


# When it comes to heart disease, can lifestyle overcome bad genes?



It started with a Facebook post. A couple of weeks ago, I uploaded a video of Bob Harper with the comment: “‘Biggest Loser’ celebrity trainer, proponent of low-fat, ‘carb-friendly’ diet, suffers heart attack at 51, blames ‘bad genes’.”

Harper is seen in the video on a recent appearance on the *Rachel Ray Show*, explaining his dietary philosophy. He calls for a balance between equal amounts of protein, fats, and carbohydrates. The latter may consist of pasta or rice. 

Harper is best known as the popular trainer on *The Biggest Loser*, an extreme weight loss reality show that has recently come under fire because contestants rapidly lose inordinate amounts of weight which they fail to sustain over the long-term. Most contestants regain most of the weight they lost, and sometimes more. Many are coming forward to express their disillusionment. A recent study followed 14 *Biggest Loser* alumni and found that their metabolisms had slowed to a crawl, permitting weight gain even with modest lapses in their draconian diet/exercise regimens.

“Shows like *The Biggest Loser* help perpetuate the idea that you really need to lose enormous quantities of weight to be healthy and be normal,” says study author Kevin Hall. “But you don’t have to have this rapid or dramatic weight loss to have health benefits.”

Harper professed astonishment that he suffered a serious heart attack, given his ostensibly healthy lifestyle. He disclosed that his mother had premature heart disease, suggesting a genetic predisposition. For years he had been a vegetarian, earning him an award from PETA in 2010. But, he allowed, he modified his diet to include small amounts of animal protein in 2013. He is an exercise enthusiast, and appears to have been well-conditioned, but the heart attack occurred in a gym during a strenuous workout.

The response to my post was immediate and emphatic. One person commented:

“Stop the judgement. Many people do have a strong genetic propensity and not one type of eating is right for everyone. It’s the #1 killer in the US and none of us are immune. Remember that.”

Others had a different take:

“Lol that he blamed his genes...not that he suffered a heart attack. Eat low carb, healthy fats and don’t over cardio exercise to reduce inflammation and to be healthy.”

In the same vein: “The Government food pyramid strikes again!” And “People can turn off their genetic switch...which a low carb diet generally helps.”

Some attacked me for the “*Schadenfreude*” that they believed my post reflected. (*Schadenfreude* is one of those great German words that means taking joy in the suffering of others.)

I’m not Harper’s doctor, and I’m not privy to what transpired. Did he practice what he preached in terms of diet? Or was his conception of the ideal diet too carb-laden? Was he a closet smoker? Did the pressures of Hollywood celebrity take their toll? Was he surreptitiously taking anabolic steroids? Was he abusing other performance-enhancing drugs? Did he exercise imprudently, pushing himself into the “red zone”? Or was he taking over-the-counter or prescription meds that upped his risk of heart attack? And finally, had he tapped the potential of heart-protective supplements?

I’m relieved that Harper seems to be well on his way to recovery, and I wish him well. As a minor health guru myself, I can imagine how devastating it must be to lose your aura of invincibility in full view of your public.

But coming back to the theme of this article: are some people so strongly predisposed to heart disease that they’re beyond the protection that prudent lifestyle measures can confer? Which is more important—nature or nurture?

It so happens that a recent **very elegant study** published in the *New England Journal of Medicine*, addresses this important question head-on.

The researchers first identified 50 genes that contribute to heart disease risk. Some of them raise cholesterol; others render the blood more likely to clot; still others place patients at higher risk for inflammation, obesity, insulin resistance and/or hypertension. Each of the 7814 study participants was then assigned a genetic “score,” rating them on how predisposed they were to heart disease.

Then, the same participants were surveyed as to their lifestyle practices: smoker or non-smoker; standard American diet or Mediterranean Diet rich in Omega 3 and plant polyphenols; sedentary or physically-active; and overweight or normal weight. They were assigned points according to how closely they adhered to healthy lifestyle guidelines.

Predictably, the more “bad” genes the subjects had, the more likely they were to experience a heart problem during the course of the study.

And, equally plausible, the better their aggregate lifestyle scores, the less likely they were to experience heart disease.

But the amazing part of the study—and a critical take home message—is that a healthy lifestyle “trumped” genetic factors in terms of predicting the likelihood of cardiac events. The magnitude of the protective effect of lifestyle was especially surprising. It was estimated by the study authors that even “among participants at high genetic risk, a favorable lifestyle was associated with a nearly 50% lower relative risk of coronary artery disease than was an unfavorable lifestyle.”

That means that, even with “bad” genes, a healthy lifestyle can substantially mitigate heart risk.

(Imagine the additional degree of protection had these participants been scored for their adherence to a heart-protective supplement program!)

The study authors further conclude: “. . . patients may equate DNA-based risk estimates with determinism, a perceived lack of control over the ability to improve

outcomes. However, our results provide evidence that lifestyle factors may powerfully modify risk *regardless of the patient's genetic risk profile* [emphasis added]."

By now, most of us adults have come to the mature realization that life is not always a merit system. Bad things do indeed happen to good people. But acceptance of those verities need not prompt fatalism about health. We can, to a large extent, overcome our genetic programming with the right lifestyle measures.

That, not *Schadenfreude*, was the point of my post. I did not want Bob Harper to become the poster boy for the proposition that health is just a matter of "dumb luck," as some people believe.