Why Sugar is Toxic to the Body

In 1957, Dr William Coda Martin tried to answer the question: When is a food a food and when is it a poison? His working definition of "poison" was: "Medically: Any substance applied to the body, ingested or developed within the body, which causes or may cause disease. Physically: Any substance which inhibits the activity of a catalyst which is a minor substance, chemical or enzyme that activates a reaction". The dictionary gives an even broader definition for "poison": "to exert a harmful influence on, or to pervert".

Dr Martin classified refined sugar as a poison because it has been depleted of its life forces, vitamins and minerals. "What is left consists of pure, refined carbohydrates. The body cannot utilize this refined starch and carbohydrate unless the depleted proteins, vitamins and minerals are present. Nature supplies these elements in each plant in quantities sufficient to metabolize the carbohydrate in that particular plant. There is no excess for other added carbohydrates. Incomplete carbohydrate metabolism results in the formation of 'toxic metabolite' such as pyruvic acid and abnormal sugars containing five carbon atoms. Pyruvic acid accumulates in the brain and nervous system and the abnormal sugars in the red blood cells. These toxic metabolites interfere with the respiration of the cells. They cannot get sufficient oxygen to survive and function normally. In time, some of the cells die. This interferes with the function of a part of the body and is the beginning of degenerative disease.".

Refined sugar is lethal when ingested by humans because it provides only that which nutritionists describe as "empty" or "naked" calories. It lacks the natural minerals which are present in the sugar beet or cane. In addition, sugar is worse than nothing because it drains and leaches the body of precious vitamins and minerals through the demand its digestion, detoxification and elimination make upon one's entire system.

So essential is balance to our bodies that we have many ways to provide against the sudden shock of a heavy intake of sugar. Minerals such as sodium (from salt), potassium and magnesium (from vegetables), and calcium (from the bones) are mobilised and used in chemical transmutation; neutral acids are produced which attempt to return the acid-alkaline balance factor of the blood to a more normal state.

Sugar taken every day produces a continuously overacid condition, and more and more minerals are required from deep in the body in the attempt to rectify the imbalance. Finally, in order to protect the blood, so much calcium is taken from the bones and teeth that decay and general weakening begin.

Excess sugar eventually affects every organ in the body. Initially, it is stored in the liver in the form of glucose (glycogen). Since the liver's capacity is limited, a daily intake of refined sugar (above the required amount of natural sugar) soon makes the liver expand like a balloon. When the liver is filled to its maximum capacity, the excess glycogen is returned to the blood in the form of fatty acids. These are taken to every part of the body and stored in the most inactive areas: the belly, the buttocks, the breasts and the thighs.

When these comparatively harmless places are completely filled, fatty acids are then distributed among active organs, such as the heart and kidneys. These begin to slow down; finally their tissues degenerate and turn to fat. The whole body is affected by their reduced ability, and abnormal blood pressure is created. The parasympathetic nervous system is affected; and organs governed by it, such as the small brain, become inactive or paralysed. (Normal brain function is rarely thought of as being as biologic as digestion.) The circulatory and lymphatic systems are invaded, and the quality of the red corpuscles starts to change. An overabundance of white cells occurs, and the creation of tissue becomes slower. Our body's tolerance and immunising power becomes more limited, so we cannot respond properly to extreme attacks, whether they be cold, heat, mosquitoes or microbes.

Excessive sugar has a strong mal-effect on the functioning of the brain. The key to orderly brain function is glutamic acid, a vital compound found in many vegetables. The B vitamins play a major role in dividing glutamic acid into antagonistic-complementary compounds which produce a "proceed" or "control" response in the brain. B vitamins are also manufactured by symbiotic bacteria which live in our intestines. When refined sugar is taken daily, these bacteria wither and die, and our stock of B vitamins gets very low. Too much sugar makes one sleepy; our ability to calculate and remember is lost.

Sugar: Harmful to Humans and Animals

Shipwrecked sailors who ate and drank nothing but sugar and rum for nine days surely went through some of this trauma; the tales they had to tell created a big public relations problem for the sugar pushers.

This incident occurred when a vessel carrying a cargo of sugar was shipwrecked in 1793. The five surviving sailors were finally rescued after being marooned for nine days. They were in a wasted condition due to starvation, having consumed nothing but sugar and rum.

The eminent French physiologist F. Magendie was inspired by that incident to conduct a series of experiments with animals, the results of which he published in 1816. In the experiments, he fed dogs a diet of sugar or olive oil and water. All the dogs wasted and died.

The shipwrecked sailors and the French physiologist's experimental dogs proved the same point. As a steady diet, sugar is worse than nothing. Plain water can keep you alive for quite some time. Sugar and water can kill you. Humans [and animals] are "unable to subsist on a diet of sugar".

The dead dogs in Professor Magendie's laboratory alerted the sugar industry to the hazards of free scientific inquiry. From that day to this, the sugar industry has invested millions of dollars in behind-the-scenes, subsidised science. The best scientific names that money could buy have been hired, in the hope that they could one day come up with something at least pseudoscientific in the way of glad tidings about sugar.

It has been proved, however, that (1) sugar is a major factor in dental decay; (2) sugar in a person's diet does cause overweight; (3) removal of sugar from diets has cured symptoms of crippling, worldwide diseases such as diabetes, cancer and heart illnesses.

Sir Frederick Banting, the codiscoverer of insulin, noticed in 1929 in Panama that, among sugar plantation owners who ate large amounts of their refined stuff, diabetes was common. Among native cane-cutters, who only got to chew the raw cane, he saw no diabetes.

However, the story of the public relations attempts on the part of the sugar manufacturers began in Britain in 1808 when the Committee of West India reported to the House of Commons that a prize of twenty-five guineas had been offered to anyone who could come up with the most "satisfactory" experiments to prove that unrefined sugar was good for feeding and fattening oxen, cows, hogs and sheep.5. Food for animals is often seasonal, always expensive. Sugar, by then, was dirt cheap. People weren't eating it fast enough.

Naturally, the attempt to feed livestock with sugar and molasses in England in 1808 was a disaster. When the Committee on West India made its fourth report to the House of Commons, one Member of Parliament, John Curwin, reported that he had tried to feed sugar and molasses to calves without success. He suggested that perhaps someone should try again by sneaking sugar and molasses into skimmed milk. Had anything come of that, you can be sure the West Indian sugar merchants would have spread the news around the world. After this singular lack of success in pushing sugar in cow pastures, the West Indian sugar merchants gave up.

With undaunted zeal for increasing the market demand for the most important agricultural product of the West Indies, the Committee of West India was reduced to a tactic that has served the sugar pushers for almost 200 years: irrelevant and transparently silly testimonials from faraway, inaccessible people with some kind of "scientific" credentials. One early commentator called them "hired consciences".

The House of Commons committee was so hard-up for local cheerleaders on the sugar question, it was reduced to quoting a doctor from faraway Philadelphia, a leader of the recent American colonial rebellion: "The great Dr Rush of Philadelphia is reported to have said that 'sugar contains more nutrients in the same bulk than any other known substance'." (Emphasis added.) At the same time, the same Dr Rush was preaching that masturbation was the cause of insanity! If a weasel-worded statement like that was quoted, one can be sure no animal doctor could be found in Britain who would recommend sugar for the care and feeding of cows, pigs or sheep.

While preparing his epochal volume, A History of Nutrition, published in 1957, Professor E. V. McCollum (Johns Hopkins University), sometimes called America's foremost nutritionist and certainly a pioneer in the field, reviewed approximately 200,000 published scientific papers, recording experiments with food, their properties, their utilisation and their effects on animals and men. The material covered the period from the mid-18th century to 1940. From this great repository of scientific inquiry, McCollum selected those experiments which he regarded as significant "to relate the story of progress in discovering human error in this segment of science [of nutrition]". Professor McCollum failed to record a single controlled scientific experiment with sugar between 1816 and 1940.

Unhappily, we must remind ourselves that scientists today, and always, accomplish little without a sponsor. The protocols of modern science have compounded the costs of scientific inquiry.

We have no right to be surprised when we read the introduction to McCollum's A History of Nutrition and find that "The author and publishers are indebted to The Nutrition Foundation, Inc., for a grant provided to meet a portion of the cost of publication of this book". What, you might ask, is The Nutrition Foundation, Inc.? The author and the publishers don't tell you. It happens to be a front organisation for the leading sugar-pushing conglomerates in the food business, including the American Sugar Refining Company, Coca-Cola, Pepsi-Cola, Curtis Candy Co., General Foods, General Mills, Nestlé Co., Pet Milk Co. and Sunshine Biscuits-about 45 such companies in all.

Perhaps the most significant thing about McCollum's 1957 history was what he left out: a monumental earlier work described by an eminent Harvard professor as "one of those epochal pieces of research which makes every other investigator desirous of kicking himself because he never thought of doing the same thing". In the 1930s, a research dentist from Cleveland, Ohio, Dr Weston A. Price, travelled all over the world-from the lands of the Eskimos to the South Sea Islands, from Africa to New Zealand. His Nutrition and Physical Degeneration: A Comparison of Primitive and Modern Diets and Their Effects,6 which is illustrated with hundreds of photographs, was first published in 1939.

Dr Price took the whole world as his laboratory. His devastating conclusion, recorded in horrifying detail in area after area, was simple. People who live under so-called backward primitive conditions had excellent teeth and wonderful general health. They ate natural, unrefined food from their own locale. As soon as refined, sugared foods were imported as a result of contact with "civilisation", physical degeneration began in a way that was definitely observable within a single generation.

Any credibility the sugar pushers have is based on our ignorance of works like that of Dr Price. Sugar manufacturers keep trying, hoping and contributing generous research grants to colleges and universities; but the research laboratories never come up with anything solid the manufacturers can use. Invariably, the research results are bad news.

"Let us go to the ignorant savage, consider his way of eating and be wise," Harvard professor Ernest Hooten said in Apes, Men, and Morons.7 "Let us cease pretending that toothbrushes and toothpaste are any more important than shoe brushes and shoe polish. It is store food that has given us store teeth."

When the researchers bite the hands that feed them, and the news gets out, it's embarrassing all around. In 1958, Time magazine reported that a Harvard biochemist and his assistants had worked with myriads of mice for more than ten years, bankrolled by the Sugar Research Foundation, Inc. to the tune of $57,000, to find out how sugar causes dental cavities and how to prevent this. It took them ten years to discover that there was no way to prevent sugar causing dental decay. When the researchers reported their findings in the Dental Association Journal, their source of money dried up. The Sugar Research Foundation withdrew its support.

The more that the scientists disappointed them, the more the sugar pushers had to rely on the ad men.

Sucrose: ''Pure'' Energy at a Price

When calories became the big thing in the 1920s, and everybody was learning to count them, the sugar pushers turned up with a new pitch. They boasted there were 2,500 calories in a pound of sugar. A little over a quarter-pound of sugar would produce 20 per cent of the total daily quota.

"If you could buy all your food energy as cheaply as you buy calories in sugar," they told us, "your board bill for the year would be very low. If sugar were seven cents a pound, it would cost less than $35 for a whole year."

A very inexpensive way to kill yourself.

"Of course, we don't live on any such unbalanced diet," they admitted later. "But that figure serves to point out how inexpensive sugar is as an energy-building food. What was once a luxury only a privileged few could enjoy is now a food for the poorest of people."

Later, the sugar pushers advertised that sugar was chemically pure, topping Ivory soap in that department, being 99.9 per cent pure against Ivory's vaunted 99.44 per cent. "No food of our everyday diet is purer," we were assured.

What was meant by purity, besides the unarguable fact that all vitamins, minerals, salts, fibres and proteins had been removed in the refining process? Well, the sugar pushers came up with a new slant on purity.

"You don't have to sort it like beans, wash it like rice. Every grain is like every other. No waste attends its use. No useless bones like in meat, no grounds like coffee."

"Pure" is a favourite adjective of the sugar pushers because it means one thing to the chemists and another thing to the ordinary mortals. When honey is labelled pure, this means that it is in its natural state (stolen directly from the bees who made it), with no adulteration with sucrose to stretch it and no harmful chemical residues which may have been sprayed on the flowers. It does not mean that the honey is free from minerals like iodine, iron, calcium, phosphorus or multiple vitamins. So effective is the purification process which sugar cane and beets undergo in the refineries that sugar ends up as chemically pure as the morphine or the heroin a chemist has on the laboratory shelves. What nutritional virtue this abstract chemical purity represents, the sugar pushers never tell us.

Beginning with World War I, the sugar pushers coated their propaganda with a preparedness pitch. "Dietitians have known the high food value of sugar for a long time," said an industry tract of the 1920s. "But it took World War I to bring this home. The energy-building power of sugar reaches the muscles in minutes and it was of value to soldiers as a ration given them just before an attack was launched." The sugar pushers have been harping on the energy-building power of sucrose for years because it contains nothing else. Caloric energy and habit-forming taste: that's what sucrose has, and nothing else.

All other foods contain energy plus. All foods contain some nutrients in the way of proteins, carbohydrates, vitamins or minerals, or all of these. Sucrose contains caloric energy, period.

The "quick" energy claim the sugar pushers talk about, which drives reluctant doughboys over the top and drives children up the wall, is based on the fact that refined sucrose is not digested in the mouth or the stomach but passes directly to the lower intestines and thence to the bloodstream. The extra speed with which sucrose enters the bloodstream does more harm than good.

Much of the public confusion about refined sugar is compounded by language. Sugars are classified by chemists as "carbohydrates". This manufactured word means "a substance containing carbon with oxygen and hydrogen". If chemists want to use these hermetic terms in their laboratories when they talk to one another, fine. The use of the word "carbohydrate" outside the laboratory-especially in food labelling and advertising lingo-to describe both natural, complete cereal grains (which have been a principal food of mankind for thousands of years) and man-refined sugar (which is a manufactured drug and principal poison of mankind for only a few hundred years) is demonstrably wicked. This kind of confusion makes possible the flimflam practised by sugar pushers to confound anxious mothers into thinking kiddies need sugar to survive.

In 1973, the Sugar Information Foundation placed full-page advertisements in national magazines. Actually, the ads were disguised retractions they were forced to make in a strategic retreat after a lengthy tussle with the Federal Trade Commission over an earlier ad campaign claiming that a little shot of sugar before meals would "curb" your appetite. "You need carbohydrates. And it so happens that sugar is the best-tasting carbohydrate." You might as well say everybody needs liquids every day. It so happens that many people find champagne is the best-tasting liquid. How long would the Women's Christian Temperance Union let the liquor lobby get away with that one?

The use of the word "carbohydrate" to describe sugar is deliberately misleading. Since the improved labelling of nutritional properties was required on packages and cans, refined carbohydrates like sugar are lumped together with those carbohydrates which may or may not be refined. The several types of carbohydrates are added together for an overall carbohydrate total. Thus, the effect of the label is to hide the sugar content from the unwary buyer. Chemists add to the confusion by using the word "sugar" to describe an entire group of substances that are similar but not identical.

Glucose is a sugar found usually with other sugars, in fruits and vegetables. It is a key material in the metabolism of all plants and animals. Many of our principal foods are converted into glucose in our bodies. Glucose is always present in our bloodstream, and it is often called "blood sugar".

Dextrose, also called "corn sugar", is derived synthetically from starch. Fructose is fruit sugar. Maltose is malt sugar. Lactose is milk sugar. Sucrose is refined sugar made from sugar cane and sugar beet.

Glucose has always been an essential element in the human bloodstream. Sucrose addiction is something new in the history of the human animal. To use the word "sugar" to describe two substances which are far from being identical, which have different chemical structures and which affect the body in profoundly different ways compounds confusion.

It makes possible more flimflam from the sugar pushers who tell us how important sugar is as an essential component of the human body, how it is oxidised to produce energy, how it is metabolised to produce warmth, and so on. They're talking about glucose, of course, which is manufactured in our bodies. However, one is led to believe that the manufacturers are talking about the sucrose which is made in their refineries. When the word "sugar" can mean the glucose in your blood as well as the sucrose in your Coca-Cola, it's great for the sugar pushers but it's rough on everybody else.

People have been bamboozled into thinking of their bodies the way they think of their cheque accounts. If they suspect they have low blood sugar, they are programmed to snack on vending machine candies and sodas in order to raise their blood sugar level. Actually, this is the worst thing to do. The level of glucose in their blood is apt to be low because they are addicted to sucrose. People who kick sucrose addiction and stay off sucrose find that the glucose level of their blood returns to normal and stays there.

Since the late 1960s, millions of Americans have returned to natural food. A new type of store, the natural food store, has encouraged many to become dropouts from the supermarket. Natural food can be instrumental in restoring health. Many people, therefore, have come to equate the word "natural" with "healthy". So the sugar pushers have begun to pervert the word "natural" in order to mislead the public.

"Made from natural ingredients", the television sugar-pushers tell us about product after product. The word "from" is not accented on television. It should be. Even refined sugar is made from natural ingredients. There is nothing new about that. The natural ingredients are cane and beets. But that four-letter word "from" hardly suggests that 90 per cent of the cane and beet have been removed. Heroin, too, could be advertised as being made from natural ingredients. The opium poppy is as natural as the sugar beet. It's what man does with it that tells the story.

If you want to avoid sugar in the supermarket, there is only one sure way. Don't buy anything unless it says on the label prominently, in plain English: "No sugar added". Use of the word "carbohydrate" as a "scientific" word for sugar has become a standard defence strategy

with sugar pushers and many of their medical apologists. It's their security blanket.

Correct Food Combining

Whether it's sugared cereal or pastry and black coffee for breakfast, whether it's hamburgers and Coca-Cola for lunch or the full "gourmet" dinner in the evening, chemically the average American diet is a formula that guarantees bubble, bubble, stomach trouble.

Unless you've taken too much insulin and, in a state of insulin shock, need sugar as an antidote, hardly anyone ever has cause to take sugar alone. Humans need sugar as much as they need the nicotine in tobacco. Crave it is one thing-need it is another. From the days of the Persian Empire to our own, sugar has usually been used to hop up the flavour of other food and drink, as an ingredient in the kitchen or as a condiment at the table. Let us leave aside for the moment the known effect of sugar (long-term and short-term) on the entire system and concentrate on the effect of sugar taken in combination with other daily foods.

When Grandma warned that sugared cookies before meals "will spoil your supper", she knew what she was talking about. Her explanation might not have satisfied a chemist but, as with many traditional axioms from the Mosaic law on kosher food and separation in the kitchen, such rules are based on years of trial and error and are apt to be right on the button. Most modern research in combining food is a laboured discovery of the things Grandma took for granted.

Any diet or regimen undertaken for the single purpose of losing weight is dangerous, by definition. Obesity is talked about and treated as a disease in 20th-century America. Obesity is not a disease. It is only a symptom, a sign, a warning that your body is out of order. Dieting to lose weight is as silly and dangerous as taking aspirin to relieve a headache before you know the reason for the headache. Getting rid of a symptom is like turning off an alarm. It leaves the basic cause untouched.

Any diet or regimen undertaken with any objective short of restoration of total health of your body is dangerous. Many overweight people are undernourished. (Dr H. Curtis Wood stresses this point in his 1971 book, Overfed But Undernourished.) Eating less can aggravate this condition, unless one is concerned with the quality of the food instead of just its quantity.

Many people-doctors included-assume that if weight is lost, fat is lost. This is not necessarily so. Any diet which lumps all carbohydrates together is dangerous. Any diet which does not consider the quality of carbohydrates and makes the crucial life-and-death distinction between natural, unrefined carbohydrates like whole grains and vegetables and man-refined carbohydrates like sugar and white flour is dangerous. Any diet which includes refined sugar and white flour, no matter what "scientific" name is applied to them, is dangerous.

Kicking sugar and white flour and substituting whole grains, vegetables and natural fruits in season, is the core of any sensible natural regimen. Changing the quality of your carbohydrates can change the quality of your health and life. If you eat natural food of good quality, quantity tends to take care of itself. Nobody is going to eat a half-dozen sugar beets or a whole case of sugar cane. Even if they do, it will be less dangerous than a few ounces of sugar.

Sugar of all kinds-natural sugars, such as those in honey and fruit (fructose), as well as the refined white stuff (sucrose)-tends to arrest the secretion of gastric juices and have an inhibiting effect on the stomach's natural ability to move. Sugars are not digested in the mouth, like cereals, or in the stomach, like animal flesh. When taken alone, they pass quickly through the stomach into the small intestine. When sugars are eaten with other foods-perhaps meat and bread in a sandwich-they are held up in the stomach for a while. The sugar in the bread and the Coke sit there with the hamburger and the bun waiting for them to be digested. While the stomach is working on the animal protein and the refined starch in the bread, the addition of the sugar practically guarantees rapid acid fermentation under the conditions of warmth and moisture existing in the stomach.

One lump of sugar in your coffee after a sandwich is enough to turn your stomach into a fermenter. One soda with a hamburger is enough to turn

your stomach into a still. Sugar on cereal-whether you buy it already sugared in a box or add it yourself-almost guarantees acid fermentation.

Since the beginning of time, natural laws were observed, in both senses of that word, when it came to eating foods in combination. Birds have been observed eating insects at one period in the day and seeds at another. Other animals tend to eat one food at a time. Flesh-eating animals take their protein raw and straight.

In the Orient, it is traditional to eat yang before yin. Miso soup (fermented soybean protein, yang) for breakfast; raw fish (more yang protein) at the beginning of the meal; afterwards comes the rice (which is less yang than the miso and fish); and then the vegetables which are yin. If you ever eat with a traditional Japanese family and you violate this order, the Orientals (if your friends) will correct you courteously but firmly.

The law observed by Orthodox Jews prohibits many combinations at the same meal, especially flesh and dairy products. Special utensils for the dairy meal and different utensils for the flesh meal reinforce that taboo at the food's source in the kitchen.

Man learned very early in the game what improper combinations of food could do to the human system. When he got a stomach ache from combining raw fruit with grain, or honey with porridge, he didn't reach for an antacid tablet. He learned not to eat that way. When gluttony and excess became widespread, religious codes and commandments were invoked against it. Gluttony is a capital sin in most religions; but there are no specific religious warnings or commandments against refined sugar because sugar abuse-like drug abuse-did not appear on the world scene until centuries after holy books had gone to press.

"Why must we accept as normal what we find in a race of sick and weakened human beings?" Dr Herbert M. Shelton asks. "Must we always take it for granted that the present eating practices of civilized men are normal?... Foul stools, loose stools, impacted stools, pebbly stools, much foul gas, colitis, haemorrhoids, bleeding with stools, the need for toilet paper are swept into the orbit of the normal."8.

When starches and complex sugars (like those in honey and fruits) are digested, they are broken down into simple sugars called "monosaccharides", which are usable substances-nutriments. When starches and sugars are taken together and undergo fermentation, they are broken down into carbon dioxide, acetic acid, alcohol and water. With the exception of the water, all these are unusable substances-poisons.

When proteins are digested, they are broken down into amino acids, which are usable substances-nutriments. When proteins are taken with sugar, they putrefy; they are broken down into a variety of ptomaines and leucomaines, which are nonusable substances-poisons.

Enzymic digestion of foods prepares them for use by our body. Bacterial decomposition makes them unfit for use by our body. The first process gives us nutriments; the second gives us poisons.

Much that passes for modern nutrition is obsessed with a mania for quantitative counting. The body is treated like a cheque account. Deposit calories (like dollars) and withdraw energy. Deposit proteins, carbohydrates, fats, vitamins and minerals-balanced quantitatively-and the result, theoretically, is a healthy body. People qualify as healthy today if they can crawl out of bed, get to the office and sign in. If they can't make it, call the doctor to qualify for sick pay, hospitalisation, rest cure-anything from a day's pay without working to an artificial kidney, courtesy of the taxpayers.

But what doth it profit someone if the theoretically required calories and nutrients are consumed daily, yet this random eat-on-the-run, snack-time collection of foods ferments and putrefies in the digestive tract? What good is it if the body is fed protein, only to have it putrefy in the gastrointestinal canal? Carbohydrates that ferment in the digestive tract are converted into alcohol and acetic acid, not digestible monosaccharides.

"To derive sustenance from foods eaten, they must be digested," Shelton warned years ago. "They must not rot."

Sure, the body can get rid of poisons through the urine and the pores; the amount of poisons in the urine is taken as an index to what's going on in the intestine. The body does establish a tolerance

for these poisons, just as it adjusts gradually to an intake of heroin. But, says Shelton, "the discomfort from accumulation of gas, the bad breath, and foul and unpleasant odors are as undesirable as are the poisons".9

Sugar and Mental Health

In the Dark Ages, troubled souls were rarely locked up for going off their rocker. Such confinement began in the Age of Enlightenment, after sugar made the transition from apothecary's prescription to candymaker's confection. "The great confinement of the insane", as one historian calls it,10 began in the late 17th century, after sugar consumption in Britain had zoomed in 200 years from a pinch or two in a barrel of beer, here and there, to more than two million pounds per year. By that time, physicians in London had begun to observe and record terminal physical signs and symptoms of the "sugar blues".

Meanwhile, when sugar eaters did not manifest obvious terminal physical symptoms and the physicians were professionally bewildered, patients were no longer pronounced bewitched, but mad, insane, emotionally disturbed. Laziness, fatigue, debauchery, parental displeasure-any one problem was sufficient cause for people under twenty-five to be locked up in the first Parisian mental hospitals. All it took to be incarcerated was a complaint from parents, relatives or the omnipotent parish priest. Wet nurses with their babies, pregnant youngsters, retarded or defective children, senior citizens, paralytics, epileptics, prostitutes or raving lunatics-anyone wanted off the streets and out of sight was put away. The mental hospital succeeded witch-hunting and heresy-hounding as a more enlightened and humane method of social control. The physician and priest handled the dirty work of street sweeping in return for royal favours.

Initially, when the General Hospital was established in Paris by royal decree, one per cent of the city's population was locked up. From that time until the 20 century, as the consumption of sugar went up and up-especially in the cities-so did the number of people who were put away in the General Hospital. Three hundred years later, the "emotionally disturbed" can be turned into walking automatons, their brains controlled with psychoactive drugs.

Today, pioneers of orthomolecular psychiatry, such as Dr Abram Hoffer, Dr Allan Cott, Dr A. Cherkin as well as Dr Linus Pauling, have confirmed that mental illness is a myth and that emotional disturbance can be merely the first symptom of the obvious inability of the human system to handle the stress of sugar dependency.

In Orthomolecular Psychiatry, Dr Pauling writes: "The functioning of the brain and nervous tissue is more sensitively dependent on the rate of chemical reactions than the functioning of other organs and tissues. I believe that mental disease is for the most part caused by abnormal reaction rates, as determined by genetic constitution and diet, and by abnormal molecular concentrations of essential substances... Selection of food (and drugs) in a world that is undergoing rapid scientific and technological change may often be far from the best."

In Megavitamin B3 Therapy for Schizophrenia, Dr Abram Hoffer notes: "Patients are also advised to follow a good nutritional program with restriction of sucrose and sucrose-rich foods."

Clinical research with hyperactive and psychotic children, as well as those with brain injuries and learning disabilities, has shown:

"An abnormally high family history of diabetes-that is, parents and grandparents who cannot handle sugar; an abnormally high incidence of low blood glucose, or functional hypoglycemia in the children themselves, which indicates that their systems cannot handle sugar; dependence on a high level of sugar in the diets of the very children who cannot handle it.

"Inquiry into the dietary history of patients diagnosed as schizophrenic reveals the diet of their choice is rich in sweets, candy, cakes, coffee, caffeinated beverages, and foods prepared with sugar. These foods, which stimulate the adrenals, should be eliminated or severely restricted."13

The avant-garde of modern medicine has rediscovered what the lowly sorceress learned long ago through painstaking study of nature.

"In more than twenty years of psychiatric work," writes Dr Thomas Szasz, "I have never known a clinical psychologist to report, on the basis of a projective test, that the subject is a normal,

mentally healthy person. While some witches may have survived dunking, no 'madman' survives psychological testing...there is no behavior or person that a modern psychiatrist cannot plausibly diagnose as abnormal or ill."14.

So it was in the 17th century. Once the doctor or the exorcist had been called in, he was under pressure to do something. When he tried and failed, the poor patient had to be put away. It is often said that surgeons bury their mistakes. Physicians and psychiatrists put them away; lock 'em up.

In the 1940s, Dr John Tintera rediscovered the vital importance of the endocrine system, especially the adrenal glands, in "pathological mentation"-or "brain boggling". In 200 cases under treatment for hypoadrenocorticism (the lack of adequate adrenal cortical hormone production or imbalance among these hormones), he discovered that the chief complaints of his patients were often similar to those found in persons whose systems were unable to handle sugar: fatigue, nervousness, depression, apprehension, craving for sweets, inability to handle alcohol, inability to concentrate, allergies, low blood pressure. Sugar blues!

Dr Tintera finally insisted that all his patients submit to a four-hour glucose tolerance test (GTT) to find out whether or not they could handle sugar. The results were so startling that the laboratories double-checked their techniques, then apologised for what they believed to be incorrect readings. What mystified them was the low, flat curves derived from disturbed, early adolescents. This laboratory procedure had been previously carried out only for patients with physical findings presumptive of diabetes.

Dorland's definition of schizophrenia (Bleuler's dementia praecox) includes the phrase, "often recognized during or shortly after adolescence", and further, in reference to hebephrenia and catatonia, "coming on soon after the onset of puberty".

These conditions might seem to arise or become aggravated at puberty, but probing into the patient's past will frequently reveal indications which were present at birth, during the first year of life, and through the preschool and grammar school years. Each of these periods has its own characteristic clinical picture. This picture becomes more marked at pubescence and often causes school officials to complain of juvenile delinquency or underachievement.

A glucose tolerance test at any of these periods could alert parents and physicians and could save innumerable hours and small fortunes spent in looking into the child's psyche and home environment for maladjustments of questionable significance in the emotional development of the average child.

The negativism, hyperactivity and obstinate resentment of discipline are absolute indications for at least the minimum laboratory tests: urinalysis, complete bloodcount, PBI determination, and the five-hour glucose tolerance test. A GTT can be performed on a young child by the micro-method without undue trauma to the patient. As a matter of fact, I have been urging that these four tests be routine for all patients, even before a history or physical examination is undertaken.

In almost all discussions on drug addiction, alcoholism and schizophrenia, it is claimed that there is no definite constitutional type that falls prey to these afflictions. Almost universally, the statement is made that all of these individuals are emotionally immature. It has long been our goal to persuade every physician, whether oriented toward psychiatry, genetics or physiology, to recognise that one type of endocrine individual is involved in the majority of these cases: the hypoadrenocortic.15

Tintera published several epochal medical papers. Over and over, he emphasised that improvement, alleviation, palliation or cure was "dependent upon the restoration of the normal function of the total organism". His first prescribed item of treatment was diet. Over and over again, he said that "the importance of diet cannot be overemphasised". He laid out a sweeping permanent injunction against sugar in all forms and guises.

While Egas Moniz of Portugal was receiving a Nobel Prize for devising the lobotomy operation for the treatment of schizophrenia, Tintera's reward was to be harassment and hounding by the pundits of organised medicine. While

Tintera's sweeping implication of sugar as a cause of what was called "schizophrenia" could be confined to medical journals, he was let alone, ignored. He could be tolerated-if he stayed in his assigned territory, endocrinology. Even when he suggested that alcoholism was related to adrenals that had been whipped by sugar abuse, they let him alone; because the medicos had decided there was nothing in alcoholism for them except aggravation, they were satisfied to abandon it to Alcoholics Anonymous. However, when Tintera dared to suggest in a magazine of general circulation that "it is ridiculous to talk of kinds of allergies when there is only one kind, which is adrenal glands impaired...by sugar", he could no longer be ignored.

The allergists had a great racket going for themselves. Allergic souls had been entertaining each other for years with tall tales of exotic allergies-everything from horse feathers to lobster tails. Along comes someone who says none of this matters: take them off sugar, and keep them off it.

Perhaps Tintera's untimely death in 1969 at the age of fifty-seven made it easier for the medical profession to accept discoveries that had once seemed as far out as the simple oriental medical thesis of genetics and diet, yin and yang. Today, doctors all over the world are repeating what Tintera announced years ago: nobody, but nobody, should ever be allowed to begin what is called "psychiatric treatment", anyplace, anywhere, unless and until they have had a glucose tolerance test to discover if they can handle sugar.

So-called preventive medicine goes further and suggests that since we only think we can handle sugar because we initially have strong adrenals, why wait until they give us signs and signals that they're worn out? Take the load off now by eliminating sugar in all forms and guises, starting with that soda pop you have in your hand.

The mind truly boggles when one glances over what passes for medical history. Through the centuries, troubled souls have been barbecued for bewitchment, exorcised for possession, locked up for insanity, tortured for masturbatory madness, psychiatrised for psychosis, lobotomised for schizophrenia. How many patients would have listened if the local healer had told them that the only thing ailing them was sugar blues?

Endnotes:

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