

# When fibromuscular dysplasia hits a family, abdominal aortic aneurysms may too

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One disease is more common in people assigned female at birth, while the other is more common in people assigned male at birth. But a new publication details a "shared complex genetic architecture" between the

cardiovascular conditions that could explain why, when one member of a family develops fibromuscular dysplasia, another may develop an abdominal aortic aneurysm.

"We used complementary genetic approaches to validate the relationship between these two highly sex-biased conditions, raising some interesting questions regarding sex differences relating to a common, shared genetic risk profile," said senior author Santhi K. Ganesh, M.D., an associate professor of internal medicine and [human genetics](#), and a cardiologist at the University of Michigan Health Frankel Cardiovascular Center.

Ganesh and colleagues analyzed family histories from 73 people with FMD and 463 of their first-degree relatives who volunteered to participate in [clinical research](#). They discovered that, in a family where one person had FMD, the risk of a male member of that family developing an abdominal aortic aneurysm was significantly higher. For example, the father of a person with FMD was twice as likely to experience AAA, according to results published in *Circulation: Genomic and Precision Medicine*.

The research team then compared a new polygenic risk score for FMD and established polygenic risk scores for AAA to verify a shared genetic basis for both diseases, Ganesh says. The results point to [specific genes](#) that may underlie both diseases, providing new biological understanding of vascular diseases. The findings also support that screening for [abdominal aortic aneurysm](#) in male relatives of patients with FMD may be useful, along with currently established AAA screening guidelines.

**More information:** Alexander E. Katz et al, Fibromuscular Dysplasia and Abdominal Aortic Aneurysms Are Dimorphic Sex-Specific Diseases With Shared Complex Genetic Architecture, *Circulation: Genomic and Precision Medicine* (2022). [DOI: 10.1161/CIRCGEN.121.003496](https://doi.org/10.1161/CIRCGEN.121.003496)

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