLoS Med* 9(9): e1001311.

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