

Genetic makeup of Hispanic/Latino Americans influenced by Native American, European and African-American ancestries

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A new study from researchers at NYU Langone Medical Center found that the imprint of European colonialism and imperialism is evident in the genetic makeup of today's Hispanic/Latino American populations. Scientists discovered that Europeans, Native Americans, as well as West Africans brought to the U.S. and Latin America by the trans-Atlantic slave trade, have influenced the genes of the current Hispanic/Latino populations. However, a large variation in genes among individuals within each population were still found to exist.

"It's naïve to think that the Hispanic/Latino populations have the same genetic makeup, even though the populations are described under one general category," says Harry Ostrer, MD, professor of Pediatrics, Pathology and Medicine and director of the Human Genetics Program at NYU Langone Medical Center. "Through sophisticated tests, we have determined that the genetic makeup Hispanic/Latino individuals vary between and within communities."

The study, published in the May 3 online issue of the *Proceedings of the National Academy of Sciences*, tested the [genetic makeup](#) of 100 individuals of Hispanic/Latino background in the New York tri-state area, including Dominicans, Columbians and Ecuadorians, as well as Mexicans and Puerto Ricans, the two largest Hispanic/Latino ethnic groups in the [United States](#). Currently, Hispanic/Latino Americans comprise 15.4% of the total United States [population](#), or 46.9 million

people, and account for the largest ethnic minority in the United States.

"It is important to quantify the relative contributions of ancestry in relation to disease outcome in the Hispanic/Latino population," says study co-author Christopher Velez, a medical student at NYU School of Medicine. "This ethnically appropriate genetic research will be critical to the understanding of disease onset and severity in the United States and in [Latin America](#). It will allow for the development of appropriate genetic tests for this population."

Through their analysis of the entire genome, the researchers found evidence of a significant sex bias consistent with the disproportionate contribution of European male and Native American female ancestry to present day populations. The scientists also found that the patterns of [genes](#) in the Hispanic/Latino populations were impacted by proximity to the African slave trade. In fact, Puerto Ricans, Dominicans and Columbians from the Caribbean coast had higher proportions of African ancestry, while Mexicans and Ecuadorians showed the lowest level of African ancestry and the highest Native American ancestry.

European migrant contributors were mostly from the Iberian Peninsula and Southern Europe. Evidence was also found for Middle Eastern and North African ancestry, reflecting the Moorish and Jewish (as well as European) origins of the Iberian populations at the time of colonization of the New World. The Native Americans that most influenced the Hispanic/Latino populations were primarily from local indigenous populations.

Provided by New York University School of Medicine

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