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Study reveals first genetic locus for voice pitch

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Dr. Kari Stefansson CEO of deCODE genetics and senior author on the paper, with Rosa B. Gisladottir first author. Credit: deCODE genetics

In a paper published in *Science Advances*, an international team led by deCODE genetics, a subsidiary of Amgen, reveals the discovery of

sequence variants in the gene ABCC9 that influence the pitch of voices.

Speaking is one of the most characteristic human behaviors, and yet the genetic underpinnings of voice and speech are largely unknown. In the first study of its kind, the scientists combined speech recordings from almost 13,000 Icelanders with data, in the sequence of the genome, to search for common variants in ABCC9 that are associated with a higher-pitched voice.

The scientists found that ABCC9 variants associate with higher voice pitch in both men and women. The same sequence variants are also linked to higher pulse pressure, a cardiovascular risk factor, highlighting links between voice pitch and health-related traits.

In addition to voice pitch, the study investigated the genetics of vowel acoustics. While vowel sounds such as "ah" or "ee" are clearly influenced by culture and context, the scientists found that such measures contain a heritable component, which likely has to do with the shape of the vocal tract and its effect on vowel sounds.

The findings shed new light on diversity in voice and speech and contribute to a better understanding of the human vocal system.

More information: Rosa Gisladottir, Sequence variants affecting voice pitch in humans, *Science Advances* (2023). DOI: 10.1126/sciadv.abq2969. www.science.org/doi/10.1126/sciadv.abq2969

Provided by deCODE genetics