

Health Communication Article Summaries:

### **The Scientist and The Stairmaster**

- Does exercise really make a difference? New research may suggest otherwise. Does working out make a fat person lean and does sitting around make a lean person fat? -People misconstrue the notion that if 3500 calories is a pound of fat, and you burn 700 calories a day for a week, then shouldn't you lose a pound?
- The U.S. Department of Agriculture suggests have 60 minutes of "moderate to vigorous intensity" physical activity.
- New research from the American Heart Association and the American College of Sports Medicine now says working out daily is only to "promote and maintain health" however actually losing weight via exercise doesn't have enough compelling data.
- Finnish researchers took 20 years of data and found out that 60 minutes of exercise daily might only decrease weight gain by 3.2 ounces a month or even increase it by 1.8 ounces a month.
- This is not to say exercise isn't healthy, clear research shows it can increase fitness, live longer. Reduce cardiovascular disease and diabetes. The key issue however is that when you burn more calories, you get hungrier, so odds are you will eat more as well.
- A study done by Louis Newburgh at the University of Michigan showed that climbing a flight of stairs burns three calories, so to rid yourself of a

slice of break you will need to climb twenty flights of stairs, so why not skip the break and the stairs?

- In the 1960's Jean Meyer conducted a study that shed light on obesity and illustrated that sedentary lifestyles were the most prevalent in obesity, and also noted that some overweight/obese people could eat as much or less than lean people. The issue with the findings was that although there is a correlation between sedentary lifestyles and obesity, it did not clarify the cause and effect of obesity in the first place.

-Based on Meyer's findings, there was an "exercise explosion" in 1977 when exercise originally thought of, as not a cure towards obesity changed to strenuous exercise is a necessity to combat obesity as common knowledge. Sufficient evidence was never supported for Myers claims.

-In 1989 Danish researchers conducted a study done on non-athletes over 18 months training for a marathon and found similar correlation to the Finnish results, there was weight lost, no change in weight, and weight gain.

-Fuel Partitioning is an interesting concept in which certain people send the calories they consume to the muscles to be burned rather than fat to be stored, so the problem with obesity can vary between people in how their body is biologically programmed.

-Insulin is another factor, because insulin determines fat accumulation, some peoples insulin levels may be too elevated as to why they store fat.

Clinical trials suggest that carbohydrates and sugars are foods that primarily increase insulin stimulation, and trials show people have lost weight or not gained weight eating the same amount of calories but cutting carbohydrates and sugars out.

**The New York Times:** *“New Dietary Guidelines urge Less Sugar For All And Less Protein for Boys and Men”*

-Since 1980 the Agriculture and Health And Human Services Department issues a new dietary guideline updated every 5 years.

Recently they updated to no surprise urging to drastically cut back on sugar, as well as eggs and protein meat for men and boys, to which this is surprising.

-This year they proclaimed to cut back on added sugars, which are past naturally occurring sugars, to less than 10% of daily calories.

-The Center for Science in the Public Interest noted that half the population eats high in protein meat and eggs, to which the beef industry condemned these proclamations, because significant research from the National Cattlemen’s Beef Association says you can “maintain a healthy weight, support a healthy metabolism and age more vibrantly when they consume more high-quality protein.”

-However these government issued guidelines seem to me a bit of vegetarian or Mediterranean style diets.

-The new guidelines dropped from around two eggs/300mg of dietary cholesterol a day to as little as possible, which was met with much backlash.

## **Is Sugar Toxic?** by Gary Taubes

### **Robert Lustig:**

- Gave “Sugar: The Bitter Truth” lecture that went viral to over 800,000
- Specialist on pediatric hormone disorders
- Leading expert in childhood obesity
- Claims sugar is a “toxin” or “poison” not just empty calories
- Refers to sugar as evil
- Claims it doesn’t matter if it is high-fructose corn syrup “the most demonized additive known to man” or refined sugar both are just as toxic

### **If Lustig is right..:**

- The excessive consumption of sugar is the primary reason that the number of obese and diabetic Americans has skyrocketed in the past 30 years
- Also, means that sugar can be the cause of many other common diseases

### **As bad as Lustig says?:**

- Not everyone believes that sugar is as bad as Lustig claims
- author of article Gary Taubs however did research resulting in similar results to Lustig

### **Clarification on sugars:**

- “Sugar” means both sucrose- beet and cane sugar, whether white or brown- and high-fructose corn syrup
- Right now everyone is concerned about high-fructose corn syrup
- 1980’s sugar in soda and other products were replaced with high-fructose corn syrup as a cheaper and healthy alternative

- BUT now, everyone believes this is what is causing the increase in obesity and refined sugar is making a comeback
- If Lustig is right, then it doesn't matter because they are all bad
- Refined sugar or sucrose is made up of the carb glucose and is bonded to the carb fructose making a 50-50 mix
- Fructose is almost twice as sweet as glucose
- High-fructose corn syrup is 55 percent fructose and 45 percent glucose
- Each type of sugar end up as glucose and fructose in our stomachs (physiological effects are identical)

### **What do these sugars do to us?:**

#### **The common beliefs:**

- Cause tooth decay and represent "empty calories"
- Consume too many of them - not toxic
- Don't offer nutritional value/ so they either displace other more nutritious elements
- Eaten over and above what we do need
- Consumption of empty calories leads to obesity and diabetes

#### **Why sugar is actually bad:**

- Sugar has unique characteristics
- The body metabolizes the fructose in a harmful way, at least when consumed in large quantities
- Fructose component of sugar and high-fructose corn syrup is metabolized primarily by the liver
- Glucose from sugar and starches are metabolized by every cell in the body (more work for body)
- Sugar in liquid form hits the liver more quickly than solid like an apple
- If it hits the liver fast, more likely to be turned into fat- resulting in something called insulin resistance (problem in obesity and other heart diseases)

### **The Last Time:**

- Last time the federal government looked into the question of sugar and health was in 2005
- Vaguely found that sugar could increase risk of heart disease and diabetes
- Couldn't even set an upper limit on how much sugar constitutes too much
- Same results found in 1986 study
- 1986 reports that sugar has no hazard to the general public
- In 1980 1 in 7 Americans were obese and almost 5 million were diabetic
- In 2000's 1 in every 3 Americans were obese and 14 million were diabetic

### **The Correlation:**

- Last time sugar consumption jumped markedly, it was also associated with a diabetes epidemic -Sugar consumption increased, doubling from 1890 to the early 1920's same time that diabetes deaths increased as much as 15-fold
- Same time as the birth and growth of the candy and soft-drink industries
- Japanese diet low in sugar, and Japanese people experience less cases of diabetes
- 1970's John Yudkin came to same results as Lustig that sugar is dangerous linking it to type 2 diabetes
- Americans found in the Korean war had plaque in their arteries and the Koreans did not- due to diet

### **What has changed?:**

- Physicians and medical authorities came to accept the idea that a condition known as metabolic syndrome is a major risk factor for heart disease and diabetes
- 75 million Americans have metabolic syndrome

### **Metabolic Syndrome:**

- If you are overweight theres a good chance you have metabolic syndrome and therefore more likely to have a heart attach or become diabetic (or both)
- Cells in your body actively ignore the action of the hormone insulin
- Insulin-resistant
- Likely caused by an accumulation of fat in the liver

### **As it Happens:**

- Research on metabolic syndrome and insulin resistance was big by the early 2,000's
- Reason for research on sugar= metabolic syndrome and insulin resistance
- Feed animals enough pure fructose/sugar and their livers convert the fructose into fat- the same fat that gives us heart disease
- Michael Pagliassotti- found that this change can happen to animals in just a week with large enough amounts of sugar
- Can take months when given closer to Americans proportions
- Stop feeding sugar and fatty liver can go away
- Havel and Stanthroe found that just two weeks is enough to see if sugars cause at least some symptoms of metabolic syndrome
- Won't know if sugar is toxic until long-term studies are completed

## **One More Question:**

### **Chances sugar is worse than Lustig says?:**

- There may be a connection with diabetes and metabolic syndrome with cancer
- First reported in 2004
- Death rates from cancer has increased in the second half of the 19th century and early 20th
- Cancers like diabetes is found to be a lot more rare in non Western diets
- Increase of the secrete of insulin can result in the growth of tumors (cancer)
- Insulin becomes the fuel for these tumors

## **The Cure for Everything: Untangling Twisted Messages about Health, Fitness, and Happiness**

By Timothy Caulfield

### **Introduction: The Cookie Conundrum**

- 90 percent of all disease is caused by a buildup of acid in our bodies
- Book is about the science associated with health
- Health information can be found everywhere: television, government reports, blogs, Iphone apps, books, magazines, etc.
- Book will answer questions we are left with from all the sources out there - clarifying for the truth
- Science informs the decisions we make
- Government has become a poor source because they to use science and have become twisted
- 90 percent of a healthy lifestyle is associated with a few simple truths
- Deficit model- scientist believe that if people knew more about science or understood the facts they would be more rational about their health decisions (faulty)
- BUT we see, select, and interpret health information through our own self-constructed lenses pf preconceived beliefs, values, and fears
- Scientific community producing the facts are responsible for a significant part of the twist

### **Two things done in this book:**

#### **1. Caulfield *experienced* the journey through the health science world**

- Important to get real context
- Cast evidence net very broadly

-People get things wrong because they look at health issues through the lens of a single discipline

**Disclaimers:**

-Health is not at the center of everyone's universe

-We are all going to die - why work so hard at it?

**2. What Caulfield means by facts**

-Science is rarely pure

-Always forces pulling away

-But there are some objective facts about our world that science can nudge us closer to

**Disclaimer:**

-Will not defend science

-Science gives things a sense of credibility often times resulting in twisted messages

**Chapter 1**

**Fitness: Sexy Abs and Simple Solutions**

**What is Fitness today?:**

-Sex and good abs OR the cultivation of good abs to get sex

-Today our society uses this to show fitness you go into a magazine shop and every picture on the fitness magazines have abs or titles about abs such as "flat abs instantly!"

-Fitness in our modern world is often commercialized

-Industry based on sex

-Selling fitness as sex masks why fitness is important in the first place

-Fitness is really just exercise and healthfully keeping your body in shape

-People don't care about the health, say "fit" only caring about appearance

**Exercise:**

-Exercise reduces the risk of more than 25 chronic conditions

-Exercise during pregnancy is good for mom and baby

-Good for sex drive

-Provides huge psychological and emotional benefits

-Help brain function

-Exercise benefits can surpass the damage done by drugs or other medical treatment

**Truths About Exercise:**

-It is hard to change your appearance by exercise alone

-Can not be used as a principle means of weight loss

-Will not lead to weight loss because it doesn't burn the amount of calories we think

-Will not lead to weight loss because exercise actually increases appetite



-Helps you stay the SAME weight- (gain weight as you get older)

### **What is Fitness Really?:**

-Includes: strength, aerobic capacity, and an improvement in the biomedical markers of health

-Also included the physiological improvements that ward off disease

-Included the achievement of physical state that allows a individual to simply feel better

**-Defined as:** an actual physical state that enhances one's health, not just the appearance of a physical state that enhances health

### **But The Question is What Kinds of Exercise are Best:**

-The exercises that are going to improve your appearance the most, happen (not by chance) to be the same exercises that will result in the healthiest fitness level

### **Myths that Prevent us from Getting Fit:**

-You can get fit by exercise alone/ diet is necessary

-No evidence of the claim that muscle burns more calories than fat- and therefore can eat whatever you want

-Spot reduction- you can not tone a part of the body just by toning that one spot, only way to tone a specific region is to have little enough fat that, that muscle is exposed

-Body fat with levels of 10-12 percent

-Stretching has been found to be useless and can even be harmful

-Studies show that gymnasts that stretch before their performance have been found to get lower scores, likely because stretching hurt their ability to leap

### **What Exercises are Important to Get Fit?:**

-According to Mark Peterson lifting heavy weights a few times a week - challenging resistance training

-Associated with lowering cholesterol and blood pressure

-High levels of muscular strength have few limitations and lower incidences of chronic diseases such as: diabetes, stroke, arthritis , etc.

-Also you get the flexibility of the full range of motion you need for the activities in your daily life, helps with mobility and injury prevention

-Better than aerobic training, but gives the same results as well

-Good for women, men, kids, and elderly

-Can strengthen an already damaged spine

### **Now What to Do?:**

-Work hard- you need to push yourself- heavy weights

-Must **adapt** your body

-Do exercises that put your body through a range of motions

-Do resistance training as a circuit - move from one exercise to the next without resting

-Mix up your routine after a few weeks- the body should always have to adapt to something new

### **Other Findings/ Twists:**

- Gary O'Donovan- appalled that biggest message from the consensus statement that all you need is moderate exercise for health
- The more work you put in the more you get out
- Moderation needs to be replaced by intensity
- Said not to scare people of the amount of work it can be
- Vigorous is a key word
- There is a disconnect between how vigorous people actually are working out and how vigorously they think they are
- All forms of physical activity are still great, just aren't going to be what make you fit
- You have to work hard enough that you can't talk it is so intense: only point being that moderate exercise is not enough
- But to do short workouts with huge bursts of efforts than longer exercises that don't push you as much like running/other aerobic activities- when pushed to sprint etc. aerobics can be more beneficial
- This **intense interval** approach is key and is not just for young healthy athletes
- Will power is key to staying healthy

#### **Importance of Weekly Routine:**

- Goal is to obtain and maintain the kind of fitness that will give you continuing health benefits
- Make the best use of your time

#### **Findings:**

- Obesity causes inactivity/ inactivity does not cause obesity
- False information is advertised so that people will be interested in the work being published/ twisting our truths

#### **They Want Money Not Healthy People:**

Food industry puts blame on inactivity - making us believe that exercise results in weight loss and we should just stay active so we can keep eating all their unhealthy products

- Keep people buying workout/ athletic gear
- They all just want money, so will allow us to continue believing a myth
- Only a few have bodies enhanced by yoga - but does have some great health benefits (that usually don't included becoming fit)
- Yoga is an example of good marketing
- Core stability is important but usually do not happen from the activities that advertise it
- Market a lot of things to help with core/ just because people want help with their core
- Market advertising to make money not to make you healthier

#### **Gina Lombardi:**

To finish off the chapter, Caulfield met up with celebrity trainer Gina. He found that all of his research left her tactics to no imagination. The workout followed all the rules he found and even got to discuss the downfalls of her profession.

## **The Cure For Everything-Caulfield Chapter 2: Miracle Foods And Magical**

### **Weight Loss**

-Many challenges regarding diet control is lack of knowledge, for instance the author discusses eating a muffin every day for two years and finding out it had 700 calories, far more than she needed.

-Where as vice versa there are people who wont eat something based off of certain beliefs, even if it may be healthy for you.

-Edmonton journal pronounced bacon healthy and a super food and then 6 months later they declared it basically poison.

Tim notes that obesity is linked to "Type 2 diabetes, numerous cancers such as breast, endometrial, colon cancer, as well as high blood pressure which is the number one killer on earth, liver and gallbladder disease, respiratory problems, sleep issues, degeneration of joins, and infertility. -

Tim decides to take advice from his nutritionist friends and start a daily journal of his food intake, much to his displeasure and figure out his BMI.

-A BMI of over 25 is overweight and above 30 is obese.

-To Tim's dismay he is 18% body fat of his 194 pounds

-Tim says the key is simple: Eat Less

-1992 study done by the England Journal of Medicine show that obese people underreport their calorie intake by up to 15%

-Tim's first two days were spent "caving" on poison foods, which lasted for 8 days until he gave up

-Studies indicate that fast food triggers sensors in your brain that inhibit addition to salty, high fattening foods when prolonged eating takes place.

-Tim details the vast junk food industry and how palpable the tactics are made by them to enforce advertising and misconstrue information about the products to people to eat them.

-Tim cut out junk food and eventually lost 4 pounds in 2 weeks.

-Tim notes that a big issue is portion control and people underestimating calorie content in foods, studies in the Journal of American Medical Association says most people are off by 100%. Yes 100% So if you think something is 400 calories it probably is 800 calorie.

-An issue with obesity is how you are raised, we are raised to "finish your plate to grow" and now it negatively effects you, studies show the assertive rule enforcing parents are more associated with overweight or obese children.

-At the end of his study, Tim went from 194 pounds to 175, losing 8% body fat at 10% total. All of this is accredited to smaller portions, which are the key.