

LA Times Article – DNA testing – Corporate Mention

Are the clues to diet success in your genes?

With 'nutrigenomics,' eating plans are based on DNA. Some experts question the advice.

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Some day, we may move beyond the one-size-fits-all food guidelines. A doctor could prick a finger, send the blood to a lab, predict the genetic likelihood of certain diseases — and tailor a preventive diet *exactly* to those unique needs.

This is the goal of a new field known as nutritional genetics — or nutrigenomics. The field, which barely existed five years ago, studies how nutrition interacts with genes and how that interplay ultimately affects health. Applied correctly, researchers believe, it could help prevent certain chronic diseases.

Many scientists, even those specializing in nutrition and genetics, agree that won't be for a while yet.

But high above Los Angeles, at a high-end holistic clinic with white orchids, New Age music and views from downtown to the ocean, the Center for Health Enhancement in Santa Monica is already offering eating plans tailored to clients' genetic profiles.

The center's directors call their nutrition service the DNA Diet, a name trademarked and copyrighted by licensed nutritionist Carolyn Katzin.

For \$595, Katzin takes a swab from a patient's mouth (just like in "CSI," only it takes longer to get the results, she explains), places it in a tiny test tube and sends it off to a lab.

The lab looks for the presence of variations in 19 genes that determine some of the body's essential metabolic processes, including those believed to play a major role in cardiovascular health, insulin sensitivity, the ability to transform food into energy and dispose of waste products, antioxidant capacity, tissue repair and bone density.

Before prescribing a diet for patients trying to prevent illness or lose weight, Katzin conducts a lengthy interview with the client, paying particular attention to family history, current eating habits and stresses. She also weighs and measures the client, performs a body-fat analysis and measures his or her waist.

"This is so motivating," said Katzin. "We're all fascinated by ourselves."

The center is one of the few places in the country offering a DNA analysis combined with personal counseling by a nutritionist, its directors say. (The clinic also provides a range of complementary and alternative medicine options, such as executive physicals, acupuncture, reiki, aromatherapy, yoga and stress reduction programs.)

A few other companies market DNA testing kits — for nutrition purposes — directly to consumers. One Person Health Sciences Inc., a Vancouver, Canada-based company, uses the results to recommend vitamins and supplements; Boulder, Colo.-based Sciona Inc., and Market America Inc., an Internet company based in North Carolina, sell DNA screening analysis kits, and make diet and lifestyle recommendations.

Many genetics and nutrition researchers are skeptical that a diet now can be prescribed based on an analysis of a person's DNA.

"Most experts predict that by 2010 we will have enough information to make geno-based diet recommendations," said Raymond Rodriguez, a professor of molecular and cell biology and director of the Center of Excellence for Nutritional Genomics at UC Davis.

To date, too little is known, Rodriguez said, about the interplay among the body's tens of thousands of genes, much less how specific disease risks might be affected or managed with food.

Other scientists say such diet prescriptions probably aren't harmful — especially if administered by a nutritionist or dietitian — but that the analyses probably don't offer enough information to be helpful.

"The genes that they are looking at, the mutations they are looking at, there is evidence in the literature that supports what they are trying to do," said Jose M. Ordovas, professor of nutrition and molecular genetics, and director of the Nutrition and Genomics Laboratory at Tufts University. "But if you are trying to draw the whole picture of an individual based on 19 genes, I think it is a little bit naive to believe that can tell us much. If we have more than 20,000 genes, the others are also doing something."

Ordovas said he believed it would take a panel of about 200 genes before doctors and nutritionists could give reliable diet advice.

Rodriguez, of UC Davis, agrees such tests are still too primitive to say much. For example, he said, there are about 30 types of obesity, with an estimated 300 to 400 genetic markers. What matters, he said, is the form of obesity a person has, which of their genetic markers are predictive and which will allow effective adjustments to a diet. Many chronic diseases involve the interaction of many genes and environmental factors, he said.

"It is hard to say they are wrong," he said of the DNA Diet's creators, "but it is a question

of completeness."

Nutritionist Katzin and Dr. Alan Heilpern, who bought the Center for Health Enhancement with his wife, Michelle, in 2000, concede that the DNA Diet can offer no preventive promises.

"We cannot guarantee that the cancer you thought you would get, you will not get by following this diet," said Heilpern, who worked as an emergency room physician at St. John's Hospital and Health Center in Santa Monica for more than a decade. "It will take 10 to 20 years of research, following people," to know that. But, he added, "there is no harm in saying, 'Your genes suggest you should be eating this way.' "

Heilpern and Katzin say that, for now, the main function of the DNA Diet is motivation.

"Patients like gimmicks," said Heilpern. "They want data. I can eyeball a person's body fat. But they want the calipers and the numbers. With the DNA Diet, Carolyn is giving them data. This [the DNA Diet] serves as an entree to sit down with Carolyn and learn, not just how to eat, but how to combine eating habits with the rest of their lifestyle."

Katzin added that, although the Food and Drug Administration's dietary guidelines can help keep most people healthy, they simply will not work for other people. "Some people, you can put them on the right diet, get them to do good exercise, and they are still not changing," said Katzin. "With these kinds of patients, you have to ask what unique aspect of their genetic makeup needs a special approach."

She cites the story of a 26-year-old client who had tried many diets but who was 80 to 100 pounds overweight when he first visited the center. Through interviews about his family history, combined with his DNA test results, Katzin linked his weight problem to insulin sensitivity. She told him that he could only eat small amounts of carbohydrates unless he was planning to immediately work out. By following her diet recommendations, he ended up taking 4 inches off his waist, she said.

Eveline Ginzburg, 62, a marriage and family therapist from West L.A., went to the center after finding she had high cholesterol. "I was prescribed cholesterol-lowering medication, but I wanted to know more about my body — why this active, skinny person had such high cholesterol."

She said testing revealed that she has a B vitamin gene that reduces enzyme activity — something that can be a risk factor for heart disease and stroke. Katzin recommended she get her homocysteine measured, and emphasized that she take B vitamins daily in the form of multivitamins.

Katzin also said Ginzburg had a genetic variation that affected the way her body transformed food into energy and disposed of waste products; Katzin recommended that she avoid second-hand smoke because her body is less able to fend off such toxins.

Katzin gave her all the typical dietary advice — eat more beans and whole grains, more fruits and vegetables, more fish, for their omega fatty acids. But Katzin also recommended that Ginzburg eat more artichoke hearts, watercress and cruciferous vegetables — because they can assist in the liver's detoxification process.

Ginzburg said the testing and recommendations raised her awareness of what foods she was eating, ordering and buying. She continues to take cholesterol-lowering medication and eat the vegetables and halibut Katzin recommended, and her "cholesterol has come down enormously."

Alternative health practitioners point out that for all the technology involved, such individualized diet recommendations have been part of ayurvedic and traditional Chinese medicine for thousands of years.

In ayurvedic medicine, practitioners use questionnaires and testing to determine a person's *dosha*, or governing principles of the body. From there they prescribe very specific foods to avoid and to seek out.

Vasant Lad, an Indian-trained physician who is chairman of the Ayurvedic Institute in Albuquerque, said there appeared to be many similarities between the principles of ayurveda and nutrigenomics.

"Every individual has a unique expression of psycho-biology, so diet varies from person to person," Lad said. "One man's food may be another man's slow poison."