### Prevention/Cure Chronic Diseases – Theory for Cancer –

**(Overview – This is a growing document subject to revision)**

Caveat: The following ***overview*** is only my ***opinion*** and understanding based on my research and study of publically available information and/or self-experimentation. This information is provided without cost. I am not a doctor nor do I have any credentials or formal standing in any regard as to medicine or nutrition and do not prescribe anything. While I believe that the information provided in this paper (or other methods of communication) is valid, to use it you must assume full responsibility, using it only at your own discretion. You should become a knowledgeable student of the subject and make your own decisions.

Note: I have no financial interest in anything I suggest or recommend. The medical community might disagree with some if not all of the information contained herein.

CAUTION – Diseases CAN BE LIFE THREATENING

# Highlight of Three Important Nutritional Issues

Based on my current understanding of cancer, aging, Alzheimer’s, dementia, diabetes (all), chronic fatigue, rheumatoid and osteoarthritis, osteoporosis, tooth decay, overweight, etc., all appear to be more significantly influenced by the nutritional deficiencies listed here. There is strong evidence that most people are deficient in the first two nutrients listed and these will cause a deficiency in the third. Deficiencies in these are high impact on health.

* **Magnesium** deficiency appears to potentially be a major factor in energy and disease. Magnesium is involved in nearly 800 hundred enzymatic actions influencing energy, diseases, activates Vitamin D3, helps maintain needed stomach acidity, and is critically important in maintaining calcium solubility and balance. Dr. Carolyn Dean in her book, *The Magnesium Miracle* suggests that most of modern society is deficient. This deficiency appears to be significantly caused by the CONSIDERABLE difficulty of getting enough magnesium from food or supplements. It is important to understand how to get enough magnesium as well as who should not supplement with magnesium. So key to good health. (See main text page # 26.)
* **Vitamin K2** deficiency appears to potentially be another major factor of disease. Dr. Kate Rhéaume-Bleue in her book *Vitamin K2 and the Calcium Paradox*, suggests that most of modern society is deficient in this vitamin. Vitamin K2 (not K1) is a fermented vitamin that has several forms, minaquinone-7 (MK-7) being of special interest. This vitamin manages calcium moving it out of arteries, soft tissue and joints (correcting associated diseases) and moves it into teeth and bone to correct problems with these also. In addition, Vitamin K2 (i.e., MK-7) controls cellular uptake of Vitamin D3. (See main text page # 25.)
* **Vitamin D3** deficiency (Not vitamin D2, which increases the risk of heart attack and stroke). Vitamin D3 is critically involved in numerous body functions. Deficiency is the result of lack of sunshine, supplementation, and Vitamin K2 (above). (See main text page # 25.)

(See Appendices on Weight Gain/Loss and Diabetes.)

# Cover Letter

To: Family, Friends and those, whom this might help,

Hopefully what is presented here is helpful in your quest for health. This update to past papers became a research project into cellular biology. This revision surely has errors, is in no way complete and needs significant additional work and “polish.”

The attempt is to accurately provide usable data, but ultimately one must assume that the information provided is just my opinion. Each person must determine what is appropriate for their use. I refer to and defer to a number of experts in my research and hopefully have correctly given them due credit for their ideas.

Note: The content of this paper was developed completely without concurrence, knowledge or agreement from any of my reference sources and is solely my interpretation of data provided on the Internet, YouTube presentations, books, websites, my research and experimentation.

My special thanks to:

* Dr. Joseph Mercola for his products and informational website that have been so very helpful on so many subjects with interviews of most of the following. He points out that cancer and most chronic diseases are metabolic diseases
* Dr. Frank Shallenberger because his detailed analysis of cellular function provided the critical conceptual understanding for much of this document.
* Dr. Jason Fung for his vital input on diabetes and weight loss that started me on most of this current quest for knowledge.
* Dr. Thomas Seyfried for his very helpful conceptual clarifications and emphasis about the metabolic nature of cancer
* Dr. Kate Rhéaume-Bleue for her succinct and critically important input on calcium and vitamin K2 which are so key to health and restoration of health
* Dr. Carolyn Dean who’s encyclopedic reference book on magnesium, which is a foundation to curing and preventing cancer and other chronic disease.
* The Kanacademy.org presentation data on cellular biology that helped to clarify some of the finer details that I needed.
* Dr. John Bergman for his considerable enlightenment on diseases and establishment medical practices of which everyone should be aware. He has an extensive and highly educational library of YouTube presentations.

These experts made it clear that cancer and other chronic diseases are metabolic diseases. This input set the direction and essence of this paper. There were a number of other experts and references I found on the Internet and in books. My thanks to all and apologies that I cannot give due credit to each.

Note: This paper is not to be critical of doctors. Many doctors in orthodox medicine are honest but have not had the training and do not have the time to do independent research. But as in many fields, some foundation data upon which the profession is built is in error.

Brian Boyette

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**Other Chronic Diseases and Body Weight**

**(Overview – This is a growing document subject to revision)**

# Preliminaries:

This is a growing and thus preliminary document. Use the ideas herein only as a guide. And as stated above, this paper surely has errors and is by no means complete – no document of this type can be (there is too much information).

There is so much that should be in this document, but this of necessity is left to reader for study. Hopefully the information provided, given freely, is a good starting point for that study. This compilation comprises over 25 years of effort. My major regret is that I did not know more sooner but it was just not available. The medical profession, industry and the US government block and do not support nutritional research. Modern medicine appears to have incorrectly decided that cancer is a genetic disease. While genetic influence exists, current data shows that cancer is a metabolic disease.

I believe this paper fairly accurately describes the mechanisms of what actually causes cancer, how it starts, progresses and how to prevent/cure it. Effort is made to minimize complexity, but a few concepts cannot be expressed clearly without some technical detail.

The earliest foundation data on cancer is based on Dr. Otto Warburg’s Nobel Prize winning research. My study of cancer began around 1985 and later focused on the fifty years of cancer research done by Dr. Cornelius Moerman. His curative data appeared to be the most valid. With his data and that from a number of other sources, I cured myself of cancer only using nutritional/holistic methods. Since then, I have developed a series of working papers offering what I had.

This paper is a composite of many of my original concepts and self-experimentation results as well as my research, investigation, analysis, interpretation and conceptual integration of the work of a number of nutritional experts – primarily (in order of investigation): Drs. Jason Fung (Diabetes-insulin-weight loss), Joseph Mercola (Cancer), Frank Shallenberger (Cancer), Kate Rhéaume-Bleue (Vitamin K2-Calcium), Thomas Seyfried (Cancer), and Carolyn Dean (Magnesium) combined with the Kanacademy.org presentation data on cellular biology. In this paper, I believe that I may very well have identified key aspects of the cancer puzzle not previously stated. It is my hope though that this paper will provide a **good starting** point for preventing/curing cancer and/or for further investigation.

Dr. John Bergman also has excellent YouTube presentations. In my opinion, these strongly support the overall curative approach that I am suggesting.

I hope I have correctly and fairly integrated the ideas and work of above noted experts and other nutritional giants, but suggest that one should reference their definitive books, YouTube videos and websites. I understand that Mercola.com website is the most extensively used website in the world. Regrettably I can’t point out all the nutritional greats I defer to – the above list is based on the main ones used for this paper.

For many complex diseases such as cancer, even with the most current data, the variability between individuals makes it impossible to state absolutes or give guarantees. This paper at best is an attempt to provide potentially beneficial concepts and ideas. I suggest that if you or someone you know has cancer it is necessary to learn as much as you can, take your best guess, listen to what your body tells you and work at curing yourself.

In curing cancer, understand that **ONLY YOUR BODY** can completely heal itself – a task your body is well designed to do. Many will argue this, but the reality is that our bodies can do an excellent job healing, **but only if properly maintained**. Most medicines at best are short-term tools that only address symptoms but are not curative. This is not to say that some medical interventions are not beneficial. For example, Dr. Shallenberger uses and recommends oxidative therapy and that is highly effective for killing localized instances of cancer. Also, minimally invasive operations that remove small specific localized instances of cancer can be beneficial. In these treatments though, overall health must also be addressed to assure that causal factors for cancer are corrected. Radiation treatment is discouraged, but Chemo is an ABSOLUTE NO, NO, NO.

Dr. Seyfried makes an important point, which guides this paper and should guide your life. With many diseases, especially with cancer we are not looking for a “cure” in the purest sense. It has been said that we all “get” cancer (i.e., cancerous cells or growths) about 30 times a day, but a healthy immune system eradicates bad cells stopping cancer progression. This level of **health** **management** is the goal for prevention and “cure” of cancer.

In the nature of life, it is a statistical issue for some cells to become cancerous. Having these limited cancer events is not a problem if we maintain our overall health and the health of our immune systems. The goal of this preventative-curative approach is thus to improve health to minimize the number of daily cancer events, prevent new instances of cancer from progressing, eliminate active/detectable cancers (if any), and repair damage (if any).

Note: For a quick and interesting overview of the history of cancer and how orthodox medical treatment developed, go to:

<https://idmprogram.com/cancer-paradigms-cancer-8/>

The historical approach has led modern medicine to settle on the genetic theory of cancer, which is demonstrably incorrect. This link provides an understanding of how orthodox medicine came to its current, flawed, dangerous, high-impact methods of “treatment”. Drug industry dollars surely has influenced this modality.

# Cancer Background:

Personal History: My cancer was stress induced, but not having the data presented here, it took about a year and a half to complete my cure. I only used nutritional or holistic methods, but this involved considerable research and self-experimentation. I must have stopped the progression of my cancer literally within days, but because of the need to experiment, it took a long time to finish the effort. The last nutritional step that completed my cure was to take niacin (not niacinamide). This apparently boosted blood circulation (i.e., oxygen) to eradicate all active cancer in my system. I have not been concerned about getting cancer again – that was over 25 years ago.

Understanding that the mental/physical state of being and stresses thereon establish the basis upon which cancer can start and flourish or be stopped. Consistent with this, cancer is the result of the metabolic problems that ultimately impact overall health as this influences two primary body systems:

* Health / strength of the immune system
* Health of cells to a sub-cellular level

Cells ultimately become cancerous because of damage to or stresses upon the cell and substructures within the cell called mitochondria. Depending on cell type, most cells have several hundred to several thousand mitochondria each. Once a cell becomes cancerous, health of the immune system becomes of paramount importance. If one has fairly good health, a strong immune system will detect cancer cells and remove them.

Cancer becomes a problem when general health is sufficiently poor or when traumatic events impact a person’s basic strength long enough to weaken the immune system. During a period where a person’s immune system is in a weakened state, one of the nominal daily cancer occurrences might be allowed to replicate and continue out of control. In the case of traumatic events, a quick recovery from the event might still allow the immune system to remove a growing cancer – otherwise it might progress unchecked.

With long term trauma and/or generally poor health, there is a more pressing issue of upgrading health fast enough to enable the immune system to remove the cancerous growth as well as repair damage that has been done.

Cancer Diagram 02-05-18 Ariel Font.pdf

## Figure 1 – Interrelated Cancer Factors

# Multiple Potential Causes and Pathways for Cancer:

As indicated above, once the mental/physical state and stress issues are addressed, there are many factors that influence health but two foundation systems form the ultimate key to cancer: mitochondrial performance and immune system function. Some interacting factors that cause cancer are depicted in Figure 1 (above).

“Pathway” in this paper means a dominant and fairly direct means that causes cells to become cancerous given underlying conditions are present.

**Mind/Body State Factors that aggregate to promote cancer by impacting/damaging mitochondria and weakening the immune system:**

­– Stress (This contributes in so many ways that impact mental and physical health.)

* Positive stress is good – builds mind, character, and body
* Negative stress – handle/disconnect (70% of all illness psychosomatically induced)
  + Short-term stress – that’s life (grin and bear it)
  + Traumatic event effects (short or long term, physical or emotional) can:
    - Suppress analytical function
    - Elevate blood pressure
    - Create severe hormonal imbalance (possibly causing cancer or illness)
    - Suppress immune system function (possibly allowing cancer progression)
    - Reduce health (possibly causing illnesses including cancer)
  + Long-term stress destroys health and potentiates cancer
    - Toxins (in body and/or environment)
    - Stressful/suppressive people, stressful places, things, jobs, etc. –  
       can produce psychosomatically induced illness (Handle or Disconnect)
    - Chronic re-stimulation of earlier Trauma events (=> psychosomatic illness)
      * Potential to continuously duplicate/replay past trauma event effects with minor to severe long-term health-impact (psychosomatic mechanism)

– Lack of Exercise

* Reduces oxygen, body condition and optimal health – encourages cancers
* Limits cell repair (aerobic demand motivates formation of new mitochondria)

– Lack of Sleep, Irregular and off-hour sleep (see Dr. Bergman REM Sleep YouTube. Adds to the Cancer story regarding impact of sleep.)

* Poor melatonin production – causes some cancers
* Impact to immune system – master gatekeeper for stopping cancer progression
* Impacts cellular repair that would otherwise occur during REM sleep
* Can motivate re-stimulation of past traumatic events

– Poor nutrition <=> Poor Gut Biome (i.e., **gut bacteria upon which human life depends**)

* Nutritional Deficiencies
  + High Quality Fats (organic grass-fed butter, coconut/MCT oils, avocado oil, extra virgin olive oil (NOT from Italy))
  + Collagen (the proteins we eat do not contain enough collagen for balance). This is important for youthful healthy skin and organs.
  + Fiber needed to support good gut bacteria (i.e., gut biome)
  + Vitamins, minerals, essential amino acids, fiber etc.
    - Magnesium general population deficiency – a cancer pathway
    - Vitamin K2 (MK-7) general population deficiency – a cancer pathway
    - With age, “non-essential” amino acids might need supplementation
* Unhealthy Nutritional Excesses
  + Overdosing on vitamins, supplements, OTC medicines, etc. can cause problems
  + Low quality fats (processed vegetable oils) and trans-fats – potential for cancer
  + Antacids (neutralizes stomach acid, reduces nutrient uptake, forces body to make more acid, severe affect on gut biome)
  + In modern diet, excess sugar – MAJOR cancer pathway
    - Fructose (fruit juice, high sugar fruits like grapes, excess fruits, etc.)
    - High net-carb foods (i.e., low fiber high sugar content foods)
  + Calcium excess (absolute or relative due to lack of magnesium and/or   
    vitamin K2) – a cancer pathway
  + Too many antioxidants – The body needs some free radicals
* Imbalances
  + Some supplements such as B-Vitamins must be taken in balanced portions
  + In modern diet, Calcium/Magnesium imbalance is a cancer pathway

– Age Issues

* Uptake/utilization of nutrients and hormone production goes down with age
* Internal production of “non-essential” amino acids reduced making them essential

– Environmental issues

* Degraded Food quality – affects human/animal nutrition and gut biome
  + Soil mineral depletion affects plants and thus affects human and animal foods
  + Concentrated Animal Feeding Operations (CAFOs) use antibiotics, hormones, chemicals, grains, non-chlorophyll foods etc., introduces toxins into food chain
* Radiation
  + Ionizing radiation can directly or indirectly damage mitochondria
  + Electro Motive Force (EMF – electro-magnetic fields) that cause Cal/Mag imbalance. \*\*\* Fetuses and children should not be near or sleep near the following:
    - Power lines and large transformers
    - Cell phones (near head, breast, body)
    - Tablets, computers etc. (in lap)
    - WIFIs
* Toxins can cause severe damage or impact mitochondria – a cancer pathway
  + Medicines have **severe** impact on mitochondria and good gut bacteria (Biome, with months to restore after detox)
    - Most medicines cause severe mitochondrial damage, impact Biome
    - Chemo’s are HIGHLY toxic poisons – destroy mitochondria and Biome
    - Antibiotics – destroy mitochondria and Biome
  + Artificial sweeteners (Duke University 2008 study shows “one pack of Splenda kills off 50% of the microbes in your gut”) – Note: Stevia is a natural sweetener
  + Hydrocarbons
  + Aluminum and Heavy metals
* Infections (especially viral)

– Oxygenation Issues: Oxygen is critical to optimum health. The mechanism of intake, portage and transfer of oxygen to cells is affected by most of the above factors. In turn, oxygen affects mitochondrial and body performance.

* Physical condition
* Breathing habits and lung efficiency
* Blood pickup of oxygen and portage (in blood) --- portage line below –redundent?
* Transfer of oxygen from blood into cells ----- Isn’t this the same as portage?
* Oxygen metabolism in mitochondria

The impact of any or all of the above-indicated issues can combine to either weaken the immune system and/or degrade mitochondrial function – increasing potential for cancer. The health or performance of mitochondria in a cell is a definitive marker between healthy and cancerous cells. Healthy cells have numerous fully functioning mitochondria and cancer cells have a predominance of severely damaged mitochondria (if any are functional).

The metric between a healthy and cancerous cell is the number of optimally functioning mitochondria. Healthy cells generally start with many fully functioning mitochondria, but over time damage and/or impact to mitochondria combined with nutritional deficits force the cell to shift toward anaerobic function. Once enough mitochondria become partially or fully dysfunctional, the cell becomes cancerous.

# A Cancer Metric:

Dr. Shallenberger says measurement of “Oxygen Utilization (OU),” provides an indirect estimation of overall mitochondrial health and performance – a gage of the potential for cells to become cancerous. Low OU means low mitochondrial performance. As an indirect result of poor mitochondrial performance, lactic acid in the cell increases.

Actual cellular transition to cancer is a metamorphosis that occurs only when there are not enough fully functioning mitochondria in the cell to minimize lactic acid production. Ultimately, it is excessive **Lactic Acid** within the cell that actually drives cell metamorphosis to cancer. Lactic acid also motivates cancer proliferation and other cancer phenomena. There is no specific amount of lactic acid or exact threshold, but once that level is reached, transition is probably fairly rapid. Once complete, it appears to be irreversible.

Note: red blood cells do not have mitochondria and thus only produce energy by anaerobic glycolysis – and that of course produces lactic acid. The nature of the red blood cell is such that lactic acid does not accumulate within the cell, thus the cell does not become cancerous. It is not so much how energy is produced within a cell that is an issue; it is the accumulation of lactic acid within the cell that causes the metamorphosis.

Again, the last systemic defense against the cancer and its proliferation is the immune system, which must be strong enough to detect and eliminate the cancer.

In one of Dr. Shallenberger’s YouTube presentations he has a slide that points out:

“Amazing Observation”

No patient with optimum OU ever got cancer (OU = Oxygen Utilization)

Patients with optimum OU do not get sick with anything….

Yet all his cancer patients had low OU

# Deficiencies and Excesses Cause Cancer:

In his book, *The Preventative Policy of Cancer* (1940), Prof. Pierre Delbet shows maps of Italy that correlate soil levels of magnesium to the number of cancer cases and deaths. In areas where the soil is significantly lacking in magnesium, cancer cases and deaths are significantly higher than areas where soil has a high magnesium level. In the US, there have been separate studies showing soil zinc and selenium deficiencies versus cases of breast cancer. Mineral deficiencies do have impact. - ‘a high magnesium content’ grammar

In non-mineral studies such as for melatonin deficiencies, there is indication that children using night-lights have an increased incidence of leukemia. Night-lights reduce melatonin production and this deficiency appears to be the causal factor.

This is not to generally say that specific deficiencies or excesses directly cause cancer, but there is a clear case that deficiency and excess are significantly part of the pathological initiation and/or progression of cancer. Part of the prevention and cure is thus to eliminate obvious deficiencies and excesses where possible.

Examination of a calcium-magnesium imbalance (magnesium deficiency – calcium excess) appears to be a more definite cancer link. There should be 10,000 times more magnesium within the cell than calcium for proper cellular and mitochondrial function. When ratio is not correct the aerobic capacity can be reduced enough to cause cancer.

According to Dr. Carolyn Dean, most people are magnesium deficient and this can cause a major calcium/magnesium imbalance – yielding relative calcium in excess. In addition, Dr. Rhéaume-Bleue says that most people are also Vitamin K2 (menaquinone-7) deficient. Vitamin K2 manages systemic calcium. A combined excess-deficiency of these is definitely detrimental to cellular function and is strongly indicated in mitochondrial stress pushing the cell to the anaerobic mode of cancer. The imbalance could also severely impact immune system function enabling cancer proliferation.

Magnesium is involved in nearly 800 enzymatic actions, cellular integrity and is involved in most of the process steps in aerobic energy production. It is also needed by an amino acid that removes lactic acid from cells. It appears that a magnesium deficiency is a principal pathway to cancer giving this deficiency an extremely high priority.

Also associated with calcium-magnesium issues, it is known that cell phone energy can cause flooding of calcium into cells. It has been shown that there can be 1600 times more calcium being pushed across the cell’s “Voltage Gated Calcium Channel” (VGCC) during cell-phone transmission than normal. It is known that women who put their cell phone in their bra tend to have four times the breast cancer where the phone is than other parts of the breast. Studies from years ago also suggested Electro Motive Force (EMF electrostatic and magnetic fields) from power transformers caused leukemia in children.

Understand, that other factors such as nutrient levels need to be such for conversion to occur and the immune system must be in a weakened state for disease progression. But the case stands; EMF was the precipitous cause for some breast cancers as well as a number of cases of brain cancers of cell-phone users….

# Chronic Disease Background Discussion – Common Causes:

As I understand it, one major potential cause of and pathway to Cancer and other chronic diseases has a common foundation associated with the mechanics of weight gain. It is thus important to understand weight gain to better understand the cause and cure of Cancer and other chronic diseases. So as to not complicate the logic flow of the main part of this document, most of the weight gain-loss detail has been put in Appendix 1.

Dr. Jason Fung is a diabetic specialist and the weight gain-loss expert. In his many years of medical practice treating diabetes in various stages of progression, he discovered the foundation cause of Type II diabetes (Appendix II) and weight gain (Appendix 1). He says that for 70 years we have been given bad information on why we gain weight. Read his excellent book *The Obesity Code* and study his YouTube presentations (esp., *Therapeutic Fasting – Solving The Two Compartment Problem*) where he explains why diets fail. Dr. Eric Berg has an excellent YouTube *What I Would Eat if I had Diabetes* that validates these ideas. These ideas can change your life in a very positive way and improve health.

Dr. Mercola interviewed Dr. Fung and they have many highly useful ideas. Dr. Mercola’s book *Fat for fuel* and his educational YouTube videos elucidate this. The YouTube’s also point out key factors of chronic disease. These doctors are dedicated to making our lives better by providing this phenomenal information.

Diabetes, weight gain, cancer and other chronic disease appear to be all related. I only highlight some of what they offer and add important data gained from my experience to facilitate cures for these diseases.

Dr. Fung discovered the root cause of weight gain is insulin. When we eat, blood sugar causes insulin release. Four functions of insulin (a glucose storage hormone) are:

* Stores (pushes) blood sugar (glucose) into cells
* Stores excess sugar (glycogen – storable chains of glucose) into the liver as a short-term energy reserve
* Stores excess sugar as fat into fat cells for long-term energy reserve
* Blocks fat from being removed from fat cells when food is available to eat

We get fat because of the functions of insulin. This comes down to the quality and relative sugar content of the food we eat, the insulin response to that food and how well our bodies process sugars. All of this is normal and part of the survival mechanisms of our bodies that are designed to create and maintain short and long-term energy stores.

## Where Disease Comes In

Our bodies were not designed to function well with modern life styles and diets. To understand the underlying issues, it is necessary to discuss on a somewhat more technical level cellular structure and function.

Our bodies are made of trillions of cells. Each cell has a protective membrane that contains protoplasm (living content of cell). Within most cells there sub-cellular structures called Mitochondria. These are small cell-like substructures; each also having a protective membrane very much like the cell in which they exist. Depending on the type of cell, there can be fewer than a hundred or up to several thousand mitochondria. There are so many mitochondria, that in his book *Fat for Fuel*, Dr. Mercola says researchers believe mitochondria make up about ten percent of total body weight.

Facts about Mitochondria

* Not all cells contain mitochondria, but metabolically active cells have many thousands of mitochondria, amounting to about 40% of the cytoplasm
* It is estimated that there are 10 million billion mitochondria in an adult
* Within a cell, they are constantly moving, changing mass, size and number

One important function of mitochondria is to metabolize food sugars (glucose) using oxygen to produce ATP (Adenosine Triphosphate) a chemical energy “fuel” used throughout the body. A muscle cell uses the chemical energy in ATP to produce motion.

In healthy cells there are three main steps in the glucose-to-ATP process. The first step is glycolysis and this does not require oxygen. Glycolysis occurs in the cytoplasm (fluid part within the cell outside of the mitochondria). Glycolysis breaks each glucose (sugar) molecule into Pyruvate molecules.

The remaining processing steps occur within the mitochondria. The Pyruvate molecules from glycolysis are absorbed by mitochondria and converted into a form usable by what is called the Krebs or Citric-Acid cycle. The Krebs cycle is a circular-series of chemical steps that are part of the aerobic processing. (Side note: the Krebs cycle was named after the German-born British biochemist Hans Krebs who discovered the chemical series. Coincidently and surprisingly, “Krebs” in German means “Cancer” and the direct or indirect impact to the Krebs cycle within the mitochondria is the foundation of cancer.)

Another part of the aerobic process in mitochondria involves the chemical oxidation of oxygen in support of the Krebs cycle. The energy of oxidation powers the Krebs cycle and generates ATP molecules that power most body functions.

Numerous dietary and environmental factors damage or reduce the efficiency of mitochondria over time. As a result, there is less capacity to produce ATP to energize body function, as we get older. We then wonder where the vigor of youth has gone. It appears to have been lost in the reduction of mitochondria. This reduction also directly and indirectly appears to be a foundation cause of many chronic diseases as well as contributing indirectly to weight gain. Dr. Shallenberger says it takes a lot of energy to be well and healthy, notes that it takes even more to restore health.

In his book Dr. Mercola suggests what he calls his *Mitochondrial Metabolic Therapy* (MMT), which restores, rebuilds and produces new mitochondria. I have put some of his data in Appendix 1, which covers Weight Gain and Loss, as it is related and important in that arena as well. Following the guidelines in that Appendix is significantly part of the curative approach recommended in this paper for cancer and other diseases.

# Cancer and Type II Diabetes:

As the number of fully functioning mitochondria in cells declines, the more the capacity of cells to metabolize sugar to produce ATP declines. The sugar consumed, but not metabolized becomes excess sugar in the cells. Dr. Fung points out that cells become full of sugar. The sugar buildup can occur relatively fast or take years. (See Appendix II Diabetes.)

As cells fill with sugar, a sugar concentration gradient develops between sugar in the blood and sugar in the cells. The blood-cell sugar gradient indirectly causes an average rise in blood sugar (A1C) and the pancreas produces more insulin to compensate for higher blood sugar levels. This is called “compensatory hyperinsulinemia”. In the initial stages, blood tests may indicate a rise in A1C, but this is still in the “normal” range so is considered “OK”. In middle stages of progression, the individual is said to be pre-diabetic and in the final stages, diabetic. The higher the sugar concentration in the cells, the steeper the sugar concentration gradient becomes. As the gradient steepens, more insulin is required to overcome the gradient backpressure to push sugar into the cells. It’s as if there was resistance to insulin. It is my consideration that gradient backpressure is potentially a major component of “insulin resistance.” Low magnesium contributes to this by reducing insulin efficiency causing an overall increase of both blood sugar and insulin.

As indicated above, when we eat, insulin causes excess glucose to be stored in the liver as glycogen (chains of glucose). The liver is a short-term energy storage organ. While most cells can process glucose, the liver is the only organ that processes fructose – an alternate sugar energy source. The liver thus is used as a short-term energy storage organ for both glucose and fructose intake. But once it has stored all the sugar it can, excess sugar in the liver cell becomes an issue for the liver also, affecting the entire body. Fructose intake can rapidly fill liver cells producing insulin resistance from both fat and sugar excesses.

Blood tests check for “insulin resistance” but again my consideration is that this primarily indirectly indicates how much excess sugar is in the cells. The presence of “insulin resistance” flags pre-diabetes and possibly a multitude of other chronic diseases including cancer. Dr. Fung says insulin resistance is the cause of diabetes and Dr. Shallenberger says it is the key to cancer. It is my consideration, using my interpretation of “insulin resistance,” both are correct. Credit to Dr. Fung, my interpretation of “insulin resistance” comes from physics, but is based on what Dr. Fung says in his YouTube presentations and books.

The problem is progressive. As more mitochondria become dysfunctional, cells become ever less able to metabolize the sugar pushed into the cell. The sugar gradient steepens and average insulin level rises. This increases fat storage and prevents stored fats from being metabolized – and this causes the continuous weight gain.

It is my consideration that as cellular sugar levels increase, this stresses and impedes cellular function in a number of ways. Cytoplasm within the cell becomes a sugar-based dilution disturbing cellular function on a number of levels. One is that “healthy” cytoplasm has variable viscosity characteristics required for optimum cellular function. Excess sugar surely impacts this and thus impacts proper cell function. Another is that excess sugar exacerbates glycation and chronic inflammation. Glycation is an uncontrolled process whereby excess sugar attaches to and damages proteins such as collagen. Damaged tissue is referred to as AGE (Advanced Glycation End-products). Sugar glycation is not highly active, but with high sugar concentrations in cells, my conjecture is that severe mitochondrial damage occurs. Inflammation is a biological attempt to restore normal function, but long term; it is a continuous distortion of function that ultimately causes negative side effects. Both of these are a factor damaging large numbers of mitochondria.

In addition to this, Dr. Mercola says that our diets and damaged mitochondria produce an excess of Reactive Oxygen Species (ROS) – free radicals (electrically unbalanced oxygen molecules) that add to the mitochondrial damage. The combined damage to mitochondria from ROS, glycation and inflammation creates a compounding downward spiral.

A number of factors are in play at this point. A person can become diabetic, cancerous or both. Actually, depending on a number of factors the result can be any number of other chronic disease manifestations (chronic fatigue, Alzheimer’s, dementia, rapid aging, etc).

If all is relatively “well” otherwise, the excess cellular sugar can ultimately produce full-on diabetes with blindness, amputation, etc. Dr. Fung is the expert: read his books and study his YouTube videos on how to prevent this outcome (see Appendix 1 and 2).

# Basic Data on Cancer:

Orthodox medicine may not accept it, but it is now well known that cancer is a metabolic disease. As such it requires establishment of healthy conditions through nutrition, exercise and environmental adjustment to affect a cure. Many cancers involve cellular mutation, but not all. Since some cancers exist that do not involve mutation, a general theory of cancer based on mutation, as its foundation cannot be valid. That is not to say that a mutation (initiated by some influence) cannot develop into a cancer, it is only to point out that a general theory of cancer cannot be so based. Even having a potentially cancerous mutation, there still must be metabolic underpinnings for a cancer to develop. As stated, mutations do occur in many cancers and thus must be considered. Mutations that do occur are secondary. Metabolism is the cause or foundation of most if not all cancer and chronic disease.

A major metabolic issue for chronic disease appears to be based on the health and function of mitochondria.

This cancer model suggests mitochondrial dysfunction causes pooling of partially metabolized cellular sugars, and this drives cellular cancer transformations

**Magnesium, Vitamin D3 and K2 deficiencies might possibly be the most critical factors causing cancers**

As explained by Dr. Shallenberger, OU is affected by nutrition, general health, lung capacity, capacity of blood to carry oxygen etc. It is my thought that with the excess consumption of high net-carb carbohydrates (i.e., sugars), combined with nutrition deficits causes glycation. For many, excess sugar added to other factors, becomes another strong contributor that degrades OU in the cancer equation.

According to Dr. Shallenberger’s research, ALL people with cancer, no matter how minor, have reduced OU. Mitochondria are the primary users of oxygen in the process of generating ATP thus the loss of a large number of mitochondria would definitely reduce OU. Dr. Mercola’s research is consistent with this and shows that all cancer cells have radically reduced mitochondrial numbers and function.

Drs. Shallenberger and Warburg point out that hypoxic (lacking oxygen) conditions can switch cells over to the anaerobic metabolism. Dr. Warburg suggests that a 24-hour hypoxic event would force cells to the anaerobic metabolism of cancer. With short-term extreme exertions, athletes often go into anaerobic metabolism, their energy being produced by anaerobic metabolism (lactic acid cycle). But this is only produces short-term extreme exhaustion. With any concurrent cancers being eliminated by healthy immune systems.

Dr. Shallenberger highlighted this in an interesting situation with marathon athletes. As a result of extended extreme exertion they would damage lots of mitochondria. But because of their overall health and nutrient level, rest gave complete restoration of mitochondrial function within weeks. The clue is that a good well-nurtured body is best.

## Expanded detail on Some Cancer Issues

* Fat Soluble Vitamins: A, D, E and K2 and minerals like magnesium and calcium work together and should be taken together (doses suggested below).
* Reactive Oxygen Species (ROS) i.e., free radicals are needed by the body. Dr. Mercola says indiscriminate use of anti-oxidants is not good. It is better to minimize ROS production with a high fat ketogenic diet. He also points out it is excess free radicals are a problem as these can damage mitochondria. Hydrogenated oils (trans fats) and rancid oils can oxidize (breakdown) stable molecules creating severe cellular damage and trigger cancer.
* Medicines: The CDC now formally recognizes that one of the major sources of chemicals that damage mitochondria are prescribed medicines. It has instructed doctors to reduce the number of prescribed medicines. One of the MOST destructive “medicines” and thus the most carcinogenic (cancer causing) is Chemo. Toxicity of Chemo drugs is devastating to mitochondria and the immune system.
* Sun Exposure: Continuous excessive exposure to sun can cause skin cancer. Balance is important, as too little sun is NOT healthy. Sun exposure produces critically needed vitamin D3 (don’t wash skin for a while after sun exposure to allow vitamin absorption). Dark skinned people tend to be vitamin deficient because the melanin in the skin acts as a sunscreen that blocks vitamin D3 production.
* Carcinogens (smog, asbestos, chemo, drugs, hydrocarbons) can damage, cause inflammation that damages or impact mitochondrial function. Toxic medicines (e.g., antibiotics, aspirin, satins, Beta-blockers, steroids, TB meds and chemo), radiation produced toxins, heavy metals and other substances (e.g., fluoride (tap water), processed foods, etc) in our diets are all toxic to mitochondria.
* Note: some say making body pH alkaline might be curative. The problem is that different parts of the body have different pH requirements and one cannot make selective adjustments. At most only use alkaline foods, NOT alkaline water, which will neutralize stomach acid needed for food digestion and cause illness.
* Cancer is often referred to as being a “stress disease”. Chronic stress and chronic inflammation produces long-term elevated cortisol (the “Fight or Flight” stress hormone). Chronic Inflammation is along-term distortion of cellular function that produces chronic stress. This in turn yields long-term elevated insulin, which elevates cellular glucose – one potential cause of cancer in this model. To compound the problem, the stress generated cortisol turns off the immune system response making one more susceptible to cancer and to earn the “stress disease” label.
* Leukemia: My research into leukemia and knowledge is lacking. In her book *Vitamin K2 and the Calcium Paradox*, Dr. Kate Rhéaume-Bleue points out that vitamin K2 (fermented foods) is a powerful tool against leukemia. The minaquinone-7 form of vitamin K2 kills most leukemia cells – but not necessarily all. Here the minaquinone-4 form of vitamin K2 tends to force the remaining leukemia cells to differentiate into normal cells over time. One thought is that boosting A, D3, magnesium would all contribute to solution. D3 is a big immune system booster.

As we get older, the body often is less able to uptake nutrients to fight disease. Also, mitochondria efficiency decreases about 5-8 percent each decade. That is not to say that if you live long enough you will “get” cancer, but to indicate it takes more work, as one gets older to maintain optimal health. It is said anyone over 60 has cancer. Actually as indicated before, everyone has cancer, but a strong immune system stops progression.

# Suggested Pathology for Cancer:

There are a number of complex factors in play, thus it is conjecture as to any specific combination of factors that actually causes one to get cancer. The following is potentially one likely scenario.

As stated above, it is estimated that healthy people “get” cancer about 30 times a day. Dr. Bergman suggests the number is much larger. Unhealthy people probably “get” instances of cancer far more often. Healthy people do not get clinically detectable levels of cancer because the immune system is strong enough to identify and remove these statistical cancer occurrences when they appear. This fact establishes foundation criteria for this disease. First, to get clinically detectable cancer, an individual’s health must be sufficiently poor at the time of a cancer event that the immune system is unable to detect and remove the instance of cancer. Second, with health supported by proper nutrition, exercise, sleep, environment, etc., the body is designed to prevent illness and cure itself.

Several possibilities exist. One is that a person can have overall long-term poor health that invites illness. A second is that person also might generally have fair to good health, but experience a severe physical and/or emotional trauma, which though temporary, impacts health to the point where a happenstance cancer can grow to become an issue. Such an event can temporarily weaken the immune system so that it does not stop a cancer. In this situation, a simple removal of the cancer would probably result in a complete “cure” – presupposing underlying metabolic issues are healthy enough to return to a good norm.

In the case of poor general health, just removing an instance of cancer does not produce a cure. The underlying metabolic issues must also be corrected. This includes improvement in long-term environment (toxins and radiation), stress (physical, chemical or emotional), poor nutrition (vitamin/mineral deficits, hydration, electrolytes), lack of exercise, lack of sleep – all of which contribute to weakening the body and the immune system.

The way to affect a cure then is to correct these long-term conditions to improve overall health, and in particular the health of the immune system so that it can perform its task of eliminating the cancer. To improve these, mitochondrial function must be addressed. There are many factors that affect mitochondrial health. Understanding mitochondria is thus essential.

As part of this, it is necessary to introduce cellular “fuel” molecules called NAD (Nicotinamide Adenine Dinucleotide) and NAD**H** (NAD with a **H**ydrogen atom attached). What’s important is that the oxygen we breathe and other processes chemically convert low-energy NADHs to high-energy NADs. The high-energy NADs circulate within mitochondria releasing energy to perform needed functions. In giving up energy, a NAD gains a hydrogen atom that changes it back to NADH.

According to Dr. Shallenberger, the NAD to NADH ratio is a measure of Oxygen Utilization (OU). Under optimum conditions the NAD to NADH ratio is about 700 to 1. Mitochondria need the energy of a large number of NADs to function at peak levels. As health declines (sugar buildup, glycation, ROS damage, inflammation, toxins, chemo, medications, lack of vitamins, minerals, and exercise, etc.), our bodies don’t use oxygen as well and the ratio can slide down to 300 to 1 or lower. With low OUs (i.e., very limited number of oxygen-produced NADs) even healthy mitochondria become almost dysfunctional.

Where mitochondrial damage is involved, unrepaired damage to mitochondria tends to compound; and damaged mitochondria can generate more ROS than normal metabolism. The additional ROS can further damage mitochondria (Dr. Joseph Mercola). Add to this, poor oxygenation and/or low nutrient levels also reduce mitochondrial performance. Further, as more mitochondria become less functional or dysfunctional, the less sugar a cell can metabolize and this increases sugar accumulation. Excess sugar increases glycation and inflammation. All factors combined compromise mitochondrial function even more. This can increase cellular sugar to further damage mitochondria in a vicious and progressive downward spiral that can after some point deteriorate rapidly.

A number of conditions can reduce mitochondrial function (with or without prior damage):

* A vitamin D3, K2 and/or magnesium deficiency can have a severe impact on mitochondrial performance. Magnesium is involved in six of the eight steps required for energy production (Krebs Cycle). Dr. Carolyn Dean points out that a magnesium deficiency can virtually stop mitochondrial function as well as impact numerous other cellular functions. Vitamin K2 controls Vitamin D3 and a deficiency of either can also have a major impact. Sufficient deficiency of these could cause cancer.
* Toxins such as Trans-Fatty-Acids (vegetable oil) and heavy metals (e.g., mercury) are referred to as “uncouplers” because they uncouple the oxygen utilization chain in mitochondria reducing performance (Dr. Frank Shallenberger).
* Some viral infections can impact or damage cellular function in a manner that impacts performance of or damages a large number of mitochondria.
* Factors involving oxygen transport from lungs to blood to the cells including hypoxic events can restrict oxygen availability, thus restrict mitochondrial function (Dr. Frank Shallenberger). If oxygen restriction is significant and of long enough duration, cells can become cancerous (Dr. Otto Warburg).

Factors can aggregate to cause cells to become cancerous. The following is one suggested Scenario for Cellular Transition-to-Cancer:

It is my consideration that a dangerous balance is created within the cell when large numbers of mitochondria become less functional. This sets the conditions for cancer.

Insulin helps move glucose in the blood through the cell membrane into the cell cytoplasm (cellular fluid). In the cytoplasm, a chemical process called glycolysis breaks down glucose molecules into Pyruvate molecules. Glycolysis uses the energy of a NAD to NADH chemical reaction. This releases NADHs and Pyruvate molecules into the cytoplasm. Some Pyruvate and NADHs in the cytoplasm combine to make lactic acid.

In a healthy person there is good oxygenation as well as numerous highly functional mitochondria floating in the cytoplasm. The mitochondria absorb most of the Pyruvate and NADHs from the cytoplasm where oxygen converts NADHs to NADs, and Pyruvate is metabolized to produce ATPs (to energize the body). In less healthy individuals there is less oxygenation and fewer fully functioning mitochondria. Less Pyruvate-NADH absorption occurs and less ATP is formed (making a person less energetic).

Glycolysis continues, making more Pyruvate and NADHs, increasing their concentration in the cytoplasm. With a higher Pyruvate-NADH concentration, more Pyruvate and NADHs combine and make more lactic acid. The cell tries to eliminate the lactic acid. With a magnesium deficiency, the enzyme that pushes the lactic acid out of the cell is less functional. By this, lactic acid within the cell can accumulate.

Once lactic acid accumulates to the point that it exceeds some level or threshold, the excess lactic acid chemically causes a cellular metamorphosis whereby the cell becomes apparently irreversibly cancerous. My research suggests that high levels of lactic acid in a cell appears to be the crucial factor that determines cellular fate. Beyond some point, lactic acid accumulation forces a number of definitive cancerous cellular conversion phenomena to occur. A tumor microenvironment is created, a new path develops/defines where cell material comes from, pH becomes ~6.5, immunosuppression, angiogenesis (new vascularization) and cellular proliferation are all initiated (see links for discussion of phenomena).  
 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3757307/>

http://news.mit.edu/2016/how-cancer-cells-fuel-their-growth-0307

As indicated earlier, athletes in extreme exertions go into anaerobic metabolism (a lactic acid cycle). With good nutrition, health, and conditioning that produce larger numbers of mitochondria, athletes tend to have greater lactic acid tolerance and capacity to minimize accumulation. The lactic acid threshold that causes cancerous transformation is possibly higher. In addition, cells that do transition to cancer would be quickly removed by the healthy athlete’s strong immune system. This would not be the case with the non-athlete.

Note: the fact that red blood cells only use glycolysis (anaerobic metabolism) to produce energy (without lactic acid accumulation) tends to support this consideration.

As previously stated, the immune system is the final gate before a body actually “gets” clinically detectable cancer. If the immune system is sufficiently strong, it can identify and eliminate cancer cells before serious damage is done. If the immune system is weak (due marginal health conditions), it cannot do its job. As a result, malignant cancer cells proliferate into fully detectable cancer.

# Mitochondria – The foundations of health:

Once the oxygen-mitochondrial function is understood, some generalizations for many chronic diseases can be made. For optimum health, it is necessary to improve oxygen utilization (OU) by maximizing mitochondrial performance through nutrition, exercise and sleep. This also means minimizing toxins such as aluminum, medicines (especially Chemo and vaccines) and radiation that impact oxygen and mitochondria.

The process is reciprocal; oxygenation improves mitochondrial function, which then can produce more ATP. As ATP increases, then entire system functions better and more energetically, and this improves the capacity to breath better to bring in more oxygen.

All combined helps in maintaining or restoring mitochondria to full function. And by minimizing sugar intake (from all sources), we can improve overall health, increase energy and fight or prevent cancer, diabetes and other chronic disease.

It should be noted that if any person (adult or child) can have issues that compromise their oxygenation and/or mitochondria. In primitive cultures, gaining and losing weight is a normal survival function, but in advanced societies, even being slightly overweight can indicate possible metabolic issues or compromise. OU, though, as stated by Dr. Shallenberger, is the best indicator of compromise.

# Prevention/Cure – Suggested Method for Cancer:

## Prevention/Cure – Important First Steps

Overall, this method involves improving health by adopting an optimum diet, taking key supplements that improve mitochondrial and immune system function, taking supplements that kill cancer cells, getting the sleep and exercise needed, handling or disconnecting from stress, and avoiding or correcting detrimental environmental factors.

Starting at baseline, ensure that your hydration and electrolytes are balanced (page # 21).

Because of the nature of chronic disease, improving mitochondrial function is at the top of the list. Specifically, in this curative method, the first and most important step is optimizing magnesium levels (along with calcium). Magnesium activates storage-state Vitamin D3 and also directly affects Mitochondrial performance. A significant magnesium deficiency almost guarantees higher rates of cancer. The population is deficient because of food source/quality and lifestyle. It is difficult to achieve and maintain optimum levels of magnesium. It is thus necessary to supplement with magnesium, but this has issues also – see Magnesium (page # 26 of this document).

The next most important nutrient is vitamin K2 (i.e., menaquinone-7 (MK-7)). According to Dr. Kate Rhéaume-Bleue this vitamin is also deficient – caused by dietary and lifestyle choices. MK-7 plays a number of important roles: managing calcium and Vitamin D3 uptake into the cells. A K2 deficiency restricts cellular vitamin D3 and this, especially in concert with a magnesium deficiency also potentially guarantees higher rates of cancer – see Fat Soluble Vitamins (Page # 25 of this document).

## Prevention/Cure – Overview

It’s a genetic and/or happenstance issue as to which factors can or will cause cancer (or other disease) in any one individual. It is thus suggested to correct outpoints (such as deficiencies and excesses) for prevention, cure and optimization of health.

In this document, I refer to a “Cure Period.” My experience and expectation suggest that once one starts this procedure, the body responds literally within hours correcting problems. Depending on the extent of the cancer the cure period can be say 4-6 weeks to several months. Healing damaged tissue can take longer, but then the concern is healing, not cancer. The suggested cure period is a best guess, not a guarantee. Some of this I speak from what I have actually seen using far less knowledge than is in this document.

This preventative/curative approach uses holistic methods to correct foundation issues and specific problems. No orthodox medical treatments have been identified to date appear to address the basic nature of this disease or provide safe realistic curative benefit.

Prevention/Cure Overview:

* Adjust nutrition to ensure optimum health
  + Eliminate processed foods. Eat wholesome and raw foods. Avoid meats, fish and eggs from Commercial Animal Feeding Operations (CAFOs) as these use antibiotics and other toxic chemicals, which ultimately contaminate the protein. Preferably use organic free-range grass-fed animals. Grasses stimulated by the sun provide chlorophyll, eaten by animals yield higher quality meats and eggs as well as higher vitamin K1 content which then animals convert to vitamin K2.
  + Migrate to Ketogenic diet
    - 60% of calories from good fat
    - Adjust protein intake
      * In general – moderate protein commensurate with physical activity
      * For active cancer – absolute minimum with extra proteolytic enzymes
    - Minimal carbohydrates and only low net-carb foods to minimize sugars
  + Fasting (where appropriate and possible) – there are so many anti-aging and general health benefits to calorie restriction, but especially with Fasting.
  + Adjust nutrients with food and/or supplements
    - Boost health and immune system
    - Include anticancer foods and supplements (listed below)
* Exercise – Add/Adjust
* Hydrate body – It is important to drink plenty of good water that contains minerals. Do not use pH water or use pH water machines as these neutralize stomach acids impacting digestion. Fluoride (fluorine) causes cancerous. Minimize chlorine.
* Adjust sleep – See Dr. Bergman YouTube on sleep (if necessary)
* Eliminate/minimize all negative mental/physical/chemical stress issues (if any)
* Avoid Carcinogens (including Chemo)
* Detoxification is helpful to critically needed – we have years of toxic accumulation

The intent of this curative approach is to maximize overall health and boost immune system function as fast as possible as well as adding specific nutritional tools that kill existing tumors and cancer cells. Correcting nutritional deficiencies can make a major difference in general overall health. This approach also helps the body to heal itself.

## Prevention/Cure – Detail Suggestions:

### – Basic Diet:

In years gone by, the quality of foods available was much better and healthier. Grains have now been chemically and radiologically hybridized reducing nutritive value and making them relatively more toxic. With the advent of “modern” food processing and Commercial Animal Feeding Operations (CAFOs), the quality of our food supply has declined to the point of being unhealthy. One example according to Dr. Bergman is that commercial growers feed arsenic to chickens to fatten them sooner for market. This increases profits but taints the product for human consumption. It’s not just a “noble” consideration to improve animal living conditions; their food and health are critical to human health.

It is suggested to avoid processed foods, consume raw fruits and vegetables, cook at home and use as much organic as possible. So much is toxic in our food supply and is detrimental to mitochondrial performance exacerbating chronic disease. Genetically Modified Organisms (GMOs) are a whole different issue. No multigenerational testing has been done to ensure that GMOs won’t have devastating future consequences. Damage done to grain took decades to show its severe impact on human health – and government does nothing to correct the poisoning of our citizens. Since a more knowledgeable public is seeking healthier organic foods, government and industry are dishonestly trying to redefine “organic.”

### – Ketogenic Diet:

Drs. Mercola, Fung and others recommend the ketogenic diet. Significantly it helps reduce sugar (high net-carb food) from all sources. Diet encourages metabolizing fat, which reduces production of ROS and facilitates Fasting (with its dramatic healing benefits).

With glucose dependent cancers, a ketogenic diet significantly reduces the glucose available to the cancer and can be a powerful anti-cancer tool. Some cancers are not restricted to metabolizing glucose and can switch to metabolizing glutamine. This curative approach does not depend on what a cancer metabolizes.

Ketogenic diet guidelines:

Fats: Sixty percent of calories should come from healthy high quality fats (organic grass-fed butter, coconut/MCT oils, avocado oil, extra virgin olive oil (NOT from Italy))

Protein: For prevention, protein should be moderate and only enough to fully support physical needs. Excess protein can add to body weight. With active cancers, I suggest very limited protein during the cure period. Protein digestion requires large amounts of proteolytic enzymes, so take extra digestive enzymes. I am guessing that “predigested” proteins might help with the enzyme issue. Another issue is that protein controls the mTOR signaling protein (Dr. Mercola *Fat for Fuel* book p51-2). When the mTOR is off, needed cellular repairs can occur. Excess protein turns this signal on, stimulating growth, but potentially stimulating cancerous growth during the cure. (percentage?)

Carbohydrates: Should be minimal and only low net carbs (i.e., high fiber, low sugar content). Eat green, colored foods, whole fruits and blends of these including fiber. Avoid pastas, grains (cereals, bread), sugar, and high-sugar fruits (e.g., grapes).(amount?)

Note: grains and pastas contain an anti-nutrient called phytic acid. Phytic acid binds with minerals and blocks absorption (outweighing potential benefit). Soaking, sprouting, and fermentation reduce phytic acid content. Sourdough bread is a good example.

### – Fasting:

There are several significant benefits that Fasting offers for preventing cancer. One of the biggest is that during Fasting, the body goes into repair mode that improves mitochondrial health. Fasting repairs damaged and dysfunctional mitochondria and adds new mitochondria. This makes the whole body healthier and stronger thus better able to reduce the chance of getting cancer. Calorie restriction adds healthier years to your life. In addition, Fasting produces Human Growth Hormone (HGH), rolling back the body clock.

Fasting is an optimum method for loosing weight, but this is not a goal for fighting an active cancer. If one is overweight, loosing weight helps to make one healthier, stronger and thus more able to prevent cancer. For possibly the best and easiest methods for weight loss, see Appendix 1 for Dr. Fung’s weight loss approach using Fasting. His entire method is presented in his YouTube videos and he has been generous enough to provide what you need for free. His goal is to help people. His books provide additional data and I have learned a lot from him.

While the ketogenic diet appears to be the optimum for fighting cancer, Fasting to the point of loosing weight should be minimized or avoided while curing cancer. If you use Fasting as part of your curative approach, intermittent Fasting gives slower weight loss. Also, eating a meal each day gives the chance to take supplements needed for the cure.

With cancer, loosing weight is a two-edged sword. Loosing weight, in general is a health benefit, but fat cells can have years of toxic accumulation. In a Dr. Mercola documentary on niacin, he points out a Dr. David Root 1990 study in which Dr. Root found Yugoslavian workers had 150 times more toxin in their fat cells than their blood. Most people do not have this accumulation, but when you loose weight, the toxins they do have can be released into the system and have negative effects. This toxic release is NOT good when one is curing cancer as this adds a greater burden to an immune system. Depending on individual toxic history, during a cancer cure, it may be wise to either not loose weight or to loose it more slowly (as can occur with intermittent Fasting).

### – Exercise:

Exercise for normal health, but especially for disease. It helps to metabolize excess sugar in cells (if any). Aerobic exercise is especially useful to improve lung function, blood circulation, and cell oxygenation. Aerobic exercise forces the body to increase the number of mitochondria to meet aerobic demand. Do not overstress your system. If walking is all that you can do, then just do that. If you are more athletic do what is reasonable.

### – Sleep:

Sleep is just as important as exercise. With REM sleep, the body goes into repair mode fixing mitochondria and other issues. A full night of sleep is important, but do not oversleep (consider Dr. Bergman’s YouTube sleep technique to maximize REM sleep). Get what your body needs, but no more. Sleep especially when not well.

### – Hydration and Electrolytes:

Water and electrolytes are critical to good health. The amount is individualized. See:

Health*line* <https://www.healthline.com/health/how-much-water-should-I-drink>

Dr. Axe <https://draxe.com/electrolyte-imbalance/>

Dr. Dean suggests drinking half your body weight in ounces of water a day (e.g., 75 oz for a 150 lbs of body weight). The water must be mineralized. Caution, a large volume of tap water has too much chlorine, and fluoride in water causes cancer. The above link for the Dr. Axe article is very informative. Dr. Mercola suggests also taking some Himalayan sea salt with minerals to help maintain mineral/electrolyte balance. Also consider:

* Trace Minerals Research: “ConcenTrace Trace Mineral Drops” liquid appears to be exceptionally good and has a high concentration of ionic magnesium and minerals.
* Eidon offers a low dose liquid electrolyte supplement.

### – Avoid Negative Stress:

It is said that 70% of all illness has psychosomatic origin. Negative stress, especially long-term can break us down and severely impact immune system and health. Long-term negative stress can literally cause cancer. Long-term stress can be induced from many internal and/or environmental factors and can be physical or emotional.

Physical stress can come from nutritional deficiencies, long-term illness, environmental toxins (medicines), radiological sources, etc. or physical accidents. Emotional stress can come from any area of life that is especially upsetting, including personal or professional.

It should be noted that the greater the stress, generally the shorter the term needed to cause serious illness or death. Stress uses up stress-vitamins/minerals. During stress conditions, nutritional requirements change and long-term stress can potentially create long-term nutritional deficiencies. A primary mineral used up is magnesium and the primary stress vitamins are folate (not synthetic folic acid) and vitamins B-6, B-12, and C. In addition, it increases cortisol, which distorts homeostasis, all conducive of cancer.

With stress, the simplest answer is to handle or disconnect – from people, places or things that cause you significant problems. A disconnect can be temporary if that solves the problem long enough for you to get well, but necessity may require it to be permanent.

### – Avoid Carcinogens – During Cure Period:

What one needs is clean fresh air and fluoride free water in their environment. One should avoid breathing or physical contact with hydrocarbons like gasoline, kerosene, etc. and other environmental or volatile chemicals. Avoid household chemicals (cleaners, hair sprays, artificially scented perfumes, artificial air fresheners (house or car)). Many stores have strong chemical smells – avoid these stores. Breathing natural fragrances of flowers etc. or even barn smells is not an issue. One should avoid all heavy metals and aluminum. Don’t cook in aluminum pots and pans or consume drinks from aluminum cans, and do not use underarm deodorants that contain aluminum – it **dangerously** impacts magnesium.

Note: our bodies can readily absorb many things from underarms and the bottom of feet. It should also be noted that feet have largest pores on your body. This enables absorption of small molecule liquids such as extra virgin olive oil, coconut oils etc. Suggest regular washing of feet (ensure soap fully removed).

### – Avoid Chemo – Chemo is NOT an Option:

Understand that you can kill, cut, burn every cancer cell in your body, but unless you have corrected the metabolic issues that caused the cancer, you are NOT cured. As a clarification and not an exception to this consideration, one can experience traumatic events that temporarily impact health and immune function long enough for cancer proliferation. In that case, a full restoration of health might ultimately eliminate the cancer naturally. It would be best though to ensure that all metabolic issues are properly addressed.

Acknowledging that just removing or killing detectable cancers is not a cure, Chemo has a number of **highly destructive to fatal** side effects. The various forms of Chemo used are literally poisons. The intent is to poison and kill cancer cells. The problem is that chemo is a general toxin that also severely damages healthy cells. Using the toxic chemicals of Chemo adds a considerable toxic burden to an already over stressed immune system which must remove those toxins. Use of chemo creates a race condition that **attempts** to kill the cancer before it kills the patient and that too often is not the case. There are oncologists that would refuse chemo treatments for themselves or family members because it is so destructive and offers no real benefit.

Current studies and the information presented herein show that the health of mitochondria and the immune system are critical to restoration of health. Use of chemo is absolutely contrary to this. Chemo destroys mitochondrial function, severely impacts immune function and poisons the whole body. Chemo **destroys** the body’s cancer gatekeeper, the immune system and your body’s ability to heal itself.

Further, for a person to live and grow healthy, they must be able to digest food. Chemo kills the good bacteria in the gut and the gut biome cannot be reestablished until ALL of the chemo toxins are removed using a complete detoxification procedure. This fact has killed more cancer patients than anyone is willing to recognize or admit. Once gut bacteria are killed, a weakened body is forced into catabolism where the body digests its own muscle mass to survive. If one does not have much muscle mass, the individual wastes away until death. The doctors will then claim the individual died of cancer, but that is not the case – the patient was killed by a barbaric medical procedure that should be made illegal.

Compare the above noted toxic aspects of Chemo to natural substances such as vitamin D3, vitamin K2, Turmeric, melatonin, etc. that kill cancer cells and also improve health to better fight cancer. The “rational” is simple. Chemo provides major profits to doctors, drug companies and government officials, but natural substances while truly curative do NOT. The CDC, AMA, government regulation, modern medicine and the drug companies fully reject truly curative natural substances for greater profits – while the ignorant public pays, suffers and dies. Note: Drug companies fund medical “education” and doctors are taught that only valid treatment is drug based. Many honest doctors believe this lie. Honest doctors who know the truth risk loosing their license to practice if they fight the system.

### – Detoxification:

At the top of the list of issues regarding aluminum and heavy metal toxicity is potentially, a nutritional magnesium deficiency (see magnesium page # 26). Healthy magnesium levels play a significant roll in preventing and/or reversing aluminum and heavy metal toxicity.

Detoxification can be a complicated and difficult task that requires study. It is far better to go online and search on “detox” at websites such as:

* Dr. Mercola website: mercola.com
* Dr. Axe website: draxe.com
* Dr. Hyman website: drhyman.com
* Dr. Bergman Detox YouTube presentation

The following is only offered to highlight some aspects of the task and is not sufficient to do justice to the subject. Many toxic chemicals such as Chemo, medicines etc. destroy mitochondria and remain in system for years. These must be removed for optimum health.

Chemo is one of the most dangerous and destructive drugs in use today and should be outlawed. Mitochondria are the foundation of human life and energy and Chemo destroys mitochondria in addition to impacting the immune system and should NEVER be used.

Remember, even if every cancerous cell in your body is eliminated, you must still correct the metabolic issues that caused the cancer or you are not cured…. Over the years we accumulate toxins and heavy metals. Significantly these can come from medicines (especially vaccines and chemo). Curing oneself involves removing toxins from your system (detoxification) and optimizing mitochondrial function.

Toxins and heavy metals can store in adipose (fat) tissue. There is good and bad to weight loss when one has cancer. The suggested program of weight loss can release those toxins and heavy metals into the system when body fat is used for fuel. A healthy immune system will remove and excrete these toxins. Nonetheless, toxins released from body fat will pass into the blood and can make you feel sick. This can complicate the curative process for active cancers by adding a toxic burden to immune system. To minimize this effect, it is suggested that one postpone weight loss during the curative period or only use limited intermittent Fasting for weight loss (temporarily avoiding frequent or longer Fasts). This is to slow the release of toxins into the system to give the body more time to flush toxins.

Magnesium helps remove heavy metals, but also consider using time-release Alpha Lipoic Acid – consistently for a minimum of several days or longer without break once started. Niacin (not niacinamide) helps to detoxify and it improves circulation, to fight cancer.

## Prevention/Cure – Suggested Supplements:

In general, take vitamins with meals. For vitamins you have never used before, it is recommended to test them for a negative reaction by starting with low doses for a few days or so or until you feel that you have no negative reaction. Note: nutrient/supplement and/or doses suggested here are based on manufacturer recommendations, estimates of what might be beneficial and/or experimentation – one must take full responsibility for considering or using any of these suggestions. Doses are nominally for adults. The medical profession might disagree with any or all of the suggestions or considerations offered herein.

Some of the supplements actually directly or indirectly kill cancer cells: A lab demonstration was broadcast on TV that showed Vitamin D3 actually killing active breast cancer cells (ABC News 02/22/2010 Good Morning America, Is Vitamin D a Silver Bullet). For vitamin D3 to be effective, vitamin K2 and magnesium are also needed. I understand that turmeric and melatonin also kill cancer and do so without the severely destructive toxic side effects of chemo. And surely other healthy nutrients do also. Digestive aids (i.e., Digest Gold) digest the protective coating tumors form, enabling the immune system T-cells to detect and kill cancer cells. Nonetheless, it is still necessary to correct all of the metabolic issues to optimize health for a successful cure. Health is a process of balance in nutrition, exercise, rest, attitude, lifestyle and genetics to win the daily cancer battle.

1. **Multivitamin** (quality): This might be at the top of the list of supplements as it can provide some of the many basic vitamins and minerals. While multiple vitamins are not perfect they offer important nutrients, trace minerals and herbs.

Some suggested products – but do your own research (follow stated dosage).

* 1. Mercola multiple is the superior choice. Available from Mercola.com
  2. Country Life: Max For Men & Max for Women with Maxi-Sorb.
  3. Mega Foods seem like a potentially good source of vitamins, but does not appear to have therapeutic doses.

1. **Digestive enzymes** taken with meals help digest foods (Suggested dose nominally 1-2 capsules with each meal). Digestive enzymes can also be used as a therapeutic tool to remove extra fat from blood vessels, kill bacteria and viruses, and cancer cells. For example, cancerous tumors tend to form a protein sheath that mimics body proteins thus prevent detection by the immune system. It has been suggested that excess digestive enzymes in the blood will digest the protein sheaf exposing the tumor cells to the immune system, which destroys them.

For this, extra digestive enzymes should be taken on an empty (or nearly empty) stomach (close to bed time?), as the excess passes into the blood stream and is carried throughout the body.

Note: The therapeutic dose of Digest Gold is so effective it also cleans the blood vessels of oils, fats, fatty deposits, scar tissue, etc. reducing the chance of heart attack or stroke (and possibly Alzheimer’s). The elimination of fats and oils can cause dry skin, so one might increase good oil intake, Omega-3, vitamins A, E, D, K2, etc. I suggest taking a probiotic to restore any good bacteria loss.

Dosage: For normal digestion read label. For therapy, 2-3 capsules on empty stomach (once or twice a day). Caution for therapy, taking more than about 3 capsules can remove mucus linings causing minor superficial anal bleeding.

* 1. Digest Gold by Enzymedica is very good
  2. Ω-Zyme Ultra by Garden of Life should also be good

1. **Probiotics** play an important roll in ensuring one has good gut bacteria (biome). One cannot digest food without gut bacteria. They are critical to life. If one has diarrhea this flushes out good bacteria and should be replenished. Many medicines (especially antibiotics, Chemo and other toxins) kill good bacteria, and these need to be replaced. In general, I suggest a supplement with at least 6 probiotic strains with several billion cells. In theory, it would seem the more high-count strains the better, but caution, in practice too much may upset the stomach. With budget in mind, do what works for you. The foods we eat are dramatically different. Dr. Mercola suggests vitamin D3 and fiber to “feed” good gut bacteria.

One friend is using a supplement with 20 strains and that sounds great. Check expiration date versus potency. The more strains and cells per strain, the higher the price. I have used Jarro-Dophilus + FOS by Jarrow, but this only has only 3.4 Billion active cells. Follow dose suggestions for general digestion (see above for therapeutic dose).

One possible review website is called Probioticspillreviews.com

<http://probioticpillreviews.com/lp1a/>

A supposedly “independent” review of probiotics suggests, “thrive Naturals Advanced Probiotic Complex.” I ordered some for testing.

### – Fat Soluble Vitamins A, D3, E, K2

1. **Fat Soluble Vitamins A, D3, E, K2**: These work together and should be taken together along with calcium and magnesium (below). These are **CRITICAL** to optimum cellular function. For vitamin D3 and K2 (MK-7), Dr. Kate Rhéaume-Bleue is the expert (see her book *Vitamin K2 and the Calcium Paradox*). These vitamins are discussed together because their functions are critically interrelated. Vitamin D3 acts much like a hormone in that it regulates the function of genes and is involved in thousands of chemical reactions in the body. Vitamin D3 **requires** magnesium and vitamin K2 to function. Vitamin D3 is crucial for mitochondrial function and thus is an anti-cancer nutrient. Vitamin K2 thus becomes is a critical anti-cancer nutrient because a deficiency has a severe impact on vitamin D3 utilization.

Vitamin D3: (never use synthetic D2 as this increases risks of heart attack and stroke). My preference is to take fish oil D3. Magnesium is needed to convert D3 from the storage state to active state. Vitamin K2 (i.e., minoquinone-7 (MK-7)) is needed to activate Vitamin D3 receptors (VDRs) for cellular uptake.

Vitamin A helps reduce ROS production, and increase ATP and NAD. It is an immune system booster that fights cancer, autoimmune diseases and flu (Dr. Axe). It can also reduce the risk of food allergies causing inflammation (and possibly cancer). Sneezing due to light situations is an indication of low vitamin A.

Vitamin E helps conserve oxygen, protects cellular membranes and more.

Vitamin K2 (i.e., MK-7 or minaquinone-7) supplements come in 90 microgram capsules. According to Dr. Kate Rhéaume-Bleue you can get K2 form fermented foods such as sauerkraut, Kimchi, Natto, cheeses (Gouda, Brie and Edam), etc. She says there is no overdose issue with K2. Note: for leukemia, MK-4 or minaquinone-4 has significant benefit – the fermented foods contain this form of vitamin K2 and it is also available by supplement.

Vitamin K2 also pulls calcium out of joints, soft tissue, and blood vessels (possibly improving blood pressure) and pushes this calcium into teeth and bone where it is needed. This reverses tooth decay and builds up bone mass (reverses osteopenia and osteoporosis). It also helps osteoarthritis by removing excess calcium from joints. If you have tooth decay, osteopenia, osteoporosis or osteoarthritis you are probably vitamin K2 deficient. (Side note: if your mother was vitamin K2 deficient during your pregnancy, your teeth may be crowded.)

**Doses**:

Dr. Mercola recommends about 8,000 IU of vitamin D3 a day along with 800 – 1,000 micrograms (i.e., 0.8-1.0 milligrams) of vitamin K2 (8-10 90 µgm capsules).

I suggest 10 – 30,000 IU’s of Vitamin A daily as a norm. With a cold or flu boost that to 50-60,000 IUs. (Note: zinc in the multiple prevents a toxic buildup of vitamin A in the liver). An overdose symptom is a minor skin rash.

I suggest 400 – 1,200 IU of vitamin E a day.

### – Magnesium

1. **Magnesium:** One of the best sources of data on magnesium is Dr. Carolyn Dean’s book *The Magnesium Miracle*. She says that of all minerals, **magnesium is one of the most CRITICAL** as it is involved in cellular and mitochondrial health, thus effects cancer, other chronic diseases, gaining body weight and **aging**.

Referred to as the Master Mineral, magnesium is involved in hundreds of enzymatic reactions. According to this model, a significant deficiency could directly cause cell conversions to cancer as well as weaken the immune system – a duo that readily produces end-stage cancer. It has been said that cancer is a disease of mineral metabolism. Magnesium gives substance to this statement.

Studies indicate that in modern societies, **most** people are deficient in magnesium. This is significantly a result of low magnesium in soil and food sources as well as modern lifestyle and diet. In addition, **aluminum** toxicity (from underarm deodorants, soda cans cooking pans, etc) **dangerously** compromise magnesium. Phytic acid in grains, pastas, seeds, etc also impacts absorption. Supplementing with magnesium appears necessary, but difficult for numerous reasons.

Dr. Carolyn Dean describes impact of magnesium deficiency and well documents modern society deficiency. There are nearly eight hundred enzymatic actions that require magnesium. Her book points out that six of the eight ATP producing steps in mitochondria depend on having enough magnesium.

Magnesium makes calcium soluble and is key to calcium assimilation and management, cellular and mitochondrial function, healthy heart, brain function and blood pressure. Magnesium is heavily used in sleep (and deficiency can cause leg cramps at night). Night usage causes magnesium to be at its lowest in the morning.

Significantly low magnesium slows mitochondrial production of ATP (for energy) and increases cellular lactic acid. The enzyme that removes excess lactic acid from cells is also magnesium dependent. Low magnesium thus has a double effect that results in cellular lactic acid accumulation causing cancer.

Magnesium, along with Vitamin K2 (i.e., MK-7), MSM, and vitamin D-3, manage calcium. Dr. Dean suggests that Calcium and Magnesium should be taken in a one-to-one ratio. Many Cal-Mag supplements suggest different ratios and use magnesium oxide, which is virtually useless. Note: if you have osteoarthritis (excess calcium in soft tissue and joints), a suggestion is to temporarily stop calcium intake and use quality non-ionic magnesium, MSM and vitamin K2 to remove the excess calcium to correct the problem.

According to Dr. Dean, healthy cells should have 10,000 times more magnesium than calcium. If initially you have excess calcium in the cells, Ionic forms of magnesium can help flush the excess out of the cells. This can result in excess extra-cellular calcium, which requires using a magnesium chelate, citrate, or chloride capsule to remove this (along with vitamin K2 and MSM).

Magnesium is only available in chemical compounds for consumption:

* 1. Magnesium L-Threonate (capsule): This particular magnesium apparently works well on a cellular level and is extremely beneficial to brain and mitochondrial function, and thus would appear critical for prevention and cure of all chronic diseases, especially cancer – as well as anti-aging and weight control.
  2. Magnesium amino acid chelate, citrate, chloride, etc. (capsules): These work well but more for non-cellular application (e.g. moving soft tissue calcium).
  3. Trace Minerals Research: “ConcenTrace Trace Mineral Drops” provides trace minerals and 250 mg dose of ionic magnesium. Their label says, “Ionic sea minerals from the Great Salt Lake in Utah, USA.” This appears to be a good source. Being ionic, it should be 100% absorbable with no bowel effect.
  4. ReMag – (liquid magnesium chloride) 144 mg dose, ionic form 100% absorbency thus no bowel effect. This is excellent, and may be best ionic form.
  5. Eidon Ionic Minerals Magnesium – (liquid magnesium chloride) has a very low 8 mg dose, ionic form 100% absorbency thus generally no laxative effect.

Dr. Mercola suggested the Magnesium L-Threonate form in one YouTube video and research data strongly supports it. With limited Threonate experimentation, I experienced **very** obvious memory and mental clarity benefits that exceed all the rest by far (including the ionic forms). The product label suggests three capsules a day, but based on Dr. Carolyn Dean indicating a general magnesium deficiency in the population I suggest experimenting with up to three times that dose a day especially for cancer, diabetes and other diseases. With these diseases, you might also want to supplement with liquid ionic forms as well (ReMag). Ionic forms appear to work more on a cellular level, so taking both forms should be optimal.

**Magnesium supplementation and ingestion issues:**

Dr. Dean suggests that it might take up to a year to reach optimum cellular magnesium levels even with ionic forms overcoming bowel issues. As stated above, magnesium for consumption only comes in chemical compounds. Absorbency, uptake, utilization and effectiveness of magnesium are dependent on the nature of the compound and these produce different bowel responses (loose stool to diarrhea).

* Dr. Dean (page 458 in her book) cautions people with kidney failure, myasthenia gravis, excessively slow heart rate, and those with bowel obstruction.
* Whole grains (including bread (except sourdough), pastas, oats, rice, etc.) legumes, nuts, oil seeds contain phytic acid (an anti-nutrient). Phytic acid can impact magnesium uptake from all sources.
* Some people who have had a significant long-term deficiency may actually feel worse when they first start taking magnesium. This is not a negative side effect of the magnesium, but a result of the nearly 800 enzymatic actions are beginning to function, including flushing toxins out of the system. This can make you feel worse because you are not taking enough magnesium (see page xlv and Dose in index in her book).
* Some people are very sensitive and get a bowel response with almost any dose of magnesium in capsule form. Apparently ionic forms correct this, as there is a 100% cellular absorbency. One possible method is to apply approximately ¼ teaspoon of ReMag on each foot and underarms. The pores of feet are largest on body so uptake is excellent.
* Liquid ionic forms do not produce a bowel response because of its 100% cellular absorbency until the cells have absorbed what is needed. After that additional ingestion of this form does produce a bowel response.
* It may not be possible to get therapeutic doses without using Liquid ionic forms, but those with a significant amount of magnesium have a strong taste that needs to be masked for consumption.
* Ionic forms apparently are best suited for intra-cellular benefit.
* For many people, most capsule forms allow uptake of several hundred milligrams (mg) of magnesium before producing a laxative effect. Most of these non-ionic capsule forms apparently are not as well absorbed into the cell so have greater non-cellular benefit (and bower effect).
* Magnesium Hydroxide (Milk of Magnesia) is a laxative.
* Magnesium Sulfate (Epson Salt) in a bath helps with magnesium intake.
* Magnesium Oxide: Uptake is 4%. It is not possible to get a therapeutic dose before you get diarrhea, but medical community recommends this.

**Preliminaries** – **Magnesium Supplementation Suggestions:**

It would be helpful to read Dr. Carolyn Dean’s book *The Magnesium Miracle*. She suggests that one needs 600-1200 mg daily. With her suggested 1-to-1 dose, this also means ingesting about 600-1200 mg of calcium daily. The combination is needed for optimum health, energy, stamina and physical performance. Achieving this magnesium dose is not easy and that is possibly one more reason that a magnesium deficiency exists. The following suggestions might be used to help.

My understanding and experimentation suggests that Magnesium works on several levels. It is involved in both intracellular and intercellular activities. It seems that the liquid ionic and the L-Threonate forms tend to be more readily absorbed into cells thus function best within the cell. The amino acid chelate, citrate, chloride, etc., forms having less capacity to be absorbed into cells tends to be better for intercellular function. I suggest taking both forms to meet all needs.

If you are not already taking magnesium, start slowly to test sensitivities. Dr. Dean says that as you increase magnesium intake, you begin to cause hundreds of magnesium dependent enzymes to increase function. This can cause beneficial, but sometimes uncomfortable effects. Give your body time to adjust.

By projection most people in modern society have a calcium excess and magnesium deficiency. To correct, use liquid ionic magnesium. This flushes excess calcium out of cells into blood vessels, joints and soft tissue. To flush this intercellular excess, don’t take any calcium for a couple of days and take magnesium amino acid chelate, citrate capsules to make that calcium soluble. This, along with vitamin K2 (i.e., MK-7) and MSM, helps to move the soluble excess calcium into teeth and bones (or flushes it out of the system).

Other than this initial possible few day transition period, balance magnesium intake with calcium in a 1-to-1 ratio for optimum health. Note: if you have osteoarthritis, it is helpful to continue restricting calcium intake for several weeks or more until that condition is corrected. Then restart calcium 1-to-1.

**Dose Optimization Suggestions**

Direct application of magnesium to skin, with sprays, or with Epsom Salt (magnesium sulfate) baths can reduce laxative effects unless you overdo this method.

Any method to achieve needed magnesium is good. Generally there is no need to rush to achieve optimum magnesium levels. Two suggestions one might try to achieve healthy levels (best to take magnesium with food):

a) This method attempts to directly achieve optimum intake.

* If possible start with a one or two capsules of magnesium amino acid chelate, citrate, chloride, etc., but a low enough dose that you do not get a bowel response. If you are not able to take any non-ionic forms of magnesium (i.e., capsules), skip this step.
* Begin taking liquid ionic magnesium with the minimum suggested dose. Over a period of days, begin to increase your intake of ionic magnesium until you get a bowel response, then skip a day and restart dosing at a slightly lower level. Based on Dr. Dean’s suggested dosing I would not take more than about 1,200 mg a day – unless you want to experiment. Dr. Dean suggests that you will ultimately get a bowel response once you fully meet cellular needs for magnesium. [There is potentially another symptom of overdose that might occur. When your blood has an excess of anything your system does not like, it flushes this excess out in urine. This might cause some thirst or itchy skin (if you are not taking enough water)].

b) This method offers a less directed effort that attempts to more casually work up to higher levels of magnesium.

* If possible start with a one or two capsules of magnesium amino acid chelate, citrate, chloride, etc., but a low enough dose that you do not get a bowel response. If you are not able to take any non-ionic forms of magnesium (i.e., capsules), skip this step.
* Start taking one of the liquid ionic forms of magnesium initially following directions on the container, then increase. My preference would be to use the Trace Minerals Research, because it has more magnesium, but importantly also has numerous other minerals that surely have positive benefit.

**Additional Magnesium Reference:**

WellnessMama – <https://wellnessmama.com/3610/low-magnesium/> Educational and suggests using skin-absorption (especially spray-on) magnesium.

Also see Mg Water – The Magnesium Website (for PMS, Rheumatoid Arthritis, SIDS, Stress, Stuttering, Tinnitus, etc):

<http://www.mgwater.com/liste.shtml#stutter>

1. **Calcium** (see magnesium above and Dr. Kate Rhéaume-Bleue book *Vitamin K2 and the Calcium Paradox*). A one-to-one dose with magnesium makes calcium soluble. Too much calcium dumps unusable calcium into system. Taking vitamin K2 moves soluble calcium out of the joints, soft tissue and blood vessels, and moves it into teeth and bones where it belongs. Can help blood pressure.
2. **Vitamin C**: I suggest taking 1,000 – 3,000 mg a day. Solaray Super Bio C Buffered should minimize potential stomach upset because it is buffered.
3. **Niacin – Vitamin B3** (not niacinamide): My preference is nicotinic acid, but higher doses (i.e., 50 mg) can cause flushing. Niacin helps in a number of areas such as managing cholesterol (possibly by reducing inflammation). It also is converted to NAD, which helps mitochondria. It dilates blood vessels thus improves systemic oxygenation. All anti-cancer and it has life extension properties.
4. **Folate** (not synthetic folic acid) is important in many regards. It is critical to mitochondrial function and is a stress vitamin. The suggested form is 5-MTHF (5-methyltetrahydrofolate) is the natural and biologically active form of folate. It also controls mutations, often an important secondary factor of cancer. In a good multiple there should be enough of this supplement.

NOTE on Genetics: If a person has an MTHFR gene mutation, depending on “expression”, there can be a negative effect from taking folate (see <http://mthfr.net/> for nutritional alternatives if needed).

Dose: Use what is in the Mercola Multiple or equivalent.

1. **Phytochemicals**: Turmeric is 95 percent Curcumin is said to be able to kill cancer stem cells, so it is important in that aspect. Resveratrol, Silymarin and other Phytochemicals also kill cancer cells – far better, safer and cheaper than chemo. Resveratrol also protects mitochondria and improves aerobic capacity. This apparently and reasonably has life extension properties. Dose: follow bottle suggestion.
2. **Berberine**: Initial research data suggests this is a phenomenal tool for diabetics but would be extremely helpful for anyone with weight issues and probably for cancer. The caps are 500 mg and suggested is 1 or 2 separate doses a day with meals. Taking too much at one time and without food can be hard on the stomach.
3. **Melatonin**: Helps mitochondria. With low melatonin levels, the propensity for growth of cancer increases.

The body produces melatonin when one sleeps provided the area is dark. The optic nerve indirectly controls melatonin production. When sleep deprived or is not in a darkened area, melatonin production is reduced. Studies indicate this causes a higher incidence of cancer and one indicates that children that sleep all night with a night-light have a greater incidence of leukemia.

<http://www.bio-medicine.org/medicine-news/Exposure-To-Night-Light-may-Increase-The-Risk-Of-Leukemia-2969-1/>

The implication is that reduced melatonin production is causes cancer. Studies have shown that melatonin controls cancer growth rate. Correlation is too much to ignore. Melatonin appears to be a key factor in the cancer equation and there is suggestion that it might actually kill cancer cells, thus take for prevention and/or cure.

For healthy people younger than 35 – 50 it is not optimum to use this supplement except to handle jet lag or as a cancer remedy (during the cure period) as this reduces body production. Supplementation with age a plus, but not in large doses as this reduces daytime serotonin production (needed for alertness). Melatonin is often used to help one sleep. Suggested dose for older adults might be 1 mg in 50’s to more with age as needed before bedtime. Experiment to determine best for you.

1. **CoQ10 (Ubiquinol)**: Supports mitochondrial function
2. **Alpha Lipoic Acid**: Jayson Hunter R&D Director for Jaylab Pro Nutrition says that this Krebs Cycle cofactor has been proven to help Mitochondrial function. I suggest a time-release version, taking suggested dose regularly.
3. **Glutathione** (Master Antioxidant): Dr. Mark Hyman YouTube says Glutathione deficiency affects so many diseases (e.g., cancer, chronic fatigue syndrome, heart disease, autoimmune diseases, diabetes, autism, Alzheimer’s and Parkinson’s). His research indicates that most seriously ill patients are glutathione deficient.

Dr. Hyman says that glutathione cannot be taken as a supplement because digestive processes destroy it. Since your body makes its own glutathione, he suggests taking the following precursor supplements (follow doses on containers):

* NAC (n-acetyl-cysteine)
* Alpha lipoic acid
* Milk thistle (silymarin)
* Vitamins B-6, B-12 and folate
* Vitamins C and E (mixed tocopherols)
* Selenium

1. **MSM** (Methylsulfonylmethane) is a biological form of sulfur. Needed for healing and calcium management. Suggest Jarrow Brand 1000 Mg capsules. Take 1-2 daily. Overdose: excess sulfur converts to sulfuric acid that can dissolve mucus linings and cause minor anal bleeding. Stop for a day and restart with a lower dose.
2. **Collagen**: Dr. Axe points out that our diets usually lack this protein as most protein sources concentrate on the “meat” and not on collagen content. It is **important** for healthy youthful skin and organs. Available from bone broth. For supplements: Dr. Axe (draxe.com), Costco offers Youtheory Collagen, as does Dr. Mercola.com, health food stores and online.
3. **Psyllium**: Since fiber content of carbohydrates reduces the effect of sugar or insulin response to the sugar in carbohydrates, it might be beneficial to also supplement with additional fiber – suggest organic psyllium husks in a drink.
4. **Thyroid Supplement** if thyroid is low to boost mitochondrial performance
5. **Electrolytes:** Trace Minerals Research: “ConcenTrace Trace Mineral Drops” provides trace minerals and 250 mg of ionic magnesium. Eidon Ionic Minerals low dose liquid electrolyte. Follow dose suggestions.

# Dr. Mercola – MMT Diet:

Dr. Mercola suggests what he calls *Mitochondrial Metabolic Therapy* (MMT). MMT is a dietary approach that helps to restore mitochondrial health. With “modern” diets and living habits, mitochondria are damaged, the number of functioning mitochondria (and the energy they produce) diminish over the years. With fewer mitochondria there is less capacity to produce the energy fuels needed. The good news is that Dr. Shallenberger says our mitochondrial health can significantly improve within three months. Caution, the reverse is also true – if you don’t maintain your cellular health, it only takes about three months to degrade your mitochondria. The number and health of functioning mitochondria is critically linked to cancer and other chronic diseases.

Both Drs. Mercola and Fung suggest a diet of low (net) carbs, moderate protein and high fat. Dr. Mercola says to add new and repair-replace damaged mitochondria, his MMT suggests switching to a high (healthy) fat diet where 60% of the calories come from healthy fats (e.g., coconut, extra virgin olive (non Italian) and avocado oils, etc.), 30% of calories from protein and the rest from HIGH-FIBER carbohydrates. Add to this, Dr. Fung suggests intermittent water Fasting. After your body adjusts to metabolizing fat, it becomes easy to water-fast for 12-14 hours every day or so.  Fasts of several days are acceptable also. Fasting burns body fat, reestablishes body-weight set point, improves health through autophagy and mitophagy and produces Human Growth Hormone (HGH) to reverse body clock.

Since most people are on an “Eat three or more meals a day,” mode most of their lives, there is usually some adjustment to be able to fast. This can take a week or so with some hunger and discomfort, but once you retrain your body to metabolize body fat, the hunger goes away and you comfortably burn body fat (i.e., you loose weight).

# Dr. Shallenberger – Oxidative therapy:

Dr. Shallenberger uses oxidative therapy and finds that a cancer site into which he is able to inject with ozone (O3) dies immediately. The general research on oxidative therapy includes hydrogen peroxide (H2O2). Dr. Shallenberger suggests that internally, hydrogen and other peroxides in the blood would boost the NAD to NADH ratio and thus be highly beneficial for cancer situations. To use this approach, the doctor would remove some blood, mix it with the peroxide and re-inject the blood.

**Other therapies and Curative-Preventative Tools:**

There are numerous natural substances such as photochemicals that are known to kill cancer cells and cancer stem cells. The Internet provides numerous suggestions such as:

Dr. David Jockers (DrJockers.com) “Top 12 Cancer Stem Cell Killing Nutrients”

<https://drjockers.com/cancer-stem-cell-killing-nutrients/>

One key to evaluating curative-preventative techniques and supplements is to remember that solutions must be reasonable and solve underlying metabolic issues that cause cancer and/or boost the immune system.

There is so much information currently available that it is almost impossible to assess all that is available. The availability of this information further points out the gross dishonesty in Government, drug companies, and orthodox medicine for those organizations to reject or do not consider nutritional solutions in addressing illness and disease. This is not logical.

# Summary:

Dr. Shallenberger points it out best in his YouTube slide:

“Amazing Observation”

No patient with optimum OU ever got cancer (OU = Oxygen Utilization)

Patients with optimum OU do not get sick with anything….

Yet all his cancer patients had low OU

The anti-cancer goal then is to shoot for optimum OU. The diet, supplements, exercise, avoidances, etc. are oriented to this goal. The cancer cure does this but adds or emphasizes extra steps that also actually fight existing cancer. Optimum OU requires body aeration and healthy mitochondria.

Do not get overly complex.

* Move toward a Ketogenic diet. Go organic as much as possible. Healthy-fats encourage eating less overall to add health and robust years to life – feeling better. Fruits should be whole – juice with fiber. Move toward intermittent fasting if possible. It’s better when you achieve and easily maintain a body weight you want.
* Take a good multiple as well as vitamins A, D, E, and K2 (i.e. MK-7) and magnesium. The other suggestions of L-Carnitine, Chromium polynicotinate and a few more can be helpful. Use judgment and strive to get most nutrients from good food.
* Splurge occasionally; enjoy life – not an issue. Occasional pie, ice cream, alcohol, etc. adds enjoyment (a survival plus). It is the continuous consumption of high net-carb foods (sugars, pure juices, etc.) that encourages disease.
* Get sunshine, go barefoot (sometimes), exercise appropriately and sleep well
* Avoid negative stress, toxins and detrimental radiations whenever possible and protect the children from the same. Stevia is natural, artificial sweeteners are toxins.

Why is there an upswing in the number of cancer cases? Possibly:

* In modern society, stress is a major cause of cancer for many
* As a culture, we are less active, thus do not oxygenate our bodies well
* Too much stress, too little sleep
* We don’t hydrate our bodies or maintain our electrolyte levels properly
* We eat excessive amounts of sugar and low net-carb (i.e., low fiber) foods
* We are deficient in Fat-Soluble Vitamins A, D3, E, K2, which work together and we don’t proportion or ingest these together.
* Our culture has gotten away from eating fermented foods and the effect of reduced vitamin K2 is devastating. Vitamin K2 limits benefits of Vitamin D3 (encouraging/causing cancer), causes tooth decay, weakens bones, causes osteoarthritis, osteopenia, and osteoporosis, etc.
* Our culture is magnesium deficient and this alone can cause many cancers. We also take too much calcium for the magnesium we do ingest. Further, calcium and magnesium work with the fat-soluble vitamins should be taken with them.

As a guess, top of the list of nutrients are magnesium, vitamin K2 and D3 deficiencies.

Appendix 1

# Optimal Weight Loss – Issues and Methods

Two major factors of weight gain are Mitochondrial Performance and Insulin:

## Mitochondrial Performance: Major Potential Impact on Body Weight

The main text discusses mitochondrial health and performance in detail as well as the effects of oxygenation, nutrition and other factors on that performance. The main text is oriented toward what causes cancer, but there is also significant potential for mitochondrial health and performance to have a major impact on weight gain. This is because mitochondrial performance determines the body’s capacity to metabolize food glucose.

If mitochondrial performance is lacking for whatever reason, cells cannot metabolize ingested sugars (glucose) as needed. This causes a glucose buildup in the cell that increases “insulin resistance.” This in turn, causes more ingested glucose to move into the liver and fat cells to cause weight gain. Optimally functioning mitochondria help keep body weight in line and poorly functioning mitochondria can cause weight gain.

Understanding the above, there are a number of factors associated with weight gain.

* Diet – quality and nature of food consumed
* Excesses/over consumption
* Nutritional deficiencies (especially magnesium and vitamin K2 (i.e., MK-7))
* Toxins in food, water and environment

## Insulin: Control and Influence Upon Body Weight

This appendix is only a highlight of Drs. Fung, Mercola, and Berg’s work on weight loss. For best understanding of this subject, it is recommended to go to Dr. Fung’s many YouTube presentations and his book *The Obesity Code*. One of his good starter YouTube presentations is “*Therapeutic Fasting – Solving the Two Compartment Problem*.” See Dr. Mercola’s extensive YouTube library on this and related subjects. See also Dr. Eric Berg’s YouTube presentations on diabetes and his vinegar drink. These YouTube presentations provide ALL the information needed for most people to finally and successfully lose weight. These doctors have provided the YouTube information without charge. To expand your understanding of weight loss concepts, I also recommend their books.

## Weight Gain – Weight Loss Detail

Dr. Jason Fung is the weight gain / weight loss expert. In his many years of medical practice treating diabetes (Appendix II) in its various stages of progression, he discovered the foundation cause of Type II diabetes and weight gain. He says that for 70 years we have been given bad information on the cause of weight gain and how to correct it. He explains how to readily loose weight and why diets fail.

No diet program compares to his simple and exceptional weight loss method that also adjusts “body weight set-point.” His method can improve health, changing your life in a very positive way. On his website, Dr. Mercola interviewed Dr. Fung and they have many common and highly useful ideas. These can be seen in Dr. Mercola’s book *Fat for Fuel* and in his many educational YouTube videos. The YouTube’s also point out key factors of chronic disease. These doctors are dedicated to making our lives better by providing this phenomenal information (for free). I can only highlight some of what they offer and add data from my experience and interpretation.

Dr. Fung discovered and clearly stated that the root cause of weight gain is insulin. When we eat, the food is significantly converted into blood glucose (i.e., sugar). This causes the pancreas to release insulin. Insulin is a glucose storage hormone. Four functions of insulin are noted here:

* Stores (pushes) blood glucose into cells
* Stores excess glucose as glycogen (storable chains of glucose) into the liver as a short-term energy reserve – up to about 10-12 hours of reserve
* Stores excess glucose as body fat for a long-term energy reserve
* Stops fat cells from releasing body fat that otherwise could and would be burned as fuel. This preserves body fat as an energy store for future use.

We get fat because of the effects of insulin, with high insulin levels over time causing obesity. Getting fat comes down to how well we metabolize sugars, the quality, quantity and relative sugar content of the food we eat, the insulin response to that food and **WHEN** we eat. The “when” we eat significantly affects insulin levels and as stated, the effects of insulin causes us to get fat. All of this is normal and part of the survival mechanisms our bodies have to create and maintain energy stores.

**It is what and when we eat combined with the   
capacity to digest and burn   
that is the key to weight gain and weight loss**.

As indicated above, the capacity to burn (metabolize) glucose is based on oxygen, nutrition and the performance of mitochondria. With sufficient oxygen, fully functioning mitochondria can metabolize all the glucose within the cell. This prevents disease and helps to maintain body weight. Factors that influence oxygenation and mitochondrial performance are discussed in detail in the main text. These same factors are also important to loosing weight. Notably deficiencies of magnesium, vitamin K2 (menoquinone-7 (MK-7)) and vitamin D3 can severely impact glucose metabolism. Anything that compromises glucose metabolism could cause weight gain. Metabolic capacity is thus a major underlying factor that potentially could affect all effort and methods to loose weight.

According to Dr. Fung, methods that suggest, “eating less and exercising more” to loose weight tend to fail because of the body’s survival mechanisms. These mechanisms preserve body fat as a long-term emergency energy store. To protect and maintain this emergency store, the survival mechanism does not allow stored body-fat to be used as fuel when there is food for fuel. When food is eaten, especially carbohydrates, this becomes glucose. Glucose in the blood triggers insulin production and insulin prevents fat cells from releasing body fat to be used as fuel. Insulin prevents weight loss AND increases storage of fat.

More than a nominal amount of insulin in the blood eliminates the option to eat less and exercise more to “burn off the body fat.” Whether it is less or not, eating generally causes the pancreas to secrete insulin – and this blocks weight loss. There will typically be some insulin in the blood when food is continuously eaten, even in smaller amounts. In addition, if you eat less overall, the body also senses the reduced calorie intake over time and goes into “emergency mode” to survive. Emergency mode **reduces** metabolism to a level less than the caloric intake and stores the resulting calorie excess as body fat. Reduced food intake causes both hunger and weight gain. It’s a stressful no-win situation, all keyed to insulin. Fasting corrects these issues and is a natural solution to this problem.

Apart from basic body weight (muscle mass, bone, blood, tissue, etc.), the mechanism for weight gain is associated with how much excess food calories are stored as fat in fat cells. Each fat cell has a single droplet of stored fat (triglycerides). The greater the excess, the more fat stored, the larger the droplet and thus the more weight and bulge of that cell. With millions of fat cells, the bulge and weight can be significant.

Weight and bulge decrease when fat previously stored in fat cells is released and metabolized for fuel. Metabolized fat is converted to energy, carbon dioxide, and body wastes, which are excreted – weight and bulge disappear.

During Fasting, you do not eat and this reduces food sugars (glucose) in the blood. As blood glucose levels decline, insulin levels decline also. High insulin prevents fat release from fat cells and low insulin enables the release. As insulin in the blood declines, fat cells begin releasing stored body fat to be metabolized. As long as you Fast, insulin levels remain low enough for the fat cells to continue releasing body fat that is used to fuel the body’s energy needs. (Appendix II discusses how diabetes influences this process.)

It should be noted that Fasting also does not turn on hunger or emergency survival mode for several very simple reasons. When you first stop eating, glucose (stored in the liver as glycogen) is released into the blood to provide energy. This glucose keeps insulin level high (blocking release of body fat). This short-term glucose energy store must be used up before weight loss can occur.

If the liver only has a small supply of stored glycogen it doesn’t take long to use this up. If the liver is full of glycogen, it could take as much as 10-12 hours to deplete this reserve. Once this liver reserve is gone, it can no longer release glucose into the blood. At that point blood glucose and insulin begin to drop. Once the insulin level drops to a low enough point, fat cells begin releasing body fat to be used for fuel.

Having no glucose to burn, the body metabolizes the only fuel available, which is the body fat released by the fat cells. That’s when you start to loose weight. **The healthiest and most effective method for loosing weight has less to do with minimizing calories; it has everything to do with where those calories come from – and insulin controls the source.** When one uses Fasting for health and weight loss, you change your fuel source from food sugars to body fat and you can do that as long as you have fat to burn.

There is no reduction in calories to burn; there is only a **change in the source of its calories**. In this is some of the magic of Fasting. Because there is NO reduction in calories, there is no hunger and NO starvation mode….

Note: If a person has never fasted or it has been a while, some adaptation is often needed. Initially we get “hungry” out of habit and often from a sense of emptiness in the stomach, but these “hunger” symptoms go away once adapted. For some this might be a day or two. For others, a longer period of adjustment may be needed.

Eating a ketogenic diet and possibly taking L-Carnitine may help as these encourage fat metabolism. Dr. Berg’s vinegar-lemon drink (add psyllium) is very helpful in satisfying hunger and increasing water intake.

When a person has been Fasting regularly (as historically everyone did), there is no hunger and the transition to fat burning mode is easy. If you are Fasting regularly, there is a tendency to eat less so the sugar storage in the liver is less and the transition time is short. The body can then more quickly switch its fuel source to body fat. With Fasting, it is easy to not eat. You are not hungry and you are loosing weight by burning body-fat for energy.

Note/Caution for Diabetics: To consider Fasting, you (or your knowledgeable healthcare professional) must make a decision. I would first view Dr. Fung’s YouTube presentations and read his book. You might then consider using the following as a guide:

If you are able to eat fatty foods and use the ketogenic diet, then you should be able to Fast to loose weight (and cure Type II diabetes). If so, lower insulin levels should not be an issue as your body should switch to burning body fat for energy. If, though, you cannot digest fats or cannot do the ketogenic diet, then Fasting is **NOT** for you (unless you correct associated issues). The reason is simple, if you cannot burn fats, you MUST have sugar to survive and not eating is NOT an option.

Dr. Berg in his YouTube, “What I Would Eat if I had Diabetes” points out that carbohydrates (especially low fiber, high sugar) produce the highest insulin response. With moderate protein consumption there is a moderate to low insulin response whereas high protein consumption the response is much higher. Food fats produce little or no insulin response – a significant motivation for using the ketogenic diet. Fasting, as Dr. Fung tells it, has a **ZERO** insulin response, thus offers the greatest benefit for weight loss.

Dr. Berg points out that both vinegar and lemon juice, reduce insulin response to help with weight loss. A combination of berberine, vinegar, and lemon juice (I add ReMag and psyllium) along with a ketogenic diet should be a very good for weight loss, but all this along with Dr. Fung’s Fasting would be a most healthy and effective combination.

See Dr. Berg YouTube for full detail on his vinegar drink: about 12 oz. of cold water, a few teaspoons of apple cider vinegar (suggest organic Bragg Vinegar), a few teaspoons of lemon juice and pure organic cranberry juice (no sugar) and Stevia for a sweetener. He says that if you need the drink, you will like it – so true.

For some, adapting to Fasting is more difficult. After their sugar reserve in the liver is used up, their insulin level drops and they can get headaches, nausea, extreme hunger, etc. To handle this, try ignoring the discomfort for a little while, and then eat only high-fat ketogenic meals to satisfy the hunger and remove the discomfort. Dr. Berg’s vinegar drink may help. Some people have difficulty adapting because of the modern life style habit of eating 3+ meals a day and snacks. Their bodies are conditioned to a continuous influx of sugar and high insulin levels and even a short-term hunger is a challenge. If one really wants the exceptional benefits of Fasting, then keep working at it until possibly it becomes easier.

It is best to see Drs. Fung, Mercola and Berg’s YouTube presentations. These doctors discovered the problem and presented the solution for the entire world to benefit. With the information provided, most people have a choice that enables them to successfully work at achieving a more youthful and healthy body.

Dr. Fung points out that with Fasting (especially intermittent Fasting (which Dr. Mercola supports)) there are many benefits:

* Body-weight set point adjusts down to a new healthier norm.
* With Fasting (once adapted), there is little or no hunger, just healthy weight loss.
* Body goes into repair mode; protecting DNA and fixing damaged mitochondria, reducing the chances of getting cancer (and other diseases).
* Body secretes Human Growth Hormone (HGH) reversing body clock and aging.
* In “fat burning mode” there is a lot of energy reserve, especially for overweight people (i.e., most of us).

Dr. Fung’s book *The Obesity Code* and Dr. Mercola’s book *Fat for Fuel* provide more of this life changing data. Not everyone can or should do Fasting. If you are overweight, definitely consider it. The human race has been Fasting since the beginning of time and many religions recommend it. Fasting historically has been the norm, but poor modern diet habits have dropped this.

Intermittent Fasting as suggested by these doctors is easiest and for most, possibly the simplest and best method. If you are slender, frail, have some condition, etc., then Fasting is not for you. Part of Drs. Fung and Mercola’s approach is to work toward Fasting by eating a ketogenic diet (described in main document, and in Dr. Mercola’s *Fat for Fuel* book).

The ketogenic diet appears to be one that encourages health for most people. If you have a special situation or concern, consult a doctor or nutritionist. Be sure who you consult is in concert with these concepts. Regrettably most doctors have NO nutritional training.

With Intermittent Fasting, most people would loose a half to three quarters of a pound a day. The approach requires that you do not eat for about 12-14 hours. If part of that time is sleeping, that makes it easier.

Some hints:

* Since the fiber content of carbohydrates reduces the effect of sugar or insulin response to the sugar in carbohydrates, it might be beneficial to also supplement with additional fiber – possibly organic psyllium husks in a drink.
* To maintain weight loss mode, don’t nibble or snack. Even a small snack will cause the pancreas to inject insulin stopping weight loss until the small amount of sugar is burned off. Use Dr. Berg’s magic vinegar drink often – it helps.
* As the days go by, daily not eating some meals causes the stomach to shrink. This helps to reduce hunger and increase weight loss. As you eat less, less sugar is stored in the liver enabling weight loss to begin with fewer hours of Fasting.
* If you eat so that you never fill your liver with sugar, as a guess, there might never be an excess to store as body fat – preventing weight gain.
* After following a Fasting regime a while, if you are inclined, it becomes very easy to actually add a Fasting day or two for added weight loss.
* I can now splurge occasionally, and then easily bring my weight back in line. This means that this weight loss approach is flexible and easy to adjust to social activities. If you have friends or family function eat, party and enjoy. Its easy as long as you don’t stray long term from the ketogenic diet.
* I began to realize that with the data provided (for free) by these phenomenal doctors, almost anyone can loose weight, and do so fairly easily. This as said before adjusts the body-weight set-point. This eliminates the continuous, loosing battle for weight loss. Body weight is now a choice for almost anyone who has the motivation to make the effort to maintain body health and weight. It does require effort and motivation, but the benefits should be worth the effort to most people.

# Summary

Drs. Fung, Mercola and Berg have corrected 70 years of misinformation on weight loss and have provided the correct information needed for most anyone to successfully achieve real and permanent weight loss. And, they have made this information fully available without cost in their YouTube presentations and on their websites. They have also written highly informative books that add considerable value to their presentations.

In my opinion, the world owes these doctors for their highly beneficial revelations.

Appendix 2

# Prevention/Cure – Diabetes

**Type I, I-5 and Type II**

**Caution, see document Caveats –** This is A NEW Look at these Diseases – The medical community surely will reject this view.

It is suggested to read the main text and Appendix 1 to better understand this Appendix.

Note: **Type I diabetics are NOT immune to Type II diabetes** or becoming overweight and need to understand what causes both. Type I diabetes is a condition whereby the body does not produce its own insulin, so insulin must be injected. The problem is that Type I diabetics can induce full-on Type II diabetic conditions by poor diet, lack of exercise, etc. and injecting **too much** insulin over time.

Type I-5 diabetes: This is a Type I diabetic condition that occurs later in life. As a result of my earlier cancer research, I predicted the existence of this disease before it became a recognized disease. It is my consideration that this form of diabetes is an autoimmune disease induced by some combination of the factors discussed in the main document. Also see comments in the “experimental suggestion” below regarding autoimmune diseases.

Type II diabetes is a condition where poor diet, lack of exercise, etc. produce “pre-diabetes” and insulin (Metformin, etc.) is used to “correct” this metabolically induced high blood sugar condition. The inappropriate use of medications to lower blood sugar over time **causes** full-on Type II diabetic conditions.

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## Type II Diabetes:

Dictionary.com Definition of Type II Diabetes: “A disease in which the body’s ability to produce or respond to the hormone insulin is impaired, resulting in abnormal metabolism of carbohydrates and elevated levels of glucose in the blood and urine.”

It is my understanding that Dr. Fung in his YouTube presentations says the current standard medical treatment for Type II diabetes is wrong. Dr. Berg in his YouTube, “What I Would Eat if I had Diabetes” states specifically that current medical advice is bad for anyone with diabetes. Current medical “treatment” only reduces excess sugar in the blood and urine, but these are only symptoms of a more severe problem. The real problem is that cells cannot metabolize glucose well enough to maintain healthy sugar levels within the cell. Pre-diabetes and diabetes are varying stages of the condition of excess sugar in cells – not high blood sugar. The current medical practice of using insulin (Metformin, etc.) to reduce blood sugar ignores the real problem. Also, pushing sugar into cells that are already over burdened with sugar damages those cells. This medical practice in fact actually ***CAUSES*** the devastating medical conditions known as Type II diabetes.

The excess sugar in the blood and cells is a result of numerous factors inducing oxygenation-mitochondrial dysfunction. This dysfunction reduces cellular metabolic performance so that cells cannot metabolize sugar fast enough to prevent a sugar buildup.

The sugar buildup in the cells creates a sugar gradient from a concentration differential between the blood and the cells. To overcome this sugar gradient requires more insulin. In addition, if the person is magnesium deficient, insulin is less efficient thus even more insulin is required. All factors in combination, referred to as “insulin resistance,” create a greater insulin requirement. It is my consideration that a measure of “insulin resistance” is primarily or significantly an indication of excess sugar within the cells.

Further, it is my consideration that the whole medical concept of Type II diabetes is wrong. Dr. Berg in his YouTube also specifically states that, “the American Diabetes Association is actually creating diabetes.” He says that the doctors have been “brain washed” into believing that what they are doing is “sane.” He is absolutely correct. Type II Diabetes is a created disease that has nothing to do with impaired insulin performance. Type II Diabetes and the associated devastating medical conditions, as these are currently known and treated, are iatrogenic diseases. These diseases would not exist except for the wrong and destructive medicinal application of insulin (Metformin, etc.). The medical community is “treating” the symptom of high blood sugar and completely ignoring underlying nutritional-oxygenation-mitochondrial dysfunction that compromises sugar metabolism.

The causal factors for the dysfunction are discussed at length in the main text and in Appendix 1. The cure for this condition is very much the same as the cure for cancer, but with an added focus on a careful and paced reduction of the excess sugar in the cells – undoing the destructive effects of the medicinal use of insulin, Metformin, etc.

## Steps to Cure Underlying Metabolic Issues for Type II “Diabetes”

The solution is to correct the nutritional-oxygenation-mitochondrial problems using methods described in the main text and Appendix 1. It is also necessary to exercise, reduce sugar intake, increase metabolic activity, and carefully flush excess sugar out of the cells.

For most people there appears to be fairly straightforward methods to correct underlying metabolic issues, especially if action is taken early. The road that led to Type II diabetes started with a reduction in mitochondrial performance. Poor oxygenation, diet, and sleep as well as long-term nutrient deficiencies, lack of exercise, and environmental factors that together cause reduced mitochondrial performance.

Corrective Steps:

* Generally follow described steps in main text and Appendix 1 for curing cancer
  + Ketogenic diet and supplements (especially magnesium), etc.
  + Minimize any sugar sources as much as possible
  + Initially Fasting may not be possible as insulin levels may be too high
* Accounting for disease damage to organs, slowly begin reductions in prescribed insulin, Metformin etc.
* Use Dr. Berg’s vinegar drink to minimize effects of insulin and to flush sugars
* Use mineral water to flush out excess blood sugars
* Flushing Blood and Cellular Sugar – Monitoring blood sugar closely
  + With high blood sugar, flush with drinks
  + Experiment with berberine in lieu of using insulin
  + When blood sugar is low, reduce insulin, this causes cellular sugars to backflow increasing blood sugar – follow with water flushes
  + Repeat above steps until diabetes and “pre-diabetes are completely gone

Sugar Flushing: The body has a mechanism whereby an excess of anything in the blood is flushed out by pulling water from body reserves and urinating the excess. It is important to drink mineral water to ensure one does not flush out minerals needed for good health. Dr. Berg has a great YouTube presentation on an apple cider vinegar drink he suggests which helps immensely. These actions are to cure Type II diabetes.

Since the fiber content of carbohydrates reduces the effect of sugar or insulin response to the sugar in carbohydrates, it might be beneficial to also supplement with additional fiber, possibly organic psyllium husks in a drink.

In taking this approach, a person also reduces the probabilities of getting other chronic diseases like Alzheimer’s, dementia, chronic fatigue etc.

When one is diabetic or pre-diabetic, there is excess sugar in the cells that needs to be flushed out. This can take weeks. The following steps are suggested:

See also the Dr. Berg YouTube on diet for diabetics

<https://youtu.be/NQXGXfpV9d0>

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Type I and I-5 Diabetes:

Type I and I-5 diabetics have their basic condition and other problems:

1. Basic condition: Their bodies do not produce enough insulin and it must be injected

And by poor diet, lack of exercise, etc. and by injecting more insulin than is needed they can induce one or more of the following conditions:

1. They can exacerbate numerous other chronic diseases (see main text)
2. They can induce an overweight condition (see Appendix 1)
3. They can induce all of the ravages of Type II diabetes

Type I and I-5 diabetics must be aware of all of the various conditions discussed in this paper as they more directly control the food they eat and the amount of insulin used than others. They must fully understand the ramifications and impact of just injecting insulin to control blood sugar. Just controlling blood sugar, is only one of the issues that must be considered. The problems are far more complicated than the medical profession understands or the drug industry has described or suggested to you. If you learn and understand the information presented in this paper, you can be much more in control of your health.

Beyond the above, the following is offered as an untested experimental possibility.

**Experimental Suggestions:**

## Experimental Suggestions for Possible Type I Diabetes Cures:

Suggestion 1: For Type I diabetes, there is a possibility that for some, the condition is due to or affected by a severe magnesium deficiency. If so, see Magnesium (page # 26).

Suggestion 2: This is a purely hypothetical approach that has not been tested – Caution:

Dr. Caroline Dean in her book *The Magnesium Miracle* pages 356-7 suggests that autoimmune diseases are not an issue of the body attacking itself. She suggests it is a problem of cells being modified by toxins and/or poor nutrient levels to the point that the immune system identifies these cells as “not being self.” In such a case, the immune system is correctly eliminating defective cells – albeit cells that are (or were) critical to normal function. I have heard this in at least one other reference. In addition, for years, I have considered that Type I diabetes is another manifestation of a cancer or cancer-like condition. To me, it is very reasonable that toxins might poison cells, even specific classes or types of cells, such as beta cells, based on some affinity or mechanism, and thus cause the immune system to destroy the “defective” or “no longer self” class of cells.

With this in mind, possibly with many, most or all autoimmune diseases, one might consider the following as a possible cure – understanding that these steps are specifically oriented to correcting Type I and I-5 Diabetes:

These steps technically have some risk, so anyone not wishing to be experimental or willing to be personally responsible for outcomes, should probably not follow this suggestion. Refer to the main document for details on diet, Fasting, supplements, etc.

The experimental steps:

Before starting, do an extensive systemic detox (as discussed in main document) to minimize possible sources of toxic cellular distortion.

* Begin the procedure by slightly reducing injected insulin. It is my opinion (and guess), that it is better to use slightly less insulin than more.
* Continuously monitor blood sugar to determine results of any action.
* Use a ketogenic diet and do intermittent Fasting if possible
* Use a combination of berberine, vinegar, and lemon juice to reduce insulin response
* Follow main document supplement suggestions, especially:
  + Take a good multiple
  + Optimize vitamins A, D, E, K2 and minerals (especially magnesium). Note, eat fermented foods to get the full spectrum of the vitamin K2 menaquinones.
* For Type I diabetics, take desiccated raw pancreas capsules to possibly “salt” or rebuild beta cells. (This contains some insulin that can confuse monitoring.)
* Repeat these steps, only reducing insulin if blood sugar numbers improve.

Note: There is some possibility that if an improvement is seen, it might also plateau. This may be a limit on improvement, or just a temporary lack of progression.

Caution: if blood sugar begins to increase unreasonably, then something is not right. Look to determine what might be wrong, or discontinue procedure.

This experimental approach might take months to work, if it works at all.

The above is only a guess but might be worth a try.

# Summary

“Type II Diabetes” (and its devastating side effects) is a disease created by the medical profession, which incorrectly and destructively treats only the symptom of high blood sugar, but not the underlying issues that cause the high blood sugar.

Using insulin, Metformin and other drugs to push sugar into cells that already have problems metabolizing sugar is devastating to cellular health and conducive to severe maladies.

Discussions on Type I and I-5 diabetes are to offer other possibilities.

See Dr. Fung YouTube “How to Reverse Type II Diabetes” naturally in days.

<https://youtu.be/Ekqq6DE8vGE>

References (Partial List):

Also, see websites for all references

**Books Primarily Referenced in this Paper**

Fat for Fuel Dr. Joseph Mercola

The Obesity Code Dr. Jason Fung

Vitamin K2 and the CALCIUM PARADOX Dr. Kate Rhéaume-Bleue

The Magnesium Miracle Dr. Carolyn Dean

**YouTube Presentations Primarily Referenced in this Paper**

TTAC (The Truth About Cancer) – an organization that is offers some good alternative data on cancer. One caution is that there is so much data and one needs to filter this with knowledge and judgment.

<https://youtu.be/Ts_5AUVxxwM>

Mercola Cancer *Mitochondrial Metabolic Therapy* (MMT) diet

<https://youtu.be/Ts_5AUVxxwM?list=RDTs_5AUVxxwM>

Dr. Frank Shallenberger, MD 1:06:19

Oxygen, Mitochondria, ATP and the Origins of Cancer

<https://youtu.be/85EPbiABqJs?list=RDTs_5AUVxxwM>

YouTube Time: 14:28

“…Insulin resistance is absolutely tied to the geneses of cancer”

YouTube Time: 26:40

Pyruvate dehydrogenase (PDU) function reduced in 24% healthy and 100% reduced in every cancer patient. Alpha Lipoic acid dependent function.

YouTube Time: 27:22 Slide “Amazing Observation”

No patient with optimum OU ever got cancer

Patients with optimum OU do not get sick with anything….

Yet all his cancer patients had low OU

YouTube Time: 41:38

Decreased Oxygen Utilization (OU) is prime cause of cancer

Hypoxia is the trigger.

Decreased OU:

* Stress
* Bad Diet
* Lack of Fitness
* Atherosclerosis
* Ischemia (inadequate blood supply)
* Poor endothelia
* Heavy metal toxicity
* Nutrient deficiency

Dr. Frank Shallenberger, MD 1:04:56

Cancer case Studies using Ozone and IVC Protocol

(IVC = Intervenes Vitamin C)

<https://youtu.be/x5wOX4NSb90>

Dr. Mercola Interview Martin Pall – EMF damage to Mitochondria

<https://youtu.be/ZAqmT9KJBC8>

Dr. Thomas Seyfried PhD - Mercola Interview: Cancer is a metabolic disease   
not a Genetic disease of mutation

<https://youtu.be/yGnJQ2kGB-g>

Fasting Autophagy and Cancer

<https://youtu.be/eoDDZnfYonw>

* Cachexia
* Glucose, glutamine and some amino acids are cancer fuels

Cancer: A Metabolic Disease

<https://youtu.be/eoDDZnfYonw>

Dr. David Perlmutter – Ketogenic Diet, Carbs & Gut Bacteria

<https://youtu.be/2hR9sD9eX-A>

Author of: Grain Brain book

Grain Brain Full Life Plan

Excess Glucose is a brain toxin causes dementia, Alzheimer’s

YouTube Time: 32:26

BDNF (a protein) Brain Derived Neurotrophic Factor – Like growth hormone for the brain

Raise BDNF by

Intermittent Fasting

Aerobic Exercise –> increases memory cells (epicampus)

Ketogenic diet

Turmeric

DHA – Omega 3 Highest -> lowest risk of dementia

“Whole coffee fruit extract” ??? may get on market

Eat pre- and probiotic and fermented foods.

Dr. Robert Heaney – Maintaining Vitamin D levels Mercola Interview Jan 2015

Very Good

<https://youtu.be/FmCw8qekues>

Dr. Robert Heaney Jan 2015 Mercola interview Vitamin D levels

<https://youtu.be/FmCw8qekues>

Dr. Dennis Goodman Vitamin K2 Mercola interview 29 Jun 2015

<https://youtu.be/jPkRdAfuwjg>

His 4 Pillars of good healthy 5:20

1. Nutrition
   1. Supplements
2. Exercise and Flexibility
3. Stress management
4. Sleep

K2 Crucial benefits:

1. Cardio Vascular health (removes calcium from lining of vessels)
2. Bone Restoration
3. Statins impact K2

Quartet: Calcium, magnesium, Vitamin D, Vitamin k2

Dr. Kate Rhéaume-Bleue ND Mercola Interview Vitamin K2

<https://youtu.be/ET_2w9OOdtY> 15 minutes (and the longer version)

Calcium manager. Moves calcium out of soft tissue where it doesn’t belong to where it does belong.

Cheeses: Gouda, Brie high in K2

Dr. Bergman: See his numerous YouTube presentations including sleep, autoimmune disease, it is medically very bad to reduce cholesterol or blood pressure

Dr. Berg: YouTube presentations, especially on his “Vinegar Drink” which is a **critical aspect** of health and loosing weight. Vinegar and lemon juice in his drink reduces insulin response thus helps you loose weight. (See multiple YouTube presentations)

Diabetes info

<https://youtu.be/NQXGXfpV9d0>

Dr. Mark Hyman on Glutathione:

<https://www.youtube.com/watch?v=Eh2PYQBICWs&feature=youtu.be>

Dr. Axe.com YouTube Presentations on his website

JayLab Pro The Energy and Weight Loss Connection Nobody Talks About

<https://www.jaylabpro.com/optimizing-mitochondria-for-healthy-weight-loss.html>