

## Climate Change and Health

There was a very interesting article in the October, 2015 issue of *Scientific American* titled "The Fat Gene."

The basic finding was an epigenetic effect related to the gene that controls uricase. What the research found was that there is an evolutionary based environmental trigger that turns off the uricase gene thereby allowing uric acid to build up in the body. The effect of this is a pre-diabetic condition that facilitates fat storage. Apparently, this epigenetic effect came about as an anti-starvation strategy related to climate change. This appears to have taken place around 15m years ago with the beginning of an ice age. The primates at the time lived primarily off of fruit. As the climate cooled, fruit trees produced less fruit and for shorter periods during the year.

The primates of that period learned to stuff themselves with fruit as the cooler period of the year approached in order to store up fat to survive the period of low food availability. Overeating fruit (and the fructose therein) markedly increase blood glucose and thereby became the epigenetic trigger that turned off the uricase gene. In modern times, obesity, cardiovascular disease, high blood pressure, type 2 diabetes, kidney stones and gout are some of the problems believed to be linked to the turning off of this gene and the subsequent accumulation of uric acid in the body. The high fructose intake (note that sugar is half fructose) in the modern diet triggers the shut down of the uricase gene. Since the increase in fructose intake in modern people is not seasonal the gene remains turned off for extended periods of time; i.e., for years if not decades instead of months as was originally the case.

I did an investigation on foods high in purines, which are converted to uric acid, and/or uric acid since elevated levels of uric acid is the culprit and a diet high in such foods combined with turning off the uricase gene is a double whammy. Here are the types of foods high in purines and/or uric acid: All organ meats, meats, poultry and fish (especially salmon, trout, sardines and shrimp) beans and peas (though cranberry and garbanzo beans are lower than others), some vegetables such as broccoli as well as beer (brewers yeast is very high) and whiskey to a less extent. Wine appears not to be a problem if it is a dry (not sweet) wine. Herbal supplements that there is reason to believe help expel uric acid from your system include extract of black cherry and extract of celery seeds. For more details on diet see:

<http://www.dietaryfiberfood.com/purine-and-uric-acid/purines-food-and-gout.php>

<http://www.drugs.com/cg/low-purine-diet.html>