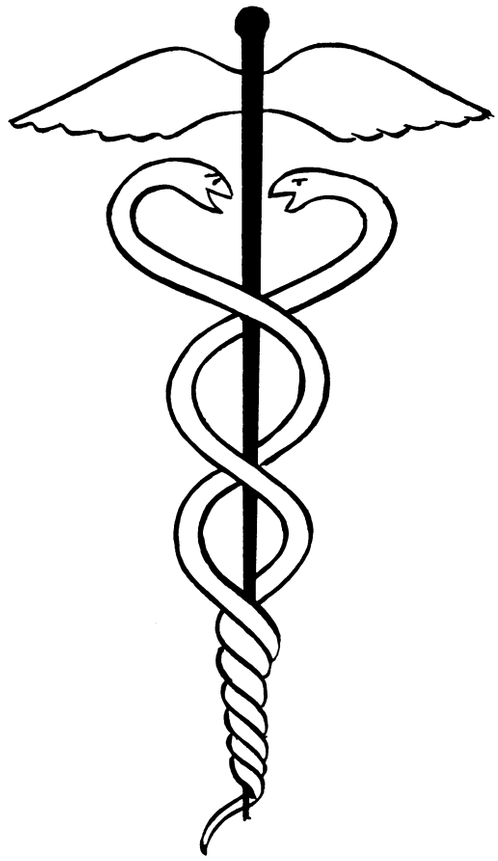
The great medical debate over low blood sugar



How many people have hypoglycemia? How many of our social and emotional problems can be attributed to it? The answers, in a medical conflict that seems to have no middle ground, depend on whom you ask.

by Joan Arehart-Treichel

The prevalence of violence, rebellion, depression, anxiety, fatigue, nervous breakdown, sexual inadequacy and divorce in American society suffers no shortage of explanations based solely on social and environmental causes. But recent years have seen a segment of the medical community proposing and actively advocating another explanation attributed to a single biological condition—low blood sugar, also known as "hypoglycemia."

This explanation was introduced and promoted by nutrition messiahs such as Adelle Davis, Carlton Fredericks and the Hypoglycemia Foundation in Mount Vernon, N.Y., which attempts to alert Americans to low blood sugar problems and to available treatment by physicians. Davis wrote, "Irritability resulting from low blood sugar can be a factor in divorces." Fredericks proclaimed on the Merv Griffin show that 20 million Americans suffer from low blood sugar. A Hypoglycemia Foundation pamphlet proclaims: "There is probably no illness today which causes such widespread suffering, so much inefficiency and loss of time, so many accidents, so many family breakups, and so many suicides, as that of hypoglycemia." The popular press disseminated the message further. FAMILY CIRCLE printed in June 1965: "Millions among us . . . suffer unknowingly from low blood sugar." TOWN AND COUNTRY stated in June 1971: "Ten million Americans have hypoglycemia."

Yet how many Americans really do suffer from chronic low blood sugar? And of those who do, how many emotional problems can really be attributed to the condition? Since no comprehensive scientific study has been conducted to find out, the answer depends on which physicians you talk with.

One of the strongest answers comes from the American Medical Association, the American Diabetes Association and the Endocrine Society, which stated their position on low blood sugar in an editorial statement in the Feb. 5 JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. The position is that few Americans suffer from low blood sugar and that those who do are not particularly affected by it.

"There is no good evidence," the associations' statement declares, "that hypoglycemia causes depression, chronic fatigue, allergies, nervous breakdowns, alcoholism, juvenile delinquency, childhood behavior problems, drug addiction or inadequate sexual performance." An opposite answer, however, is provided by the several hundred physicians who serve as consultants or cooperating physicians for the Hypoglycemia Foundation. Asserts one consultant: "I believe we have an epidemic of suboptimal carbohydrate metabolism, just like we have a lot of suboptimal things." Declares one of the foundation's cooperating physicians: "I see many patients with low blood sugar. Some I diagnose by chance, others are referred."

And then there are a number of physicians who have their own views on low blood sugar. Says Leonard Kryston,

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an endocrinologist at Hahnemann Medical College and Hospital in Philadelphia: "We see a lot of patients with low blood sugar. I do think it is a problem and not enough general physicians are aware of it." Marvin Cornblath, chairman of pediatrics at the University of Maryland School of Medicine believes that few adults and older children have low blood sugar. "Yet low blood sugar," he asserts, "is a significant event in infants, particularly in those that are low birth weight, of diabetic mothers, and it can have serious consequences. . . ." Jack L. Ward, a psychiatrist at Mercer Hospital, Trenton, N.J., reports that "about half the people I see for psychiatric problems have abnormal blood sugar. . . . The incidence in schizophrenia is high and in neuroses even higher." Declares Theodore G. Duncan, an internist at the University of Pennsylvania School of Medicine, "Although hypoglycemia is not a common diagnosis, I find quite a few patients with it."

Even those physicians who believe many Americans have low blood sugar, though, agree that the problem is hard to focus in on. To begin with, low blood sugar can trigger a welter of symptoms. "Depression and anxiety are two things we find frequently," says Kryston. "Other things are poor concentration, headaches, visual blurring." Says James Field of the University of Pittsburgh School of Medicine, "Hypoglycemia can cause depression, chronic fatigue, allergies, nervous breakdowns. . . ." Says Ward, "The usual symptoms are fatigue, depression, anxiety, irritability, some perceptual distortion, some confusion. Some people in their forties think they are going senile when they are not." Asserts a Scarsdale, N.Y., general practitioner, "Hypoglycemia episodes can mimic almost every neurologic and psychiatric disorder—thick speech, sleepiness, restlessness, negativism, personality changes, emotional instability, maniacal behavior, acute paranoia. . . ." Duncan stresses that half of his patients with low blood sugar do not have symptoms they themselves are aware of, yet they suffer from slower mental and motor functioning, which can be a hazard at work or while driving. Five of his low blood sugar patients have carried drunkometers in their automobiles for six months now, to detect low blood sugar levels that might make them unsafe behind the wheel.

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Statement in brochure . . .

As if the symptoms of hypoglycemia are not complex and deceptive enough, the physician is faced with the further challenge of diagnosing it. The usual test is a five- or six-hour glucose tolerance test. The patient fasts during the night, then receives a dose of glucose the next morning in the doctor's office. The doctor draws blood samples periodically for the next five or six hours, and charts how much glucose is in them. A typically healthy response shows a rise in glucose after eating, then a gradual tapering off. A typical low blood sugar response shows a marked rise in glucose after eating, then a drastic falling off around the third or fourth hour. There is no hard and fast "normal" or "abnormal" response, though, DeSaussure F. Philpot, a New York City psychiatrist, stresses. What one physician may interpret as low blood sugar another may call a borderline case.

Getting at the cause or causes of low blood sugar is also tough, physicians concur. Essentially there are two kinds —the organic, fasting variety, and the functional, after-meal variety. The functional variety is far more common.

When a person has organic low blood sugar, he wakes up in the middle of the night with symptoms or has symptoms before eating meals. A frequent cause of organic low blood sugar is a tumor of the pancreas, which causes the pancreas to pump out too much insulin all the time, thereby depleting the body's blood sugar. When a person has functional low blood sugar, his symptoms will appear three or four hours after meals. The basic cause of functional low blood sugar is sporadic insulin output. A person's insulin response is a bit sluggish after a meal, so his blood sugar shoots up at that time. Yet by the time insulin moves into gear, it pumps too hard, and drastically depletes blood sugar.

Steroid hormones released by the cortex of the adrenal gland may aggravate low blood sugar, Hypoglycemia Foundation physicians and some other physicians believe. They claim that the adrenal steroids, which normally keep insulin under control, are inadequate in many cases of low blood sugar. The AMA, ADA and Endocrine Society, however, disagree. In their statement in JAMA they declare: " . . . adrenal insufficiency, itself an uncommon condition, is a *rare* cause of hypoglycemia." A lot of other factors, physicians tend to agree, may also trigger or influence low blood sugar—disturbances of the liver (which stores and releases sugar), pituitary gland or thyroid gland; drug overdoses, and drinking alcohol without eating. "There are also causes we don't understand," Field admits.

If physicians disagree over who has low blood sugar and what its behavioral effects are, they also differ over what should be done about it. Most will concur that if the cause is a tumor of the pancreas, then the tumor should be excised. Most will concur that the first line of treatment for most other kinds of hypoglycemia should be a high protein, low carbohydrate, many-meal diet, in order to steady the patient's insulin and glucose levels. But if the diet does not work, many physicians part company on what the next treatment should be. Some, such as Kryston, use drugs that stabilize the blood sugar, or that adjust the sugar and insulin levels. Others use extracts of the adrenal cortex, which is by far the most controversial treatment for low blood sugar.

causes such widespread suffering, so much inefficiency and loss of time, so many accidents, so many family break-ups, and so many suicides, as that of Hypoglycemia." This statement was addressed in 1957 to an American Medical Association meeting. In 1963 Robert Greenblatt wrote in his *SEARCH THE SCRIPTURES,* "Even today its diagnosis is often missed because of the extreme variability of its manifestations. The occurrence of functional Hypoglycemia, although frequent enough, is understood so poorly that the disorder has earned the soubriquet, Stepchild of Medicine." Other doctors have pointed out that controlling Hypoglycemia is frequently relatively simple, and that such control could do much to prevent diabetes and to reduce alcoholism and drug addiction; to combat juvenile delinquency, mental retardation, chronic fatigue, asthma, allergies, and many other serious problems.

. . . by hypoglycemia supporters.

The AMA, ADA and Endocrine Society declare in the Feb. 5 JAMA "that administration of adrenal cortical extract is not an appropriate treatment for any cause of hypoglycemia." Says Duncan, "The AMA has come out against adrenal shots. I totally concur." Says Ward, "Using large quantities of adrenal hormones in patients is unnecessary and possibly even dangerous." Many Hypoglycemia Foundation physicians, however, will swear by the value of the extracts in relieving low blood sugar. Says one, "About 50 percent of my patients improve from the extracts. Nothing else helped them." Says Kryston, "Although I have not been using adrenal extracts myself, mainly because I have had so much success with diet and a blood-sugar stabilizer, there is

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some rationale to using the extracts. The adrenal cortical steroids of low blood sugar patients are relatively insufficient."

Yet as Field points out, "There are a lot of people who are being treated with extracts where there is no evidence that is what they are deficient in." Philpot backs him, "I am sure there are some people who are getting the extracts who are helped by them to some extent. I am sure some people get them who don't need them." The problem, it appears, is that it is costly to diagnose a patient for adrenal hormone insufficiency, and few physicians want to burden patients with the expense. As a result, they may treat patients with the extracts not knowing for sure whether the patients lack adrenal steroids or not. If a patient responds, fine. If he does not, the physician may look toward another treatment. This appears to be the approach taken by a number of Hypoglycemia Foundation physicians. The AMA, ADA and Endocrine Society, however, take issue with it in the JAMA editorial. They write that before a patient is treated for low blood sugar, "the particular kind of hypoglycemia that is producing the symptoms [should] be established."

So with physicians warring over how much American neurosis, psychosis, decreased mental sharpness and decreased muscle function is due to low blood sugar, and what should be done about it, who really has low blood sugar and what should be done for them? Until a comprehensive, scientific study is conducted to get the answers, no physicians, however blatent or ardent, will have the final word on the subject.

There is little doubt that the Hypoglycemia Foundation, and the physicians who support it, are guilty of messianic fervor, as they strive to rid thousands of Americans of neuroses, psychoses or whatever by readjusting their blood sugar levels. Yet who is to say their goal is not a sound one? As Ward points out, psychiatrists are trained in medical schools "to practically ignore organic factors." Says Kryston, "Most physicians do not screen for low blood sugar." What's more, the AMA, ADA and Endocrine Society assertions that few Americans have low blood sugar and that adrenal extract treatments are a no-no are not without emotion and bias, either.

For example, when SCIENCE NEWS attempted to track down the scientific evidence upon which these assertions were based, JAMA editors were vague about who put the editorial-statement together. Hugh Hussey, the editor-in-chief of JAMA, said contributing editor Henry Ricketts had a hand in it. Ricketts said no: "I didn't do it, I'm quite sure. It's quite possible that Edward H. Rynearson of the Mayo Clinic wrote it." Rynearson told SCIENCE NEWS he had not only *not* written it, he hadn't even read it. Finally the ADA tipped off SCIENCE NEWS that Stefan S. Fajans of the University of Michigan Medical School had helped engineer the statement. Fajans admitted that he had. He also confirmed what many Hypoglycemia Foundation physicians suspected—that the statement was largely targeted at the Hypoglycemia Foundation, and what the AMA, ADA and Endocrine Society believe to be unethical adrenal cortical extract treatments. Says Fajans, "We did not mention the Hypoglycemia Foundation because by giving them publicity we are playing into their hands. . . . There are some patients who are writing to journals like CONSUMER REPORTS, complaining that they have been billed large amounts for adrenal extract treatments." When asked whether many physicians might be profiting personally from such treatments, Fajans replied, "Probably only a minority of physicians."

Statement on Hypoglycemia

Recent publicity in the popular press has led the public to believe that the occurrence of hypoglycemia is widespread in this country and that many of the symptoms that affect the American population are not recognized as being caused by this condition. These claims are not supported by medical evidence . . . .

JAMA statement debunking ailment.

Whether the Hypoglycemia Foundation and adrenal extract treatments deserve the railing JAMA gives them or not, there is little doubt that the JAMA statement will influence many of the nation's physicians. A Kansas City internist admits, "Although the statement makes some claims that the AMA would have trouble backing scientifically, the statement is still the kind of thing that makes doctors feel terribly uncomfortable. This is the Establishment talking, the AMA to which we belong." Says Philpot, "I filed the editorial under 'Love's Old Sweet Song,' because it comes out periodically. It represents a kind of close-mindedness to the whole low sugar business."

So until physicians cool off, raise their blood sugar and are willing to examine the low blood sugar subject objectively and scientifically, whether a number of Americans have low blood sugar or not depends largely on which physician they go to. Rynearson puts the matter succinctly: "If the physician is a good vitamin man, his patients get all the vitamins, including B_{12} in the rump. If the physician is a good hormone man, they get shots of hormones. If he's a psychiatrist, why then, they lie down on the couch. And if he's interested in this blood sugar business, then, by God, they've got hypoglycemia." □

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