

# Study results suggest genetics play a role in later life cerebral cortex thickness

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A team of researchers affiliated with several institutions in Norway and the U.S. has found that genetics appears to play a role in how thick the cerebral cortex is for people as they grow older. In their paper published in *Proceedings of the National Academy of Sciences*, the team describes

their study of over a thousand MRI brain scans of people between the ages of 4 to 88 and what they learned as a result.

The [cerebral cortex](#) is, of course, the ridged outer layer of the cerebrum, made up of folded gray matter—it is believed it plays a very important role in consciousness and intelligence. Prior research has shown that the cortex grows thicker in toddlers than grows thinner again as unnecessary information stored inside is pared away. But it also appears that the cortex grows thinner as people age, and this latest research suggests, the amount of thinning appears to be genetically related.

To better understand the changes that occur with the cortex over the course of a lifetime, the researchers looked at 1,633 MRI scans from a total of 974 different people, from 4.1 years of age, to 88.5, focusing specifically on longitudinal changes in cortex thickness. They also looked at MRI scans of 406 middle-aged twins to serve as a reference point.

In analyzing the results, the researchers report that they were able to see that [genetic factors](#) were clearly influencing [brain structure](#), including the thickness of the [cortex](#) over time. They suggest their findings indicate that variations in [cortical thickness](#) in older adults can be traced back to differences in neurodevelopment change rates related to genetic factors. But they also note that much more study needs to be done to reconcile what they found with the results of other studies. They suggest a much larger study needs to be carried out in order to better understand the rate of thinning and whether environmental conditions over the course of a lifetime had any impact on genetic influences. In the future, they add, brain structure needs to be compared to the genome to gain a clearer picture of the factors a person inherits that can have an impact on their brain for an entire life.

**More information:** Anders M. Fjell et al. Development and aging of

cortical thickness correspond to genetic organization patterns,  
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