

Study finds women with low 2D:4D finger ratios tend to have stronger grip strength

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A trio of researchers at the University of Vienna has found that women with low 2D:4D ratios tend to have stronger grip strength than women with higher ratios. In their paper published in *Proceedings of the Royal*

Society B, Nora Bäck, Katrin Schaefer and Sonja Windhager describe measuring finger length and grip strength in volunteer women.

Prior research has shown that exposure to high levels of testosterone in the womb leads to human males born with a lower 2D:4D ratio and higher [grip strength](#) and overall heightened physical performance. In this new effort, the researchers found that the same is true for women. The 2D:4D ratio is the ratio of finger length between the index and ring finger. In some people, the ring finger is shorter than the index finger, while in others it is longer. Exposure to testosterone in the womb has been shown to play a role in this difference.

The work by the researchers involved measuring ring and index finger length in 125 healthy women in Austria selected after factoring out age, environment, ethnicity and exercise as possible impactors of [finger length](#). Each woman also had her hand grip strength measured using a dynamometer.

The researchers found what they describe as a "clear association" between lower 2D:4D ratios and grip strength. Put another way, they found that the longer a [ring finger](#) was relative to an index finger, the higher the grip strength. They did not test whether the ratio was tied to exposure to testosterone in the womb but suggest it is a likely association, considering it has been shown to be the case in men.

This new finding comes on the heels of other factors attributed to the 2D:4D ratio. One team in Scandinavia found that when hungry, people with lower 2D:4D ratios tend to make what was described as more "masculine food choices." And another team at Swansea University found that high income [women](#) tended to give birth to children with lower 2D:4D ratios.

More information: Nora Bäck et al, Handgrip strength and 2D : 4D in

women: homogeneous samples challenge the (apparent) gender paradox, *Proceedings of the Royal Society B: Biological Sciences* (2021). DOI: [10.1098/rspb.2021.2328](https://doi.org/10.1098/rspb.2021.2328)

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