



This story is taken from [Sacbee](#) / [News](#).

---

## Genetics may define diets of the future

### Scientists look at how personalized nutrition could change how and what we eat

**By Carrie Peyton Dahlberg - Bee Staff Writer**

**Published 12:00 am PDT Monday, October 15, 2007**

Deep in each person's genetic code may lie the answers to which medicines can help them, which environmental toxins can kill them, and even which foods they should eat to live well.

The tantalizing prospect of personally tailored diets, dictated by our genetic makeup, drew hundreds of scientists and dietitians from around the world to UC Davis over the weekend for a conference on nutritional genomics.

The fast-growing field "will be huge," said Jim Kaput, who next month will take over as head of the U.S. Food and Drug Administration's division of personalized nutrition and medicine. "We are definitely not ready for it."

In interviews, Kaput and other conference speakers said that as the cost of creating individual genetic profiles drops, doctors, dietitians and consumers will be able to get massive amounts of data about themselves.

The challenge will be figuring out what to do with it.

"Eating for your genotype is probably decades away," said Judith Gilbride, a nutrition professor at New York University who last year was president of the American Dietetic Association.

Genes interact with each other and with the environment in so many ways that it will be a long, slow slog toward advice so specific that you're told to eat more broccoli while your neighbor is advised to opt for oranges.

What's likely to come first are potentially valuable snippets of information.

In a study that made headlines last year, researchers zeroed in on a genetic variation that affects how quickly different people process caffeine.

They found that people who drink lots of coffee but metabolize caffeine slowly face a greater risk of heart attacks than those who drink just as much coffee but clear caffeine from their bodies faster.

Ahmed El-Sohehy, co-author of that study, said this could help explain some of the conflicting results from earlier research into coffee and heart disease.

If a substance can be bad for people with one set of genes, but harmless or beneficial for people with different genes, it's easier to see why studies that lump everyone together can be unclear or misleading.

In one way, today's cutting-edge nutritional research is pointing back toward older truths, said Ray Rodriguez, who heads UC Davis' nutritional genomics center and who organized the weekend conference.

"People don't always respond the same way to the same diet. I think our ancestors knew that, our grandmothers knew that, but experts assumed we really all did respond the same," Rodriguez said.

One of his favorite examples is a low-fat diet. Most people with high cholesterol see it drop when they consume less fat. But a smaller group, roughly 30 percent, see it increase instead.

Other examples are certain to come tumbling out as academic researchers, pharmaceutical companies and the food industry keep exploring what our bodies do with foods we eat.

"The progress is significant," said Leon Frenken of the Unilever Foods and Health Research Institute, who came to the conference to catch up on both the science and the start-up companies that hope to capitalize on it.

"What I hear here really is flabbergasting," Frenken said.

One of the first big markets, he predicted, will be demand for tests that can tell people more about their DNA

profiles and about how they metabolize certain fats.

A few companies have already begun offering diets based on genetic testing for the general public, but UC Davis' Rodriguez dismisses them as "infotainment."

It's not that the science behind them is bad or sloppy, he said. It's simply that so far, we don't know enough yet to leap from a few genetic details to truly individualized diets.

There is a danger, too, in relying too much on genetics to predict how healthy we can be, said heart health researcher and author Dr. Dean Ornish.

In a packed Saturday evening talk underscoring his long exploration of lifestyle and heart disease, Ornish noted that new research is focusing on ways our behaviors can change how our genes work.

Exercise in older people, for example, was recently shown to affect about 300 different genes, increasing activity in some and dampening it in others.

"You're not a victim of your genes," Ornish said. "You can actually change to a much larger degree than we once realized."

In time, he predicted, doctors will be able to tailor recommendations much more precisely, using genetic testing to help each person find the right mix of diet, exercise and medication.

Go to: [Sacbee](#) / [Back to story](#)

---

This article is protected by copyright and should not be printed or distributed for anything except personal use.  
The Sacramento Bee, 2100 Q St., P.O. Box 15779, Sacramento, CA 95852  
Phone: (916) 321-1000

[Copyright](#) © [The Sacramento Bee](#)