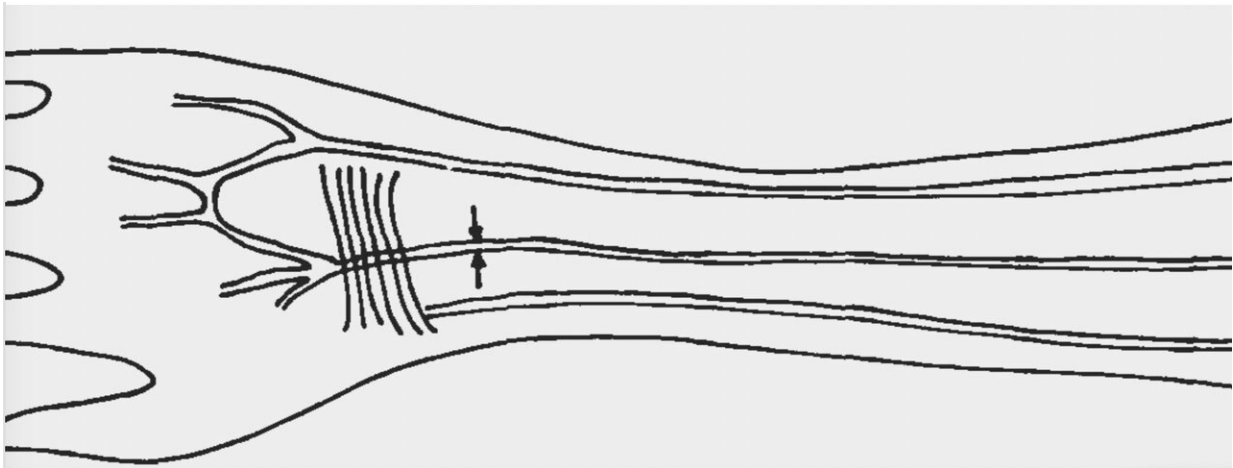


Forearm artery reveals humans evolving from changes in natural selection

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Credit: Prof. Dr. Hab. Maciej Henneberg, University of Adelaide

Humans haven't developed genetic mutations for telepathy or superpowers just yet, but a new study shows our species is still evolving in unique ways and changes in the natural selection could be the major reason.

An investigation by Dr. Teghan Lucas at Flinders University and Professor Maciej Henneberg and Dr. Jaliya Kumaratilake at the University of Adelaide published in the *Journal of Anatomy* has shown a significant increase in the prevalence of the median artery in humans since the late 19th century.

The median artery is the main vessel that supplies blood to the human forearm and hand, when first formed in the mother's womb but it disappears once two arteries seen in adults develop. But many people now retain the median artery for their whole life in addition to the other two arteries (about one in three).

This evolutionary trend will continue in those born 80 years from today, with the median artery becoming a common in the human forearm.

The radial and ulnar arteries usually replace the median artery during developmental stages in the womb, so most adults obviously don't have a median artery, but increasing numbers of cases retain the artery, so a person can have all three [arteries](#), because the median artery poses no actual health risk.

Dr. Teghan Lucas from Flinders University says this study into the prevalence of the artery over generations shows that [modern humans](#) are evolving at a faster rate than at any point in the past 250 years.

"Since the 18th century, anatomists have been studying the prevalence of this artery in adults and our study shows it's clearly increasing. The prevalence was around 10% in people born in the mid-1880s compared to 30% in those born in the late 20th century, so that's a significant increase in a fairly short period of time, when it comes to evolution."

"This increase could have resulted from mutations of genes involved in median artery development or health problems in mothers during pregnancy, or both actually. If this trend continues, a majority of people will have median artery of the forearm by 2100."

The research group investigated the prevalence of artery in each generation by analyzing published records and dissecting cadavers from individuals born in 20th century.

Senior author Professor Maciej Henneberg who is also a member of the Institute of Evolutionary Medicine at the University of Zurich, Switzerland, says the median artery offers benefits because it increases overall blood supply and can be used as a replacement in surgical procedures in other parts of the human body.

"This is micro evolution in modern humans and the median artery is a perfect example of how we're still evolving because people born more recently have a higher prevalence of this artery when compared to humans from previous generations."

"We've collected all the data published in anatomical literature and continued to dissect cadavers donated for studies in Adelaide and we found about one third of Australians have the median artery in their forearm and everyone will have it by the end of the century if this process continues."

Other examples of human anatomy changing over time, include the prevalence of spina bifida occulta (opening of the sacral canal), abnormal connections of two or more bones in feet, increasing absence of wisdom teeth, thyroidea ima artery (branch of the aortic arch)—decreased over time, disappeared completely by the end of the 20th century) and fabella (small bone in the back of the knee joint—increased over time).

More information: Teghan Lucas et al. Recently increased prevalence of the human median artery of the forearm: A microevolutionary change, *Journal of Anatomy* (2020). [DOI: 10.1111/joa.13224](https://doi.org/10.1111/joa.13224)

Provided by Flinders University

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