

# The Apo E Gene Diet

Using genetics to determine the best way to eat

**W**hen you're eating for health, "one diet does not fit all," says Pamela McDonald, an integrative nurse practitioner and author of *The Apo E Gene Diet*. One reason for this is differences in the Apo E (apolipoprotein E) gene, responsible for determining how your body processes fat and cholesterol. First discovered in the 1970s, the Apo E gene has since been linked to conditions such as high cholesterol, heart disease, diabetes, Alzheimer's, Parkinson's, and multiple sclerosis (MS). Because these genes affect how your body processes foods, eating a diet customized to your particular pair of Apo E genes may ultimately help reduce your risk of developing a disease associated with your genotype.

## THE GENOTYPES

You inherit one of three naturally occurring gene variations, or genotypes, from each of your parents, giving you one of six possible pairings. Most people (64 percent) have the Apo E 3/3 genotype; pairings including Apo E 2 or 4 are considered "alternative" expressions. The Apo E gene diet is based on the concept that each genotype carrier processes foods differently. McDonald's clinical experience as well as mounting research show that in people not following a healthy diet, Apo E 3 is linked to diabetes and insulin resistance; Apo E 2 is connected to high cholesterol, vascular disease, and Parkinson's; and Apo E 4 to inflammatory diseases like Alzheimer's and multiple sclerosis. If you're interested in learning your genotype, you'll likely have to request a simple blood test through your doctor or a private lab. Remember, carrying a gene does not mean you are guaranteed to get a disease—a whole host of factors, including lifestyle, influence health. But by knowing your genotype and what conditions you are at risk for, you can help mitigate these risks through tailored diet and lifestyle changes.

## THE DIETS

Regardless of genotype, everybody benefits from eating an anti-inflammatory diet rich in antioxidants, healthy fats, fruits and vegetables, and whole grains. Another key is approaching food as fuel and eating small meals and snacks about every three hours. McDonald believes that determining the best "fuel" for your body depends on your genotype.

**Apo E 2** For example, those with genotypes including Apo E 2 prefer fat and operate optimally with 30 to 35 percent of daily calories from healthy fats such as olive oil, avocados, nuts, and omega-3-rich foods like salmon and walnuts. A sample dinner for this genotype carrier might be salmon, broccoli with chopped almonds, and a baked potato.

**Apo E 3/3** This genotype processes fat normally and does best with a moderate-fat diet including slightly smaller portions of healthy fats, such as a dinner of salmon, broccoli, and a baked potato.

**Apo E 4** People with genotype pairings containing Apo E 4 don't use fat for fuel well and should aim for limiting it to 20 percent of total calories, deriving more calories from complex carbohydrates and plant proteins. (For example, dinner could be beans, rice, avocado, and broccoli.)

## SMALL CHANGES, BIG RESULTS

These may seem like small tweaks, but many of McDonald's patients have been successful, one even dropping 200 points from her cholesterol through diet and exercise alone. "It shows me that diet is so important, it cannot be ignored," says McDonald. She recommends making diet and lifestyle changes gradually to ease your transition and ensure they are sustainable. You may feel better—and begin to lower your disease risk—within just a few weeks. For more information, visit [apoenediet.com](http://apoenediet.com).

.....  
This monthly column on nutrition is produced in collaboration with the Arizona Center for Integrative Medicine. For more information, visit its website at [integrativemedicine.arizona.edu](http://integrativemedicine.arizona.edu).