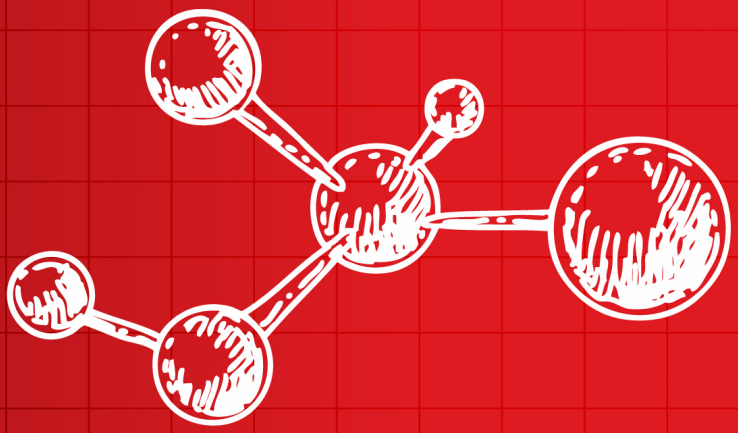
SUMMARY

TOO MUCH OF A GOOD THING

Lee Goldman, MD



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FREE BOOK SUMMARIES

Summary of «Too Much of a Good Thing» by Lee Goldman

Written by Lea Schullery

A radical explanation for how our bodies are turning against us and why we experience modern ailments like obesity, high blood pressure, and anxiety.

Introduction

Since the Industrial Revolution, human life expectancy has doubled, yet we continue to face modern ailments and illnesses like obesity, diabetes, high blood pressure, and mental illness. Throughout *Too Much of a Good Thing*, Dr. Lee Goodman provides a revolutionary explanation for how the genes that once helped us survive are now becoming detrimental to our health. For example, our ability to store food causes many of us to overeat and our systems designed to keep us from bleeding to death now lead to high blood pressure and heart disease. Our world has changed drastically over the past 200 years, but our bodies haven't. Learn about how our bodies have evolved over the centuries and how they are widely unable to adapt to our modern world and lifestyle.

Our Dark-Skinned Ancestors

How many times do you have to help a parent or grandparent navigate something on the computer, smartphone, or tablet? Older people struggle to adapt to this new digital world, and similarly, our bodies are just as confused by our modern world. 60,000 years ago, before humans migrated out of Africa, all our ancestors had dark skin, with a melanin pigment that partially blocked ultraviolet light. Despite this darker skin, our ancestors still got enough ultraviolet light because they spent so much time in the warm sun without needing to shield their bodies with clothes.

But when our ancestors first moved out of Africa to less sunny climates, things began to change. Dark skin wouldn't have been a problem, but a cooler climate meant a different lifestyle, one with much more clothing. For instance, when our ancestors migrated out of Africa to colder climates, they were forced to wear more clothes to keep warm. Therefore, the amount of skin exposed to sunlight fell dramatically and compromised their ability to activate enough of their livers' vitamin D.

So how did they adapt? Random genetic mutations, which reduced their skin's production of melanin, lightened their skin color. This mutation spread rapidly because of the advantage it granted, it allowed more ultraviolet light to penetrate their sun-exposed skin and activate the vitamin D precursor made in their livers. While this change in migration and genetic mutation was slow and gradual over thousands of years, recent changes are not quite so steady.

Since the Industrial Revolution, modern advancements have drastically changed the way we live. Resources like food and water were once scarce, but we now can order such luxuries from the comfort of our home and even get it delivered in less than thirty minutes! We now live less physical, more sedentary lives. We pursue intellectual interests, and our societies are significantly safer and less violent than our ancestors. But why does this matter? Well, our bodies were widely unprepared for such drastic changes.

Our Change in Food Habits

As mentioned previously, food in today's society is anything but scarce. We can simply open an app on our phone and food can be delivered in as soon as thirty minutes. We walk into the grocery store and we can find just about anything we need, certainly more food than we need to survive. Because of this increase in food, we have become accustomed to ingesting more calories than we need. Some triggers are social, think about that delicious steak dinner at your favorite steakhouse, while others are more ingrained in our body like our taste-buds preference for calorie-laden items. However, food didn't always work that way. The traditional three meals a day was most certainly not practiced like it is today.

Instead, our hunter-gatherer ancestors were forced to eat large quantities of food at once, and stock up on fat when it became available. In fact, early pioneers recorded that Native American tribes would eat up to nine pounds of meat, which equates to about 12,000 calories, in one day if it was available. Because food was scarce, the bodies of our ancestors were forced to reserve energy, so they stored fat in their bellies, hips, and thighs. Not only were these fat reserves crucial for storing energy, but they were also critical for people living in colder environments because they needed extra protection to keep warm and prevent their bodies from freezing.

Nowadays, our lives are very different. How do you stay warm? You either put on extra clothing, turn on the heat, or light the fireplace in your house. Today, you no longer need to rely on your body to keep you warm. Because of this change in lifestyle, we are eating too much food and piling on too much fat as our bodies no longer rely on fat for warmth. Goldman states "All the remarkable traits that helped our ancestors survive recurrent food shortages are simply out of sync with modern supermarkets, fast-food restaurants, and unlimited snacking options."

Similarly, our genetic makeup now makes it more difficult to lose that extra fat. When we lose weight, the number of calories that we need also

decreases. For every percent of body mass that we lose, we need 20 fewer calories per day. Therefore, we can only lose weight by consistently eating less for the *rest of our lives*. In fact, in 2012, Priya Sumithran found that when a person loses weight, their body releases a hormone that increases their appetite, no matter their size. Of course, at one point this made sense when food was scarce, but today that genetic makeup is only contributing to the obesity epidemic.

A Rise in High Blood Pressure

In today's society, we hardly think twice about working out or going for a run. In fact, we enjoy working up a sweat because we equate sweat with losing weight or building muscle. We lose sweat, but we can easily replenish the water and sodium in our bodies with food and water that is readily available. Water runs freely through fountains, and food can simply be picked up just as easily. However, our ancestors would have never been able to exert such energy centuries ago. Our ancestors rarely exerted themselves due to fear of dehydration since clean water and sodium were scarcely available.

For example, in 490 BC, the messenger Pheidippides ran from Marathon to Athens to report that the Greeks had defeated their Persian invaders. The area between the two cities is incredibly arid and Pheidippides ran with little water and lost up to two liters of sweat every hour. Throughout his journey, his body eventually stopped sweating to conserve water and sodium. When your body stops sweating, it no longer can cool itself off naturally, so his body temperature rapidly increased. Soon after delivering the news, Pheidippides collapsed and died due to heatstroke from excessive dehydration.

Similar to how our bodies store fat for warmth, our bodies are also developed to conserve water and sodium; however, this mechanism is now dangerous in today's world. We now have too much sodium which leads to high blood pressure. Throughout the day, we are constantly losing water through sweat, urine, or even diarrhea, and when you lose water, you lose sodium. The result of losing those critical nutrients is low blood pressure. The opposite is also true; when you take in too much sodium and water, you then suffer from high blood pressure.

Because of the constant threat of dehydration, our ancestors evolved genes that produced hormones that helped maintain high levels of sodium in the blood. However, these genes now threaten us due to the higher amounts of

sodium we consume in our food. In fact, 15 percent of all deaths in the United States are caused by high blood pressure. While our ancestors consumed large amounts of salt and water to continue producing sweat to keep up with prey, today we sweat far less than our primitive ancestors because we do not have to rely on hunting and gathering for food; however, we continue to crave more salt than we need. At the end of the day, our intestines are continuously extracting calories from the food we ingest and storing it efficiently. Simultaneously, our bodies are fighting against weight loss with hormones that stimulate our appetite when those pounds disappear, which could even stay stimulated for years to come.

Why We Experience Anxiety and Depression

Mental health issues like anxiety and depression have become common in today's society. You or someone you know likely suffer from one or more of these afflictions. People who exhibit symptoms of anxiety and depression interpret seemingly minor problems as a serious threat to their life; however, this isn't a necessarily new concept, instead, we can look to our ancestors to understand how these mental health disorders have developed over time.

In prehistoric times, people were constantly under the threat of danger and violence. Because they faced so many threats, our ancestor's bodies reacted as quickly as possible to survive imminent danger. Becoming easily frightened was advantageous as those who scared easily had a higher chance of survival. According to the psychiatrist, Randolph Neese, he proved that becoming injured was far more detrimental than running away from a predator. He proved that fleeing from danger burned as little as 200 calories, whereas an injury could lead to a loss of up to 20,000 calories. In other words, running away scared is far safer than fighting and risking injury.

Today, we are no longer threatened by such predators and enemies; however, we are triggered by modern stresses such as work deadlines, depressing broadcast news, and threats of modern illness like cancer. These stresses trick our bodies into thinking that we are constantly under threat which causes us to experience severe afflictions like panic attacks and anxiety. According to Goldman, "The anger that used to be directed externally toward other people is now increasingly directed internally, where it's manifested as anxiety and depression." Suicide, he observes, is the tenth most common cause of death in the United States.

However, it's not all bad news. Modern technology has allowed researchers to discover a cure for depression through light therapy. Dr. Susumu Tonegawa and his team discovered that anxiety and depression-inducing

memories can be erased with a biological technique called optogenetics, a method where light is used to control cells. The team used a procedure involving shocking male mice in a specific room to instill a fear of a certain location. Once shocked, they moved the mice to a separate room with female mice which activated different brain cells and made them feel happy again. Then, the male mice were taken back to the room that frightened them. This time the scientists reactivated their “happy” brain cells with a laser beam. This laser beam made the mice feel calm again, completely erasing their anxiety.

The History of Blood Clotting

Today when you fall off a bike or get into a car accident, you have access to modern advancements to heal and stop the bleeding quickly. There are bandaids and ointments for minor cuts and scrapes and wraps and stitches for more severe afflictions. But how did our ancestors deal with such injuries? While we may use bandaids to prevent further infections, they aren't meant to physically stop bleeding, our bodies do that on their own! Naturally, our blood clots to stop blood loss; however, our ancestors were prone to bleeding to death when they suffered from major injuries like hunting accidents or even childbirth.

Additionally, human blood had to clot efficiently or else large portions of the population would have died from basic accidents, and even more women would have died from childbirth. Lastly, humans had to be vigilant of attack, instinctively fight away dangers and hide from threatening predators. However, all these genetic predispositions are increasingly causing trouble inside our bodies in today's modern world.

Blood clotting has now become a widespread genetic trait, and our bodies have evolved to contain a high concentration of blood-clotting agents called platelets. Platelets essentially move to the wounds and attach to them to seal the skin and prevent blood loss. They also send out chemical signals that alert other platelets when there is an emergency in the body. In total, human blood contains about 15 million platelets in just a single drop of blood.

This increase in platelets now poses a threat when combined with an unhealthy diet. When you consume too many unhealthy fats like saturated or artificial trans fat, cholesterol deposits build on the walls of your arteries. These deposits are easily susceptible to tearing and can cause the lining of your arteries to tear. In America, according to Goldman, "diseases caused by clots — heart attacks, clotting strokes, pulmonary embolism, and the like

— cause about 25 percent of all deaths, more than four times the number of deaths caused by all forms of bleeding."

As mentioned earlier, platelets are attracted to wounds like magnets, so such tears in the arteries attract platelets who try to mend it. So while these platelets begin to mend the wounds, they also create clots in arteries as they build on top of the layers of cholesterol. This build-up blocks proper blood flow and eventually causes heart attacks and heart disease.

Are More Genetic Mutations in Our Future?

Over the centuries, the human body has evolved to new environments and new ways of living, so does that mean that our bodies will continue to evolve to our more modern lifestyle? Suppose one day the human body develops a gene that can make us immune to chronic diseases like cancer or diabetes. Unfortunately, natural selection is unlikely to immunize us from such diseases.

Natural selection allows our favorable genes to be either passed on to new generations or become gradually weeded out as they hinder a person's ability to survive or reproduce. While diseases such as obesity and diabetes are known to affect fertility, modern technology has made it possible for people to undergo in vitro fertilization if they cannot produce naturally, so while these genes are disadvantageous to our survival, they can still get passed on to the next generation.

Because of these modern advancements and natural selection, it is unlikely that our bodies will adapt much further to catch up with our modern lifestyles. While immigrants have the potential to introduce new genes and replace less advantageous genes, the human population is far too vast for a random, advantageous gene to spread throughout the entire global population. Additionally, we won't be able to adapt to our environment quickly enough to pass any advantageous genes to our children. Our behavior will impact the next generation far more than our genes will. For example, children who don't spend enough time playing outside are more likely to suffer from nearsightedness which they can then pass on to their own children later on.

One of the more likely advantages that we could eventually see is the ability for our kidneys to become better at eliminating sodium from our blood; however, no studies have been successful at confirming this will happen. Instead, we should simply assume that our bodies won't naturally adapt to modern changes in our lifestyle.

Sheer Willpower May Not Be Enough

Many people struggle with their weight in today's society. We continuously harp on changing your diet and exercising to lose weight and maintain a healthy lifestyle. Additionally, we assume that people who can't maintain their weight simply have a loss of willpower. We might think, "if only they could put down that piece of cake or stop drinking that sugary soda." However, sheer willpower may not be enough to help us control our weight. Take, for example, Oprah Winfrey. In 1988, Oprah famously lost 67 pounds, but twenty years later she went back to weighing around 200 pounds. Despite her determination to maintain a healthy lifestyle, she continued to struggle with fluctuating weight.

Even former US president William Howard Taft struggled to overcome his own weight problems. In 1909, Taft weighed in at 354 pounds when he took office. He too made many prior efforts to lose weight, but he struggled to take control. Determination and willpower alone aren't quite enough to overcome the obesity battle.

Instead, collective action must take place to see more change. In other words, governments need to step up and take control of the contents that go into our food. For instance, the UK parliament forced companies to reduce the amount of salt in processed food by 20 to 30 percent. Finland campaigned for salt content limits to reduce the consumption of sodium by 25 percent. Changes like these resulted in a decrease of high-blood-pressure related illnesses and complications.

Additionally, cultural norms and traditions can also become advantageous in the fight against obesity. This is true in countries like Japan who have an obesity rate of just 5 percent, one of the lowest rates in the world. In 2008, the Japanese government passed a law requiring all adults aged 40 to 70 to measure their waistline each year. If the measurement exceeds 35.4 inches for women or 33.5 for men, then they must go through compulsory dietary counseling.

It's Not All Bad

If you're beginning to think that our genetic mutations are simply hindering our existence, there are still plenty of benefits! Nowadays, modern technology has allowed people to survive incredibly complicated surgeries and chronic illnesses. People can now survive childbirth and heart attacks at a higher rate and can even become immune to diseases like AIDS and HIV. For example, Bill Clinton lived through two heart attacks thanks to advancements in surgery and medication.

The AIDS epidemic in the 1980s first criticized pharmaceutical companies for failing to provide adequate treatment for those suffering, as was seen in the film, *The Dallas Buyers Club*. However, since then, pharma companies have now discovered an HIV resistant gene mutation in about one percent of the human population. That one percent is blessed with the Delta 32 mutation of the CCR5 gene. Really lucky people have two copies of this rare mutation, one from each parent. In these people, the most common forms of HIV cannot get into the T cells at all; therefore, AIDS doesn't develop and the body eventually rids itself of all or nearly all of the virus.

In 2007, a man named Timothy Ray Brown was dying of both AIDS and leukemia, and his chances were grim. That was until his doctors in Berlin stumbled upon a bone marrow donor with HIV-resistant genes. Brown underwent a double bone marrow transplant which not only cured his leukemia but also made him immune to HIV. Thanks to advancements in technology and research conducted by pharmaceutical companies, Timothy Ray Brown was able to overcome two malignant diseases.

Final Summary

Throughout hundreds of thousands of years, our bodies have adapted and evolved to what they are today. The body has seen countless gene mutations to adapt and keep us alive; however, those genes that once helped us survive now play a large factor in keeping us fat and unhappy. Our bodies are wired to consume more food, we continue to crave sodium and store excess fat and nutrients. While this once helped us survive when food was scarce, we now have an overabundance of food and no longer need to rely on our bodies to store fat, energy, and warmth. Additionally, our genetic mutations that once helped save our lives through clotting our blood now clot our arteries and cause high blood pressure and heart attacks. We experience anxiety and depression now that we no longer have to worry about imminent threats from predators and enemies. However, despite these genetic mutations that hinder our health, the advancements we have seen in modern medicine continue to help us live longer, happier lives.