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Veritas is studying the DNA of

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for clues to longevity

- Veritas Genetics says it has the largest collection of DNA for people who have lived to the age of 110.
- The company is focused on people at the edges of the human experience, whether it's the really old, really young or super performers.

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Source: Veritas

Veritas' Rodrigo Martinez and his wife Kristin are expecting their first child together.

Nelson Dellis has won the U.S. memory championship four times. He once memorized the sequence of a pack of cards in just over 40 seconds, and it took him just 15 minutes to master over 200 names.

Considering how many people struggle with memory loss due to age

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and disease, there's naturally a lot of interest in knowing how Dellis' brain works. [Veritas Genetics](#), a biotechnology start-up, just got approval to sequence the 34-year-old memory athlete's entire genetic code.

Veritas, located north of Boston, is among a handful of emerging companies providing the tools for humans to map their genome at a price, \$1,000 each, that almost brings it into the mainstream. When Steve Jobs, the late Apple CEO, had his DNA sequenced while battling pancreatic cancer in 2011, it cost him \$100,000.

But in addition to selling kits to consumers who want to dive deep into their biological code, Veritas is doing research into people like Dellis to try and understand how and why extraordinary people are different. Prior to Dellis, Veritas has worked with former NASA astronaut Scott Parazynski, who completed five space shuttle flights before retiring (he's now a Veritas advisor), and [the world famous free diver William Trubridge](#), who can descend more than 330 feet into the ocean on a single breath.

Veritas is reaching the edges of human experience in other ways. It also wants to be the first to provide a whole genome sequencing test to newborn babies, and it is building the largest data set of genomes for the oldest of the old.

"I think studying these extreme cases is a really interesting approach," said Robert Green, a medical geneticist at Brigham and Women's Hospital and a consultant to Veritas. "In some ways, the notion of extremes is so fundamental to what we have learned and ever learned about in medicine."

The company doesn't know what it will learn, but that's the nature of this kind of research. Scientists in the past decade uncovered two women with [very low LDL cholesterol levels](#), who turned out to have the identical double dose of an extremely rare gene mutation. That discovery set off a chase among the world's largest pharmaceutical companies to get approval for a drug that imitates the effect of that mutation.

More than 100 years

Preston Estep, Veritas' co-founder and chief scientific officer, has a particular interest in the really old, as well as "super humans" like Dellis and Trubridge.

One of the company's research efforts, spearheaded by Estep,

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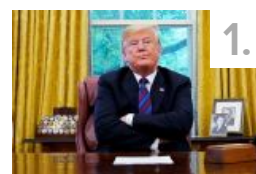
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'I hate them': Locals

involves the study of people who live for more than a hundred years. As their contemporaries have succumbed to cancer, heart attacks and a myriad of other diseases, these folks are still going. Estep wants to sequence their DNA to uncover what they're doing right.



Source: Veritas

Veritas' Preston Estep studies the genomes of super-centenarians

Estep's team has so far collected DNA from 50 "super-centenarians," meaning they have passed their 110th birthday. He's confident that he has the largest collection of any research group in the world.

"We want them to be as old as possible," Estep said. "But we also need a large enough sample to get a sufficient statistical power."

Estimates suggest that there are between a few hundred and 1,000 super-centenarians in the world, and a disproportionate number live in the Mediterranean region and Japan, so finding them is a challenge for Veritas. To broaden the study, Estep is expanding his search to people who have lived to be at least 105. He's also interested in statistical anomalies, like finding a family where all the siblings lived to be over 100.

Veritas is funding the effort in collaboration with the [Personal Genome Project](#), so consumers don't have to pay anything. Estep is involved with the Personal Genome Project, run by the scientist George Church, which works to sequence and publish genomic data and medical records from 100,000 volunteers.

Another challenge with the extremely old is that birth records across the globe were less common over a century ago. Veritas has to find other ways to prove the ages of some people before adding their anonymized genomes to the database.



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Estep has a few theories about what he might find, based on his previous research. Diets that involve a lot of fresh fruit and fish are clearly a factor, given the parts of the world where these people tend to reside. He says that longevity tends to be the result of both genetics and environment.

The really young

As for the extremely young, another Veritas executive is particularly excited.

Rodrigo Martinez, the company's marketing and design chief, and his wife, Kristin, are expecting their first child together in mid-October. Most newborns today receive a biomedical test that screens for a few dozen conditions. Veritas is aiming to offer a test that looks at a few thousand potential abnormalities, and shares those results with patients. Examples of what it might be able to share include pharmacogenomic information, or the infant's potential response to drugs.

Martinez is hoping that his own baby will be one of the first to get this test. And Veritas, along with a number of universities, is also looking at ways to collect smaller saliva samples, so infants won't be subjected to a blood draw.

Martinez and his wife want to limit the information they learn to things that are actionable, instead of learning about risks that are out of their control. They're also still exploring the costs and the implications for privacy, given that there are no legal protections in the U.S. to prevent life insurers and long-term disability companies from denying coverage based on DNA data.

In addition to advising Veritas, Green is the lead on a [research study called BabySeq](#) that looks for childhood risks and illnesses, and studies the value of sequencing infants.

"Newborns have their entire lifetime of health risks ahead of them, which could be potentially prevented," Green said.



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