There are several companies marketing genetic test kits that promise to provide personalized diet and/or lifestyle recommendations. This is how it works: A person collects a DNA sample, usually by swabbing the inside of the cheek with a cotton tipped swab, and sends it to the company for analysis. Then, the company sends back diet and lifestyle recommendations.

These tests are based on a science called nutrigenomics, which studies how our diets influence health by changing the way our genes work. However, nutrigenomics is a new, emerging science, and there is still much to be learned. Here is what we know today.

- Our genes interact with environmental factors such as food, activity and smoking to determine our health.
- Dietary products may alter the way our genes work. Genes that are regulated by diet play a role in disease onset, progression and severity.
- Diet and lifestyle recommendations based on these test results are personalized.
- These tests may provide information regarding the risk of chronic disease and motivate some people to maintain healthy habits.

However . . .

- Interaction between genes and the environment is in a constant state of change. Our understanding of this process is very limited.
- We do not know how nutrigenomic test results apply to “real life” situations or how this lack of information will affect the accuracy or usefulness of the tests.
- Diet and lifestyle recommendations based on these test results are not very different from the current general recommendations.
- Information about chronic disease risk might make some people feel fatalistic and helpless to improve their health.

Take Home Messages:

1. Nutrigenomic research is a new field of study that holds great promise. However, since we know so little about how diet affects gene function, use of this information may be premature.
2. There are many causes of disease that nutrigenomic tests cannot identify. Therefore, people should not depend too heavily on test results for information about disease risk.
3. Knowing family health history is a good way to determine your risk for many chronic diseases.