

THE Crazy Makers

*How the Food Industry
Is Destroying Our Brains and
Harming Our Children*

Carol Simontacchi

JEREMY P. TARCHER/PENGUIN
A MEMBER OF
PENGUIN GROUP (USA) INC.
NEW YORK

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To mothers and fathers everywhere who are struggling
to understand why their children . . .
can't learn
can't cooperate
can't relax and enjoy life,
or why their teenagers are . . .
defiant
angry
depressed.

To the men and women who are . . .
unhappy and uncertain
struggling just to maintain their sanity
beset with mental struggles that have appeared
seemingly from nowhere.

To the mental health practitioners and educators . . .
frightened at the increase in mental disorders . . .
searching in the wrong places for the answers.

I pray this book will bring some understanding.

Preface

So much time has passed since *The Crazy Makers* was first released in 2000. And so much has happened. It almost appears that we're getting the message that our foods are unsafe for our collective brains. Several states are pulling the vending machines out of the school halls. Research in the autism community is linking genetic defects, many of which are concerned with nutrition and the body's ability to detoxify, with the dreadful cluster of symptoms that defines the autism spectrum disorders.

Several books, including Eric Schlosser's *Fast Food Nation*, which chronicles the dreadful state of America's food habits, appeared on best-seller lists. Morgan Spurlock's *Super Size Me* spent about ten minutes in movie theaters across the nation, sparking the hope that we were finally convinced that our eating behaviors have consequences, and that we need to make better choices for ourselves and our children, lest we lose our brain power forever. (Why didn't the movie, as good as it was, enjoy a longer showing? Probably because the theaters themselves sell the very stuff Spurlock graphically displayed in the movie.)

But on the other hand, McDonald's started appearing in hospital cafeterias. Are they serving brain- and heart-healthy salads and fresh seafoods, drawn from the icy waters of the Arctic Circle and bursting with omega-3 fatty acids? I think not. According to the AP wire services, fifty-nine of the nation's 250 children's hospitals have fast-food restaurants, and they serve the same fare in the hospital as stand-alone restaurants. According to one pediatrician who authored a study on the "insanity" of placing a fast-food restaurant in a hospital, parents actually think that McDonald's meals served at a hospital are healthier than the same stuff sold outside the hospital.

According to a spokesperson for the chain, McDonald's defended the policy, stating that the chain serves "a wide variety of menu choices, including fruits and vegetables, mixed greens, and 100 percent USDA-INSPECTED hamburgers." Well, as I study their own "Nutrition Facts" chart for the fruits, I find only a small, snack-sized "fruit and walnut salad," grape and strawberry jams, fruit and yogurt parfaits, a few packaged juices, and apple dippers that may count as fruit in their entire ten-page nutrition report. Vegetables? French fries and a few salads were the total offering in the department. . . . I think you get the picture.

We are eating more meals outside the home, many of which are consumed at fast-food chains. We will spend over \$511.1 billion at restaurants in 2007, over \$1 billion per day (up from \$4.8 billion spent in 1980).

Babies are still being bottle-fed instead of breast-fed. Children continue to consume sugary cereals for breakfast and eat those terrible school lunches, which have not improved in either taste or nutrition. Adults still eat packaged foods, and guzzle soft drinks at an astonishing rate. Teenagers and children drink more soft drinks than ever.

Meanwhile, we are getting more and more depressed. The number of Americans with Alzheimer's disease has more than doubled since 1980, and while it may be argued that we are living longer and the number of senior citizens is also growing rapidly, mental disease in the elderly is outstripping population growth.

Studies indicate that one in five children has some sort of mental, behavioral, or emotional problem, and that one in ten may have a serious emotional problem. One in eight teenagers suffer from depression.

When this book was originally released, one interviewer asked me, “Do you really think that this book will make a difference in how we eat?” I had to admit that my goals were not that lofty. It would be wonderful, of course, if the book did change how our nation eats, but we, as a culture, are so locked into pathological eating behaviors that widespread, national changes seem impossible. My highest goal was to change people. Individuals. Moms and dads. Kids and grandparents. My goal was to get us talking about it, to get us to look at the connection between food and mood, food and cognition. And just maybe, individuals here and there would “get it,” and their mental lives would change forever.

In that goal, the book succeeded beautifully. I get letters and e-mails from people who read the book, changed their diets, and changed their lives—and they then recommended the book to others who read it, changed their diets, and found their mental lives transformed. I get e-mails from your mothers who decided to breast-feed their infants and prepare home-cooked meals for their toddlers. Those children have been given a beautiful gift.

What does that mean to you? The good news is that even if the rest of the Western world clings to sugary breakfast cereals and “monster burgers” and packaged entrées laced with preservatives and artificial flavorings, and suffers the brain-altering consequences, you now have a choice. You can choose to be mentally healthy.

My prayer is that in the pages of this book, you will find the answers that you need to experience vibrant mental health.

Carol Simontacchi
Sanibel, Florida
2007

Introduction

"You're making me crazy!" This common phrase is amusing, puzzling. Can one person really make another person crazy? The logical answer is no. Frustrate, anger, humiliate, disturb, inconvenience, annoy, perhaps.

We use the term so loosely, so frequently, that meaning takes leave. The American Heritage dictionary defines the word as "affected with or suggestive of madness, insane," which conjures up images of insane asylums of long ago, of people staring blankly into the air, or mumbling to themselves as they shuffle down the street. We visualize bizarre behavior or strange movements.

When we say someone makes or drives us crazy, we're trying to express frustration, anger, inconvenience. We never actually mean that someone is harming our minds. And anyway, is it really possible for someone to make us lose our sanity? Does anyone possess that power? Bad behavior makes us uncomfortable, but it doesn't damage brain cells.

It may be unlikely that a person could damage our brains, but what about our favorite instant- and fast-food toys? What about infant formulas and baby foods? These items have become so much a part of the American food culture that we never consider the impact they have on our mental abilities. We've been told over and over that our food choices are contributing to degenerative diseases like cancer, diabetes, and heart disease. Maybe it's time that we explore the possibility that these major American consumer brand "foods" are destroying our brains, too. Cell by cell.

When Rachel Carson published her indictment of industrial polluters, *Silent Spring*, in the early sixties, environmental rapists were held responsible for their destruction of the world we share. They have been and are being forced to clean up and to undo the damage they've done, either knowingly or unknowingly. They've been held accountable, and rightly so.

What about food industries that wantonly destroy our bodies and our brains, all in the name of profit? We call them "food manufacturing companies," a nomenclature that is chilling. Are they manufacturing food, or food artifacts that look, taste, and smell like the real thing? Are they redefining what we think food to be, while the words "food" and "nutrition" have lost their true meaning in our marketing/advertising-driven world?

Food used to be brilliantly colored fruits and vegetables, rich brown grains, milk and butter, lean game meats, and plump fish wrestled from living rivers and oceans. Food used to be plucked from the garden after a summer of planting, fertilizing, raking, and weeding. It used to have roots deep embedded in soil that nearly pulsed with life-forms that enriched the earth. Food used to feed our tender green plants and drink out of pristine streams that sparkled with life from the sun.

Food used to be something we ate to give strength to our bodies, to heal us when we were sick, to satisfy an appetite at the end of a day filled with purpose and work. We ate to satisfy a need that arose from deep within. We ate when we were hungry, and savored the food that satisfied that hunger.

Food is different now.

Now, we are sold packages, boxes, artificial flavors, coloring agents, and pseudofoods that strip the

body and leave the brain poverty-stricken. The product is colorful and flavorful, but not from natural goodness. The colors come from a chemist's beaker, from FD&C Blue No. 1, Red No. 40, and Yellow No. 5, or from cochineal (from the female insect, *coccus cacti* from the West Indies). The flavor comes from allyl anthranilate or isopulegol or linalyl benzoate or methyl delta-ionone, while gravies and sauces are thickened with wood fiber and emulsified by dioctyl sodium sulfosuccinate. While some of these agents have been tested for carcinogenic properties, virtually none have been studied to learn their impacts on brain chemistry.

Instead of being eaten when we are physically hungry, food is now consumed to satisfy artificial cravings generated by a brain that isn't working right and whose receptor sites beg for synthetic stimulation from chemicals. We eat, but we are never satisfied. We are full, but we aren't contented.

Looking with a careful eye, there isn't much dissimilarity between environmental rapists and certain food-manufacturing companies. Industrial polluters spill toxic waste into the soil and water. Some food manufacturers slip toxic products into our cereals, our soups, our breads, our beverages, our fish, and call it progress. We carve a culture out of our favorite food icons and we don't link the food artifacts with the depression, the anger, and the heartbreaking assortment of mental illnesses that beset us.

Nutritionists made the initial connection between many of these toxic products and our physical health years ago. Products like margarine can cause heart disease; hormone-injected beef can wreak havoc with our own hormonal systems. We can greatly reduce our risk of certain diseases just by making simple lifestyle and dietary changes.

No one, though, has looked at the rapacious industry that has altered our consumption of basic nutrition so that our brains are deprived of the essential building blocks required by our brains.

The issue of brain health first led me into the health food store and started me on the road to better health through better nutrition when I was in my twenties. I suffered from severe emotional illness in the form of deep depressions, hostility, fatigue, and confusion. Then I read how sugar is a poison, and I greatly reduced my intake. I learned that the B complex is required for enzyme activity in the brain and started eating foods rich in B complex. I learned that I needed amino acids and essential fats to build neurotransmitters and neurohormones, and replaced my nutrient-deficient diet of breads and pastries and cakes and ice cream with wholesome forms of protein and beneficial oils. I started eating vegetables.

I read about brain nutrition and made drastic changes in my diet and became convinced that it was impossible to be contented and emotionally stable while poisoning my brain with the Standard American Diet (SAD).

Consider the common figures we all hear about—how the average American eats over two hundred pounds of sugar and artificial sweeteners per year (over twenty teaspoons per day). The average teenager guzzles twice as much soft drink as milk, but young adults from their twenties to the thirties drink nearly three times more than that.¹ The typical teenage male who drinks soda drinks over forty-two ounces every day, and the habits of girls are only slightly better.

Parents today can't count on school districts to help teach their children good nutritional habits. Many of the people managing the schools are in on it, too, earning millions of dollars each year by inviting fast-food chains and soft drink dispensers into schools. They perform a vital function in the

marketing scheme of these mega-companies. The schools end up being complicit in “teaching” that it’s okay to drink pop instead of water, to eat candy bars instead of fresh fruit, to load the body up on artificial this-and-that—as long as money can be made. Meanwhile, students’ test scores are dropping and the administrations cry out for more funding.

Mind-altering pharmaceutical drugs are one of the leading industries in this country and growing rapidly. Yet few people have made the association between what we are putting into our mouths and the toxic thoughts and feelings that pour out of our brains. Instead, we blame the breakdown of the family, parents, teachers, and political administrations.

Since this book was first released, schools have starting removing vending machines from the cafeterias. That is a good first step and we are happy to see it. The next step is to provide healthy breakfast and lunch options in those same cafeterias. We laugh about the quality of school lunches. I think we can do better—a lot better—in terms of quality and taste appeal.

In response to public fears about food safety, Congress did seek to regulate the food industry by passing the Delaney Clause, first introduced in 1958. Delaney was considered to be rigorous in forbidding the sale of food containing a substance shown to produce cancer in laboratory animals or humans.

Delaney was amended in the late 1980s as a result of a policy written by the FDA “based on the doctrine of *de minimis*, which holds that the law does not concern itself with trifling matters and that courts should not apply literally the terms of a statute to mandate results. Under this doctrine, if a food additive or any of its metabolites or breakdown products increases the chance of developing cancer over a lifetime by less than one case per million cases of cancer, the threat is considered too small to be of concern.” This policy is currently being challenged in court as too lenient to ensure public safety.²

As a result of Delaney, the U.S. Food and Drug Administration (FDA) and industry researchers aimed their efforts and money at proving that food additives are benign in terms of producing cancer. When anecdotal and epidemiological reports were delivered to the FDA concerning the neurotoxic effects of some of the top-selling sweetening and flavoring agents, the reports’ significance was dismissed by the food industry. Instead of trying to raise the standard, they bolstered efforts to debunk what they were hearing. In some cases, as we will see later, brand-name food manufacturers hire their fiercest critics to work in their legal or public relations departments to silence them.

It is possible that this myopic view was held simply because scientists did not understand much about the biochemical workings of the brain. Not much was known at that time about receptor sites and neurohormones and about the communication link between the endocrine system and the neurologic system. Receptors were not isolated until 1972, long after the first neurotoxic chemical hit the food market.³ In fact, we still don’t know as much about these complex systems as we would like.

Receptor sites are embedded in cells all over the body, allowing the endocrine and neurologic systems to “talk” to one another. They are activated by bodily produced hormones but are not

selective. They also can be activated or shut down by chemicals produced outside the body in doses low as a few parts per trillion. Such small numbers may be difficult to grasp, but when you understand that infinitesimal amounts of a substance can cause a misfiring of the brain's signals or cause an endocrinological message to be lost, it becomes clear that more research needs to be done if we are to save our minds.

If government regulations were passed requiring food additives and artificial foods to pass the same rigorous standard concerning brain chemistry as was set by the Delaney Clause for cancer prevention tests would be developed to help us understand how these chemicals influence brain chemistry. But already costs over \$112 million to bring a new substance onto the food or drug market; is the industry willing to ante up more dollars to ensure our safety in terms of brain health? At some point, financial viability is lost. It simply wouldn't be profitable to do it, and when no profit is to be made, it's amazing how quickly the research dollars dry up.

The Crazy Makers will illustrate where the Western world has gone astray in the most fundamental of life concerns: the quality of its food supply. During the past century, food-processing companies and their creative marketers have changed the definition and composition of our food. Marketing efforts have been so successful that we no longer think it strange or even unhealthy to drink a liter of Coca-Cola per day instead of water, or that our lunch consists of a bagel with cream cheese, a meal stripped of nutrition that laboratory rats perish on it.

Many of us think of people who lobby for pure water and pure food as food faddists or health nuts. We call a section in our local supermarket the "Health Food Section." What is the rest of the store called, the "Death and Disease Section"? Food that has been robbed of its beneficial oils is called "heart healthy," while we regulate the amount and types of fats consumed, as if we could convince Mother Nature to change her mind about the importance of balancing essential fatty acids in the sustenance that she bestows.

When I warn lecture attendees that virtually everything written about nutrition in the mainstream press is wrong and potentially harmful, they stare at me in disbelief. Learn about the architecture of the brain, though, and you'll discover what it requires for optimum health. We can start over and learn from nature instead of trying to teach it.

This book will shatter so many popular myths about health and nutrition. When I began the process of pulling research data together, it quickly became clear that I would have to limit the contents of the book to address nutritional issues alone. This one topic could not be covered adequately in the few pages, along with a responsible discussion of all the other influences that are contributing to the deteriorating our brain structure and chemistry.

The information covered here does not include environmental toxins, genetically modified organisms, the influence of recreational or pharmaceutical drugs on the brain, or family or social issues that affect learning and emotions. I write only about food, but how very important it is.

In one of the most famous Gallup surveys conducted in September 1989, pollsters telephoned

cross section of Americans one evening to ask them what they were eating for dinner. Fifty percent of those people replied that they were having “frozen, packaged, or take-out meals.” The next time you start to phone a delivery service or visit a favorite take-out spot on your way home from work, think again. It would make sense to change this habit—for one simple reason.

Our food is, quite literally, driving us crazy.



Our Food and Suffering

Foods of the future will be different from foods currently consumed. They may have different shapes, colors, flavors, nutritional and pharmacologic profiles, and longer shelf-lives. Foods of the future may appear to be unusual and will probably be more intense in flavor and be natural or nature identical. . . . They will have extended shelf-lives, primarily due to irradiation. The only limitation may be the imagination of the food technologist.

—*Practical Handbook of Nutrition in Clinical Practice*¹



Publicly the tales of our mental lives are told in the accounts that splash across the front pages of newspapers about school shootings or violence in the workplace. We read about them when the latest test scores of students are released, or when a politician or panel of experts holds a town hall discussion or conducts a study about the safety of our neighborhoods and the societal issues plaguing America. They are apparent, too, when a new psychoactive medication achieves FDA approval, and a marketing campaign begins with advertisements in magazines and commercials on televisions that include an ever-present roll of side effects.

More often, though, the most poignant stories of our mental lives are told in conversations along the sidelines of soccer and baseball fields and over backyard fences, as mothers compare stories of their teenagers or whisper the secrets of their own fears and depressions. These are the stories of the men and women, teenagers, and children who struggle to maintain an emotional balance but often succumb to feelings of despair. They struggle with their schoolwork because they can't remember or focus. They fight anger that bubbles up from nowhere and scalds the people they love most dearly. They find themselves fighting irrational fears that hinder them in relationships, schools, and on the job.

Millions of people can't get their mental lives together. Sometimes they resort to violence and see themselves driven to live a life on the edge of destruction, but most often they suffer in silence. They are the "walking wounded" who seem destined to fail or fall short in life because their minds cannot think.

properly.

They include Heather, a teenage girl who spent several months in a juvenile facility because of drug addiction. After returning to her home and school, clean and focused on the future, she started dabbling in drugs again, driven by an internal need over which she felt little control. They include Sandra, a middle-aged, well-educated woman who has used antidepressant medications for years in an attempt to control her overwhelming depression. They include Barbara, a mother of five children and wife of a successful businessman who can't shop in her local supermarket because of her intense fear of open spaces. They include Heidi, a beautiful teenage girl who is doing fourth-grade work in school. She isn't learning-disabled. She simply can't concentrate and, as a result of her educational handicap, has turned to drugs and alcohol. They include Jack, a young man who comes from a "good family" but has spent several years in jail because he can't control his impulses. And they include me, thirty years ago, beset by depression and mental confusion so severe that at times I was barely functional.

As part of my research for this book and my desire to understand the walking wounded more clearly, I applied for and received the approval of an Investigational Review Board (IRB). The approval was to conduct a basic study on the influence of diet on cognition and mood states in a local private high school. The study imposed no huge dietary restrictions or changes on the students. They were simply required to arrive at school early each morning for four weeks to consume a nutrient-dense breakfast drink and take tests prior to and after the testing period.

The breakfast drink, supplied by Nature's Life, a California-based supplement manufacturer, was an over-the-counter blend of protein, carbohydrates, vitamins, and minerals specifically designed as a meal replacement. To the drink was added flaxseed oil, a rich source of omega-3 and omega-6 fatty acids, both of which are essential to brain function and the production of energy. While the calorie count of the drink was low (less than one-third the daily requirement for calories in adolescents), most of the kids either skipped breakfast altogether or ate such a poor-quality breakfast that the added nutrition could only benefit them.

After obtaining the informed consent of the parents of the students, we gathered the small student body together to explain their part in the project. "You've been chosen to participate in a formal research project that will be published in a book and submitted to peer-reviewed magazines," I explained, searching their faces for some sign of enthusiasm or, at the very least, compliance. I could see none. My reputation as a nutritionist had preceded me. I knew what they were thinking. I saw trepidation and just a little annoyance.

"You'll be asked to take a cognition test and a mood states test. You'll also be divided into two groups: control and test. The control group will continue to eat what they usually eat. The test group will be given a chocolate or vanilla drink every morning just before school starts for four weeks. At the end of the four weeks, both groups will be given the same tests, and we'll learn if the drink has made any difference in how you think and feel."

Despair swept over their faces. I tried to make it sound as attractive as possible, appealing to the adolescent self-interests, but my salesmanship failed. They weren't buying. Reluctant compliance appeared in their eyes, and hands started waving, seeking recognition. "Can I be part of control, please? Let me be control."

Every morning I arrived at the school early to prepare the drink in the blender, pour it into paper cups, and watch the students drink it. I instructed them on filling out food diaries. Flaunting the

adolescent independence, several of the test-group kids brought cans of soft drinks every morning wash down the nutrient-dense breakfast drink, casting a rebellious eye in my direction.

When the final morning rolled around, the student body gathered in the auditorium to retake the tests. First, the principal had a message to deliver. The students' participation in Spirit Week wasn't up to his expectations, and he threatened to curtail planned activities if they didn't put more heart into it. For ten minutes, he lectured. As I listened to the speech and watched the faces of the kids, my heart sank. I could see anger and frustration written all over their faces. This wasn't part of the protocol. No one, test or control, would be in a good mood after this.

After compiling the stats, though, I was astounded by the results. Even after being thoroughly scolded, the kids who had faithfully used the nutrient-dense breakfast drink showed a clear improvement in mood. In fact, the results were so good that we reran the statistics to verify the findings.

The mood test (Profile of Mood States, or POMS) measures six identifiable affects or emotional states, including:

- Tension-Anxiety
- Depression-Dejection
- Anger-Hostility
- Vigor-Activity
- Fatigue-Inertia
- Confusion-Bewilderment

Each of these affective states is rated from 0 to 5, 0 meaning "Not at all," and 5 meaning "Extremely." Being a positive mood, Vigor-Activity is calculated as a positive score, while the other states are negative scores. The Vigor scores are therefore subtracted from the totals of the other moods.

The drink made a significant difference in how these teenagers felt emotionally. It also made a small difference in the cognitive ability of the students, following the pattern of previous studies. The results that we obtained from this study have been replicated in private counseling sessions with nutritionally minded physicians and clinical nutritionists, and in other studies around the world. Food wields a powerful influence over mood and the ability to perform mental tasks—to both our advantage and our disadvantage.

This study highlighted many questions that need further exploration. In the case of our small student population, would their mood and cognition have improved even more dramatically if they had eaten several daily servings of vegetables and fruits, and limited the amount of sugars and other processed foods? What if they had supplemented their diets with essential fatty acids and good sources of protein?

Why did the breakfast drink make such a powerful difference in their emotional state? Did it normalize their blood sugar (blood sugar provides energy to the energy-hungry brain)? Did the proteins in the drink stimulate the production and activity of neurotransmitters and neurohormones? Did the vitamins and minerals fuel enzymatic reactions? Or all of the above?

I think it is fair to say that if we all simply ate better (if we ate real food) instead of waiting for scientists and studies and the advice of the "professionals," the answers to these questions would be moot. Our obsessive need to check with the experts before we sit down to a meal is unique to the

century. Until the past few decades (since man started tampering with the food supply), we ate what nature provided, grew healthy brains, and never gave it another thought.

THE AMERICAN FOOD CULTURE

Over the past century, the American food culture has gone through a transformation so pervasive and enormous that we have almost completely lost sight of what constitutes a normal diet. In our quest for convenience and a shift in culture and priorities, we have pushed aside the notion that the purpose of eating is to provide energy for our day-to-day activities and to maintain the structure of our changing bodies and brains.

Our new foods have changed our bodies and our brains. We look very much the same as our ancestors looked, although, statistically speaking, we are taller and heavier. Our babies are fatter when they are born, and our girls reach puberty several years earlier than their mothers and grand-mothers.

Our new foods, however, are altering the ability of our brains to think. They are altering both the structure and function of our physical brains, leaving us less able to cope with stress and more susceptible to the forms of mental illness I outline in the second half of this chapter.

Food has always played an important role beyond that of just providing nutrition. Our ancestors who were farmers and hunters had a kind of spiritual relationship with their food because they watched it grow. They handled it and tended it in the field and sought it out in the forest. When they served food, they knew that it was the stuff that built strong, vibrant children. A heavily laden table was the sign of a good provider, a sign that God and nature had been good to them.

While the food was simmering on the stove or baking in the oven, the aroma prepared the family to receive the meal. Salivary glands pumped out digestive juices well ahead of the first bite. The stomach, liver, pancreas, and other organs of digestion anticipated the meal's arrival. The mind and the body participated in the preparation, intake, and metabolization of the food. Eating was a fundamentally holistic experience, and as such, nourished the body and the mind.

Shifts in the way we procure our food and in the types and quality we are consuming, however, have left our brains and bodies deficient in the building materials that the brain needs in the first two years of life when it is undergoing its most critical period of development. Food has been stripped of the nutrients needed to remodel the brain later in life. We've been robbed of the very materials needed to create the neurohormones and neurotransmitters that comprise our body's communication system.

How did we let this happen?

Beginning in the 1800s, agriculture yielded to technology. In the latter part of that century the rolling mill brought white flour to the masses. Earlier mills were inefficient in removing all the bran and germ from the grain; however, the grain was still relatively rich in vitamins and minerals, more nutritious than it is today.

In her book *The Food Factor*, Barbara Griggs explains how "until the invention of roller milling wheat and other grains had been ground in stone mills to produce a whole-wheat, creamy-colored flour. For the fine white bread of the rich—which the poor also hankered for hopelessly—this flour

was sifted through finer and finer cloths to get rid of the bran and produce a flour of perhaps 85 or 90 percent extraction, as we would say today. What was removed in this sifting was the coarse outer covering of the wheat, its bran—which we now know to be rich in both minerals and the roughage which constipated modern man is so sorely in need. But even the most dedicated sifting never removed all of the germ of the wheat; and this, we now know, is rich in the B-complex vitamins, in an oil containing vitamin E, and in essential fatty acids. Thus what was considered fine white flour at the beginning of the nineteenth century was still relatively nutritious and vitamin-rich.

The fictitious person named Betty Crocker was first created in 1921 as a pen name for General Mills' consumer response department and, under her well-recognized image, turned several generations of Americans away from their traditional foods and toward highly processed, less-nutritious foods.

Excerpts from the promotional materials of General Mills explain how this happened: “We are on safari in Africa. How the women who live on remote farms in Kenya find the time and energy to devote to the finer points of baking while dealing with lions, leopards and locust plagues is remarkable. . . . The flour used here is simply ground wheat, not so fine nor white as General Mills Softasilk cake flour. Could you possibly tell us . . . what might be done to improve the quality of the Kenya flour?” (Letter from Mrs. Ernest Hemingway, 1954.)

The response of General Mills: “There isn't much your friends can do in their own kitchens to improve their flour, but they might refine the flour some by putting it through a sifter, fine strainer or through loosely woven silk cloth.”

By 1940, nine out of ten American homemakers knew Betty Crocker. She was the second-best-known woman in America, following First Lady Eleanor Roosevelt.²

“The new roller mills revolutionized man's most basic foodstuff. They split the wheat grain into a thousand fragments; with mechanical thoroughness they sifted it into a dozen different streams, so that at the touch of a button, the miller could now select for his customers only the fine starch and endosperm, to give them a flour white as never before.”³

Poor people could enjoy soft, fluffy bread instead of the heavy, dark bread that was so inexpensive. This event heralded the beginning of the food-processing industry, an industry that exploded with new technology in the twentieth century. Side by side with food technology came changes in agriculture that denuded the soil of nutrients. The soil itself, and the foods grown in it, became impoverished.

Sugar consumption was about ten pounds per year in 1821, but after the turn of the century, sugar intake began to soar, rising decade by decade to over 147 pounds per person in 1993. Our sugar consumption dropped slightly in 2004, (to roughly 141 pounds per person), but we now consume huge amounts of artificial sweeteners, with new types of sweeteners being added to the marketplace.

1942, the American Medical Association issued a warning about sugar consumption, reporting, “The consumption of sugar and of other relatively pure carbohydrates has become so great during recent years that it presents a serious obstacle to the improved nutrition of the general public.”⁴ Nobody listened then, and the AMA has since become nearly silent on the subject.

Consider these nutritional stats:

- Whereas we used to eat all of our meals either in our own homes or at the homes of friends, we now eat nearly half of our meals in restaurants, to the tune of over \$500 billion annually, and with a total economic impact of over \$1.3 trillion. The restaurant industry is the nation’s largest private-sector employer, providing jobs to more than 12 million people.

There are 925,000 restaurants in the United States, and forecasters predict that that amount will increase by 5 percent per year.⁵

- Consumption of vegetables has increased over the past two decades, with total per capita consumption of more than 442 pounds. Per capita consumption of fruits is more than 270 pounds.⁶

That increase may seem like good news. But most of the increase in eating vegetables and fruit has come from having more meals outside the home. No factor has had more influence over these growth statistics than frozen french fries. Processed potatoes, mostly chips and french fries, accounted for 27 percent of the growth in total vegetable consumption over the past few decades. Fifteen percent of tomatoes are processed into catsup, and the huge increase in consumption of french fries has, in turn, increased catsup demand. Other vegetables? Do not forget the pickled cucumbers, onions, garlic, mushrooms, and peppers that top our hamburgers and pizzas.⁷

- What else do we consume more? More than 52 gallons of soft drinks, nearly 25 gallons of coffee, and at least 25 gallons of alcoholic beverages per person per year. And oh, yes: 23 gallons of bottled water.⁸

There has been a long chain of concerned doctors and nutritionists who tried to awaken American conscience about the way they were eating, starting around the turn of the twentieth century. Dr. Max Bircher-Benner, Dr. Robert McCarrison, Dr. William Howard Hay, Dr. Henry Bieler, Dr. John Tilden, Gaylord Hauser, E. V. McColum (writer for *McCall’s*), Paul Bragg, and hundreds of other lesser-known teachers traveled around the world, wrote books, taught to huge audiences, and tried to open the eyes of the medical community about the hazards of eating highly processed foods. They were often censored by their fellow doctors, but they never softened their message.

During the earlier part of the twentieth century, periods of food shortages provided doctors with a unique opportunity to study the influence of processed foods on the health of entire nations. During World War I and World War II, when people often couldn’t afford such luxuries as sugar and white flour, or these foods were restricted by the government, they resorted to eating fresh vegetables, whole grains, and limited amounts of beef. Researchers found that the incidence of chronic disease and death dropped during these periods of deprivation.

The Danes enjoyed a diet rich in pork and dairy products. During the Allied blockade, Professor Mikkel Hindhede was appointed Food Adviser to the Danish Government, and following his

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