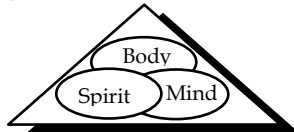


Death to Diabetes

The 6 Stages of Type 2 Diabetes Control and Reversal

How an ex-diabetic beat diabetes,
despite a blood glucose level over 1300

DeWayne McCulley



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Comments & Feedback

The following are some of the comments and feedback that I have received concerning the contents of this book.

“Your six-stage model will change the way diabetes is treated in the future.” [A local doctor]

“I like that you included a spiritual aspect instead of just talking about the body (physical). Our people underestimate the power of the inner spirit.” [A local pastor]

“Wow, this super meal thing really works! – I can’t believe it’s this simple!” [A member of one of the diabetic support groups]

“I like your flow charts and diagrams – diabetics finally have a roadmap that shows them where they are and where they’re going.” [A diabetes educator]

“I was a little hesitant at first, but once I tried your Super Breakfast, after just a couple weeks, my sugars came down.” [A Type 2 diabetic who attended one of my speaking engagements]

“Thank you, DeWayne – you’ve given me and other people hope by sharing your story.” [A member of one of the diabetic support groups]

“You explain diabetes in a way that makes it easier for people to understand the disease. And, you give us simple steps to follow in order to get better.” [An audience member after my presentation to a group of wellness consultants and diabetics]

“I like your (1-page) pamphlet -- I can’t wait for the book!” [A visitor at one of the health fairs]

“If your book is half as good as your presentation, everyone will love it!” [An audience member after one of my presentations]

About the Author

In March 2002, DeWayne went into a diabetic coma with a blood glucose level of 1337 – more than twelve hundred points above normal. Despite a set of complications that included hyperglycemia, dehydration, two blood clots, pneumonia and four insulin shots a day, DeWayne was able to use his engineering and biochemistry background to methodically and completely wean himself off the insulin and other drugs to lower his average glucose level to 92.5 mg/dl and his hemoglobin A1C to 4.4%, reversing his Type 2 diabetes – all in less than 4 months. He credits his recovery to God, the doctors and nurses, his mother, his daughter, his engineering background, and a set of serendipitous events that helped him through his recovery.

DeWayne believes he was very fortunate to have obtained a full college scholarship, an invaluable college education (B.S., E.E., Pennsylvania State University), and a good job as an engineer. Because he believes it is important to give back to the community, DeWayne volunteered as a math tutor for one of the local high schools in the 1980s and 1990s. Today, DeWayne volunteers as a community health advocate at various health fairs and other community events to discuss natural wellness solutions for diabetes, high blood pressure, obesity, and heart disease.

As an engineer, DeWayne was trained to research, analyze, test, draw logical conclusions, and write technical reports based on complex engineering and machine data. Ironically, DeWayne was able to use that same training to research, analyze, test and draw logical conclusions from the hundreds of clinical studies to help him write this book. In addition, the encouragement that DeWayne received from his mother, his daughter, and various people (from work, the local churches, the wellness industry, and the two diabetic support groups he was facilitating), also helped him to write this book. DeWayne's hope is that this book will inspire you and others the way he was inspired – by people he would never have met if it weren't for his experience with diabetes.

Notice to Readers

This book is written with the express purpose of sharing the author's experience of his recovery from a near-death diabetic coma and all the invaluable information of hundreds of clinical studies and medical references from doctors, healthcare professionals, scientists, nutritionists and other experienced healthcare advocates. Consequently, the information in this book is provided for informational purposes only and is by no means meant to be a substitute for the advice provided by your own doctor and other healthcare professionals. It is imperative that you always consult with your doctor to discuss your health state and determine your specific course of action. The author shall have no liability or responsibility to any person or entity with respect to any loss, damage or injury, caused or alleged to be caused directly or indirectly by the information contained in this book.

The information in this book is not intended to prescribe any form of treatment for any illness or medical condition. This book should only be used as a guide in interacting with your doctor and other healthcare professionals, and should not be considered a substitute for expert medical opinion. In fact, you should utilize the guidelines for doctor appointments in Chapter 11 to help improve the relationships with your doctor and other healthcare professionals.

The U. S. Food & Drug Administration has not verified any therapeutic claims expressed or implied in this book. You (the reader) are responsible for making any decisions regarding the suitability and validity of the information provided in this book. Always consult with your doctor before you implement any changes to your diet, supplement usage, exercise regimen, or lifestyle.

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Chapter 1. Introduction

Background

I discovered firsthand that your perspective on life truly changes once you face Death and survive a life-threatening coma and a disease such as diabetes. Because I consider this is a true blessing to have fully recovered from a near-death experience and from a disease that has no documented medical cure, I feel a responsibility to share that experience. Ironically, what I learned over the years as an engineer in terms of design, planning, testing, data analysis, and writing prepared me to successfully fight this disease and write this book. Of course, I realize that my recovery from diabetes may be an anomaly due to my engineering background and a series of “accidents” that helped me through my recovery. But, since I am not completely certain that this was an anomaly, I hope that by sharing my story, others with similar health problems will be inspired to improve their health or the health of a loved one. If this information helps someone, then, I will know that this was all worth it.

There are many good books written about diabetes, but I was unable to find a book that provided a systematic and organized approach with specific wellness protocols for fighting the root causes of this insidious disease. As a result, I was frustrated and confused concerning what to do when I couldn’t get clear answers as to the right foods to eat/not eat and why my blood glucose level was so high. And, when the dietitian couldn’t explain how the foods in her diet plan would help my diabetes, I became very concerned. Then, after my unexpected recovery, I was surprised by the number of people who had questions about how I recovered.

That's when my mother, my daughter and a few other people at work suggested that I write a book. But, I thought they were just being kind. Besides, I didn't really want to invest the kind of time it would require to write a book. After I gave several presentations to churches, wellness consultant forums and community groups, some of the audience participants asked if I had a book or was planning to write a book. With a strong push from my daughter, my mother and several other people, I finally relented to at least analyze the market need for a new book about diabetes.

The following is a summary of the key points from my market needs analysis that, in some cases, surprised me, and finally convinced me to write this book.

- There are more than 18.5 million people in the United States and 170 million people worldwide with diabetes (95% Type 2).
- Every hour more than 2,000 people are diagnosed as a diabetic in the United States.
- The number of people worldwide with diabetes is expected to rise to 366 million by 2030 – more than doubling in just 25 years. What is more disturbing is that the increase is based on obesity rates remaining stable.
- There are more than 40 million Americans with Metabolic Syndrome X, a strong pre-cursor to becoming diabetic. Metabolic Syndrome X is characterized by a combination of indicators including obesity, high insulin levels, internal inflammation, high blood pressure, high cholesterol, and fatigue.
- There are millions of non-diabetic people who struggle with similar health issues that diabetics struggle with, including high blood pressure, high cholesterol, fatigue, obesity, kidney problems, and cardiovascular problems. Consequently, non-diabetics have some of the same needs for health-related and nutrition-related information.
- Many of the diabetics I met had tried to change their eating and exercise habits, but with little success due to misinformation about nutrition, exercise and blood glucose testing.
- The majority of the diabetics I met had resigned themselves to taking some type of drug to control their diabetes.

- There were some diabetics who believed that they were doing well by taking drugs to control their blood sugar. They were either unaware or didn't care about the long term effects of the drugs.
- There were some diabetics who were comfortable living *with* the disease instead of determining how to live *without* the disease – because they were unaware of better options to fight the disease.
- I found that most diabetics were doing something wrong in at least 6 of the 8 major areas associated with diabetes management and blood glucose control: nutrition, exercise, education, blood glucose testing, spiritual health, recordkeeping, doctor visits, and drug therapy. And, in many cases, the diabetic or the healthcare person didn't know they were doing anything wrong in those areas.
- I was not able to find a book that addressed how to control and reverse diabetes in measurable terms that the average person could track on their own. There was no book that could answer my basic questions about the disease and its root causes. During my recovery I referred to several books and websites, many of which were out-of-date, had vague information or conflicted with each other.
- After several presentations, people kept inquiring if I had written a book. They felt that I had a powerful message that needed to be shared on a larger platform.
- My daughter felt that people would learn a lot more if everything I presented were written down – so that people would not have to take so many notes.
- My mother kept meeting people who would ask her how she lost weight, lowered her cholesterol and remained so active at her age.
- The blood glucose levels of most diabetics returned to normal when they implemented some of my nutritional principles. Non-diabetics also experienced positive results.
- Although people are living longer, they are not necessarily living healthier. More people are relying on drugs, ending up in hospitals; living in pain; and, dying of diseases due to the lack of knowledge and poor lifestyle choices.
- Many people do not have a personal computer and access to the health-related information on the Internet. They need a hardcopy book that provides that information.

Facts & Figures

The following are additional facts and figures that further convinced me to write this book.

- Diabetes continues to grow at epidemic levels as it kills more people each year than AIDS and breast cancer combined. The average life span of a diabetic is shortened by 13.5 years.
- More than 7 million people over the age of 65 are diabetic as more people are becoming diabetic as they get older.
- More than 140 million Americans are overweight/obese, which provides a strong feeder base for people to develop cardiovascular disease, cancer, diabetes, and arthritis.
- “Diabetes is the fifth-deadliest disease in the United States, and it has no cure. The total annual economic cost of diabetes in 2002 was estimated to be \$132 billion, or one out of every 10 health care dollars spent in the United States.” American Diabetes Association
- At least 13% of African-Americans have diabetes and African-Americans are twice as likely to develop the disease. This is due to African-Americans being more likely to have one or more of the following risk factors: high blood pressure, overweight/obesity, high cholesterol, poor nutrition, and a sedentary lifestyle.
- “Diabetes is the leading cause of new cases of blindness in people ages 20-74. Each year, from 12,000 to 24,000 people lose their sight because of diabetes.” American Diabetes Association
- At least 4 out of every 5 diabetics will develop one or more of the following complications: kidney disease (nephropathy), eye disease (retinopathy), nerve disease (neuropathy), or heart disease (cardiovascular disease).
- According to a study by the Yale University School of Medicine, more than one fifth of the patients with Type 2 diabetes have decreased blood flow to the heart, but no symptoms to suggest there is a problem. Known as myocardial ischemia, this condition occurs when the heart does not receive enough blood to meet its metabolic needs, usually due to plaque build-up in the coronary arteries. When no symptoms are present, the disease is said to be “silent”.
- “Heart disease strikes people with diabetes, twice as often as people without diabetes.” American Heart Association

- Heart disease, *not* breast cancer, is the number killer of women in the United States.
- With all of the great medical technology, doctors, and research, it doesn't make sense that the only treatment for diseases/ailments such as diabetes, heart disease and high blood pressure is a set of drugs that suppresses the symptoms and doesn't cure the disease/ailment.
- "Doctors must shift their focus from treating disease alone to tailoring treatments to individual patient needs." American Journal of Medicine Feb 2004

The Controversy

According to medical science there is no proven cure for Type 2 diabetes. According to medical science I should still be on insulin or some other diabetic medication. To be completely objective, it is possible that what happened to me was an anomaly or I just got lucky. In fact, that's what I thought initially when I returned to work. When people asked me what I did to get off insulin and the other drugs, I told them that my situation was unique and would not work for them because everyone's body is different.

But, a strange thing happened that I didn't expect. People told me they tried what I did and were successful – their sugar level came down, they felt like they had more energy, they lost weight, and some were able to reduce their medication. I was surprised to say the least. And, when my mother told me she was able to reduce her cholesterol and blood pressure by making some nutritional changes, I began to wonder that maybe it was not an anomaly. So, I decided to conduct some in-depth research into nutritional science, biochemistry, and the findings from clinical and epidemiological studies. In the meantime, my daughter and several people at work asked me to document what I had done so that they could use or share the information with family members and friends. Then, when other people including my doctor asked me what I did to wean myself off insulin and lower my blood glucose, they were all so very encouraging and supportive; and, I began to think that maybe I should share this with other people. And, so, the journey began . . .

Purpose of this Book

The primary purpose of this book is to provide easy-to-use procedures and protocols that specifically address the root causes of Type 2 diabetes and provide specific medical-endorsed measurements/tests that track the progress of a diabetic's recovery. The procedures are defined within six stages, based on my personal recovery and over 250 clinical studies. However, this book is not a medical book and is not meant to replace the personal advice and support you receive from your physician and other healthcare professionals. In fact, one of the key principles of improving your health is that you partner with your physician and other healthcare professionals on a regular basis to ensure your health is moving in the right direction.

This book defines a diabetes wellness strategy, which is an integrated Body-Mind-Spirit approach to the healing process for people who are fighting a systemic, degenerative disease such as Type 2 diabetes. This wellness strategy is based upon the following five principles.

1. The Body, Mind and Spirit must work in harmony and balance for the entire being to be healthy.
2. Proper nutrition, exercise, education and spiritual health are the key planks to successfully fight the primary root causes of most systemic, degenerative diseases (including diabetes) – nutritional deficiency, hormonal imbalance, inflammation, oxidation, and toxic overload.
3. There are 5 “live” foods (from God) that align with the body's blueprint and internal healing mechanisms.
4. There are 5 “dead” foods (made by man) that trigger many of today's diseases and prevent the body from using its internal healing mechanisms.
5. Because a disease (such as diabetes) is a condition that is “acquired” primarily due to the *absence* of proper nutrition, then a disease (such as diabetes) can be “unacquired” with the *presence* of proper nutrition.

This wellness strategy aligns with the body's need and ability to heal itself and prevent the diabetes from causing further damage – when that body is fed the proper food and spiritual nutrients. This strategy works because it addresses the real root causes of Type 2 diabetes – insulin resistance, nutritional deficiency, inflammation, oxidation, and toxicity; and, is based upon personal experience and hundreds of clinical studies. As a result, the body relearns how to properly metabolize food and increase glucose uptake, providing a higher level of energy within a matter of weeks. This diabetes wellness strategy is designed to help you:

- Increase glucose uptake, reduce blood glucose levels, and increase the utilization of insulin in the body by consuming specific foods, juices, nutrients, herbs, and quality supplements.
- Prevent, control or reverse the long-term complications of nerve, kidney, eye, and heart diseases; and other complications including high blood pressure, cholesterol, and homocysteine – based on specific wellness protocols.
- Customize the wellness protocols to fit your specific health needs, based on your blood glucose testing and other medical tests.
- Design meals with the 5 “live” nutritious foods that heal the body; while avoiding the 5 “dead” processed foods that harm the body.
- Avoid the 7 most common mistakes that diabetics make.
- Progress from no blood glucose control to complete control and reversal of diabetes by using a well-structured six-stage process.
- Learn how to save money while eating healthier foods.
- Learn how to save time while preparing nutritious meals.
- Learn how to properly handle stress and conquer your inner demons.

Author Sidebar: I do not consider my diabetes wellness strategy to be an official “cure” for Type 2 diabetes, despite all of the evidence. As an engineer, I do not believe in anecdotal data – I believe in the data and testing from independent, qualified test labs and similar resources. A series of double-blind, placebo-controlled clinical studies need to be performed to properly validate (or discredit) my diabetes wellness program. Hopefully, there is a company that would be interested in pursuing this endeavor for the betterment of our country and the world.

Chapter 2. My Coma & Recovery

My Coma

Surprisingly, for someone who had never been ill, I became ill in a very short period of time and almost died without any warning. This is very important to grasp because death can come upon us very quickly when we continue to ignore the signs, such as weight gain, fatigue, or an increase in blood pressure. Interestingly, this is the false trap that we all fall into – the “illusion of good health”. How many times have you heard about someone having a stroke or heart attack and you just talked with that person just a few days ago and he/she looked completely healthy? And, despite this type of health crisis occurring on a regular basis, we never translate that health crisis happening to us. And, for those of us who are ill with a health problem such as diabetes, obesity, or high blood pressure, we ignore our doctors and live in a state of denial and false hope that “It’ll go away.” That is what happened to me.

It was March 2002, work was busy as usual, especially with the recent reorganization and restructuring within the company. As our engineering teams had become smaller and lost key talent, we had to become more efficient in getting work done. I had stopped playing basketball and tennis, and was eating more processed foods, gaining weight, increasing my cholesterol level and ignoring the warning from my doctor to change my eating habits. As a result, I had gradually put on 45 pounds within several years. I had started to drink more and urinate more frequently, but I thought that it had something to do with my prostate. So, I scheduled a doctor’s appointment for April.

I awoke the morning of March 19, 2002 in a semi-paralyzed state – my arms and legs felt rubbery, similar to how your arm or leg feels when you sleep on it. Because I didn’t feel right, I had decided to go back to sleep

to get some extra rest and go to work later that morning. But, for some strange reason I decided to call 911 and was rushed to the hospital by the local ambulance. I found out later that if I had gone back to sleep, I would have died in my bed that morning.

According to the doctors, I went into a non-ketotic hyperglycemic hyperosmolar (NKH) coma, with a blood glucose level of 1337, and almost died. In fact, the doctors had called my mother (who lives in Pennsylvania) to tell her that by the time she got to New York, I would probably not be alive. But, for the grace of God, and the expertise of the doctors and nurses, I somehow survived the coma, the blood clots, and death.

My Daughter's Arrival

At the time I went into the hospital, there was a terrible snowstorm that made it almost impossible to travel. My daughter, Cynthia, had called the airline to get a plane as soon as possible. When the operator told her it was going to be expensive, Cynthia said: "I don't care what it cost! I need to get to my father, he's in the hospital!" The operator told her that she could get a discount for bereavement if she obtained a notification from the hospital, which she did. I must have been in pretty bad shape, because when Cynthia arrived at the hospital she didn't recognize me when she entered my room. In fact, she turned around and asked the nurse "Where's my father? This must be the wrong room." When the nurse told her, "Well, that's Mr. McCulley." Cynthia was devastated – she had never seen her father so sick, overweight and close to death.

Every night Cynthia called my mother, who would provide Cynthia with encouragement that "God will get your father through this coma." Cynthia also relied on her mother, who was also concerned with my condition. Cynthia and her mother talked several times a day just to maintain some sense of hope and to support each other. Consequently, this allowed Cynthia to calm down and focus on what needed to get done while I was in the hospital.

When I came out of the coma and was fully cognizant of my surroundings, Cynthia told my mother that night, “Grandma, Dad’s out of the coma, but he still looks pretty bad.” My mother told Cynthia, “Tell your father to pray.” Cynthia said “But I’ve never seen my Dad pray before.” My mother said, “Cynthia, all my children know how to pray – they were all raised in the church.” So the next day Cynthia told me “Grandma said that you should pray.” I said “Okay.” and, that night, and the following morning, I prayed like I had never prayed in my life. I found out later that the nurse talked to my mother every morning and had seen me praying. She told my mother “I have some good news for you. I saw your son praying this morning.” My mother smiled and said, “That’s good to hear.”

My mother also provided Cynthia with guidance concerning what foods to buy since my kitchen was stocked with primarily snacks and junk food, e.g. cookies, pies, cakes, soda, bottled juice, frozen dinners, etc. With my mother’s help, Cynthia pulled herself together and was very instrumental in keeping my spirits up, even though things didn’t look very promising those first few days. Hopefully, Cynthia will utilize that same strength to help fulfill her own destiny the way she obviously redirected mine.

Hospital Events

I was in the intensive care ward for the first seven days of my hospital stay. There were several times that I could have died, but there were several interesting events, some of which I believe redirected my fate:

- There was disagreement concerning why my blood glucose level was so high. Some of the hospital doctors were convinced that I was an alcoholic, until my doctor showed up to set the record straight. Otherwise, without my doctor’s help, I’m not sure if I would have received the proper treatment when my life was still in the balance.
- I remember the head nurse – her energy, her drive, and her commitment to keep me alive. I believe she didn’t go home that first night and was very responsible for keeping me alive during that critical time. (I sent a letter to the hospital personnel department a couple months later thanking her and the other medical staff for not giving up on me).

- For some reason, one night, I couldn't go to sleep no matter how hard I tried. Then, a nurse came in to give me some medication. But, something told me to ask her: "Why are you giving me this medication? What is it for? I haven't been given any medication at night before now." Then, the nurse realized that she was in the wrong room! She apologized profusely and left immediately.
- As my health started to improve, one of the people from my engineering team stopped by to visit. At work, we call him "Elton John". I believe it's because of his hairstyle and the fact that he plays the piano. Later that day, when one of the nurses asked me how I was doing, I said, "Pretty good, Elton John just stopped by to say Hi." Because the doctors and nurses thought that I might be developing dementia, they provided almost hourly encouragement during the rest of my hospital stay.

Out of the Hospital

My daughter drove me home after thirteen days in the hospital. Finally, I thought that I would get some much-needed rest. But, we needed food so we drove to the grocery store and spent more than two hours going up and down the aisles trying to find the foods that my mother had told Cynthia to buy for me. This was torture because my legs were rubbery and I didn't have much energy. After about an hour, I felt shaky and a little dizzy. I realized that my blood sugar was low and that I was in danger of going into another coma. Cynthia had bought me some candy bars for emergencies, but she was in another part of the store, and, I didn't have time to find her. I went to the candy bar aisle and found one of my favorite candy bars, Almond Joy. I opened one of the bags and quickly ate two of the candy bars and the shakes subsided. I thought: "Wow, is this what I have to look forward to for the rest of my life?"

Although I was out of the hospital, I was placed on short-term disability and could not return to work. Because of the severity of my diabetes, I was required to take 4 insulin shots a day to control my blood glucose and prevent a future coma episode. In addition, because of bouts with dehydration, blood clots (deep vein thrombosis), oxygen deprivation, pneumonia, and high cholesterol, I had to take other drugs including

Coumadin (to thin my blood) and Lipitor (to lower my cholesterol). Although the drugs were keeping me alive, my overall health was not improving and I was not getting any stronger. I was extremely fatigued, overweight (by 60 pounds), and felt faint/dizzy because my body was unable to effectively convert the food to energy. Because of my fear of needles, it was extremely difficult psyching myself up every several hours to inject myself with the insulin. In fact, I briefly considered having a home nurse give me my insulin injections, but at \$100 a visit, four times a day, it didn't take long to figure out that I'd better get over my fear of needles. A home nurse did visit during the first week to ensure that I was injecting myself properly with the two different insulins and to answer any questions.

My Mother and Sister's Arrival

Three weeks had now passed, and Cynthia needed to return to work. But, she was very concerned about leaving me alone. My mother told Cynthia that she didn't need to worry because she was going to fly here to pick up where Cynthia had left off. Cynthia was very surprised especially since my mother had never flown before in her life! In addition, despite the financial costs of a plane ticket and missing work, my sister Marguerite decided to accompany my mother.

When my mother and sister arrived, they didn't waste any time in getting the house in order. They inspected each room and quickly identified a set of activities that needed to get done. In addition, because of the information they had received from Cynthia, they concluded that it was imperative to collect all my unopened snacks and junk food and return them to the grocery store. They made me pack up my cakes, pies, potato chips, sodas, TV dinners, cookies, bottled juices, etc. and return them to the grocery store. This was quite embarrassing, but what choice did I have? Face my mother? It was easier to face the store clerk. When the store clerk saw the three carts of food that I was returning, she asked me why. I meekly whispered and pointed to my mother who was standing behind me with a stern look on her face. I think the clerk felt sorry for me, so she accepted the returned food and gave me a store credit of almost \$300! During the next month, I didn't have to pay for any food

that I bought from the store. Thanks to my mother and the grocery store, it was financially beneficial for me to eat healthy.

My mother felt it was necessary that I learn how to cook properly so she wrote several recipes for some of her dishes. My mother and my sister both showed me how easy it was to prepare a healthy breakfast, lunch, snack and dinner in very little time. They also dragged me to other stores to purchase other items such as the Foreman Grill, a blender, a nonstick frying pan, and a steamer.

People ask me all the time how I was able to turn around my bad eating habits so quickly. I point out that it wasn't really me – it was my daughter, mother and sister who drove all of the changes. Hmm-mm . . . three women – I didn't have a fighting chance now that I think about it. They didn't feel sorry for me when we went grocery shopping. They would go up and down each aisle at least 3 times while I held onto the grocery cart because my legs were so weak. There were many times when I just wanted to rest, but they would always have something that needed to get done: go to the store, clean out the garage, clean the bedrooms, do the laundry . . . I believe they were killing me and enjoying it at the same time. Ironically, my doctor believes this push from them and not feeling sorry for me may have accelerated my healing.

After about two weeks, my mother and sister felt that they had accomplished what needed to get done, so they returned home.

The Accidents

There were several serendipitous events or accidents that occurred during my recovery. My mother refers to these accidents as “blessings that were meant to happen.”

The 1st accident (or blessing) occurred when the head nurse didn't go home when her shift ended the day I entered the intensive care ward of the hospital. She was instrumental in keeping me alive during those initial critical hours when it appeared I was not going to make it.

The 2nd accident occurred when my daughter bought the diabetes book, titled *The Insulin Control Diet* by Dr. Calvin Ezrin and Robert Kowalski.

At the time, I didn't realize how important this one book was going to be in my understanding the science of diabetes. As it turned out, this was the only book that I came across during my recovery that explained diabetes from a scientific perspective including how insulin really worked as a fat storage hormone and an instigator in critical vitamin/mineral losses and deficiencies. It also explained the importance of glucagon and why diabetics have so much trouble managing and controlling blood glucose highs and lows. When I asked my daughter how she selected this book, she had no logical answer since she herself knew very little about diabetes. She wasn't certain how her hand was guided to select that one book from so many others.

The 3rd accident occurred just before I was discharged from the hospital. One of the nurses, who was a diabetes educator, gave me a ticket to a diabetes health conference being held locally at the Hyatt Regency Hotel. I was fortunate to be invited to this conference where I met hundreds of diabetics, health care professionals, doctors, nurses, pharmacists, and medical sales people. I saw many people who were without limbs, in wheelchairs, wearing coke-bottled glasses, limping, and severely overweight. Everyone that I talked with was helpful in sharing their knowledge about diabetes. What I learned about diabetes during this conference would have taken me at least a month to learn on my own. Ironically, I learned a lot about what *not* to do if I wanted to defeat my diabetes. And, the knowledge, spirit and unselfishness of everyone provided me the focus that I needed to fight this disease. In addition, fear was a key motivator and became my catalyst for change because I didn't want to lose a limb, my eyesight or end up in a wheelchair.

Because of my poor health, I had difficulty exercising. I tried to exercise to lose some weight, but I didn't have the energy. And, even when I had some energy, the exercising just made me hungrier, leading me to eat more and eventually put on more weight! Also, it was frustrating and scary to exercise and see my blood glucose level go even higher when I thought that exercise would help me to lose weight and lower my blood glucose. I found out later that the intense exercise triggered my liver to release stored glycogen, which caused my blood glucose to rise.

Then, another church that heard about the presentation asked me to give a similar talk to their congregation about my experience with diabetes; and, another church asked me to come to their Saturday Morning Breakfast. Then, a wellness group asked me to give a presentation; and, a correctional facility asked me to provide a presentation on obesity and diabetes to their staff; and, a senior citizens retirement facility invited me to discuss how to eat healthy on a fixed income; and, on and on it went.

Then, the scope of what I was doing was expanded when one of the directors of the American Heart Association asked me to work with several of the local churches tied to their Healthy Heart Program. As a result, I conducted several well-received diabetes seminars with a number of churches, including Baptist, Pentecostal, Methodist, Seventh Day Adventist, and Christian. And, then, I was accidentally invited to a health fair held by the local Hindu temple, where I met some wonderful doctors and other healthcare professionals. I have truly been blessed to have met so many wonderful people that I would never have met if I had not been a diabetic.

But, because this was beginning to take up too much of my time, I created a document of all my notes and information and had copies printed for the churches and other local groups. This allowed me to return to my normal life as an engineer. But, the document led to more questions that caused me to add more pages to the document. Then, the document became too expensive to continue to have copies printed. So I finally relented to write a book that would provide all the detail that wasn't in the document and would answer all the questions that I normally discussed during my presentations. Now that the book is completed, everyone will have the necessary information that's been missing and my life will finally return to normal.

Chapter 3. Types of Diabetes

Diabetes History

Diabetes was identified as a medical problem centuries ago, but it didn't become a major health issue until people increased their consumption of processed foods while reducing their physical activity during the past 15 years. This has led to a steady increase in the number of overweight and obese people, with an increasing percentage of them developing insulin resistance and eventually becoming diabetic.

Consequently, diabetes, specifically Type 2 diabetes, has rapidly become one of the most chronic diseases in the United States and worldwide, with more than 7% of the adult population affected. Type 2 diabetes is more common in the elderly and minority populations, especially Native Americans, African Americans, Hispanic Americans, and Asian and Pacific Island Americans. In these populations, Type 2 diabetes may be present in 10% to as much as 50% of the adult population. However, this is only the tip of the iceberg of an epidemic of impaired glucose intolerance, insulin resistance, and an increased risk of cardiovascular disease.

Diabetes has been linked to the Western lifestyle, as it is uncommon in cultures consuming a more primitive diet. As cultures switched from their native diets to more commercial processed foods, their rate of diabetes increased, eventually reaching the same proportions seen in Western societies. A great deal of research has been conducted into the possible root causes of diabetes, with most of the prevalent ideas falling into the following categories: dietary indiscretion, obesity, endocrine imbalance, heredity, unknown virus, and psychic stress. This disease literally affects every cell in the body and the essential biochemical and metabolic processes involved with those cells.

As a result, diabetes is much more than a “blood sugar” disease – high blood sugar is just one of the symptoms of the disease. Unfortunately, most of the drug therapy is directed at these symptoms (to lower the blood sugar level) and not at the biochemical and metabolic root causes to get rid of the disease.

Obesity appears to be a significant factor, particularly considering the fact that more than 90% of Type 2 diabetics are overweight or obese. And, because diabetes appears to run in families, genetic factors may be important in determining susceptibility to diabetes. However, I contend that since many siblings “inherit” the cooking and eating behaviors from their parents and relatives, it is the *environmental, dietary and lifestyle behavioral* factors that are the key drivers of this disease. To support my contention, there are many clinical studies with significant evidence that diet and exercise can effectively control this disease and slow down many of its complications. The controversy and confusion is associated with the attributes of that diet, leaving many diabetics confused and frustrated with fighting this disease. Hopefully, this book will clarify those attributes and eliminate the confusion by focusing on the underlying biochemical, metabolic, and hormonal root causes of this disease, e.g. hyperinsulinemia, insulin resistance, nutritional deficiencies, toxic overload, inflammation, oxidation, and acidity. Interestingly, in my research, I found that even non-diabetics were affected by these same root causes, leading to significant weight gain and internal inflammation.

What has become apparent through years of medical research is that diabetes is not simply a matter of one or two things having gone wrong. It is a complex condition with a multitude of biochemical, metabolic and hormonal imbalances. Consequently, although the conventional medical approach of using insulin or oral drugs to treat the symptoms of diabetes may be effective in the short term, it is not effective in the long term. An effective approach would be one that reduces the high level of insulin resistance and improves the health of the trillions of sick cells.

Types of Diabetes

There are primarily three (3) types of diabetes, Type 1 Diabetes, Type 2 Diabetes, and Gestational Diabetes.

Type 1 Diabetes (insulin-dependent diabetes mellitus, IDDM) is associated with the inability of the pancreatic beta cells to produce insulin. This disease is classified as an autoimmune disease that attacks and kills the insulin-producing beta cells. The pancreas continues to form beta cells, but they are rapidly killed off by the malfunctioning immune system. Type 1 diabetes used to be called childhood-onset diabetes, because it primarily afflicted children whose immune systems had not fully matured. But today adults in their 20s and 30s are now developing this disease.

Type 2 Diabetes (non-insulin-dependent diabetes mellitus, NIDDM) is associated with the body's inability to effectively utilize the insulin produced by the pancreas. This is known as insulin resistance. Type 2 diabetes used to be called adult-onset diabetes, because it primarily affected older adults. But today with more children being overweight and sedentary, they are now developing this disease.

Gestational Diabetes is also associated with the body's inability to effectively utilize the insulin produced by the pancreas. But, Gestational Diabetes only occurs during pregnancy and usually disappears after the delivery of the baby.

Please Note: Despite the similarities, Type 2 Diabetes is a much different disease than Type 1 Diabetes. Type 2 Diabetes is a *lifestyle* disease with trillions of metabolically defective cells. Type 1 Diabetes is an *autoimmune* disease with dead or dormant pancreatic beta cells that are not producing insulin. The focus of this book is the lifestyle-driven Type 2 Diabetes. However, many of the wellness principles can be applied to Type 1 Diabetes and Gestational Diabetes with the proper medical, lifestyle and nutritional guidance.

Blood Glucose Management (Normal Operation)

The human body contains more than 70 trillion cells, many of which help to regulate the body's blood glucose (blood sugar) level by pulling in the glucose out of the blood. The blood glucose level is regulated within a narrow range from 80 mg/dl to 120 mg/dl using two hormones secreted from the pancreas: insulin and glucagon.

Insulin is normally secreted by the beta islet cells of the pancreas when the blood glucose level starts to rise, usually due to the consumption of food. Although there is always a low level of insulin secreted by the pancreas, the amount secreted into the blood increases as the blood glucose rises. Similarly, as the blood glucose level falls, the amount of insulin secreted by the pancreatic islets goes down. Insulin has an effect on a number of cells, including the muscle cells, red blood cells, and fat cells which absorb glucose out of the blood, having the net effect of lowering the high blood glucose level returning it to the normal range.

On the other hand, glucagon is secreted by the alpha islet cells of the pancreas when the blood glucose level starts to sink and goes too low, usually between meals and during exercise, to bring the glucose level back up. As the blood glucose level goes down, more glucagon is secreted. Like insulin, glucagon has an effect on many cells of the body, but most notably the liver. The effect of glucagon is to make the liver release the glucose it has stored in its cells into the blood stream, with the net effect of increasing blood glucose. Glucagon also induces the liver (and some other cells such as the muscle cells) to make glucose out of building blocks obtained from other nutrients found in the body.

If the blood glucose level rises above 120 mg/dl this can be normal if the person has eaten within 2 to 3 hours, but even after eating, the glucose level should be below 180 mg/dl. Above 180 is termed "hyperglycemia" which translates to mean "too much glucose in the blood". If the blood glucose level is below 70, this is termed "hypoglycemia".

In addition to insulin and glucagon, another hormone called leptin may play a vital role, especially if the diabetic is significantly overweight. Leptin is a recently discovered hormone that is produced by the fat cells.

Leptin tells the body and brain how much energy it has, whether it needs more energy (a sign of hunger), and whether it should get rid of some energy (and stop being hungry). In other words, leptin tells the brain (hypothalamus) when to eat, how much to eat, and, most importantly, when to stop eating. Based on a recent study, it appears that leptin may affect blood glucose levels through two different brain-body pathways: one that controls appetite and fat storage, and another that tells the liver what to do with its glucose reserves. Further studies are underway to better understand leptin's role in obesity and its link to diabetes.

Are You Diabetic?

During a physical exam your doctor may discover that you have a high fasting blood glucose reading above 126 mg/dl. Your doctor will follow up with one or more of the following tests to determine if you are diabetic:

- Fasting Blood Glucose Test
- Oral Glucose Tolerance Test

Fasting Blood Glucose Test

For this test you will be required to fast (not eat) for at least eight hours on two separate days. Your doctor will draw your blood and measure your glucose level each time. If your blood glucose level is 126 mg/dl or greater both times, then, you are diabetic. If your doctor is not fully certain that you are diabetic, then, he/she will perform the Oral Glucose Tolerance Test.

Oral Glucose Tolerance Test

For this test you will be required to fast for at least eight hours. Your doctor will give you a sugar solution to drink and measure your blood at one-hour intervals during the next three hours. If your blood glucose level is 200 mg/dl or greater each time, then, you are diabetic.

Marginal Cases (Pre-diabetes) & Risk Factors

For marginal situations where the fasting blood glucose is above 100 mg/dl in combination with two of the following risk factors, a patient may have impaired glucose tolerance (IGT), an indication that he/she is becoming insulin resistant or pre-diabetic. The risk factors for Type 2 diabetes include the following:

- Abdominal fat: a waistline greater than 40 inches (for a man), or 35 inches for a woman
- Overweight/obesity: Body Mass Index (BMI) greater than 25
- Poor nutrition: too much processed white rice, potatoes, bread, pasta, and other refined flour products; too many cookies, cakes, pies, bottled juices, soda, ice cream, and other sweets; and, not enough fiber, water, plant oils, and nutrients from vegetables and fruits
- Tobacco/alcohol consumption
- Sedentary lifestyle: very little physical activity or exercise
- Age: 45 years or older
- High blood pressure (130/80 or higher)
- High triglycerides (over 150), Low HDL cholesterol (under 40 for men, 50 for women)
- High C-reactive protein, high homocysteine and/or small, dense LDL particles, indicators of high levels of internal inflammation
- Non-Caucasian ethnicity: Hispanic American, African American, Native American, Asian American
- A family history of Type 2 diabetes or cardiovascular disease
- Acanthosis nigricans: patches of thick, brownish, velvety skin on the neck, underarms, or groin; also, just below the breasts in women
- Poor mental health, e.g. depression
- A history of gestational diabetes during pregnancy

If your doctor believes that you have impaired glucose tolerance, he/she may suggest some preventive therapy. For example, a change in eating habits and exercise may be suggested to lose several pounds – to reduce the insulin resistance and prevent the onset of diabetes. This is a major opportunity to prevent Type 2 diabetes, but, unfortunately, most of us do not listen to our doctor because we do not want to make changes to our lifestyle.

Then, when we get the bad news, we are either in denial, surprised or angry that we have been diagnosed as a diabetic. As our health gets worse, we expect our doctor to perform a miracle and fix us with some “magic pill”. This is not fair to our doctor, who’s earlier warning was ignored; and it’s not fair to our family, who depends on us.

If your doctor has warned you about your weight, blood glucose level, blood pressure, or one of the aforementioned risk factors, then, you should take heed because he/she is trying to save your life. If you have not been to your doctor in a while, you should set up an appointment as soon as possible. It is a lot easier to *prevent* diabetes than it is to control and reverse it.

If you exhibit more than three of the aforementioned risk factors, you may have what is being called Metabolic Syndrome X, a condition driven by years of high insulin levels and inflammation in the body. And, the more of these risk factors you have, the greater the chance that you will develop insulin resistance and become pre-diabetic; and, eventually diabetic. Excessively high insulin levels over a period of years will develop into hyperinsulinemia and the accumulation of excess fat particularly in the abdomen area – all due to insulin resistance. The excess fat releases chemicals called cytokines that block the insulin receptors which triggers the pancreas to release two to three times more insulin. This can inhibit the breakdown of homocysteine, which can eventually lead to internal inflammation and damage to various body parts such as the arteries and kidneys.

If you have more than three of these risk factors, talk to other family members to understand your family history. Don’t just talk to members of the immediate family, talk to grandparents, uncles, aunts, and cousins. Because of the embarrassment of the disease and because some cultures/families just didn’t talk about this or other diseases, there may be a hidden (unspoken) family history that is usually passed down in terms of poor eating habits, negative attitudes and negative behaviors. As a result, a silent disease like diabetes is allowed to progress from one generation to the next because of this unnecessary embarrassment and unspoken word.

Acceptance of the Diagnosis

Once you have been diagnosed with diabetes, you will go through several stages of emotions: surprise, denial, anger, suspicion, acceptance and resolve. This is normal. Unfortunately, many people, once diagnosed with a disease, remain in a state of denial and/or anger and miss a major opportunity to prevent the disease from taking hold and their health deteriorating to a serious level. Discuss your problem with a family member or close friend, and acquire more knowledge about the disease. Sometimes, just talking about your health problem or becoming better informed helps to alleviate some of the fear and anger.

It may appear to be somewhat overwhelming when you try to figure out what you should do. I was fortunate because my daughter initiated many of the early activities by working with the doctors and nurses to obtain my insulin, the needles, the blood glucose meter, the test strips and the lancets. Also, the hospital had one of their home nurses visit me to ensure that I knew how to properly test my blood glucose and inject myself with the insulin. The nurses seemed to sense the fear and anxiety I had and were able to diffuse it with their patience and insight – they seemed to know what questions I was going to ask and helped to put me at ease with their quiet confidence and caring demeanor. There is no doubt in my mind that all of this help enabled me to get going in the right direction almost immediately. My mother and my sister were also a tremendous help at the beginning by showing me how easy it was to prepare nutritious meals. Their help made it easier for me to accept the diagnosis, absorb a tremendous amount of information, and allow me to move forward instead of languishing in self-pity.

Once diagnosed, some people do make some minor changes to their diet and/or exercise hoping that these changes will deter the disease. Some people even experience some initial success (e.g. weight loss), but, unfortunately, they underestimate the devastation that the disease can cause and are unaware that the disease is still lingering and silently progressing throughout their body. As a result, the disease takes a foothold while they relax and eventually the disease “returns” stronger and more formidable, requiring additional changes to diet, exercise, and, possibly, the need for diabetic drugs.

Treatment Guidelines

Your doctor will recommend a treatment protocol based on your blood glucose readings from the aforementioned blood glucose tests. In general, your doctor will recommend the following, but keep in mind that these are only guidelines that may be modified for your specific situation.

Glucose Reading (mg/dl)	Diagnosis	Treatment
100 to 125	Impaired glucose tolerance (Pre-diabetes)	Nutrition, exercise
126 to 140	Diabetes	Nutrition, exercise
141 to 200	Diabetes	Nutrition, exercise, oral drugs
201 and higher	Diabetes	Nutrition, exercise, oral drugs/ insulin

Figure 1. Diagnosis & Treatment Guidelines

Author’s Personal Note: In my case, the doctors had to put me on insulin (Humalog and Lantus) immediately because my blood glucose level was so high that it was life-threatening and they knew that the oral drugs would not be effective in getting my blood glucose under control.

Impact of Diabetes

There are more than 170 million people worldwide and more than 18 million people in the United States with diabetes, with more than 95% having Type 2 diabetes. In the United States alone, there is at least an additional 41 million people who are unaware that they are diabetic, pre-diabetic, or have Metabolic Syndrome X. Every hour over 2,000 people are diagnosed as a diabetic. Type 2 diabetes in adults has increased from less than 10% in 1982 to more than 30%, with more than 85% of the adults diagnosed with Type 2 diabetes being obese. Type 2 diabetes in children has increased from less than 4% in 1982 to more than 20%, with more than 85% of the children diagnosed with Type 2 diabetes being

obese. More than 80% of all diabetics will develop some form of cardiovascular, kidney, eye, or nerve disease.

I could go on and on with more statistics explaining how diabetes impacts our health. But, most people don't really care that much about statistics. So, I created the following diagram that provides a better overall picture of the health impact and seriousness of diabetes on an annual basis in the United States.

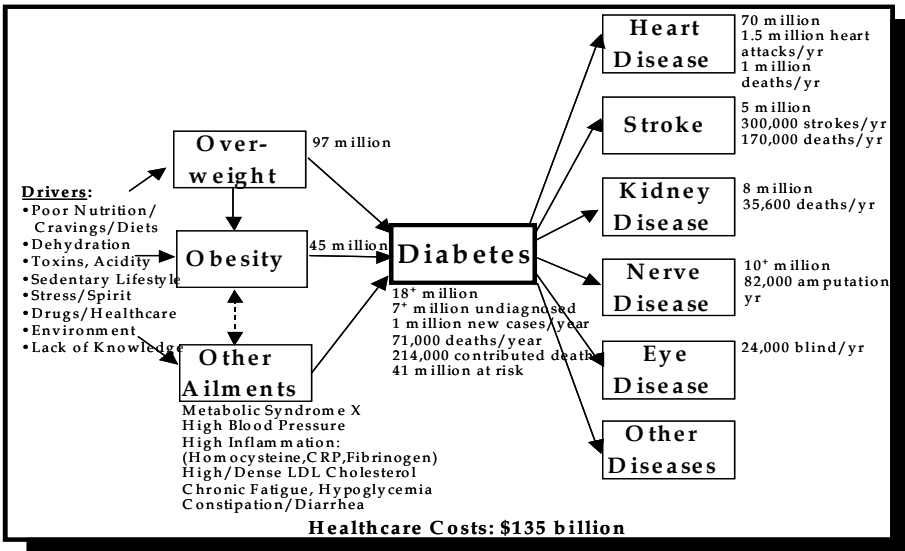


Figure 2. Impact of Diabetes (Annually)

As you can see from the diagram, diabetes is primarily being driven by a large population of overweight/obese people who have a profile of poor nutrition, a sedentary lifestyle, and a high dependency on drugs. Diabetes, in turn, is one of the key drivers of heart disease, stroke, kidney failure, and other circulatory-related diseases. According to the Mayo Clinic, “Diabetes poses a major threat to your cardiovascular system, putting you at increased risk of having a heart attack or stroke.”

Because the key drivers of obesity and other ailments are on the increase, the growth of diabetes will continue as it now approaches epidemic levels.

The combination of an overweight population, a sedentary lifestyle, the inability to handle stress, and the dependency on processed foods and drugs will continue to fuel these numbers. This will raise healthcare costs significantly and also drive increases in the other diseases, especially heart disease, stroke, kidney disease and nerve disease.

Type 2 Diabetes

Type 2 diabetes is a complex, insidious disease that slowly and silently destroys your body one day at a time. This silent killer destroys your organs one by one, by attacking and clogging the small capillaries and blood vessels that feed your heart, brain, feet, kidneys, and eyes. This disease accelerates the biological aging of the organs and tissues, but most of this aging is not painful or visible to the unsuspecting diabetic. As the disease progresses, the majority of diabetics develop two or more of the following complications:

- Additional weight (fat) gain, leading to low energy and fatigue, obesity, high blood pressure, dehydration, high cholesterol, arthritis, toxicity and other acidic, inflammatory ailments.
- Kidney disease (nephropathy), leading to kidney failure and dialysis.
- Eye disease (retinopathy), leading to blindness.
- Nerve damage (neuropathy), leading to amputation of a lower limb; and other nerve-related conditions.
- Gum (periodontal) disease, leading to the loss of teeth and other infections.
- Heart disease (due to high blood pressure, high homocysteine, thick blood), leading to a heart attack or stroke.
- A higher susceptibility to other infections and diseases due to an underlying mechanism of internal inflammation and a weakened immune system.

Like Oprah said during one of her TV shows about diabetes: “There’s no such thing as a little sugar problem . . . this is a very serious problem in our country.”

Because most diabetics do not feel any pain or discomfort for at least several years, they choose to ignore the disease.

Chapter 7. The Super Meal Model

The Most Important Key

Most people are aware that nutrition, more than any other factor, is the key to successfully managing and controlling diabetes. However, many diabetics are not aware that nutrition is also the key to reversing diabetes. The primary reason for diabetes (and other systemic, degenerative diseases such as heart disease and arthritis) is nutritional imbalance. Nutritional imbalance can be characterized in two ways: (1) **toxic buildup/congestion** – eating too many “dead” foods full of chemical toxins that cannot be processed and eliminated by the body; and, (2) **nutritional deficiency** – eating “dead” foods that lack vitamins, minerals, amino acids, fatty acids, enzymes, fiber and water. Both of these imbalances interfere with the body being able to function properly and successfully defend itself against any disease.

Most diabetics are either not aware of the right nutritious foods to eat or are not willing to change their eating habits, leading to congestion and nutritional deficiency. This, in turn, progresses to increasing insulin and glucose levels, insulin resistance, weight gain, fatigue, cravings, increasing blood pressure and cholesterol levels, and eventually a serious disease such as diabetes. And, all of this is primarily due to the diet (nutritional profile) of most diabetics being full of common mistakes, some of which are made knowingly, some unknowingly. This chapter will define the proper nutritional profile for diabetics – the Super Meal Model. This model will help diabetics to better control their blood glucose levels and trigger their bodies’ internal healing mechanisms.

The Super Meal Model

Most nutrition and diet books provide good descriptions of foods, vitamins, minerals and other vital nutrients. But, because those descriptions are seldom done in the context of a “model” (picture), it is difficult to understand and remember all the specific foods that are good or bad for your health. Even if you know what foods are good for you, it is still not clear what combinations of these foods will provide optimum health or help to fight a disease like diabetes. And, even if you know the right combinations of foods, counting calories can be very tedious and frustrating. All of this makes it difficult to design a program that is enjoyable, flexible, inexpensive and easy to remember, implement, and modify on a consistent basis to suit your health needs. Bottomline, if it’s not enjoyable or easy to implement, then, you will eventually return to your old eating habits.

As engineers, we design and develop products and solutions, based on an architectural design model that is supported by a set of engineering principles that meets the needs of the customer. As a result, it is easier to design a successful product that will work properly according to those engineering principles and customer needs.

Similarly, I felt that it would be easier to design a healthy meal if I had a set of sound nutritional principles that aligned with the body’s needs. And because of my own frustration and ignorance with trying to figure out how to identify the right foods and design meals that would work for me, I felt that a simple model (picture) of what my meal plate should look like every time I ate would be easier to remember than counting calories. And, if that model is based on what my body requires biochemically and hormonally to fight the primary root causes of systemic degenerative diseases (e.g. nutritional deficiency, toxic overload, oxidation, inflammation, and hormonal imbalance), then, the model should work to optimize my health and fight any disease, including diabetes.

Since I was not much of a cook, I decided to design a simplistic model based on the body’s physical structure at the cellular level, e.g. water, fat,

Chapter 8. Nutritional Supplementation

Nutritional Supplementation Strategies

An estimated 40 percent of the U.S. population uses nutritional and dietary supplements on a regular basis while 70 per cent uses supplements occasionally. Vitamin E and Vitamin C are among the most commonly used supplements.

So, are nutritional supplements really necessary? The answer really depends on your health state, your nutritional profile, and the quality of the foods that you're eating. If you are relatively healthy and you are eating four to six super meals/snacks with primarily organic foods and superfoods every day, you may not need any nutritional supplementation until you get older. On the other hand, if you are ill with a disease like diabetes, this should tell you that you are not consuming and absorbing enough of the proper nutrients. Because your body is very depleted in terms of nutrients, you need to supplement the super foods that you've begun to consume with some super supplements to help accelerate the body's healing process.

You may find it difficult to obtain all the necessary nutrients from the food you eat because of the loss of soil quality, water quality, and how animals are fed and raised. But, as long as you are predominantly eating the "live" foods instead of the "dead" foods, you will be successful. If finances are not an issue, you can buy organic food to ensure you are receiving the best quality foods, but for the most part this is not necessary. I did not eat organic food during my recovery. **The reduction and elimination of eating the "dead" processed foods will have a more dramatic positive effect on your health, more so than any other single factor.**

Because it may be difficult to eat four to six super meals consistently each day due to your work life, family, or lifestyle, some type of nutritional supplementation is necessary. In fact, medical institutions, such as the American Medical Association (AMA), agree that nutritional supplementation is necessary today.

So, how do you decide what specific supplements to take? Should you take natural, synthetic or wholefood supplements? First of all, any comprehensive nutritional supplementation plan should accomplish the following three objectives: (1) nourish; (2) protect; and (3) cleanse/detoxify the body's cells, blood, tissues and organs. There are basically three major strategies to employ for nutritional supplementation, depending on your personal needs, preferences and financial resources:

Take a quality wholefood or a multivitamin/mineral supplement.

This is probably the easiest and most economical option for most people and requires the least amount of knowledge about nutrition and supplements. However, you should ensure that the supplement is of the highest possible quality and is bioavailable, that is, the nutrients will be absorbed and utilized by the body. To help you determine bioavailability of the nutritional supplement, use the criteria in the next section.

Take specific wholefood supplements or vitamin and mineral supplements, based on your health need.

This may be the more optimum solution, but may not be as economical for some people. This option also requires a better knowledge of the benefits of each type of supplement and how that supplement addresses your health needs.

Take a combination of a wholefood supplement, a multivitamin and multimineral supplement, and/or specific vitamin and mineral supplements.

This option provides the most flexibility and the best of both worlds: a simple strategy to ensure a minimum level of nutritional supplementation, plus the ability to add new supplements based on specific health needs.

Chapter 9. Cleansing/Detoxification

The Need for Cleansing/Detoxification

After some people have started eating properly and exercising on a consistent basis, they find that they reach a “wall” and either are unable to lower their blood glucose level below a certain point or stop losing weight. In most cases, this is due to the body’s toxic load preventing metabolism and energy production. For the people who are not eating properly and exercising on a consistent basis, their toxic load is definitely affecting their health and preventing metabolism and energy production.

Cleansing/detoxification is a set of normal biochemical processes performed by the body to prevent and fight disease on a continual basis and to keep the body as healthy as possible. This cleansing/detoxification is optimized when we eat healthy foods the majority of the time. However, in our fast-paced world it can be difficult to find the time to prepare healthy meals, especially, given the easy availability and accessibility of convenience and fast foods. Unfortunately, our bodies pay a heavy toll for eating unhealthy convenience foods, fast foods, and processed foods. To compound the problem, our bodies are also bombarded with chemicals and pollutants on a daily basis from the air, water and environment. Under this heavy barrage of toxins, the cells become sick and the human body eventually reaches a point where it is no longer capable of flushing toxins and acid waste on its own. As the toxins and acid waste accumulate in the cells, blood, tissues, and organs, they trigger an increase in inflammation, the formation of pathogenic bacteria, fungus and mold, and lead to a state of poisoning commonly referred to as toxicity.

Common symptoms of toxicity include headaches, fatigue, increased allergy symptoms, overall aches and pains (particularly joint pain), and digestive discomfort. These symptoms occur when the body has become so clogged with toxins that it can no longer perform necessary functions effectively. Toxins are generally acquired in one of three ways: through things we ingest (such as foods, drinks, drugs, etc.); through external sources (such as the air we breathe, radiation, environmental chemicals, etc.); and, internally by the body's own metabolic processes. Over the past decade, extensive research has found that if the body's detoxification system is sluggish, toxins will accumulate, slowing down cellular energy production and increasing the number of tissue-damaging free radicals. In addition, pathogenic bacteria continue to multiply faster than the immune system can kill them and remove their debris, creating an overloading and clogging of the lymphatic system and various organs. This can eventually lead to various systemic diseases/ailments such as chronic fatigue, weight gain, high blood sugar, high blood pressure, high cholesterol, heart disease, cancer, fibromyalgia, and Alzheimer's. In the meantime, the body's detoxification and excretory organs (e.g. colon, kidneys, liver, gallbladder, lymphatic system) struggle to effectively remove the toxins, excess glucose, and acid waste.

The **liver** is the primary organ that performs the detoxification. The liver accomplishes this by using specific enzymes to transform the toxins into intermediate chemicals; and, other enzymes to transform the intermediate chemicals into harmless water-soluble substances that are then excreted in the bile or urine. But, if the liver becomes sluggish, clogged, or impaired, these toxins can begin to accumulate in the body's tissues and blood. Consequently, it is very important that the liver is kept as healthy as possible. Ironically, when we don't feel well, we take an over-the-counter or prescription drug, which is toxic and only puts more stress on an already deteriorating liver and suppresses the symptoms, making us think we're okay.

The **colon** (or large intestine) is important to cleansing and detoxification because it removes the unwanted fecal waste and other toxins. Discomfort in the colon usually manifests itself as something such as diarrhea or constipation. Unfortunately, our response to this is usually a

Chapter 11. Blood Glucose Testing/ Doctor Visits

Blood Glucose Testing

Because of the major advances of medical science and technology, blood glucose testing is a very important tool for diabetics to track the progress of their blood glucose levels. Blood glucose (BG) testing is the *most powerful diagnostic tool* that a diabetic has to determine the state of their health on a daily basis. Next to nutrition and exercise, it is the most important key to effectively control the disease. And, for Type 2 diabetics, it has the power to *reverse* the disease – once effective nutritional, exercise and spiritual programs have been implemented. Unfortunately, most diabetics either do not test their blood glucose on a frequent-enough basis or do not understand the appropriate corrective actions to take based on their test results. Consequently, most diabetics can never get to a point where they can proactively control their blood glucose level and their diabetes.

By increasing your blood glucose testing, you can more readily determine the potential cause and effect relationships between your high glucose readings and the events that may be driving those high readings, e.g. meals, drugs, exercise, stress, illness, emotional state, menstrual cycle start (for women). Keep in mind that there will be times when your glucose levels will be high for no apparent reason, but, the more you test, the more infrequent will be those types of occurrences. Blood glucose testing is probably the most misunderstood and least-performed activity of the eight “living” elements for managing and controlling diabetes, so do not overlook this critical activity.

Blood Glucose Tests & Normal Ranges

The fasting blood glucose test is performed by pricking your finger and placing a drop of blood on a test strip. This drop of blood is analyzed by your blood glucose meter and translated into a number that is displayed in the window of your glucose meter. This number indicates your blood glucose level at that particular moment and is based on what you ate and did during the past few hours since your last meal. The following is the set of normal ranges for blood glucose levels.

Fasting glucose level before meals: 80 to 120 mg/dl

Optimum Range: 80 to 100 mg/dl

Optimum Running Average: less than 100 mg/dl

Postprandial glucose level (2 hours after meals): 90 to 130 mg/dl

Optimum Range: 80 to 110 mg/dl

Optimum Running Average: less than 105 mg/dl

Hemoglobin A1C Testing

Another important blood glucose test is the Hemoglobin A1C test. This test measures the percentage of glucose in the blood for the past two to three months and provides a more reliable measure of your blood glucose control during that time frame. Because A1C values are directly proportional to the concentration of glucose in the blood over this time period, they are not subject to the wide fluctuations of the day-to-day fasting blood glucose tests. The test is also known by several other names, including such variations as glycated hemoglobin test, glycosylated hemoglobin test and HbA1C test.

You will know whether your blood glucose has been under control during the past two to three months, based on the hemoglobin A1C percentage. The hemoglobin A1C normal range of 4.4% to 5.5% correlates to the blood glucose monitor normal range of 80 mg/dl to 120 mg/dl.

Chapter 13. Mind & Spirit

Body, Mind & Spirit

Man is a trinity that is comprised of the Body (Physical), the Mind (Mental), and the Spirit (Spiritual). The Body, Mind and Spirit work in harmony to make you the best that you can be in this life. If one of these three elements is “sick” or out of balance with the other two, then, your entire being will be sick.

Unfortunately, most of traditional medicine focuses on the Body by addressing and suppressing the symptoms and never fixing the underlying root cause of the unhealthy cells. Traditional medicine tends to overlook the importance of the Mind and the Spirit and its role in healing the Body. Man also tends to focus on the Body by taking drugs to relieve pain or by feeding his food cravings to satisfy hormonal hunger – both of which may be driven by emotions such as depression.

Consequently, there are psychological and psychosocial factors that may exert substantial influence on the biochemical control in diabetic patients. These factors have been shown to increase the risks of poor glycemic control, “brittle diabetes”, and diabetic ketoacidosis. Depression has been identified as one negative influence of glycemic control among pediatric and adolescent patients. And, depression has been observed to affect family members of patients with Type 2 diabetes and influence family dynamics toward the condition. This suggests that a clinical psychologist may be helpful in treating some diabetic cases.

As with any disease, after several years of fighting the good fight, you can become physically drained because your physical body has continued to weaken despite everything that you’ve done to fight the disease.

Consequently, you also become emotionally and spiritually drained; and, as a result, you “give in” to the fact that the best you can do is to live with the disease – that you’ve done everything possible to fight the disease. This can be very disconcerting and difficult to overcome emotionally. Also, despite the support from your family and friends, you feel very alone and afraid at times. There are horror movies that can scare you, but I can truly tell you that there is nothing, absolutely nothing scarier than knowing that your doctor cannot help you and your time is limited. Only a strong belief in a power that is greater than yourself can give you the confidence and courage to fight for your life instead of giving in to the inevitable life of kidney failure/dialysis, amputation, and blindness.

Once you accept the fact that we live in a spiritual universe and that we are all spiritual beings, you will find yourself equipped with an instrument through which you can exert influence over your body and your blood glucose control. But, how do you go about tapping into your inner spirit and belief system? The following section will give you some ideas to get started. Anything and everything is possible if you have faith and you take responsibility of your health problems and follow up with the necessary actions; and, resist the negative influences that will discourage you from making yourself a healthier person.

How does food help or prevent us from getting to this inner spirit? There is no universal agreement about the relationship of food to the human body, mind or spirit. However, I believe that we can agree that “dead” food definitely harms the Body. And, since food can make us happy or console us when we’re sad, we can make the case that food also harms the Mind and the Spirit. Food is an ever-present reminder that there is more to life than just filling stomachs. Our minds and spirits crave for more meaning.

Now, can we conclude that the inverse of those statements is true? Can we conclude that the Body, Mind and Spirit affect the food we select to eat? I believe we can conclude that to a large degree. If you have a positive mental attitude and truly believe that food can help you improve your health, then, it will because you will acquire the knowledge to make

better food choices. The following section provides some guidelines that will help you to build and use your Mind and Spirit to improve the health of your Body.

So, how did we get here with all these convenience and fast foods and such poor health? When it comes to food, the irony is that just at the time nutritional scientists were identifying vitamins, minerals, and other nutrients that support life, technologists were perfecting the refining processes to separate the nutrients from the food or to reconstitute them in synthetic forms. Refined white flour, “enriched” cereal, homogenized milk, bottled juices, soda, high fructose corn syrup, margarine (partially hydrogenated oil), and fast foods are examples that are devastating our health today. All of this was motivated by profit for the seller and convenience for the buyer, as the age of boxed mixes and prepackaged foods brought new freedom in the kitchen and profits to food packaging industries and grocery stores. Unfortunately, that new freedom has come at a high price, which many people are ignoring, hoping that, maybe medical science will develop a magic pill in the near future. Medical science is making a lot of progress in their research and technology areas, but the focus is currently on using drug therapy to suppress symptoms and help people live *with* their disease instead of fixing the underlying root cause and live *without* the disease and the drug therapy.

Unfortunately, many people put their faith in these drugs that were created by man instead of the foods that were created by God. And, as long as we continue to believe that man is smarter than God, we will be trapped with poor health and our dependency on these man-made foods and drugs.

Spiritual health allows you to focus on your inner faith and the belief that you must respect and protect what you put into your body to maintain a healthy balance with the mind and spirit. This supports Apostle Paul’s requirement to glorify God in our body, as well as our spirit:

“Know ye not that your body is the temple of the Holy Ghost . . . therefore glorify God in your body, and in your spirit, which are God’s.” [1 Corinthians 6:19-20]

Discord between your Spirit and Mind usually leads to illogical behaviors and rationalizations. For example, as their reasoning for eating what they like even if it is bad for their health, I am amazed at the number of people who have told me “Well, you gotta die of something.” This type of rationalization is due to a disconnect between that person’s spirit and unconscious mind, leading to a negative effect on their body. It is also a disconnect between the spirit and conscious mind that is created as a defense mechanism when the person can’t really explain why they’re doing something that they know is harming their body. Research has shown that a diabetic who is not healthy emotionally will not respond positively to treatment, even though they may have the best care and medicine. Discord between the mind and body is a critical factor. Diabetics know that if they worry too much their blood sugar will go “sky high” and stay high until they stop worrying.

How you handle problems and stress is also very important. Do not neglect the problem. Acknowledge that stress can actually be helpful. For example, the stress that an athlete feels can actually help to improve their performance if they know how to channel the stress and nervous energy. Obviously someone like a Michael Jordan handled stress well on the basketball court. But, you don’t need to be Michael Jordan – just be yourself, embrace the challenge and don’t neglect the problem.

Neglect is like an infection -- left unchecked it will spread throughout your entire being. When you neglect your health (by not eating right and exercising), this may cause you to feel guilty and guilt leads to an erosion of your self-confidence. As your self-confidence diminishes, so does your activity level (of trying to get healthy). And as your activity level diminishes, your results inevitably decline. And as your results suffer, your attitude begins to weaken. And as your attitude begins the gradual shift from positive to negative, your self-confidence diminishes even more . . . and this downward spiral continues as your health suffers.

Review the next section and discuss options with your doctor or other healthcare professional, and, if necessary, consider some type of relaxation therapy or other psychological support.

Author's Background & the Book Cover Design:

Background: DeWayne McCulley grew up in Western Pennsylvania with two strong, caring and hardworking parents and seven brothers and sisters. He was blessed with great teachers and professors, who taught him the wonders of mathematics and science. In addition, his Uncle Claude taught DeWayne how to draw illustrations and develop his artistic skills. As a result, DeWayne was able to use his math aptitude and his analytical/artistic skills to obtain a Bachelor of Science degree as an electrical engineer from the Pennsylvania State University. Today, DeWayne believes he is fortunate to be working as a system engineer for a Fortune 500 company that believes in community involvement. During his free time, DeWayne provides presentations and participates in health fairs with various churches and community groups that have an interest in diabetes and nutrition. If you have any questions about diabetes, feel free to contact the author at: DeWayne@DeathToDiabetes.com.

Book Cover Design: DeWayne wanted a book title and a cover design that was clear and powerful, but conveyed a positive, uplifting message of hope and sincerity -- while conveying the purpose of his book. First, DeWayne came up with the phrase "death to diabetes" to indicate hope and the end (or death) of this serious disease. Then, he needed a cover design that "connected" with the phrase. DeWayne remembered that he had a dream about graveyards when he was in the hospital, but it didn't make any sense at that time. Although, some people thought that a photograph of a graveyard was "too dark", DeWayne felt that people would "get it" and see the graveyard and the word "Diabetes" on a headstone as a positive, powerful message. Finally, trying to find a book cover designer that "understood" DeWayne's vision was not easy. Fortunately, he found one (Katuscia Lanza) accidentally when he was looking in the yellow pages for someone that could make him a large sign for an upcoming health fair. Coincidentally, because of the recent loss of her grandfather, Kat understood exactly what DeWayne was looking for and was able to find a local cemetery for the book's unique cover design.

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