

# LAMORINDA WEEKLY

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## Dinnertime and DNA

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We've heard the saying "You are what you eat". Scientists are now discovering that your DNA unwinds and expresses itself according to what you eat also. The Genome Project, which has decoded human DNA, and the field of epigenetics (the science of what influences DNA), reveal that eating patterns may determine the health of not only yourself, but of future generations.

Nutrition is a lifestyle decision, but the genes that have been passed down to us may seem like an unalterable inheritance. Yet nutrigenomics (the study of nutrition and DNA) is showing that nutrients surrounding a cell's nucleus can influence which part of a gene unwinds. If the nutrient is compatible with health, optimal parts of the code can unwind to reproduce. If the nutrient is harmful, it may cause an expression of the genetic code that allows a familial-inherited disease to express itself. For example, if several men in a family have had heart attacks in their mid-forties, an active, positive lifestyle can be what spares some from that fate.

Genomic testing, if used responsibly and discriminately, can provide very interesting clues to how family patterns of disease are passed from one generation to another. Take high blood pressure, for instance. Several genetic tests can check for the presence of DNA alterations which may predispose (not absolutely predetermine) someone to hypertension. One can run those tests with a goal of making specific changes to avoid getting hypertension or prolong its manifestation. This knowledge can help in the employment of therapies which have a better chance of working. For example, a 47 year old female patient of ours with a history of hypertension on her mother's side, tested positive for an enzyme defect which can lead to a decreased ability to lower blood pressure. The good news is that her positive lifestyle

steps can help her avoid going down that road. Another unexpected benefit was that in knowing a bit of her daughter's genetic code, her mother changed her medication to one that addressed that enzyme defect, and more effectively lowered her blood pressure.

Another patient of ours, a 52 year old woman with a strong history of osteoporosis, had a simple genomics test done that revealed she was deficient in Vitamin D and calcitonin receptors. Vitamin D promotes calcium deposition into bone. Calcitonin is a hormone that signals calcium to enter the bone. The good news about this information is that she became informed enough to compensate for the genetic deficiency by taking more vitamin D supplements and D-rich foods. Also, there are calcitonin nasal sprays available to assist in raising available calcitonin levels. Her genetic inheritance is not a doomsday sentence. Along with appropriate medications to influence bone deposition, she's improving her chance of staving off osteoporosis.

There are thousands of genomic test results one could attain, and many new facilities that conduct these tests, but only about a dozen or two results are backed by research and shown to be alterable by lifestyle changes. At Lamorinda Nutrition, we only test for genomics factors that can be improved by diet and lifestyle.

In the next article, we will describe how nutrition, as a big part of lifestyle, can influence future generations by affecting our amazing genetic code.

*(Nutrients can cause a cascade of cell signals which )*

*(This suggests that even with a strong family history of disease, one can positively alter that inheritance. )*



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