

by Dana Waring

## Genetic Testing: Right for You?

What if you could learn about the ancient origins of your family? Or whether you have an increased risk of certain diseases? What if you could finally point to a genetic predisposition for your aversion to brussels sprouts?

The past decade has seen incredible advances in rapid and inexpensive DNA analysis. In fact, for a few hundred dollars, the information above can already be gleaned from your genome. All you have to do is send a saliva sample to a company such as 23andMe, DeCODEme, or Navigenics, and in a few weeks you can learn about how your genes might influence how your body metabolizes medicines or coffee, or your possible risks for ADHD or age-related vision loss.

While it's exciting to be able to see what your genes say about you, it is important to pause and consider likely risks and benefits. Is there such a thing as too much information?

Much of the excitement about personal genomics relates to potential health benefits. For example, if you learned that you have an elevated risk for skin cancer, would this make you feel more in control of your health and motivate you to see your dermatologist more regularly? Or might you feel instead that you just received the diagnosis and feel resigned to your "fate"?

One company now offers a genetic test for the "pre-pubescent athlete" that claims to indicate whether you have muscles suited to endurance sports or those that require short spurts of exertion. What if your parents or coach ordered this test for you? What if your results indicated that you were not suited for your favorite sport? With such results in hand, it might be easy to forget that athleticism, like many traits, is the result of an interplay among genes, environment, and social factors. Keeping the complexity of our traits in mind will help us critically consider the information provided by genetic testing.

We are in the very early stages of understanding the human genome. We have roughly 30,000 genes, and scientists have linked only a small number of them to known characteristics. As our knowledge progresses, it is possible that genes we now associate with traits such as eye color or bitter taste sensitivity could in the future also be tied to characteristics such as longevity, intelligence, or risk of depression. A little knowledge now could lead to much more knowledge later, whether we want it or not. When Nobel Laureate James Watson made his genome sequence public, he asked that one piece of information be kept private: whether he had a specific gene mutation that put him at elevated risk for Alzheimer's. The researchers complied, but within a few months new discoveries were made, and the parts of his genome that are public do in fact contain predictive information about his Alzheimer's risk.

Opportunities to have our genes analyzed will continue to arise. While personal genetics may become a common experience, the choice to do the testing and the decision of what to do with the information that comes from it are ultimately yours. The possibilities of improved health and tailored medical treatment are on the horizon. The challenge is weighing the pros and cons at a time when the risks and benefits are not yet known—and may not be for years to come. **i**

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**The Personal Genetics Education Project promotes dialogues on the ethical, legal, and social issues in personal genetics through workshops, conference presentations, and educational events at the high school, undergraduate, and graduate levels. To learn more, visit <http://pged.org>.**