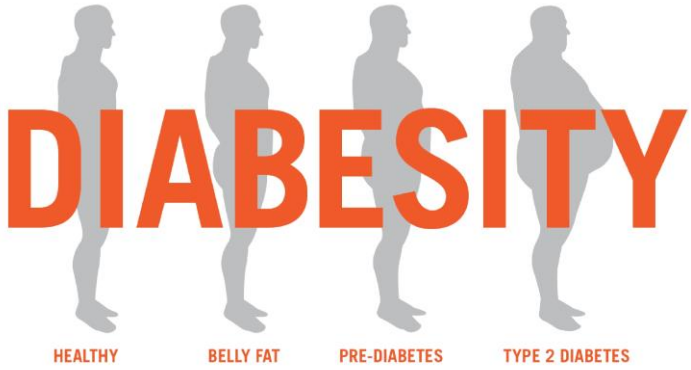
Take Back Your Health:

Reversing Diabesity with Community-Based Medicine



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Introduction

Something changed in American culture over the past 50 years, and the lasting effect was a population that is overweight and dealing with serious chronic health issues. Sleep apnea, depression, allergies, asthma, heart disease and diabetes rates have soared since the 1960s. In a simple term, the U.S. is suffering from a "diabesity" epidemic.

At first, doctors turned to conventional medicine to treat this growing health crisis. From their viewpoint, conventional medicine in the 20th century saved millions from both infectious and childhood diseases. But the conventional medicine focus on finding a drug for each symptom failed to stop the expanding waistlines of Americans. A variety of lifestyle-related health issues from obesity to heart disease and many cancers are still diagnosed and treated separately by specialists. Yet these modern diseases are connected.

Because a behavioral and cultural change is at the root of this interconnected health problem, it only follows to look at behavior to solve it. A growing area of health care, called functional medicine, approaches disease in a new way: with a priority on restoring health, and not on symptom elimination. Through the use of community groups, social support, food and exercise, it is possible to address, and even reverse, some of this "diabesity" crisis.

The scope of "diabesity"

The world is well aware that people in the developed world are suffering from obesity and diabetes at alarming rates. An estimated $47 trillion will be spent over the next 20 years on treating lifestyle-preventable chronic diseases worldwide. That's more than the annual GDP of the six largest nations combined.

A healthy future in the U.S. and abroad will depend on getting to the root of the lifestyle issue, which is primarily our diet, and the human connections we make in our everyday lives. The breakdown in those two fundamental things is what is driving most of these chronic diseases. These preventable diseases can be

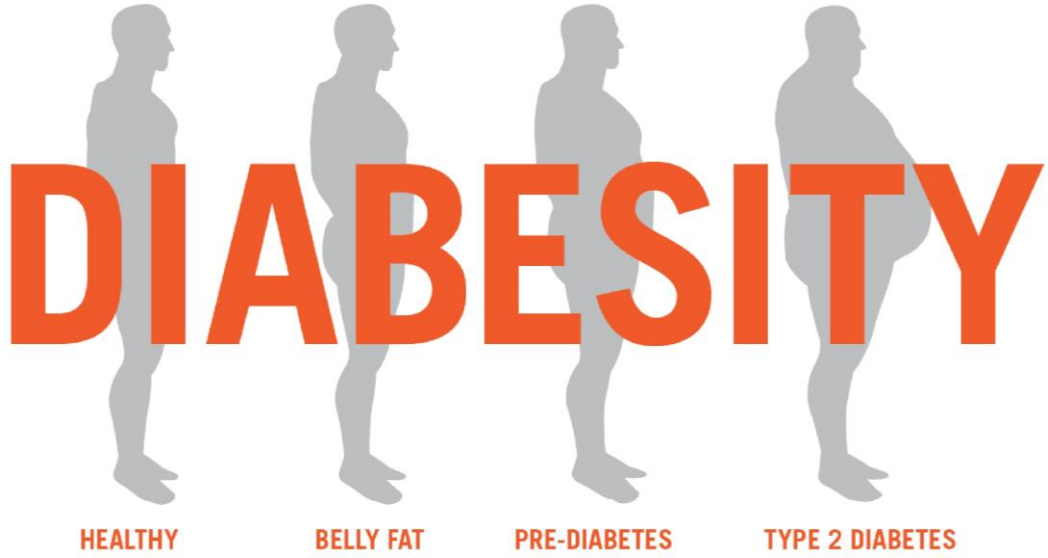

Figure 1

conceptualized as a continuum from overweight, to obesity, to insulin resistance, pre-diabetes and Type 2 diabetes.

In 1990, not a single U.S. state had an obesity rate over 20 percent. By 2010, not a single state had an obesity rate under 20 percent. The "diabesity" epidemic is also affecting children – 40 percent of U.S. children are now overweight. In 1980, almost no children had been diagnosed with Type 2 diabetes. Today, there are over 50,000 children with a Type 2 diabetes diagnosis in the U.S. And this is not just an American problem. Nearly 80 percent of the world's Type 2 diabetics are in the developing world.

If this trend continues, there will not be enough doctors and hospitals in the world to take care of all of these people. It is time to think of a completely new and disruptive solution to solve this problem. The question is not whether someone has diabetes; it is whether someone has "diabesity."

The average person walking around with "diabesity," doesn't know that they have it.

A simple questionnaire can guide people through the signs: sugar cravings, belly fat, a history of obesity, a family history of Type 2 diabetes or heart disease, high triglycerides, low HDL, high blood sugar, or even infertility.

Currently, the National Institutes of Health (NIH) spends $800 million a year trying to solve the question of what is causing obesity. However, on some level it's already quite clear. Every year, the average American consumes 29 pounds of French fries, 23 pounds of pizza, 24 pounds of ice cream, more than 53 gallons of soda, 24 pounds of artificial sweeteners, 2.736 pounds of sodium – 46 percent more than is recommended – and 2,700 calories a day.

Figure 2

If this ongoing "diabesity" epidemic is rooted in unhealthy living, then we must face the question of how to create healthy living in the modern world. Both biology and behavior must change in order to turn the tide, and the science of understanding how to change those two fundamentals will lead to the science of creating health. The call to action then becomes: how to get people to do things that have been proven to make them healthier. The answer comes down to two things: the first is

understanding how biological networks work – the foundation of functional medicine – and the second is understanding how social networks drive behavior. Academic institutions are increasingly recognizing this model. For example, the Cleveland Clinic has been working with the Institute for Functional Medicine to build a revolutionary institute to do research, education and clinical care in this area.

Modern treatments miss the point

By definition, many people think of chronic diseases as being without a cure. But there can be an effective strategy to prevent, reverse or treat many lifestyle-related chronic diseases. A simple thesis is to think of food plus love equals health, similar to $e=mc^2$. Getting the diet right and getting the love and support right creates health in a person's life.

Figure 3

Yet there is ongoing public inclination to turn to drugs as the primary solution to chronic disease, despite the fact that many drugs for these chronic diseases come with significant side effects. For example, the diabetes drug Rosiglitazone

aggressively lowers insulin, but was later linked to heart attacks and even death – up to 200,000 deaths since 1999 – and was temporarily restricted by the U.S. Food and Drug Administration (FDA) for public safety. The Rosiglitazone issue demonstrates that it is just not only about controlling blood sugar, but also about *how* one controls blood sugar.

Statins are another example of a drug championed on false safety assumptions. Research has shown that with a sample of 50 people being treated with statins, just one heart attack will be prevented, and from a sample of 890 people treated, just one death will be prevented. Those are lousy numbers. Doctors would not be impressed with an antibiotic if it took 890 people on the antibiotic to treat one UTI or one strep throat infection.

Moreover, recent data has linked statins to increased rates of diabetes because it is a mitochondrial toxin. In another fascinating study, doctors compared two groups of overweight men – one on statins and one not on statins. The groups were asked to exercise aggressively for 12 weeks. By the end of the study, the statin group showed no benefit in their fitness. In fact, there was a decrease of 4.5 percent in their mitochondrial function while exercising on the statin. The men were actually worse off while exercising on the statins than they were before they began exercising.

When popular drugs that are used to treat diabetes are shown to actually cause heart attacks, and a drug that is supposed to prevent heart attacks is shown to cause diabetes, it's really just the end of the road for the pharmacological solutions. The reason that the American healthcare industry is in this situation is that we are trying to treat 21st century diseases with a 20th century acute care model.

This acute care model isn't just missing the mark on diabetes and obesity. Allergic and autoimmune diseases, digestive disorders, cancer, and life expectancy rates are all getting worse. In the meantime, many people don't realize that most chronic illnesses are food-borne diseases. It's time to rethink food, rethink medicine, rethink health, and rethink the entire paradigm.

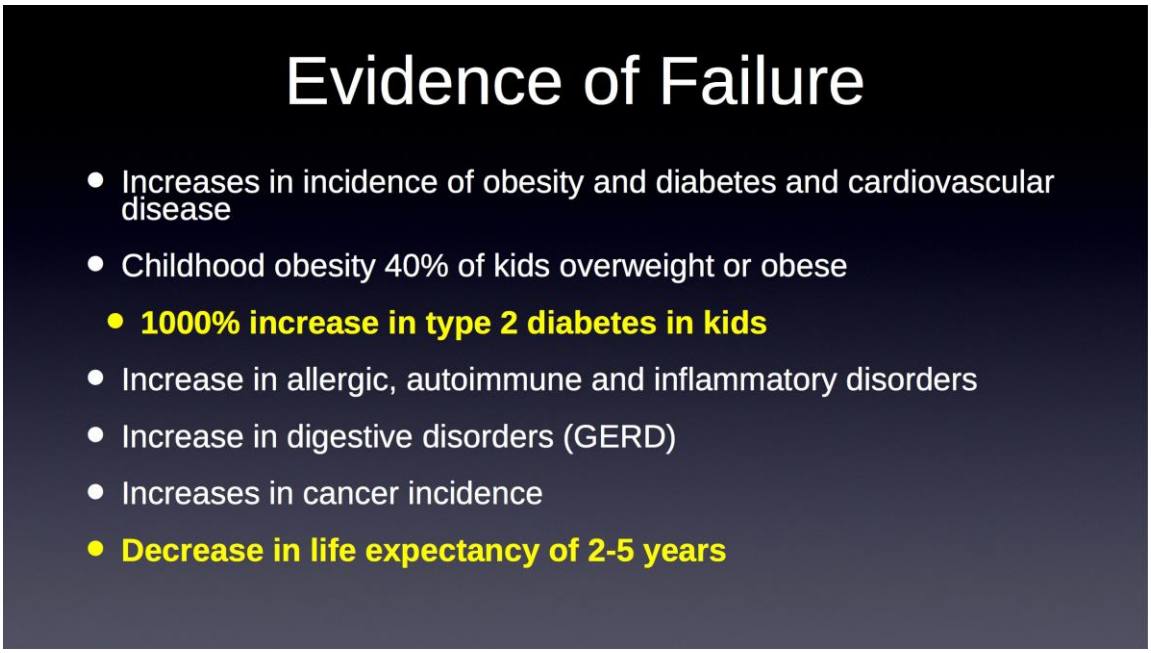

Figure 4

Food as a drug, food as a disease?

Many doctors – even top cardiologists in the U.S. – are still operating under the idea that the type of food a person eats doesn't have much to do with cardiovascular risk. However, more and more studies are finding the link between the molecular make up of food and health.

A good diet can create biological resilience. Through food – a powerful "new drug" – people can control and improve the function of tens of thousands of genes, optimize tens of thousands of protein networks, and improve the balance of dozens of hormones. Food works faster, better and more cheaply than any drug on the planet. It's available to almost everyone immediately, and it's simply food.

New studies are finding that food actually contains information that regulates almost every function of your body. It's like computer code, but it's much more complex. This new field is called nutrigenomics, and it examines how food influences the expression of your genes.

Figure 5

For example, new research has found that plant RNA is absorbed into the body when a person consumes food. The RNA is absorbed through the gut and communicates with our human DNA in a way that regulates our bodily functions. It's not just the vitamins, minerals, fiber, protein, fat and carbs. There are various molecular influences within food.

In a way, nutrigenomics is a major paradigm shift. When people talk about genes causing health problems and personalized medicine, they are mostly talking about pharmaco-genomics, which is adapting drug therapy to genetic polymorphisms. That is not really personalized medicine. In nutrigenomics, the discussion is around changing our phenotype back to what it was before the “diabesity” epidemic, through lifestyle and diet.

Several studies on populations who shifted from a pre-modern lifestyle to a modern diet and lifestyle have shown just how drastically food can influence health. For example, in Australia an extraordinary study was conducted by researching a group of aborigines who were the first generation in their area to move out of their rural

Figure 6

life and into the cities. Once in the cities, the aboriginal people shifted to a Western diet and became more diabetic, hypertensive, and obese. This same group of people then returned to their traditional healthy diet of unprocessed foods, and in just seven weeks, researchers noticed that their health had also changed. They no longer needed medications, all their biomarkers were normal, and they had lost their excess weight.

Of course, the whole world cannot go back to living a lifestyle like this group in Australia. But case studies from functional medicine clinics show that it is possible for people to rework their lives in the modern world to have the same health effects. One example of this is George.

Functional medicine: paradigm shift

A few years ago a patient named George approached a functional medicine clinic with a typical array of lifestyle-related medical problems: diabetes, heart disease, hypertension, sleep apnea, lipid problems, fatty liver, reflux, hypothyroidism, sinus

issues, prostate issues, and sexual dysfunction. These are typically called comorbidities. But if a doctor goes deep enough to into the roots of what's happening in someone's biology, it becomes apparent that all of these so-called comorbidities are connected. There was no need to treat each one separately, but that was what George and his previous doctors had been doing.

Functional medicine is the science of seeing how things connect, how the patterns

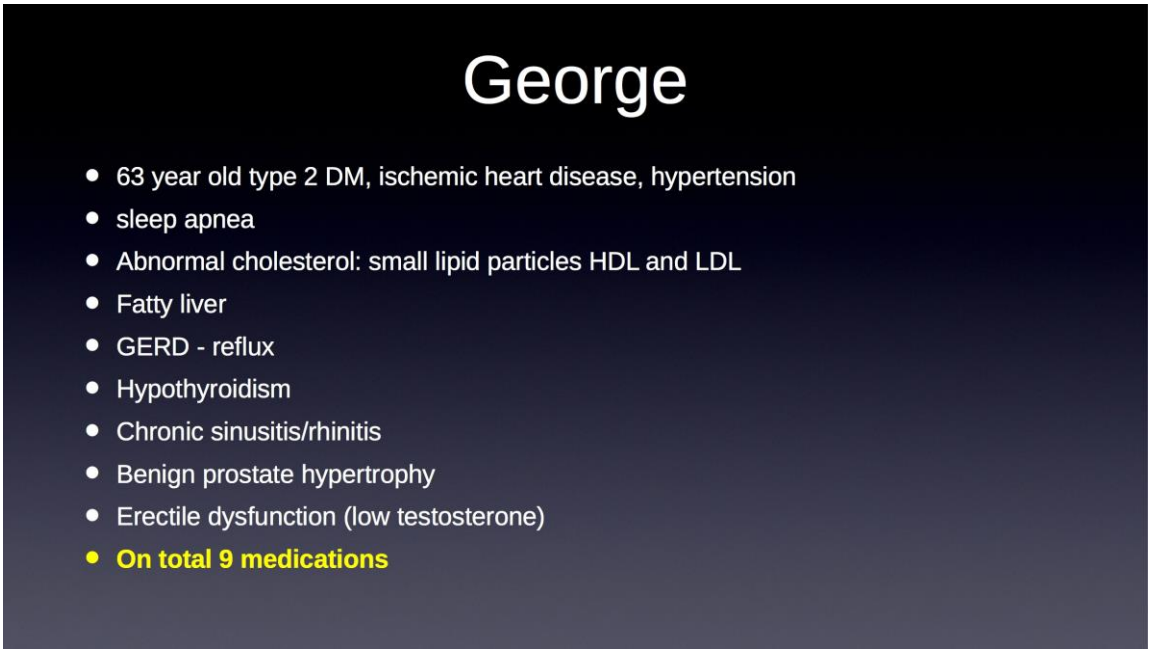

Figure 7

connect. So the first line of treatment for George was prescribing food. He started on a low glycemic diet, a little bit of exercise, some basic supplements, and some coaching and support from the doctor's staff.

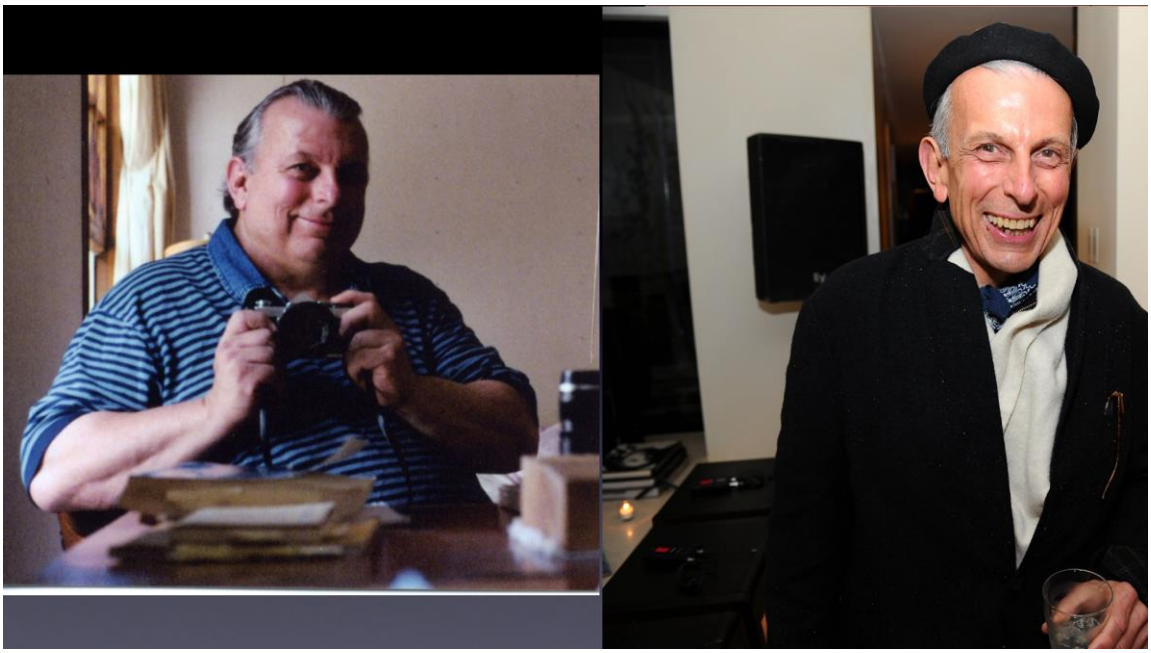

Figure 8

George lost 150 pounds in a year and a half. He was 63-years-old when he approached the functional medicine clinic. By the time he was 69, he had none of the diseases or comorbidities that he had arrived in with: All of his biomarkers returned to normal, including his blood sugar and his insulin. All of his symptoms dissolved and he went off medication. George is just one example of how a modern environment is driving genetic activity in many chronic diseases.

Social cure: spreading functional medicine

If someone's environment can influence health so greatly, then those in health care should really start to think about people's environment – which is really the places in which we live. Perhaps one of the worst human environments for good health is Haiti following the devastating earthquake in January 2010.

Many people sent money and volunteers to help, and one of the first doctors on the ground was Paul Farmer, who happened to have 30 years of experience working under difficult conditions in developing nations. Many people had already given up

on treating diseases like tuberculosis and AIDS in these impoverished areas where there was no clean water, no sanitation, and where people didn't have food or jobs.

Nevertheless, Dr. Farmer didn't give up. Dr. Farmer helped develop a model of health care that worked on the power of connection, the power of love, and the power of community, which is sometimes called the power of accompaniment. He focuses not just on specific diseases, but on what he calls structural violence, which is the social, economic and political conditions that drive disease. According to Dr. Farmer, structural violence should be a primary concern, rather than the medicine, surgery or hospitals. Dr. Farmer implemented this model around the world in Rwanda, in Haiti and in Russia.

In order to solve tuberculosis and AIDS, patients have to take medicine on schedule. This becomes quite complicated as that requires clean water and consistent access to health care providers. In Rwanda, for example, there are three hospitals to support most of the country, and they are all almost a three-day walk from the average Rwandan. Additionally, there are about 70 small health centers that are about a day's walk from the average Rwandan.

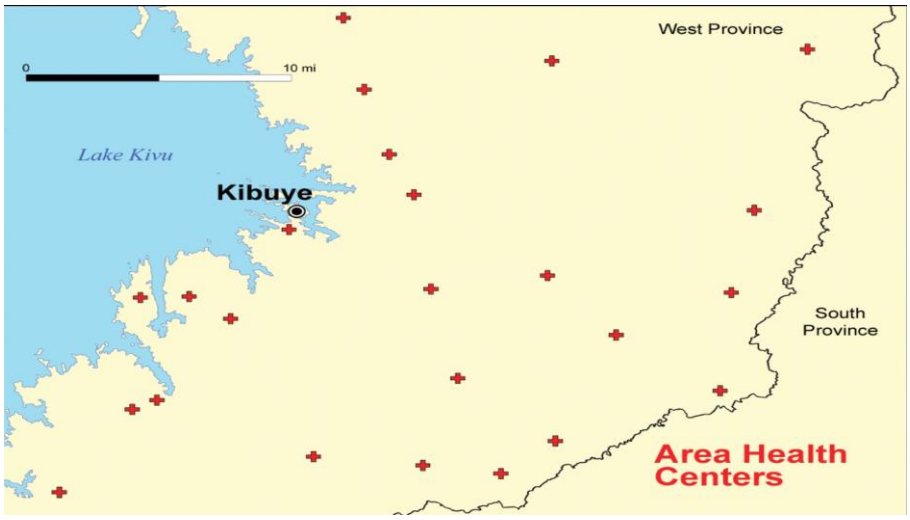

Figure 9

There are, however, 728 churches within a five-minute walk of the average Rwandan. Given those distances, it's clear that churches would be the most strategic place for people to go in order to receive health services. These kinds of social health care solutions in the developing world can be adapted to solve health care issues in the developed world.

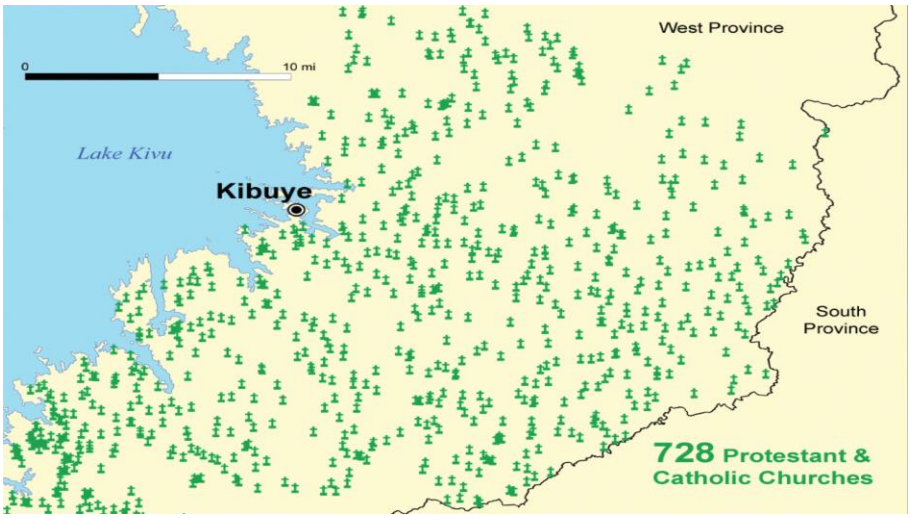

Figure 10

When thinking of the duality of biological and social networks, functional medicine already has experience studying biological networks. Yet there are not many doctors who have been trained in functional medicine that can deliver this model of medicine in the most efficient way. Instead, patients, communities and community-based solutions can become the center of health care, rather than the hospitals and doctors. We need to turn health care upside down. Another name for this type of social-based, holistic medicine could be sociogenomics.

Sociogenomics studies the social drivers of disease and how people change their gene expression through love, through connection and through community. So-called chronic diseases are often also called NCDs, or non-communicable diseases. However, following the logic of sociogenomics, it becomes apparent that obesity, diabetes, and other weight-related health issues are actually communicable

diseases. These are socially contagious diseases. And if that's true, then doctors and individuals must use a very powerful lever to change the direction of health care problems.

A seminal study published in the *New England Journal of Medicine* in 2007 found that obesity actually spread through social networks. The paper analyzed data from a multigenerational study called the Framingham Heart Study. Buried within the heart study, researchers found that a person had a 171 percent increased risk of becoming obese if they had friend who was overweight, but only a 40 percent increased risk of becoming obese if they had an overweight sibling. That would indicate that maybe it is these social threads that connect us more than the genes with which we are born. The study found that even if a friend of a friend was overweight, a person is 20 percent more likely to be overweight than not.

If chronic disease is based on the understanding that unhealthy behaviors are contagious, then perhaps healthy behaviors can also be contagious. This notion has been the driving force behind new approaches to changing "diabesity." For example, a non-profit company called Microclinics International has been using micro-clinics around the world. These micro-clinics aren't clinics in the traditional sense. In a diabetes micro-clinic, for example, small groups of people meet to help and support each other in addressing their diabetes. Doctors and health care workers were not present; it was simply people helping each other to live better. One recent 40-week peer support micro-clinic program in Bell County, Kentucky resulted in 95 percent of the participants achieving dramatic reductions in their biomarkers of obesity and heart disease. Rather than thinking about illness as a singular thing, this non-profit approached chronic illness as a group activity or a team sport and turned a small social group into medicine.

Case study: the Daniel Plan

The Daniel Plan began with Rick Warren, a bestselling writer and evangelical pastor from South California. After a mass baptism, Pastor Warren noticed how many of his congregants were overweight. He approached some top doctors – including

functional medicine practitioners – for help. Together, they quickly recognized the social connection opportunities within Warren's megachurch: his 30,000-strong congregation also met weekly in 5,000 small groups. Warren and the functional medicine experts created a healthy living program, called *The Daniel Plan* to

Figure 11

disseminate through these small meeting groups.

More than 15,000 people signed up to participate in *The Daniel Plan* in the first week. The average weight of the volunteer was 210 pounds for men and 170 pounds for women. In total, the first *Daniel Plan* participants weighed about 2 million pounds. After the program, Pastor Warren himself lost 50 pounds. The group on *The Daniel Plan* lost 160,000 pounds, which is about the size of a house. Meanwhile, the average person lost 7.8 percent of their body weight, which is significant considering studies have found that a 5 percent weight loss equates to a 58 percent reduction in diabetes risk.

Over the course of a year, church members on *The Daniel Plan* lost 260,000 pounds.

If the U.S. could somehow achieve these results across the American population, the country would save $300 billion a year in health care costs.

Another pastor at the church, Pastor Steve, lost 35 pounds in six weeks and four inches off his waist. His triglycerides dropped 300 points, his cholesterol dropped 50 points, his HDL went up 24 points and his hemoglobin A1c went from 7.2 to 5.3. The best drug interventions alone can't achieve these results.

Figure 12: Pastor Steve saw great results

Other people at the church saw reductions in a number of different chronic diseases, including asthma, migraines, autoimmune disease, digestive disorders, reflux and acne. Their sleep, moods, energy, and even their sexual drive and function all improved simply by creating the conditions for health.

Compared to those who followed *The Daniel Plan* alone, those who followed *The Daniel Plan* in groups saw the most significant impact. Those who followed *The Daniel Plan* alone lost an average of 8.9 pounds, while those who did it together in small groups lost an average of 15.7 pounds; that's almost twice as much weight

loss.

The Daniel Plan is just one example of the tremendous power of community. The plan was based on the insight of using the power of love, support, connection, and of people living, working, playing, eating and doing things together. In short, it represents the love diet.

Today, there is a book and an online curriculum based on *The Daniel Plan*. *The Daniel Plan* has moved to thousands of churches across America and works on the principles of faith, food, fitness, focus and the power of friends.

Case study: the Peers for Progress program

Community based, secular programs have also produced powerful changes in health. One example is Peers for Progress by the American Academy of Family Physicians Foundation. Peers for Progress took a diabetes self-management program into the developing world, including in areas in Uganda, Cameroon, Thailand and South Africa.

Peers for Progress participants received some guidance on diabetes self-management and were then instructed to support their peers in the program. The people in the program were nonprofessionals and were mostly uneducated. Many had cell phones, but not smartphones and so could text each other to communicate. In general, they helped each other by meeting, exercising, and cooking together.

By the end of one Peers for Progress study, doctors saw dramatic improvements in the diabetes symptoms, diet, blood pressure, BMI and glucose of the participants. Over the course of six months, the average BMI of participants dropped from 28 to 25 and the average hemoglobin A1c was reduced from 9.6 to 6.7. Those dramatic changes are difficult to achieve with medication. The study produced a tenfold reduction in health care costs. If this program worked in the developing world, there is no reason to think it won't work in America.

All calories are not created equal

In functional medicine, the approach to food is based on simple principles as a sort of instruction manual for the care and feeding of a human body. What someone puts on the end of their fork is more powerful than any drug ever discovered on the planet. And the sum of a community's diet choices also has tremendous implications. Food affects a community's aquifers, soil health, environment, and global warming. Food affects economies – it even affects national security when an unhealthy country is unable to mount a military that is fit enough to serve. It can also affect education. If children go to school and have breakfast of Doritos and cola, they aren't apt to learn or function at their best. The food on the end of a fork is literally talking to human biology, and communicating with the genes in every cell.

Still, one of the biggest myths circulating today is that all calories are the same. Most nutritionists and doctors are trained to follow Newton's law of thermodynamics: energy is conserved in a system, so calories in and calories out is the secret to weight loss. That is the same message being spread by the government and by the food industry. The idea is that there are no good or bad calories and, instead, it’s all about moderation. In fact, the key to health is to simply eat less and exercise more. However, there's a subliminal message behind this calorie in-calorie out premise, and it is that the fault of being fat is the personal failing of the individual. If all calories are equal, then everything would be fine so long as people stopped being such lazy gluttons. However, the ongoing “diabesity” epidemic confirms that this message is not working. In truth, there are good and bad calories, and there are foods that change your biology in ways that other foods do not.

The crack in this theory is that, according to Newton's law, energy is only conserved in a closed system. Therefore, in lab the equivalent calorie premise is true: 1,000 calories of broccoli is the energy equivalent to 1,000 calories of soda. In a lab, the system is conserved in a vacuum, but a person is not in a vacuum. Studies have shown that with every bite, food is interacting with a person's metabolism and biology. Food affects hormones and neurotransmitters as well as cell messengers

and cytokines. Molecules within food can down-regulate a number of different genes.

Using the broccoli versus cola example, a 750 calorie portion of broccoli has 35 grams of fiber and, because it is low on the glycemic index, it won't raise a person's blood sugar or insulin levels. However, it would be very difficult to consume 750 calories of broccoli because that would be equivalent to 21 cups. On the other hand, a person can very easily drink 750 calories of soda – about the same amount found in an ultra-sized convenience store cup. That amount of soda is equal to 46

Figure 13

teaspoons of sugar; it will spike insulin levels, cause lipogenesis, activate cytokines, create insulin resistance, raise triglycerides, lower HDL and disrupt hormones. In reality, 750 calories of broccoli are quite different from those of soda.

Functional medicine has proven that there is a better eating manual than calories in versus calories out. Following simple rules of eating real food, eliminating both processed food and liquid calories, can go a long way towards weight loss. Some people also opt for a so-called detox in which they rid their body of gluten and dairy,

and embark on a “drug” holiday during which time they refrain from caffeine, alcohol, and sugar. These principles are just as easy to follow as calorie restriction, and often more effective in weight loss and health creation.

Functional medicine: food as a prescription

Calories do matter. But calories are not the only way in which food influences biology. Food influences biology through all components of food, including macronutrients and micronutrients. The quality of macronutrients matter as well. Eating wild kangaroo meat versus a feedlot cow will result in very different effects on a person's biology and cytokine profile. Certain kinds of wild meat don't have the same inflammatory effects of feedlot meet. The micronutrients in food, the fiber, the phytonutrients, and the plant genome we are learning about also matter. There is also a whole new category in food being studied, called anti-nutrients.

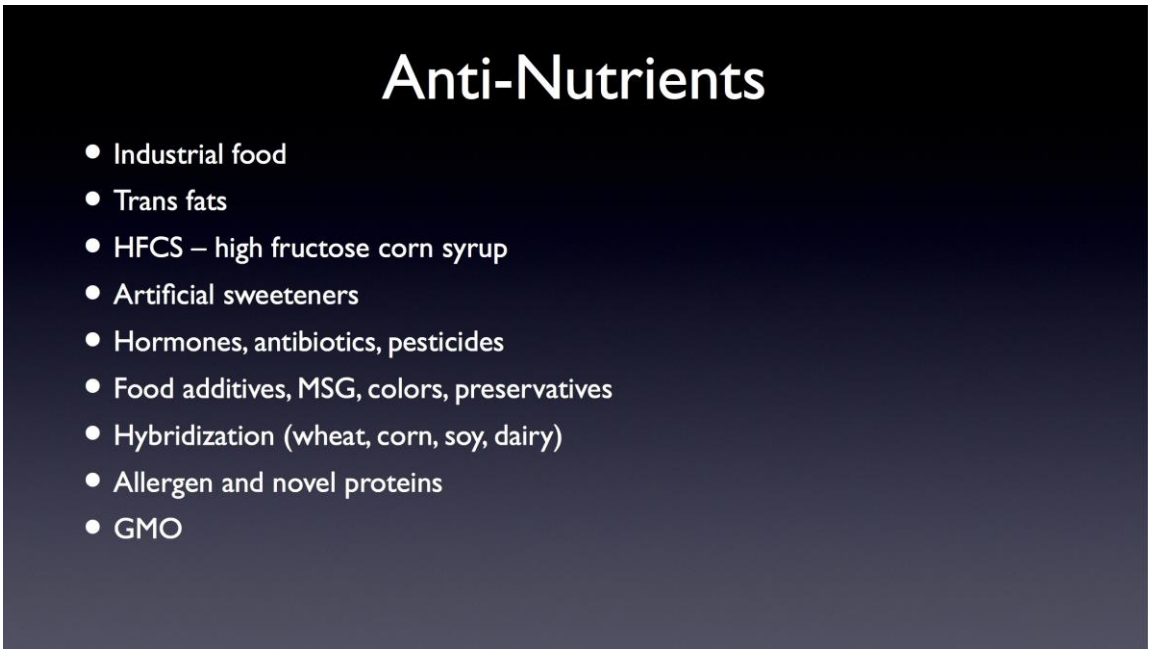

Figure 14

In functional medicine, the body is understood as a network with certain nodes that are influenced by everything we do – by the environment and by what someone

eats, breathes, thinks, believes, or absorbs in toxins. These nodes are all interacting dynamically within a matrix. Crucially, food influences every single one of these aspects of our network through nutrigenomics, through nutrient status and coenzymes, through cellular signaling, communication hormones, the immune system and through the body's detox processes. Food also affects the human gut microbiome and gut flora. Food affects mitochondrial function, and even the structural integrity of our cells.

Based on this model and nutritional science, there are plenty of foods that should be included on our plate – and plenty of foods that should definitely be avoided. First on the list of those to avoid would be factory-made "Franken-Foods."

Many people have outsourced their cooking to the food industry in recent decades. Over time, the food industry has encouraged this shift with a narrative that it is both costly and time intensive to cook at home. And to replace homemade meals, industrial food companies have literally created addictive foods to compete for "stomach share." The result of this taste arms race has not been healthy. High-fructose corn syrup, artificial sweeteners, hormones, antibiotics, pesticides, food additives and, of course, trans fats are being pumped into our food. Yet these anti-nutrients do nothing for human health.

The willpower myth

Sugar is consumed in near pharmacologic doses in the U.S. The average American eats about 152 pounds of sugar and 142 pounds of flour a year. Nearly 15 percent of the average American's caloric intake comes from soda. These levels are unprecedented in human history.

Still, most of the sugar being consumed in the U.S. is actually hidden. A single serving of tomato sauce has more sugar than two Oreo cookies. The average fruit-sweetened yogurt has more sugar than a cola. People who think they're eating a healthy breakfast of yogurt and cereal might as well be eating dessert. All this hidden sugar raises the question of will power and personal responsibility. Someone's willpower may not be to blame when sugar is hidden in savory foods

everywhere.

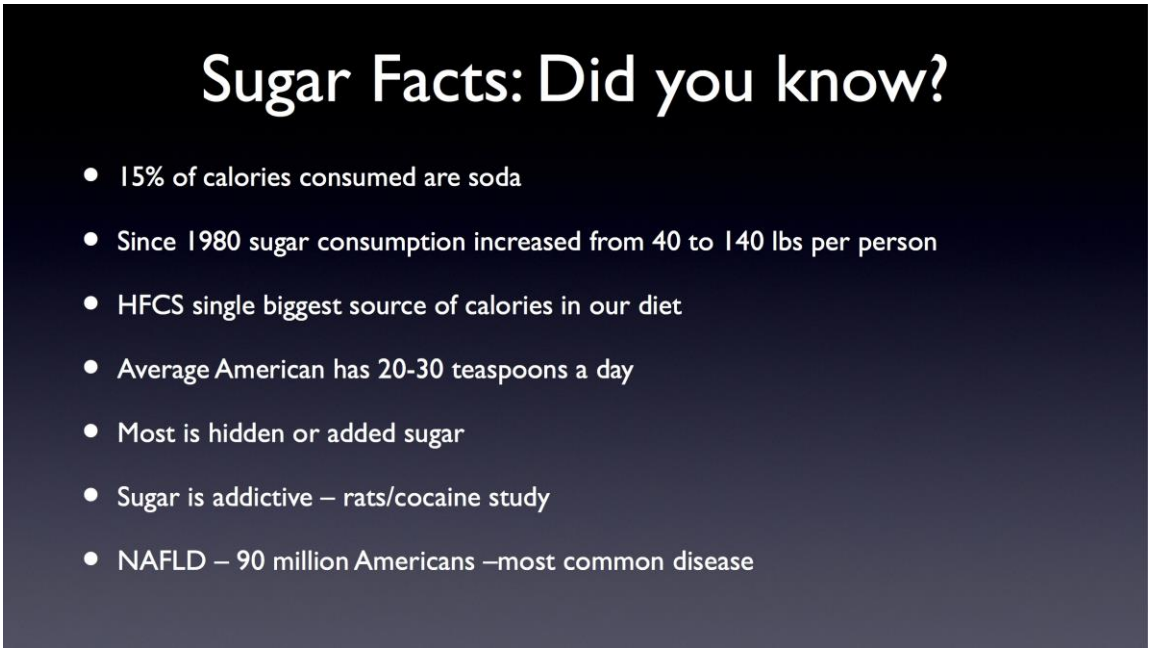

Figure 15

Sugar's addictive qualities only add to the crisis. Harvard scientist, Dr. David Ludwig, recently designed a unique study into food addiction that demonstrates the power of all of these hidden sweets. Critics of the idea that some food is addictive have argued that the brain's pleasure and reward centers would light up if a person were to eat a burger, fries or soda and would not do so with broccoli. According to these critics, this represents taste rather than addiction. With this in mind, Dr. Ludwig controlled for taste using a side by side milkshake comparison.

In the experiment, a group of overweight participants ate a high-glycemic milkshake one day, and a low-glycemic milkshake another day. Both milkshakes tasted the same and both had the same calories and the same proportions of protein, fat and carbohydrates. The only difference between the milkshakes was the starch: one milkshake had low-glycemic starch, and the other had a high-glycemic starch that would raise blood sugar quickly.

Dr. Ludwig found that the low-glycemic milkshake showed no measurable sign of

addiction in the functional MRI and had no significant impact on blood sugar. However, when the participants consumed the high-glycemic milkshake, their brains lit up like a Christmas tree in the nucleus accumbens, which is the addiction center in the brain that also lights up with the consumption of cocaine or heroin. In fact,

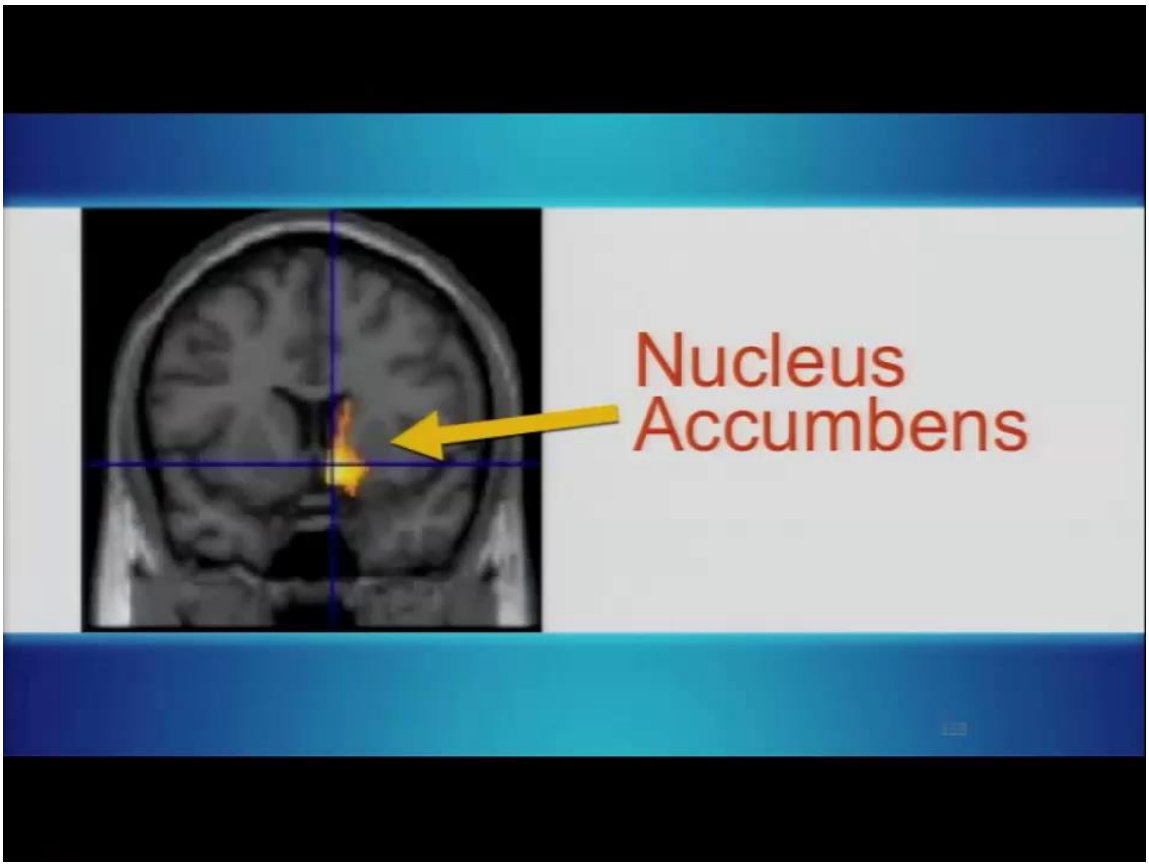

Figure 16

animal studies have shown that sugar is eight times more addictive than cocaine.

Most processed foods that have been developed by the food industry are truly factory-made science projects designed by "cravings experts." The food industry has taste institutes that study the "bliss point" of foods in an effort to create "heavy users" and produce greater "stomach share." These are real terms used by the food industry. The food industry has hijacked the taste buds, hormones, and metabolism

of the American public – all with profit, rather than health, in mind.

The path to reverse this hijacking is with real food that includes plenty of phytonutrients, high-density good fats such as olive oil, avocados, nuts and coconuts as well as high-quality proteins.

The power of community

All of these functional medicine elements that work on someone's biological network can be administered individually, however, the quest to create health is more effective when people work together in their community. The people who first embarked on *The Daniel Plan* with Pastor Warren created dance and jogging activities that included each other in a community. Their small meeting groups also focused on sleep, meditation, inspiration and peer support. They used friend power, not willpower, to help people change. This was the secret sauce. Participants of *The Daniel Plan* also changed their own micro-food culture when determining what was available at church meetings. Participants also attended healthy cooking events and cooking demos as a part of the program.

This community support is important, considering there are generations of Americans today who have been disenfranchised from their own kitchens; they no longer know how to cook healthy food. One family featured in the 2014 food industry documentary, *Fed Up,* didn't even own a cutting board or decent knives. This family worked with functional medicine experts to change their diet and learn how to make real food again. In just a few months, the mother of the family lost 67 pounds and the father lost 45 pounds. Their son lost 40 pounds, but gained it back after beginning a job at a fast food restaurant. The family's local community had far more fast food restaurants and convenience stores than they did grocery stores. This proves that the consideration of the local food environment is critical.

Everyone should be activists and advocates like these people. We need to take back our health. Getting healthy is a team sport and is central to changing the "diabesity" epidemic – we do not need more doctor's offices or health care professionals. Leveraging the power of love, community and connection will ultimately change

unhealthy behavior in the U.S. This epidemic can be solved one kitchen at a time, one community at a time, one family at a time.

Conclusion

The current human and monetary cost of obesity, diabetes, and other diet and lifestyle-related health problems is stunning. In 2008, obesity alone accumulated $147 billion worth of medical costs in the United States, according to the Centers for Disease Control and Prevention (CDC). New drugs, surgeries, and public health campaigns aimed at addressing the problem have collectively failed to stem the "diabesity" epidemic since it first began in the late 20th century. Clearly, only a paradigm shift in medicine will help to tackle the problem.

Instead of approaching medicine through an acute care model of finding a symptom and prescribing a drug, more doctors are now taking a holistic view at their patients. Although many doctors promote the weight loss methodology of calories in versus calories out in, an individual's health is more complicated than that. Processed foods are designed by the food industry to be addictive and unhealthy. These foods can disrupt an entire biological system from blood pressure to hormones to inflammation and even how our cells express genes. On the other hand, a healthy diet of whole, natural foods can reverse these changes.

Despite a deep-seated emphasis on individual willpower, research has shown that both obesity and diabetes are actually social diseases. An individual is more likely to gain weight if their friends and family gain weight. On the other hand, social ties and community centers have proven to be fast and efficient routes to spread and promote healthy living.

Considering the social elements of food, diet and recreational activities, it's clear that both an individual's biological network and their social network need to be included in the foundations of health. Community-based, functional medicine approaches have shown that the "diabesity" epidemic plaguing western countries is reversible. What is on the end of someone's fork may have more influence over their health than the pills in their medicine cabinet.

Biography

Mark Hyman, MD is a practicing family physician, a nine-time #1 New York Times bestselling author, and an internationally recognized leader, speaker, educator, and advocate in his field. He is the Director the Cleveland Clinic Center for Functional Medicine. He is also the founder and medical director of The UltraWellness Center, chairman of the board of the Institute for Functional Medicine, a medical editor of The Huffington Post, and was a regular medical contributor on many television shows. Dr. Hyman has testified before both the White House Commission on Complementary and Alternative Medicine and the Senate Working Group on Health Care Reform on Functional Medicine. He has consulted with the Surgeon General on diabetes prevention, and participated in the 2009 White House Forum on Prevention and Wellness. Senator Tom Harkin of Iowa nominated Dr. Hyman for the President's Advisory Group on Prevention, Health Promotion, and Integrative and Public Health. In addition, Dr. Hyman has worked with President Clinton, presenting at the Clinton Foundation's Health Matters, Achieving Wellness in Every Generation conference and the Clinton Global Initiative, as well as with the World Economic Forum on global health issues. He is the winner of the Linus Pauling Award, The Nantucket Project Award, and was inducted in the Books for Better Life Hall of Fame, and the Christian Book of the Year Award for *The Daniel Plan*. He is as an advisor and guest co-host on The Dr. Oz Show and is on the board of Dr. Oz's HealthCorps, which tackles the obesity epidemic by educating American students about nutrition. With Dr. Dean Ornish and Dr. Michael Roizen, Dr. Hyman crafted and helped introduce the Take Back Your Health Act of 2009 to the United States Senate to provide for reimbursement of lifestyle treatment of chronic disease. And with Tim Ryan in 2015, helped introduce the ENRICH Act into Congress to fund nutrition in medical education.