CRAZY-GOOD LIVING!

Healthy Gums, Healthy Gut, Healthy Life

Feeding your body from cradle to grave

Dr. Alvin H. Danenberg
Periodontist, Certified Primal Health Coach
Certified Functional Medicine Practitioner
CRAZY-GOOD LIVING!
Healthy Gums, Healthy Gut, Healthy Life

by Dr. Alvin H. Danenberg

ELEKTRA PRESS EDITION | COPYRIGHT ©2017 ALVIN H. DANENBERG

THIS EBOOK IS LICENSED FOR YOUR PERSONAL ENJOYMENT ONLY AND MAY NOT BE RE-SOLD OR GIVEN AWAY TO OTHER PEOPLE. IF YOU WOULD LIKE TO SHARE THIS BOOK WITH ANOTHER PERSON, PLEASE PURCHASE AN ADDITIONAL COPY FOR EACH RECIPIENT. IF YOU’RE READING THIS BOOK AND DID NOT PURCHASE IT, OR IT WAS NOT PURCHASED FOR YOUR USE ONLY, PLEASE RETURN TO ELEKTRAPRESS.COM AND PURCHASE YOUR OWN COPY. THANK YOU FOR RESPECTING THE HARD WORK OF THIS AUTHOR AND ALL AUTHORS EVERYWHERE.

Author’s Website
http://www.drdenenberg.com
ACKNOWLEDGMENTS

It all started with my son, Michael Danenberg (www.performance-therapy.com), an Active Release Technique Therapist and a strength training and nutrition coach for over twenty years. He encouraged me to get my act together about nutrition and fitness training. I’ve also been directed along the way by my various nutrition teachers: John Bagnulo, Kathie Swift, Annie Kay, Jennifer Young, Susan Lord, Lisa Nelson, Mel Sotos, Patrick Hanaway, Jay Lombard, Jim Gordon, Cindy Geyer, Jeanne Wallace, Coco Newton, Mark Hyman, Brenda Davis, Mark Sisson, and Chris Kresser. And, they continue to guide me on my path to wellness. Finally, Faye Swetky and D. J. Herda, who saw something in my writing and encouraged me not to give up.
CONTENTS

INTRODUCTION

PART I: GETTING STARTED

1. In the Beginning
2. What Went Wrong?
3. What Your Jaw Is Telling You
4. “All Roads Lead to Rome”
5. Gum Disease: “What Me Worry?”
6. What Plaque, Saliva, and Bad Breath Really Say
7. How To Know if You Have Gum Disease
8. Inflammation
9. Gum Disease: Acute or Chronic?
10. Is Gum Disease an Autoimmune Disease?
11. Individual Cells and the Roles They Play
12. Functional Medicine
13. A Tour Down the Alimentary Canal
14. Just My Gut Feeling

PART II: LIFESTYLE REPAIR

15. Prologue to My Lifestyle-Repair Plan
16. Anti-Inflammatory, Nutrient-Dense Diet and Overall Health
17. The Connection: Unhealthy Foods Lead to an Unhealthy Body
18. What My Patients Are Saying
19. The Lifestyle-Repair Plan

20. All at Once--Or a Little at a Time?

21. Modifying the Lifestyle-Repair Plan for Specific Health Concerns

22. Can I Cheat?

23. Myth vs. Reality

24. Why the Tooth Fairies Gave Up Grains

APPENDIX

   i. The Preparation

   ii. What I Eat

   iii. The Recipes

   iv. Personal Forms

REFERENCES
Introduction

Over the course of 2.5 million years, our species evolved into a perfect functioning machine. Dealing with a host of environments and demands, our genetic structure developed the abilities to become the master control center of our well-being. But beginning some 10 thousand years ago, our species has been progressively at odds with our genetic code. In many aspects we have become an unhealthy people. Our modern lifestyles have brought us to the brink of either continuing on a destructive path or taking steps to repair our body.

However, for the most part, we do have control over these missteps. You may be surprised that poor lifestyle choices cause chronic inflammation, which in turn is a major factor in many of today’s diseases. But it’s true!

Interestingly, almost everything begins with our mouths. Certainly, that includes our source of nourishment. And, our mouths have become unhealthy----more so than ever before in our species’ nearly 3-million-year journey. That’s why I have chosen to start my story with the mouth. From there, the whole body becomes its playground.

The CDC’s National Center for Health Statistics reported from its most recent data that approximately 91% of U.S. adults aged 20–64 had dental decay in permanent teeth.\(^1\) The prevalence increased to 93% for those above 65 years old.\(^2\)

A study published in 2010 demonstrated that 93.9% of adults in the United States had some form of gingivitis, which is inflammation of the gum tissues surrounding the teeth.\(^3\)

Another study published in 2012 showed that 47.2% of the adult population over the age of 30 in the United States had periodontitis (which translated to 64.7 million Americans), and an astounding 70.1% of those over the age of 65 had this disease.\(^4\)

Periodontitis is more serious than gingivitis. Periodontitis is an advanced stage of gum disease where the gums are infected and the bone surrounding the roots of the teeth are breaking down. This disease leads to bad breath, loose teeth, loss of teeth, sensitive teeth, pain, gum recession, and even spread of infection to other parts of the body.

This is what Pamela McClain, DDS (President of the American Academy of Periodontology at the time of the paper’s publication in 2012) had to say: “This is the most accurate picture of periodontal disease in the U.S. adult population we have ever had. For the first time, we now have a precise measure of the prevalence of periodontal disease, and can better understand the true severity and extent of periodontal disease in our country.”\(^5\)

So, if you have gum disease or tooth decay, you are not alone.

Obviously, our primal ancestors did not have toothbrushes and did not see a dentist every six months, but they had relatively healthy mouths. They hardly ever had gum disease or tooth decay. Why?

Today, many people see a dentist every six months and also brush and floss daily, but they still have gum disease. How could that be? What we have learned to believe may not be so. Josh Billings (the 19\(^{th}\) Century humorist) put it so clearly: “It ain’t so much the things we don’t know that get us into trouble. It’s the things we know that just ain’t so.”

The why’s and how’s are related to the nourishment we give ourselves and the lifestyles we lead. As I stated, our modern lifestyle has brought us to the brink of either continuing on a destructive path or taking steps to repair our body. The steps to repair our
body are not complicated. The ultimate decision is yours. I’m going to make it understandable, interesting, personal, and easy to get started.

My Lifestyle-Repair Plan is an anti-inflammatory, nutrient-dense diet and lifestyle similar to those of our primal ancestors. My Plan is not a hard-core, black-and-white program. It is a way of eating and a way of living. It is a foundational platform that excludes specific harmful “foods” but allows a vast degree of variation based on one’s needs, tastes, and pocket book. It also presents the means to improve your sleep, streamline your exercise program, and effectively reduce your overall stress load, all of which support a healthier you. You can use my Plan as the cornerstone to create Your Individual Plan. Later in this book, I offer various tweaks to the Plan to address thirteen specific health concerns that may be of interest to you. And in the book’s Appendix, I have included some of my original recipes, along with some variations of popular recipes. These are nutrient-dense, anti-inflammatory dishes you can prepare to help nourish your body. Throughout this book, you will learn that what happens on a cellular level anywhere in the body affects the entire human complexity and how specific foods can help keep your body running smoothly and efficiently.

Before we go on, here is one fact that you need to know up front. Not everything that I discuss in this book has been proven without a shadow of a doubt. Not everything is supported by research that has been published in peer reviewed medical journals. If I were to wait for every fact to be researched by a peer review board, it might take decades before I could make those statements. Most of the information I discuss has been well researched and published in professional journals as referenced in the endnotes, but some of the conclusions I suggest will still need to be researched in a laboratory setting only to be published many years from now.

Who I am

I am a periodontist with over four decades of active patient care. A periodontist is a dentist who has taken a formal postgraduate program of at least three years to become a specialist in the area of gum (more specifically known as periodontal) disease and its related clinical problems. I currently practice periodontics in an office located in South Carolina.

The treatment I perform today for my patients with advanced gum disease is a laser protocol called LANAP® (Laser Assisted New Attachment Procedure). I began using this modality in my practice in 2010. It involves no cutting with a scalpel and no stitches. Patients rarely have any post-op discomfort or swelling or bleeding, and they can go back to their normal routines the next day. With this laser treatment, I am able to destroy the localized bacteria causing gum disease and assist the body in growing new bone around the roots of the affected teeth. But when I started using the laser, I still did not understand the critical relationship between nourishment of the body and gum disease.

In 2013, I started an educational path to learn about real nutrition—the nutrition that allowed our primal ancestors to survive and thrive for 2.5 million years. But, my life-changing journey started years before that.

My life-changing journey

My story is interesting because I could have died.
You would think that a healthcare professional like myself would have learned everything that was necessary to be personally healthy. But, not true. Medical and dental professionals have a paltry amount of nutritional training—and no training in the importance of primal nutrition and lifestyle.

My story begins in December 2006:

I had been in practice for thirty-two years. I was treating my body as well as I thought was appropriate. I ate low fat, high fiber foods including grains, skim milk, fish, and meat. I didn’t like non-starchy veggies, but I thought I was doing just fine. I exercised aerobically four to five days a week for about forty minutes a day. One of my loves was to snack on popcorn, which I believed supplied me with healthy fiber.

Then, in December 2006 I had a life-changing event. My daughter (who was staying with me and my wife while her family was transitioning to Portland, OR from Charleston, SC,) was sitting on our living room floor while I was standing with my laptop in my hands. All of a sudden I felt a shock travelling from the computer up my arm. I dropped the computer on my sofa, and my daughter exclaimed, “What’s wrong?” I said that I just got a shock from my computer. Her response was, “Dad, don’t be so melodramatic.” A week later, I had a stroke.

The stroke must have occurred while I was sleeping. When I woke up, my grandson was at our house, and I attempted to ask him if he wanted to go out for breakfast. But, the words could not come out. I was unable to speak. I felt fine, but I couldn’t speak. My wife, who is a nurse, realized what was happening, and drove me to the hospital. I was lucky.

My doctors explained that the “shock” that I thought was from my computer was actually a TIA (Transient Ischemic Attack). Many people who have a stroke will experience a TIA days or weeks before the stroke as a warning sign of an impending crisis. I was not aware of such a warning sign, so I paid no attention to it.

While in the hospital for a week, my cardiologist and internist put me on three types of blood pressure meds, a cholesterol med, and an acid reflux med. My vascular surgeon put me on 81mg aspirin and Plavix. Their medical advice was for me to take these meds for the rest of my life. Within three weeks, I was able to speak normally. I returned to work after six weeks.

After my stroke in 2006, I knew that I needed to get educated about good nutrition. So, I began my reeducation. For the next six years, I actively pursued my needed education in nutrition. I thought I was doing well.

In April 2013, I enrolled in a five-day nutrition course that changed my life. I was excited because I believed that this was going to be the program I had searched for to confirm what I was doing currently was correct. I hoped to learn a few new things to hone my skills and update the knowledge that I already acquired. This program wasn’t about basic nutrition as I had been learning; it was about primal nutrition—the foods and lifestyles that allowed our species to thrive for 2.5 million years. What I learned in those informative and enlightening five days did change my life. I learned that almost everything I was doing was wrong. That blew me away!

Among other things, I learned that most processed foods were making us sick. I learned that modern grains of any type were one of the worst things I could put in my body. I learned that healthy fats were essential, and anything that was processed to be low-fat or no-fat was unhealthy. I learned that all the fruit I was eating contributed way too much sugar to my body, and leafy greens and other multicolored veggies were required at every
meal. I also learned that exercise needed to be efficient, sleep needed to be restorative, various stresses on my body needed to be reduced, and that sitting most of the day was almost as bad as smoking. Wow!

So, I traveled back to my home in Charleston, SC and informed my wife of what I learned. She was not happy. But, she allowed me to make a thirty-day test of my newfangled ideas. We removed all the processed foods, grain products, and sugar aliases from our pantry and fridge, which added up to seven grocery bags that I took to my local Food Bank. We joined our local CSA (Community Supported Agriculture) program to obtain locally grown, organic veggies weekly. The foods we started eating consisted of grass fed beef and wild caught fish; all kinds of shellfish; free range chicken, liver, and eggs; all kinds of vegetables raw and cooked; some deeply colored fruits and occasionally nuts and seeds that we soaked overnight.

At that time in April 2013, my meds were still the same. My HDL was 48, my triglycerides were 120, and my resting blood pressure was 137/87 even with three blood pressure meds. I weighed 184 pounds. My physicians’ advice was, “Continue to take your meds.” Unfortunately, my physicians were ignorant of the science of primal nutrition and lifestyle, as I believe most physicians are.

As I write this, it’s January 2017—forty-six months since beginning an active primal lifestyle in April 2013. I am still practicing periodontics, and I plan to continue treating my patients for the foreseeable future. As I am writing this, my resting blood pressure is 119/72, and my pulse rate is 54. My HDL is 76, and my triglycerides are 78. I weigh 157 pounds. My medications have dropped from seven after I had my stroke to two, which I am currently taking but weaning off of. It has been stated that it takes one month of repairing a nutritionally damaged body for every year of the manifestation of a disease. I am still a work in progress; I have much farther to go to regain optimal health. I am patient, but I am diligent and motivated. I can’t believe the way I used to live was slowly destroying me. I can never return to the way it used to be. I am a changed person, and I want to spread the word.

The doctors, whom I depended on in 2006 while I was having a stroke, were exceptional. They saved my life, but I had to learn how to get healthy on my own. I only learned what was going on in my body after I learned about evolution and how our ancestors thrived.

Why didn’t my physicians help me understand why I had a stroke, and how I should improve my lifestyle to get healthy? Why didn’t my physicians explain how I should wean off my meds over time? The science is there, but most of the medical profession hasn’t gotten the message.

While making a change in my life, I also am making a change in my patients’ lives. In June of 2014, I received the designation of Certified Functional Medicine Practitioner, which helped me understand why and how diseases start at the cellular level. In September of that year, I received the Certified Primal Health Coach designation, which brought the concepts of primal nutrition and primal lifestyle into a cohesive game plan to incorporate with my active periodontal treatment. In September 2015, I created the Periodontal Module for the College of Integrative Medicine, which offers a 300-hour CIHP (Certified Integrative Healthcare Practitioner) Program for existing healthcare professionals. At that time I was appointed to the College’s faculty.
In December 2016, I created and wrote a unique, 5-part, 7-hour CE course for dentists and dental hygienists titled, *Beat the Beast of Dental Disease.* It brought together concepts of primal nutrition and functional medicine together with insights of the development and prevention of dental diseases. Dental professionals now have an evidence-based prevention program they can learn from and that they can teach to their patients.

I teach all my periodontal patients the importance of an anti-inflammatory, nutrient-dense diet and lifestyle. When you enable each cell in the body to function properly by giving it what it needs—which is nutrient-dense real foods and exercise and sleep and reduction in all types of stresses--each cell will help all other cells to thrive. Your gut will become healthier; your overall body will become healthier; and your mouth will become healthier.

I’ve reenergized my life and reengineered my professional career. I offer the knowledge that I have learned to all my patients and to all who want to listen.
PART I

GETTING STARTED
1. In the Beginning

Everything in life is relative.

When you think about things changing over time, you might compare how things are today related to a time in the past. For example, a gallon of gasoline as I write this costs about $2.20, but a gallon of gas when I started driving in Baltimore in the mid-1960s cost $0.23 a gallon. Styles of clothing have changed, too. And food preparation certainly has changed from when our grandparents were cooking compared to how we cook today. Everything is relative. Some things are better today; some things were better in times gone by.

Old is also relative. After my wife and I moved to Charleston over forty years ago, we were impressed with the city's history and homes that dated back hundreds of years. I thought that was old. Years later, as we traveled to Israel, we saw buildings that were several thousand years old.

But even that old isn't really that old. Really old is when you go back several hundred thousand years and look at evolution.

A change in perspective

When you consider evolution, your perspective changes. Visualize the following:

If you looked out the window of an airplane after boarding, you would see the tarmac and some baggage being loaded into a few planes on the ground--even a few people wandering around. As the plane takes off and begins its ascent, you'd see the tops of some buildings and trees. As you climb higher, you would get a sense of the roads and possible waterways that surround the airport. As you reach the cloud level, you'd see areas of concentrated neighborhoods and forests and geography many miles around. What you'd see from 30,000 feet would be nothing at all like what you'd seen while still on the tarmac. As your visual perspective grew, you learned more of what surrounded that tiny tarmac. What you didn't know existed, you could eventually see. But, how much higher would you need to go to get a bigger and better picture still? A more comprehensive and broader view helps the real story come to life.

When you look at the human condition, the last five or twenty or even one hundred years only tell you so much. To get the real picture, you need to look at evolution. From that perspective you can decipher what has been required for our species to grow strong. Here you may find some truths that have stood the test of time.

When it comes to truths, there is only a tiny amount of what we know today to be really true. Some of what we think we know today only gets further tested and disproven a few years down the road. There are some things that we know that we don't know. However, most of the universe of knowledge is composed of what we don't know that we don't know. Perplexing!

Use your imagination

Imagine an animal in the wild--a cute, cuddly little thing. Let's call her "Fuzzy", and let's say she was living 200,000 years ago. In order for Fuzzy to survive and thrive, she needed to chew her food to get the necessary nutrients into her body. As Fuzzy was growing up,
something was happening. Her teeth began to decay, and her gums started to bleed. Soon, this furry gal started to have pain when she chewed her food, and eventually her teeth started to get loose. Then her teeth began to rot and fall out. Not only was this happening to her, but also it was happening to most of her brothers and sisters and their offspring. What do you think would happen over time to this animal species?

Unfortunately, the answer is obvious. This species would eventually die off because it could not survive without its teeth to chew the food to get the nutrients that were critical for life. Also, as this animal became weaker from lack of proper nutrition, other predators would take advantage and eat her and her sisters and brothers for dinner. Survival of the fittest!

**What did our ancestors know?**

The human species has been evolving for 2.5 million years. Over that course of time, our ancestors’ bodies slowly adapted to their environments and the foods that were available to them for nutrition. The human body developed a method of using nutrients for growth and survival. It took hundreds of thousands of years for our cells and organs to slowly evolve. Today, we must respect what our bodies need. Our genetic makeup is made up of about 25,000 genes and is 2.5 million years old. Our genes know what they need!

Our primal ancestors were not like the species I referred to above who lost their teeth and died off. As a matter of fact, primal humans hardly ever had tooth decay or gum disease during the 2.5 million years of evolution. Our species survived and thrived with practically all their adult teeth in a healthy state until they died.

It’s true that our primal ancestors had a short lifespan of only twenty-five to thirty years. But that’s true because the infant mortality rate was very high, and the mortality rate up until the age of fifteen was likewise high due mainly to accidents, infections, and battles with enemies and predators. The number of those early deaths skewed the average lifespan range. However, if an individual reached beyond the age of forty, the average lifespan was significantly higher. These primal beings lived upwards of seventy-two years without the ravages of chronic disease.

Obviously, our primal ancestors weren’t born with access to toothbrushes and dental floss, and they didn’t schedule dental cleanings every six months. Our evolutionary ancestors didn’t stop to think about what they ate or what micronutrients or macronutrients were in their food. They just ate, got satisfied, and moved on with the chores of the day. They ate a nutrient-dense diet and had healthy gut bacteria that allowed their teeth to stay healthy. They were physically active much of the day; went to sleep with the setting sun, and rose at dawn. They were social among their clan.

Different primal societies of hunter-gatherers ate different foods, as do current day primal societies. But, these foods were nutrient-dense, gathered from their local environments, and allowed their bodies to thrive without the ravages of degenerative diseases.

Then things began to change.

**What can skeletons teach us?**

I remember going to the Smithsonian Institute in Washington, DC, as a child. My favorite exhibits were the dinosaurs. I was in awe with the age of these beasts. Skeletons
told a fascinating story to me as a child. Today, skeletons still tell the story. Human skeletal remains recently have been discovered in Spain dating back about 400,000 years. Today, DNA testing can actually look at some dental remains and determine what types of bacteria existed in the mouths of some of our predecessors. Today, we can determine how healthy our evolutionary ancestors were. Science is amazing!

The DNA of the bacteria taken from teeth of most skeletons dating about 20,000 to 10,000 years ago showed a lot of bacteria, but these bacteria were not actively causing disease. In other words, the majority of our primal ancestors had healthy bacteria and minimal tooth decay or gum disease. Why?

The first evidence of gum disease and tooth decay was documented around 15,000 years ago in an isolated tribe of humans. Why?

Then, from about 10,000 years ago to 150 years ago or so, the bacterial milieu around the teeth from most skulls became unhealthy, and decay and gum disease began to show up regularly. Why?

From 150 years ago to the present, the bacteria went crazy, causing lots of decay and gum disease. Why?

Why were unhealthy bacteria beginning to overtake the dominant, friendly bacteria in our mouths that our species had slowly developed during 2.5 million years of evolution? At the same time, something was also causing a breakdown in the lining of our intestines. Food particles and bacteria that were never supposed to leak into our blood system began invading our bodies. What was causing these physiological assaults? Degenerative diseases that had never been part of the human experience began to emerge. Why did humans begin to develop diseases that never were prevalent before?

These are all perplexing questions. Fortunately, science today has provided a number of clues to the answers, and we'll take a look at them in the next chapter.
2. What Went Wrong?

If our primal ancestors ate nutrient-dense foods that allowed them to thrive with no gum disease or tooth decay, then what went wrong?

Today, there is a 47% prevalence of periodontitis among adults in the United States. Periodontitis is the advanced stage of gum disease in which not only the gums are infected, but also the bone surrounding the roots of the teeth. In time, the infected bone can begin to break down. For those who are over sixty-five years old, the prevalence of periodontitis jumps to 70%. When and why did the prevalence of gum disease go from almost 0% to 70%?

It didn’t happen in one day. It was progressive and cumulative.

Two and a half million years of evolution brought the human species to a state of high physical and mental development. Functionally, the human body was at its peak performance because the individual cells of the body were functioning as they were meant to function. These healthy cells were nourished by a nutrient-rich diet and stimulated by a physically active lifestyle.

Primal societies did not have the same diets, but they enjoyed nutrient-dense real foods that were available from their environments. However, there was a change in the air. The available nutrient-rich diets were going to become compromised as less nutrient-dense foods became available.

The first documented evidence of gum disease and tooth decay occurred in a tribe around 15,000 years ago in Morocco. These primitive people were eating significant amounts of acorns, which were cooked and loaded with concentrated sugars. The researchers who discovered their skeletal remains suggested that the tooth decay and gum disease were a direct result of the tribe’s diet of sticky, high-sugar acorns, which changed the normal bacteria in the mouth to unhealthy types.\textsuperscript{13}

A major change began with the emergence of civilization. Civilization allowed people to come together to live. Civilization brought many good things to humans--protection from the elements and protection from their enemies among them. Societies developed farming and agriculture, which brought an abundance of food to feed the masses. Unfortunately, some of the cultivated foods were processed into concentrated (or dense) “acellular” carbohydrates.

“Acellular” means “no cell wall.” Aacellular carbohydrates had their cell walls broken down and removed. Their nutrient density (the amount of nutrients compared to their total caloric content) was compromised. In time, these aacellular carbohydrates began replacing many nutrient-dense foods that used to be the dominant makeup of the human diet.

The timeline for the emergence of these processed foods was about 10,000 years ago that coincided with the advent of agricultural farming. This was the time when skeletal remains began to demonstrate an increasing abundance of unhealthy bacteria developing around the gum-tooth margin.\textsuperscript{14} The bacterial changes led to tooth decay and gum disease in the mouth. Dental health was documented to be on a downturn once humans adopted flour and sugars (acellular, unhealthy carbohydrates) into their diets on a regular basis.\textsuperscript{15,16}

As the Industrial Revolution took hold around the 1850s, flour and sugar products
became dominant in the human diet. The increased and regular ingestion of these acellular carbohydrates significantly increased the virulent bacteria in the mouth and the incidence of dental decay and gum disease.\textsuperscript{17}

Healthy carbohydrates are contained in and within the living cells of plants. These carbs are called “cellular” carbohydrates. When these plants are normally cooked, the cell-to-cell links are broken down, but the cell walls surrounding the cells containing most of the healthy carbohydrates are not destroyed. When healthy plants are ingested, the body’s digestive system breaks down their cell walls and metabolizes their contents including the healthy, cellular carbohydrates.\textsuperscript{18}

Dense, acellular carbohydrates are uncommon in nature. The exceptions are the inner parts of some seeds (including cereal grains) and raw honey. (Raw honey has some unique qualities and benefits, which I describe later.)

Two of the most powerful ways humans created dense, acellular carbohydrates were to isolate and concentrate sugars from plants, and to grind dense seeds into highly compacted flour. In both cases, heat and pressure destroyed the original food’s cell walls, resulting in dense carbohydrates. Instead of providing a quick plentiful source of nutrition, these carbohydrates were dead. They didn’t spoil over time the way healthy, cellular carbohydrates do; so that made them desirable in people’s eyes. But the condensed flour and sugars were innutritious carbohydrates that caused unhealthy changes in the body.

There is a progression of damage that occurs when we eat acellular carbs. Their lack of nutrient density can compromise the human cell’s requirements to thrive. The acellular carbohydrates also lead to unhealthy bacterial changes in the mouth and gut as well as damage to the lining of the gut.

Once harmful bacteria are formed and then die, they produce a byproduct called lipopolysaccharides or LPSs. LPSs are dead, cellular membranes of gram-negative bacteria, and they are very destructive to the body. They can leak into the bloodstream through damage in the layer of the gut lining. Also, they can combine with various unhealthy fats in the gut and can be transported through the cells into the bloodstream. Both of these methods increase the levels of LPSs in the bloodstream. Our immune system reacts to these invaders in the bloodstream and creates cascading events of inflammation, which are highly destructive to many functions of the body. Chronic inflammation leads to increases in degenerative diseases of the whole body.\textsuperscript{19}

It was once believed that periodontal disease caused systemic diseases--heart disease.\textsuperscript{20} Then the American Heart Association made a statement that there was no evidence indicating a causal link between periodontal disease and heart disease. The AHA suggested independent factors were causing both the diseases independent of one another.\textsuperscript{21}

Science now suggests that the frequent ingestion of high-density, acellular carbohydrates in flour and sugar products acts negatively on the human body in several ways. The carbohydrates create a growth of unhealthy bacteria in the mouth and gut that also increases the production of LPSs. This results in damage to the thin cellular lining of the gut. This, in turn, encourages deficiencies in necessary micronutrients that are essential for individual cell function. These unhealthy carbs most likely are the real “root” cause of periodontal disease, cardiovascular diseases, and other chronic diseases of modern humans.\textsuperscript{22} Once periodontal disease takes hold, then there may be two sources of chronic systemic inflammation--one from an unhealthy gut and one from unhealthy gums.
I have suggested that the “foods” that produce unhealthy bacteria in the gut also produce unhealthy bacteria in the mouth. In a study published in 2009, a group of ten individuals were instructed not to perform any oral hygiene for a period of four weeks, and they had to eliminate sugars and processed grains and other foods from their diets. At the end of the four-week study, the degree of bleeding gums and periodontal pockets decreased. Plaque was present, but the amount of virulent bacteria was reduced. Even though these people didn’t clean around their teeth for nearly a month, they had less gum infection. That proved how damaging the consumption of processed-food products is.

The reason is that, when bad bacteria grow out of control, they cause inflammation. In addition to the changes in the mouth and gut lining, these inflammation-promoting microbes change the normal functions of a specific hormone called leptin and other hormones that tell the brain, “I’ve eaten enough.” This communication with the brain is via nerve endings in the gut. If your brain doesn’t know you have eaten enough, it won’t tell your body to stop eating, which in turn increases the risk of obesity.

Along with eating unhealthy carbohydrates, eating unhealthy fats and oils could increase the inflammatory response. As more acellular carbs are eaten (in the forms of flour and sugar products as well as other processed foods) and less healthy carbs are eaten (in the forms of vegetables and fruits), the risks of obesity and chronic diseases increase. Unhealthy fats bind to lipopolysaccharides in the gut and both are transported directly through the cells into the bloodstream. Even small amounts of flour and sugar are able to produce significant changes. Genetic factors also play a role, but diet and environmental factors are more important than genetics.

A different way of eating

Primal societies today eat unprocessed foods, and these societies can thrive on a wide variety of macronutrient ratios (the ratios between fat, protein, and carbohydrate). These societies range from equatorial tribes such as the Kitava of Papua, New Guinea, who consume sixty-five percent of their calories from carbohydrates, to desert tribes such as the !Kung in Africa’s Kalahari Desert, who eat large quantities of nuts that are sixty percent fat. What neither of these tribes consumes is carbohydrate-dense, acellular food. These humans rarely have degenerative diseases, tooth decay, or gum disease that plague most modern people today.

Societies leading healthy lifestyles could live into their nineties and beyond. An example is the people on the Greek island of Ikaria, which is located in the middle of the Aegean Sea. There are approximately 8,000 residents who lead a simple, physically active lifestyle, eating nutrient-dense foods gathered from their environment. They essentially are free from chronic diseases. They live a full, healthy life, and then they die. However, when some of them move to other places and adopt different lifestyles and unhealthy eating habits, they succumb to chronic diseases.

Let me take you to another series of islands, The Marshalls, located northeast of Australia and southwest of the Hawaiian Islands. There is nothing but ocean surrounding these 1,200 islands for 2,000 miles. The largest of these islands is Majuro with 30,000 people. In the early part of the 1900s, the inhabitants of Majuro ate only what the land and ocean provided—various types of seafood, coconuts, bananas, pandan leaves, green leafy vegetables, etc. There was almost no incidence of type 2 diabetes. Then, Majuro became
“Westernized” with the introduction of fried foods, canned sugary sodas, donuts, bread, and various other processed foods that replaced their fresh fish, fruits, and veggies. By 2000, seventy years after the introduction of these “foods”, 30% of the population ages fifteen through thirty-four had type 2 diabetes, and 90% of people ages thirty-five and older were either prediabetic or had type 2 diabetes. The replacement of nutrient-dense foods with processed, acellular foods caused the spike in this disease.27

Here is the good news in all of this. Almost all the damage unhealthy foods have caused can be reversed or at least improved to create a better life going forward.28 In fact, significant health benefits have been documented in just ten days after switching from a Standard American Diet (a diet high in refined grains, sugar, vegetable oils, processed foods, products from animals fed unnatural foods and chemicals, and dairy products that have been pasteurized and homogenized) to an anti-inflammatory, nutrient-dense diet, which is generally defined as a Paleolithic-type diet.29 (Throughout the book, I will use the terms Paleo-type diet or Paleo-type diet interchangeably with an anti-inflammatory or nutrient-dense way of eating.) Even type 2 diabetics may be able to reverse their disease and normalize their insulin production again.30 The way to do so is to make a lifestyle change by eliminating the unhealthy foods, replacing them with healthier choices and following a more physically active lifestyle.

Eating this way will slowly rebalance the healthy bacteria in your gut and mouth, improve your metabolism, and eventually stabilize your weight. In addition, including stress-reduction techniques, receiving restorative sleep, and performing efficient exercise will enhance overall health. I will discuss all these in more detail later in the book.

So what is a healthy way of eating? Although it is very important to eat the right kind of foods, it is even more important not to eat the wrong kind of foods. The research suggests that the elimination of dense, acellular carbohydrates can go a long way in creating health and preventing disease. A diet lifestyle that is compatible to primal and contemporary hunter-gatherers is an anti-inflammatory, nutrient-dense diet consisting of animal products from head to tail, vegetables, fruits, nuts, and seeds. With rare exception, these foods have been shown to have a maximum carbohydrate density of around 23%.31

So, to answer the original question, “What went wrong?” let’s say that our food supply became dominated with dense, acellular carbohydrates that have led to unforeseen damage in the human body.

**Calculating carbohydrate density**

The term, “carbohydrate density,” means the percent of the food mass that consists of carbohydrate minus the fiber component. It is easy to calculate the carbohydrate density of any food. Just divide the grams of carbohydrate in a particular food (excluding the grams of fiber it contains) by the total gram weight of the food to get a percentage. The carbohydrate density increases as more non-fibrous carbs are packed into a given quantity of food. A healthy carbohydrate density is about 23% or less.32 Eating foods that have a higher density than 23% places more stress on your metabolism and potentially leads to the degenerative diseases of societies eating processed foods. A government Website tells where you can find grams of carbohydrates and grams of fiber in a specific weight of food.33 To use this site effectively, enter the specific food you are calculating in the space provided on the top of the page and click “GO.” Click on the food you desire. Note the Grams of Carbohydrate per 100 grams of food, and note the Grams of Fiber per 100 grams of food.
Subtract the grams of fiber from the grams of carbohydrates to get the non-fibrous grams of carbohydrate per 100 grams of the food. That will be the carbohydrate density of that particular food.

Modern food processing is, unfortunately, very good at boosting carbohydrate density. Here is a list of some foods ranging from low-density to high-density carbohydrates:

**Sampling of foods with carbohydrate density ≤ 23% (from lowest to about 23% excluding fiber):**

- Chicken, roasted thigh and skin = 0.0%
- Beef = 0.0%
- Lamb = 0.0%
- Pork = 0.0%
- Mackerel = 0.0%
- Eggs, whole poached = 0.7%
- Spinach, raw = 1.4%
- Cauliflower, boiled without salt = 1.8%
- Swiss chard, raw = 2.1%
- Cheese, gouda = 2.2%
- Turnips, raw = 4.6%
- Kale, raw = 5.2%
- Macadamia nuts = 5.2%
- Carrot, raw = 6.8%
- Beets, raw = 6.9%
- Onion, raw = 7.6%
- Honeydew melon, raw = 8.3%
- Orange, raw Florida = 9.1%
- Apple, raw with skin = 11.4%
- Kiwi fruit, raw = 11.7%
- Lentils, boiled = 12.2%
- Leek, raw = 12.4%
- Parsnip, raw = 13.1%
- Black beans, boiled = 15.0%
- Ginger root, raw = 15.8%
- Pistachios, raw = 17.2%
- Buckwheat groats, roasted, cooked = 17.2%
- Sweet potato, baked in skin = 17.4%
- Quinoa, cooked = 18.5%
- White potato, baked in skin = 19.0%
- Brown rice, medium grain cooked = 19.5%
- Wild rice, cooked = 19.5%
- Banana, raw = 20.2%
- 85% Cocoa bar (Alter Eco Dark Blackout) = 22.5%
Sampling of modern foods with carbohydrate density > 23% (from 23% to the highest excluding fiber):

- Cheeseburger, single plain patty and bun = 26.0%
- Cheese pizza = 26.8%
- White rice, medium grain cooked = 28.3%
- Plantains, raw = 29.6%
- Hamburger, single plain patty and bun = 29.9%
- Nachos with cheese = 31.7%
- White bread = 34.7%
- Multigrain bread = 35.9%
- Popcorn, oil-popped microwave = 37.0%
- French fries = 37.6%
- Rye bread = 42.5%
- Bagel, wheat = 44.8%
- Hamburger bun, plain = 48.0%
- Potato chips, plain salted = 50.7%
- Oats = 55.7%
- Granola bar, plain = 59.1%
- Whole wheat hot cereal = 65.7%
- Oat Bran cereal, toasted Quaker Mother's = 66.8%
- Cookies, graham cracker = 74.3%
- Agave syrup = 76.2%
- Pretzels, hard plain salted = 77.0%
- Rice cakes, plain brown rice = 77.3%
- Honey = 82.2%

________________________

ABOUT THE AUTHOR

Dr. Danenberg has a passion for coaching his patients to improve their diets and lifestyles. His goals are to improve their dental health, improve their overall health, and improve their lives. He has been a periodontist (a dentist specializing in gum diseases) for over forty-three years. Primal nutrition and lifestyle changes helped save his life, and he shares his knowledge and experiences with all who want to change theirs. Integrating primal nutrition and lifestyle along with the concepts of functional medicine into his treatment for dental diseases, Dr. Danenberg has made Quality of Life everything.
THE REVIEWS

- "In Crazy-Good Living! Dr. Danenberg shows us that good oral health depends not only on brushing and flossing, but also on the same things that determine our overall health—in particular, a nutrient-dense diet and healthy gut bacteria. This book is a must-read for all people who want to improve their dental or periodontal health." - Chris Kresser, M.S., L.Ac, Author, NY Times Bestseller, The Paleo Cure

- "Crazy Good Living! is a special read, in fact it's a must read. Primal Health and Ancestral Concepts has to be brought to the forefront if we are to rise above our faltering healthcare system. Dr. Danenberg's perspective from forty-three years as a practicing periodontist is certainly the unique buying proposition for this book." - Dr. Noah De Koyer, DC, Beyond Your Wildest Genes Podcast and Academy

- “In my role as Editor in Chief of DrBicuspid.com, I am often asked to leave a review for a publication. I’ve always turned down the opportunity until I read Dr. Danenberg’s new book. Not only does his experience, professionalism, and enthusiasm shine through, but his considered advice is a needed wake-up call for us all.” - Tony Edwards, Editor in Chief, DrBicuspid.com

- "Al Danenberg, thanks so much for illuminating the interconnectedness of the human ecosystem. Crazy-Good Living! illustrates just how reflective of overall health both the gums and the GI are. Their relationship is seldom covered in modern dentistry and never in any other area of medicine. While Weston Price's work over 100 years ago proved to be years ahead of its time, your account of recent clinical observations reveals how people cannot only reclaim their oral cavity but also their whole health through diet and lifestyle change. This book is both incredibly empowering and inspirational. You offer a more insightful look at how the microbiome functions than ever before. Thanks once again!" - John Bagnulo, MPH, PhD

- "A well-organized, understandable guide to support you on the path to better health and living, no matter your age or current medical condition. Crazy-Good Living! is a combo of Nutrition 101 and basic pathophysiology presented in an easy-to-read, understandable format to help you grasp the ongoing connection between your dietary and lifestyle choices and your body's cellular health. Dr. Danenberg has done a nearly perfect job of explaining the science behind why the common-sense principles of clean eating and the paleolithic lifestyle are instrumental for people to incorporate into their lives.” - Abigail Adams, MD, FACEP (Fellow of the American College of Emergency Physicians), B.S. in Nutritional Sciences, Owner, The Med Spa of New Smyrna Beach

* * *

* Buy your own eBook wherever books are sold *

* Reserve your own Print Book scheduled for release soon *
References

1. http://www.nidcr.nih.gov/DataStatistics/FindDataByTopic/DentalCaries/DentalCariesAdults20to64.htm
6. In gratitude to: Kripalu Nutrition Intensive (www.kripalu.org) and my various nutrition teachers (John Bagnulo, Kathie Swift, Annie Kay, Jennifer Young, Susan Lord, Lisa Nelson, Mel Sotos, Patrick Hanaway, Jay Lombard, Jim Gordon, Cindy Geyer, Jeanne Wallace, Coco Newton, Mark Hyman, Brenda Davis, Mark Sisson, and Chris Kresser) who have enlightened me on this journey to wellness. Also my son, Michael Danenberg (www.performance-therapy.com), an Active Release Technique Therapist and a strength training and nutrition coach for over 20 years who has encouraged me for many years to get my act together about nutrition and fitness training.
12. Ibid.


Spreadbury, I. Comparison with ancestral diets suggests dense acellular carbohydrates promote an inflammatory microbiota, and may be the primary dietary cause of leptin resistance and obesity. Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy. 2012:5 175-189.


