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SCIENCE

# Review: 'Too Much of a Good Thing' Finds a Dilemma in Our DNA

Books

By ABIGAIL ZUGER, M.D. DEC. 28, 2015

We tend to think of good genes as the ones that make us thin, calm, cheerful and healthy. This logical assumption may not be completely accurate: Dr. Lee Goldman suggests that even better genes may be the ones that make us fat, anxious and candidates for the services of a cardiologist like himself.

It's all a matter of perspective, and Dr. Goldman takes the long, long view in "Too Much of a Good Thing," arguing that many common modern ills result from the surpassingly excellent genes that allowed our species to endure over the millenniums. Only very recently did these survivor genes turn on us, creating the collection of overweight, hypertensive, jumpy and miserable individuals we are today.

Some of his argument will probably be familiar, at least when it comes to the question of why we have all become so fat. Less has been written about other areas of human physiology where our genetic programming seems to butt up against the circumstances of modern life. Dr. Goldman integrates it all into a complex narrative — a little tough sledding at points, but still thought-provoking.

For our hunter-gatherer forebears to survive, he reminds us, they had to enthusiastically consume large quantities of food when food was available. They had to scarf up substantial amounts of salt and water as well — the unique human ability to sweat profusely and keep the body cool by evaporation gave hunters the stamina to keep up with their prey.

Human blood had to clot efficiently, too, or people would have bled to death from the continual accidents inherent in outdoor life and women would have died from the bloody process of childbirth. Finally, primitive humans had to be continually vigilant against attack, instinctively fighting some dangers and hiding from others, never lowering their guard for a second.

All those genetic predispositions tend to be nothing but trouble in modern times.

When it comes to food, we are programmed to ingest more calories than we need. Some triggers are social (the pleasures of fine dining, the easy availability of tasty food), but many more are inherent in the body's workings. Our taste buds prefer calorie-laden items to others. Our intestines efficiently extract those calories from ingested food. Our bodies fight weight loss with an assortment of hormones and appetite-stimulating molecules that are revved up when pounds disappear and may stay elevated for years.

Our natural taste for salt doubtless dates to the times when salt and potable water could be hard to find. Now we have plenty of both — and we sweat considerably less than primitive humans did — but we still crave more salt than we need. Excess salt may cause or worsen **high blood pressure**, damaging the heart, brain and kidneys. Without that taste for salt, Dr. Goldman hazards, we might “be able to avoid high blood pressure altogether.”

Our risk for **bleeding** to death is certainly far lower than was primitive man's, but we have inherited his complex, sophisticated blood clotting system. When it is deployed in the blood vessels of the body's internal organs, it can be very difficult to turn off, causing common, often fatal events such as heart

attacks, strokes and giant clots in the lungs.

Finally, that hard-wired alarm system in the brain also works against us. “Nonspecific hypervigilance and even occasional panic may have been critical when animals, predators and powerful and potentially homicidal humans were constant threats,” Dr. Goldman writes.

Now, though, aggression may be internalized into crippling anxiety, while the instinct to hide from or become submissive to a predator may transform into depression, even suicide. “Our defenses against being murdered are now precipitating the anxiety and depression that are disabling and killing more of us than the violence they were designed to avoid,” Dr. Goldman writes.

All is conjecture, certainly, but it makes an interesting story. Would that Dr. Goldman, who is a dean at Columbia University Medical Center and a world-renowned researcher, were a bit more of a natural storyteller. His text bulges with facts and tangential asides, zigzagging across most of human history and biology to get to every last relevant morsel of information. Small wonder that when it comes to figuring out what to do about these errant genes, Dr. Goldman begins to sound a little fatigued.

He points out that waiting for evolution to clean itself up means a long, long wait — meaningful genetic changes happen very slowly. Hoping for good behaviors to compensate for our errant survivor genes is also unlikely to work well; note the high failure rate of most diet and exercise programs.

We are left with modern medicine, and Dr. Goldman valiantly makes a case for medicating ourselves better with agents ranging from the ones we have now (like good blood pressure drugs) to some highly hypothetical compounds (like a chemical that mimics some of the benefits of exercise while the recipient lounges on the couch).

Perhaps that pharmaceutical approach to our inner cave man or cave woman will work out someday. In the meantime, we can take some psychic

comfort from the fact that our pudginess may not be pure gluttony, nor our anxiety some culpable failure of the will. Forgive your genes, Dr. Goldman concludes: “As a society we need to become less judgmental of one another and oftentimes less critical of ourselves.”

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