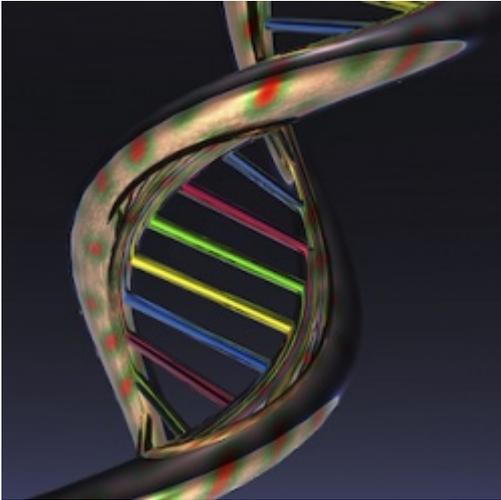


Elizabeth Warren's DNA Test Tells Us Nothing



By Alex Berezow, PhD — October 15, 2018



Credit: Storyblocks [1]

Senator Elizabeth Warren, who has taken flak for her claims to Native American ancestry, just released the results of a genetic test that definitively proves... well, nothing. She might be 1/32nd Native American. Or 1/1,024th. Nobody really knows.

The *Boston Globe* [story](#) [2], which is very well reported, explains some of the major caveats with genetic ancestry testing. For example, a person's genome sequence must be compared to someone else's, and accuracy requires a sufficiently large database. However, as the *Boston Globe* states, there is very little genetic data on Native Americans, and Sen. Warren's DNA had to be compared to that from Mexicans, Peruvians, and Colombians.

Using this data, the original [analysis](#) [3], which was prepared by a respected geneticist, determined that five segments of Sen. Warren's DNA -- totaling about 12.3 million bases ("letters") -- are of Native American ancestry. That might sound like a lot, but the human genome contains more than 3.2 billion bases, which means that only about 0.4% of Sen. Warren's DNA sequence can be attributed to Native American ancestry.

Thus, the vast, vast majority of her DNA is of European descent. Though her pedigree probably contains a Native American ancestor, he or she existed six to ten generations ago. If a generation is roughly 25 years, that means that Sen. Warren's (possibly one and only) Native American ancestor lived 150 to 250 years ago.

While that means that Sen. Warren is technically correct that she has Native American ancestry, it falls far short of her rather [boastful claims](#) [4]: "I am very proud of my heritage... These are my family stories. This is what my brothers and I were told by my mom and my dad, my mamaw and my papaw. This is our lives. And I'm very proud of it." She makes it sound as if she lived in a

teepee and smoked peyote.

I'm proud of my heritage, as well. I might be related to Charlemagne. And Nefertiti. [And you probably are, too](#) [5]. But most of us don't claim to be descended from conquerors or royalty, even though we may contain trace DNA segments indicating that we are.

Genetic Ancestry Tests Are a Bit Like Horoscopes

[Consumer tests](#) [6] usually examine the Y chromosome (if the person is male), mitochondrial DNA, and a select number of "single nucleotide polymorphisms," which can be thought of as unique mutations scattered around the genome. In this case, the test examined nearly 765,000 data points from Sen. Warren's genome.

But these tests have limitations. For instance, the U.S. National Library of Medicine [writes](#) [6] that "ethnicity estimates may not be consistent from one provider to another." That's why, as *Science News* [says](#) [7], DNA tests are just a starting point for genealogy. To really find out who your ancestors were, you must examine "marriage certificates, military rolls, census records, immigration documents, old photographs and other records."

Anything less than that, and -- as Ross Pomeroy at RealClearScience [wrote](#) [8] -- you're basically just reading a horoscope.

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[1] <https://www.storyblocks.com/stock-image/dna-r9flo4el7u-j6gpo4vh>

[2] <https://www.bostonglobe.com/news/politics/2018/10/15/warren-addresses-native-american-issue/YEUaGzsefB0gPBe2AbmSVO/story.html>

[3] https://www.bostonglobe.com/news/politics/2018/10/15/read-results-warren-dna-test/mBPi8QxENhtHHTP2B1fFBO/story.html?p1=Article_Related_Box_Article

[4] <https://www.npr.org/sections/itsallpolitics/2012/05/09/151784645/in-mass-senate-race-warren-on-defense-over-native-american-heritage>

[5] <https://www.nationalgeographic.com/science/phenomena/2013/05/07/charlemagnes-dna-and-our-universal-royalty/>

[6] <https://ghr.nlm.nih.gov/primer/dtcgeneticstesting/ancestrytesting>

[7] <https://www.sciencenews.org/article/family-dna-ancestry-tests-review-comparison>

[8]

https://www.realclearscience.com/blog/2016/02/your_ancestry_is_about_as_informative_as_your_horoscope.html