



## Human Ancestry Gene Tests Not Checked for Accuracy (Update1)

By John Lauerman

Nov. 13 (Bloomberg) -- Genetic tests that companies sell to people searching for information on their ancestors are based on data from modern individuals and may not yield accurate results, a scientific group said.

Genetic-ancestry testing for consumers has grown rapidly and without checks on the reliability of outcomes or the potential effects on individuals and social groups, and improved guidelines are needed, the **American Society of Human Genetics** said today at a conference in Philadelphia.

The tests look for small genetic variations that have been associated with broad, modern populations in African, Europe, and Asia. Results of the tests can have life-altering implications for people who want to prove they belong to certain population groups, or are surprised to find that the tests call their heritage into question, said **Joann Boughman**, the society's executive vice president.

"We know that the human species started out in Africa and spread out all over the world," she said today in a telephone interview. "It's the part between then and now that gets messy."

At least 36 companies offer genetic testing to help people trace their roots, said **George Church**, a Harvard Medical School geneticist. The Web site of **GeoGene Inc.**, based in San Francisco, offers to "Trace your Ancestry back to the dawn of Humanity." Google-backed **23andme** Inc. invites customers to "see what global regions are reflected in your genes."

### Company Acknowledges Limits

In the results it gives consumers, 23andme tries to avoid giving the impression that ancestry testing is precise, said Joanna Mountain, the company's vice president of research. The findings are presented to show that they could be interpreted in several ways, she said in a telephone interview.

"Even though people would like to know exactly which Native American or West African population they came from, we don't think the data can tell us that right now," she said. "It may be a little less satisfying, but I think people may end up trusting us more because of it."

The human genome is a code for constructing proteins and operating cells that contains about 3 billion pairs of chemicals, called bases. Small variations in the code, called single nucleotide polymorphisms or "snips," have been linked to certain populations through genetic testing over the past few years.

### Tests Not Definitive

Snips that are found in modern groups of people might not have been present in populations living in the same geographic area thousands of years ago, Boughman said. While the tests can provide clues about a person's ancestry, they can't be considered definitive, she said.

"We don't know what the frequency of these genetic variations were 11 generations ago," she said. "There are some wonderful databases out there, and we're making some inferences from them."

Companies should make a greater effort to explain the limitations of "ancestry estimation" to consumers, and more research is needed to establish how accurate it is, the genetics group said in a statement.

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