Bad Gene, Not Cupid, Puts Arrow Through Some Smokers’ Hearts

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A study suggests that a common defect in a gene is the cause of a significant increase in early heart attacks among smokers. New evidence shows that heavy smokers with this common gene variant experienced a heart attack at the average age of 52. It is the deviation of the gene CETP (cholesteryl ester transfer protein) that is the culprit. CETP is a protein found in all people that controls metabolism. The smokers with a common form of this gene are likely to suffer a heart attack 12 years earlier than a non-smoker. However, smokers who do not carry this variant appear to be protected and have the same risk of heart attack as non-smokers. Researchers focused in on CETP, which manages a person’s level of high density proteins (HDL). HDL are known as “good cholesterol” whereas as LDL (low density proteins) are known as “bad cholesterol.” The good cholesterol helps to filter out all the bad cholesterol which builds up plaque on artery walls. When CETP has this defect, it makes the protein controlling HDL work on overdrive and attack the HDL particles leading to less good cholesterol in the blood stream. At the same time, heavy smoking also decreases HDL levels and this further perpetuates the clogging of arteries. The cumulative effect is a dramatic drop in age such smokers are likely to experience a heart attack. Similarly, if you’re a smoker and you don’t carry the CETP variation, you have the same risk for heart disease as a non-smoker carrying the same gene. This research was conducted by Dr. Arthur Moss. His
conclusions are based on patients enrolled in a multi-center trial from which he collected blood samples and medical histories. Moss believes that the medical research like his will continue finding new genes that can pin-point the causes of different diseases.

This article gives me a better understanding as to the reasons why some people smoke their whole lives and experience little health problems, whereas others have heart attacks at age 50. The answer lies in genetics. I have heard about certain foods having an influence on LDL and HDL levels, however, I did not know that there was an important gene that was critical in the management of these proteins. I think that we too often tend to overestimate environmental factors and underestimate genetic factors on our health. This article is a prime example. I can easily relate this to my life because both of my grandparents were heavy smokers for many years. One of my grandfathers died about 11 years earlier than my other grandfather, both from heart complications. It makes me wonder if this CETP gene variant was a possible explanation for the disparity between two heavy smokers in my family. Furthermore, being able to determine if a person has this gene defect would have many benefits and affect their smoking habits. However, it may give people a false sense of security and cause them to increase unhealthy lifestyle choices. Just as this gene is a factor to those who smoke in developing heart problems, another gene may be a factor in a patient’s development of lung cancer. I believe scientists will continue to find a number of different combinations of genes that protect or predispose people to environmental consequences. The more scientists unravel the relationships between genes and the environment, the better chance people will have to decrease their risks of diseases.