How well does genetic screening for talents and traits work? Beethoven’s DNA suggests he was unlikely to be musical

Ludwig van Beethoven, one of the most influential and popular classical music composers, was recently the subject of genomic analysis that uncovered a predisposition for liver disease and infection with hepatitis B.

Now, a team of international researchers have analyzed Beethoven’s DNA to determine how much of the composer’s musical genius is attributable to genetics.

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“For Beethoven, we used his recently sequenced DNA to calculate a polygenic score as an indicator for his genetic predisposition for beat synchronization,” said Tara Henechowicz, a recent visiting graduate student with Vanderbilt University’s Human Genetics Program and the study’s second author. “Interestingly, Beethoven, one of the most celebrated musicians in history, had an unremarkable polygenic score for general musicality compared to population samples from the Karolinska Institute in Sweden and Vanderbilt’s BioVU repository.”
“Our aim was to use this as an example of the challenges of making genetic predictions for an individual who lived over 200 years ago,” Henechowicz said. “The mismatch between the DNA-based prediction and Beethoven’s musical genius provides a valuable teaching moment, because it demonstrates that DNA tests cannot give us a definitive answer about whether a given child will end up being musically gifted.”