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Gene mapping for everyone? Study says not so fast

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Gene scans for everyone? Not so fast. New research suggests that for the average person, decoding your own DNA may not turn out to be a really useful crystal ball for future health.

Today, scientists map entire genomes mostly for research, as they study which genetic mutations play a role in different diseases. Or they use it to try to diagnose mystery illnesses that plague families. It's different from getting a genetic test to see if you carry, say, a particular cancer-causing gene.

But as genome mapping gets faster and cheaper, scientists and consumers have wondered about possible broader use: Would finding all the glitches hidden in your DNA predict which diseases you'll face decades later?

Johns Hopkins University developed a model using registries of thousands of identical twins, who despite their shared genes can develop different diseases. They examined 24 ailments, including different types of cancer, heart disease, diabetes and Alzheimer's.

Under best-case scenarios, most people would be told they had a somewhat increased risk of at least one disease, said Dr. Bert Vogelstein, a Hopkins cancer geneticist and the study's senior author.

But a negative test for most of the rest of the diseases doesn't mean you won't get them. It just means that you're at no more risk than the general

population. Those are the findings Vogelstein's team reported Monday in the journal *Science Translational Medicine*. Why? Cancer, for example, typically doesn't result from inherited genes but from mutations that can form anytime, Vogelstein explained. Many other common diseases are influenced by lifestyle and environment - so you'd still have to eat well, exercise and take the other usual precautions.

The study examined just one possible future use of genome mapping. It doesn't mean there aren't other benefits from the effort.

Make no mistake: This technology does have huge promise for customizing care for certain people, especially children with otherwise undiagnosed illnesses, said Dr. James Lupski of Baylor College of Medicine, who wasn't involved in Monday's study.

Last year, Baylor researchers reported one of the first examples of genome mapping directly benefiting a patient. It found a mutation that pointed to the right treatment for a 14-year-old girl's baffling trouble breathing.

But even if finding a genetic explanation doesn't lead to treatment, knowing whether it was inherited can help parents decide whether to chance having another baby, Lupski added.

"There are families where this can be transformative," said Lupski. He had his own genome mapped to identify the cause of a rare nerve disorder.

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