

SUGAR and SPICE ~ BUT NOT VERY NICE



SUGAR SENSITIVITY, NOT BAD PARENTING, FEEDS MANY OF THE BEHAVIORAL ISSUES AND SUDDEN MOOD SWINGS THAT PLAGUE TODAY'S CHILDREN.

BY MARGARET ADAMEK, PHD



Anna was the fourth child in her family—a cherubic-looking three year old—whose frequent tantrums during the day drove her parents to distraction. Her behavior was so overwhelming and frustrating that her mother, Caroline, experienced guilty moments where she wondered if she even loved her own daughter. No behavior modification efforts—treats, incentives, consequences—made a dent in this fiery toddler's moods. Anna's parents became increasingly concerned about their little girl and her severe behavior issues. Should they medicate her? Did she need serious psychiatric intervention? She was completely out of control.

PhD, an internal medicine-gerontology research associate at Wake Forest University School of Medicine, discovered that physical performance and grip strength were 5 to 10 percent weaker in vitamin D₃-deficient participants—in a population of nearly 1,000 people, ages 65 and older—living in the Chianti area of Italy.

An Australian study, led by Leon Flicker, PhD, a principal fellow at Royal Melbourne and Western Hospitals, examined 1,600 elderly women in residential care facilities and nursing homes over a five-month interval. The research, which appeared in the November 2003 *Journal of American Geriatrics Society* (JAGS), was adjusted for other age-related variables, and showed that those with the lowest levels of vitamin D₃ were the first to fall. Another Aussie study, led again by Flicker and published in the November 2005 JAGS, revealed that giving daily doses of 1,000 IUs of vitamin D₃ for two years to 625 elderly people in residential and nursing care reduced their incidence of falls—and fall-related fractures—by 10 percent, even for the subjects who were not initially vitamin D₃ deficient.

RDAs, ULs and Safety The current Recommended Daily Allowances (RDAs) for vitamin D, set in 1998 by the Food and Nutrition Board (FNB) of the US Institute of Medicine (a component of the National Academy of Sciences), are 200 IUs for infants, children, and young adults; 400 IUs for ages 51 to 70; and 600 IUs for those older than 70. According to Norman, DeLuca, Garland, and Cannell, those values should at least be revisited, if not wholly changed. Norman agrees that it is reasonable to consider elevating the RDA of vitamin D to 1,500 to 2,000 IUs. DeLuca suggests, "I believe that the current vitamin D RDAs are too low and should possibly be increased up to 2,000 IUs." Garland agrees, but advises that individuals, especially women, taking calcium supplements should choose calcium citrate maleate over calcium carbonate, since the latter moderately increases the risk of kidney stones—a possible side effect of calcium and vitamin D₃ supplementation. Cannell actually takes 5,000 IUs daily during the

winter, and says, "I rarely get sick anymore."

The current Upper Limit (UL) for vitamin D₃, set in 1997 by the FNB, is 2,000 IUs per day, but a recent study advocated by The Council for Responsible Nutrition, a dietary supplement trade group, suggests raising the UL five-fold to 10,000 IUs. The research, which appeared in January's *American Journal of Clinical Nutrition*, concludes that vitamin D₃ has a very safe toxicity profile. "The UL established by the FNB for vitamin D is outdated. It is not based on current evidence and is viewed by many in the scientific community as being too restrictive—limiting research, commercial development, and optimization of nutritional policy," notes Reinhold Vieth, PhD, a coauthor of the study and an acclaimed vitamin D researcher at Mount Sinai Hospital, Toronto. "An ample collection of human clinical trial data published since the 1997 recommendation was made supports a significantly higher UL."

Not all scientists favor raising the UL to 10,000 IUs just yet. "While the study may be correct in the long run, it only ran for six months," says DeLuca. "Nephrologists [kidney doctors] will tell you that renal calcification, which results from too much supplemental vitamin D over time, would not necessarily become evident in that timeframe—it can take a year or longer."

Sun, Diet and Supplements "Here comes the sun, and I say, it's all right," sang George Harrison. Not everyone agrees. Many dermatologists recommend essentially no direct sunlight (that's a lot of sunscreen), because the National Cancer Institute estimates that 1,000,000 new cases of skin cancer will be diagnosed in the US in 2007. Fortunately, the survival rate for skin cancer is high—fewer than 2,000 of those diagnosed will die. However, 60,000 will see their skin cancer develop in their skin's pigment cells—a more fatal form of skin cancer called melanoma—and 8,100 of them will perish.

Despite those numbers, vitamin D experts generally recommend daily exposures of 10 to 15 minutes over 40 percent of the skin, sans sunscreen. Bare

those arms and legs, but always shade your face with a hat or protect it with sunscreen. Since daily exposures can be hard to come by, 20 to 25 minutes thrice a week will suffice. (Very fair-skinned people need less time, and darker-skinned individuals need more.) The skin naturally makes thousands of IUs during exposures, and toxicity does not come into play. "Responsible, routine sun exposure will save 10 lives from non-skin cancers for every one skin cancer death," says Garland.

The best dietary sources of vitamin D₃ include salmon, mackerel, sardines, and tuna. "While vitamin D₃ exists naturally in eggs, dairy, and meats, the amounts are low, while plants, fruits, and nuts are extremely poor sources," says Norman. Fortified foods, such as milk and breakfast cereals, contain enough vitamin D₃ to meet the current RDAs—presuming you want to drink several glasses of milk or eat bowls and bowls of cereal every day—but don't provide enough to reach the higher values that vitamin D₃'s supporters recommend. Also, these fortified foods don't do much good for lactose-intolerant and gluten-allergic folks, and many contain vitamin D₂, which, besides not being natural to humans, is at least 70 percent less effective than vitamin D₃.

Many vitamin D experts agree that vitamin D₃ supplementation is the safest way to get up to 2,000 IUs daily. (Especially for the elderly, whose aged skin can be 75 percent less effective at synthesizing vitamin D₃ in the sun than younger people's.) Fortunately, the vitamin D₃ found in quality supplements gets made from sheep's wool in a nonlethal process. Some experts—but not all—recommend avoiding vitamin D₃ supplements containing vitamin A, since supplemental vitamin A can possibly inhibit the uptake of supplemental vitamin D₃. Also, be careful not to overuse cod liver oil, a fantastic supplemental source of both vitamins D₃ and A, since too much vitamin A (opinions differ, but according to Garland, more than 6,000 IUs daily) over time can damage the liver. ☐

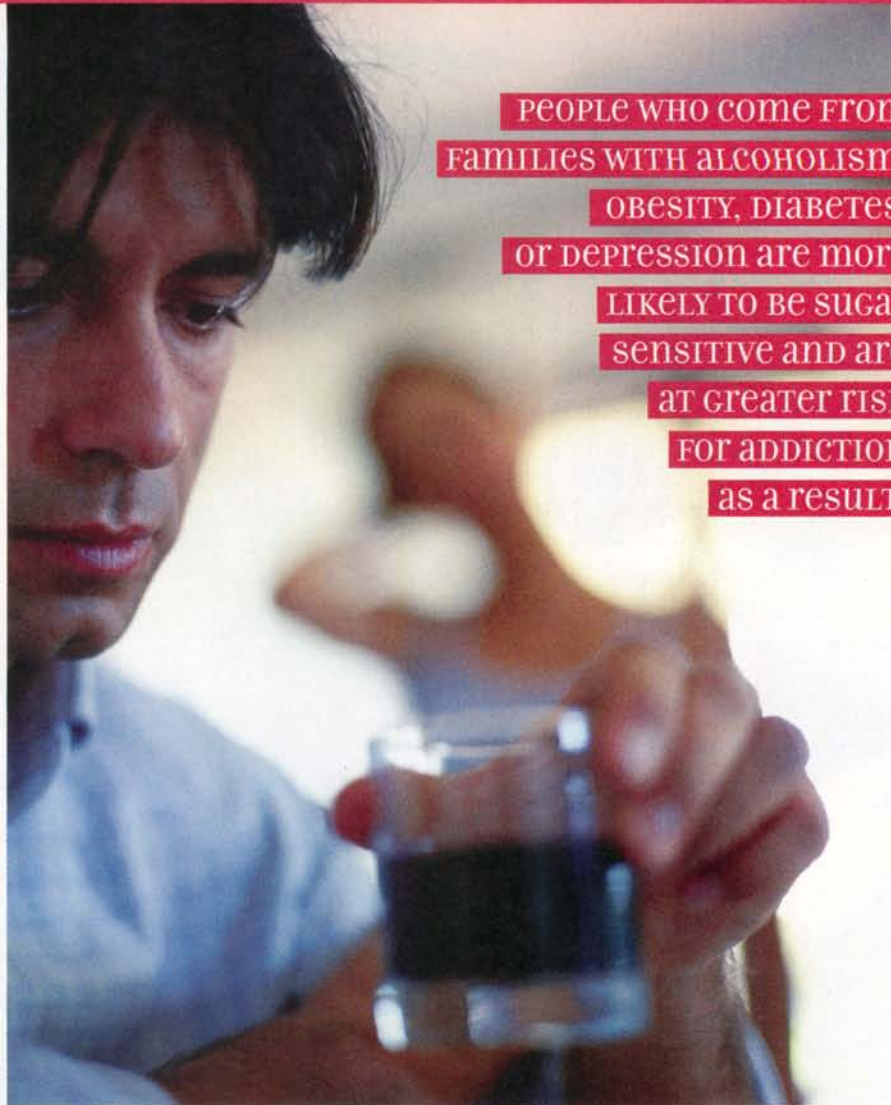
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Appleton Central Alternative High School looked like the typical last-chance school, full of troubled, angry, depressed, aggressive, low-achieving kids who couldn't cut it in a regular public high school. Frequent fights and high truancy and drop-out rates were the normal pattern; teachers spent more time "zoo-keeping" than teaching. A full-time police officer stood on duty to break up fights, and he filed numerous charges of assault against students each year. These kids were a tough bunch.

Fortunately both Anna's mother and the teaching staff at Central High stumbled on a solution. Anna and the students at Central High underwent a dramatic transformation in behavior using a similar approach. Anna's mother, Caroline, made slow, steady changes to her toddler's diet over the course of a year and was astonished at what emerged. A hellion from the get-go, Anna changed into a sweet, cooperative, easygoing, delightful little girl. Likewise, the food service staff at Central High removed the vending machines, required a mandatory school breakfast for all students, and completely shifted the menu. The dropout rate plummeted, as did school violence and truancy. Teachers were able to teach a whole class hour with few interruptions. Students drank water instead of soft drinks. That full-time police officer began working on personal training plans with students, rather than arresting them.

A NEW THEORY What happened for Anna and the students of Central High? Why did a change in diet make such a dramatic difference? What caused their behavior in the first place? Best-selling author and addictive nutritionist, Kathleen DesMaisons, PhD, may have the answer to these questions. Developed and refined through the successful treatment of thousands of people, her pioneering work links brain biochemistry, metabolism, and food in an intriguing theory she terms "sugar sensitivity." She explains: "Sugar sensitivity is an inherited biochemical condition resulting from volatile blood sugar and low levels of



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serotonin and beta endorphin" in the brain. The upshot, suggests DesMaisons—and there's ample scientific research to back her up—is a suite of psychological, emotional, physiological, and behavioral issues that includes depression, anxiety, attention and concentration deficits, conduct and mood disorders, substance abuse, compulsive overeating, obesity, and diabetes. Moreover, studies suggest that poor impulse control, low self-esteem, and fatigue also result from low levels of serotonin or beta-endorphin. Understanding sugar sensitivity means looking at the neurochemical root causes for certain behaviors and related health concerns. The theory provides a helpful and altogether different frame for understanding how sugar relates to our brains, bodies, and diet.

People who come from families with a history of alcoholism, obesity, diabetes,

or depression are more likely to be sugar sensitive and are at greater risk for addiction as a result. Oftentimes, sugar sensitive people with these issues will seek out substances or behaviors, such as drugs or certain foods, that offer temporary relief. These short-term fixes, however, actually exacerbate the problem—people become helpless in the face of their cravings for refined carbohydrates, and that only compounds their anguish. As DesMaisons notes, "Diet has a huge impact on this condition." While the child of an alcoholic may completely forswear all types of booze, her relationship to sugary or "white" foods may strongly resemble the addictive drinking patterns of family members, and her psychological and emotional balance may be just as shaky.

The sugar sensitive framework also explains why many people find dieting

so difficult. Low serotonin causes three things: poor impulse control, depression, and carbohydrate craving. Low beta-endorphin leads to cravings for sugar and fat, the only two substances besides alcohol, morphine, and heroin that evoke beta-endorphin in the brain. Volatile blood sugar also produces cravings for sweet foods. Under these circumstances, willpower—the moral mainstay of dieters—is revealed for what it is: a reflection of the amount of serotonin in the brain, not a means of controlling one's behavior.

Children who come into the world wired to be sugar sensitive face tremendous difficulties. Their unsteady brain chemistry and metabolism can result in tantrums, anger, attention and concentration issues, aggression, and low self-esteem. These neurochemical imbalances lead kids—like adults—toward substances like sugary foods that will help them feel better in the moment. When the sugar wears off, however, watch out! Crabbiness, sulkiness, paroxysms of low self-esteem, or crying fits signal that their blood sugar has crashed or they are experiencing symptoms of opiate withdrawal.

A NATION OF SUGAR ADDICTS?

Anna's mother suspected that her daughter fit the sugar sensitive profile. Prior to exploring the connections between Anna's behavior and her diet, Caroline had applied DesMaison's approach to herself, incorporating significant changes in her eating and experiencing dramatic results. Similarly, as teachers described the behavior issues of students at Appleton Central Alternative High School, it began to sound like a building full of sugar sensitive teenagers. What about American kids in general? Is there an epidemic of sugar sensitivity? One need only glance at the sobering public health statistics published by the US government to become really concerned about our kids' futures. Forty percent of girls born in 2000 will have type 2 diabetes by age 50; 33 percent of boys will suffer the same fate. In just a decade,

amphetamine prescriptions for children have increased 30-fold. Just a few years ago, 85 percent of the amphetamines prescribed in the US were issued to children. More than a fourth of our children and nearly a third of our teenagers are overweight. Anxiety disorders and depression are on a steady and rapid rise among youth, accompanied by an equally troubling increase in prescriptions for antidepressant and anti-anxiety medications for children. We also know that kids who struggle with one of these issues often-times struggle with another one as well. Research suggests that a dependency on refined carbohydrates beginning early in life also creates a higher risk of addiction to drugs and alcohol as an adult.

Since 1970, the average American has increased her consumption of high fructose corn syrup by 40 times. Per day, we now eat 300 more calories than we did 35 years ago and no longer eat even one complete serving of whole grains. On a daily basis, a third of American kids eat fast food. Our children drink more soda than milk and take in significant amounts of processed foods at school and home. We are feeding our kids massive doses of refined carbohydrates; a social experiment never tried in human history. It is, as I have said before, a national experiment in

mainlining glucose. This glut of refined carbohydrates in the American diet is creating a neurochemical perfect storm in our children's bodies—one that will dog them for the rest of their lives. The increasingly frequent onset of heart disease and diabetes in children, the prospect of juvenile gastric bypass surgery as a solution for pediatric weight loss, and the need to medicate vast numbers of children reveal both the seriousness of these issues and the limitations of our ability to address them. Do we really want to offer up insulin, Prozac, Paxil, Ritalin, and major surgery as viable options for wellness in our children? Or are there less severe and more effective approaches that use food as a primary tool in the arsenal of calming and stabilizing our kids' brains and bodies? Would we rather find a little extra time to pack their lunch and cook at home tonight?

GIVE ENOUGH, ON TIME DesMaisons not only developed the theory of sugar sensitivity, she also created a sensible, sequential food plan that heals and stabilizes brain chemistry and blood sugar regulation. Initially working to improve treatment outcomes of alcoholics in her substance abuse center,



HEALING THE SUGAR SENSITIVE CHILD

Well-meaning people often tell parents with sugar sensitive kids to “just take your children off sugar.” Sounds simple enough—unless of course your kids’ biochemistry is working against them. Kathleen DesMaisons, author of *Little Sugar Addicts*, (Three Rivers Press, 2004), has a better plan. Surprisingly, eliminating sugar is the last thing she recommends. “You want to balance your child’s biochemistry and heal the brain before taking out the sugar,” she writes. “Remember to think of this as a program of abundance rather than deprivation. You are going to add good foods in before you take any foods out.”

DesMaisons suggests slowly implementing the following six steps as a family undertaking, and by slowly she means anywhere from six to 18 months. Involve your children in the process, and let them settle in to each new regimen before moving to the next. “If you make too much change too fast, . . . you will set yourself and your family up for failure and lose time,” she cautions.

BREAKFAST WITH PROTEIN Eating breakfast is imperative, and should happen within an hour of rising. What kids eat matters as well. To get their bodies and brains off to a good start, each morning they should eat a gram of protein per pound of body weight divided by three (the number of meals in a day), along with some complex carbohydrates (found in whole-grain waffles and pancakes, or cereals like Cheerios, Shredded Wheat, Grapenuts, or similar brands with fewer than 10 grams of sugar per serving).

MAKE THE FOOD-MOOD CONNECTION Help your children notice the link between what and when they eat and how they feel and act. Encourage them to keep a food journal (they can call it whatever they like) in which they write down everything they eat during the day and how they feel afterward. By reviewing the journal with them, you’ll be able to explain the connection between certain foods and the moods your kids experience.

Your time—not sugar—is love, so treat your kids to that instead of sweets.



PUSH HEALTHY SNACKS AND DRINKS Encourage your kids to eat two to three healthy between-meal (and before-bedtime) snacks. And that means something containing protein and a complex carbohydrate, with water or milk, but no juice, pop, chocolate milk, or other types of sweetened or artificially sweetened beverages—and no caffeine.

SERVE LUNCH AND DINNER ON TIME According to DesMaisons, the most important rule about these two meals is eating on time. Children can’t go more than about three hours without eating, so become acutely aware of “when” as well as “what” they eat. Give them adequate protein (see breakfast above), a complex carbohydrate, and a vegetable or two.

“BROWN” YOUR FAMILY Refined carbohydrates like white flour and rice break down quickly and spike blood sugar. In this next-to-last step, it’s time to wean your kids from them and start adding in complex carbohydrates found in brown rice, yams, skin-on potatoes, oats, and whole grain pasta and breads. These carbs will still break down into sugars, but they’ll do it much more slowly and in a way that benefits your child’s body.

TAKE OUT SUGAR On an intellectual level, this final step makes perfect sense, but actually implementing it can be devilishly difficult. Somehow you’ve got to overcome the message “sugar is love” and start replacing sugary desserts and treats with healthy options. Once again the trick is to move slowly. “Just do one small choice at a time,” writes DesMaisons. “Fruit one night instead of cake.” And, she suggests, your time—not sugar—is love, so treat your kids to that instead of sweets.

Adapted from *Little Sugar Addicts* (Three River Press, 2004) by Kathleen DesMaisons, PhD.

DesMaisons increased long-term sobriety rates from the industry standard of 25 percent to more than 90 percent. She has seen similar results using her food plan in thousands of clients with other mood, behavior, and health issues associated with sugar sensitivity. Her inexpensive approach improves serotonin, beta-endorphin, and blood sugar functioning in a staged, sequential process that builds in skills for long-term behavior change. Her seven steps first get insulin under control and then subsequently enhance serotonin and beta endorphin functioning. The food plan includes regular meals with adequate dense protein, complex carbohydrates, fruits, vegetables, and healthy fats (including a special emphasis on omega-3 fatty acids). As a sugar sensitive person adds these components to her diet, she gains skill at recognizing connections between what she eats and how she feels, and she

develops an increasing level of mastery over (and significant gains in) her well-being. Only toward the end of the process do people slowly begin to remove sweetened and processed foods from their diets. They even eliminate diet soft drinks, as sweet taste alone stimulates the addictive opiate response in the brain. The impact is profound.

For children DesMaisons has developed a somewhat different approach, one that she boils down to the axiom, "Enough. On time." In her book, *Little Sugar Addicts*, she outlines a series of steps for children that focus on adequate protein (based on body weight) and complex carbohydrates, regular meals and snacks, and a slow enough process to keep kids in the driver's seat. Sweetened and caffeinated drinks eventually go; desserts and other sweet foods are eliminated from the diet. A key factor for kids, DesMaisons suggests, is the inclusion of

essential fatty acid supplements, which are critical for brain and nervous system development, as well as insulin and mood regulation in children.

Anna's family and Central High's food service used these dietary parameters to achieve nearly identical results. What they accomplished provides a revealing look at why we should pay closer attention to what our children are and are not eating. For their current well-being and future health, American children deserve a diet that neither creates nor compounds sugar sensitivity. At school or at home, as a nation we need to give our children enough of the right foods when they need them. **NS**

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NINE OUT OF 10 STROKE VICTIMS NEVER RECOVER COMPLETELY, BUT HIGH-PRESSURE OXYGEN THERAPY AND ACUPUNCTURE CAN HELP BEAT THOSE ODDS.

BY LISA MARSHALL

The moment Connie Goings opened her eyes at 6:20 a.m. on a Monday morning, she knew something was terribly wrong. * The 56-year-old Louisiana school teacher had long suffered from low blood sugar and been prone to dizzy spells. But as her husband casually went to fetch the usual remedy—a piece of fruit and a cold towel—she shot him a terrified look: “It’s not that kind of dizzy,” she said, before falling out of bed and hitting the floor, the victim of a massive stroke. * Luckily, Goings lived just moments from a hospital, where doctors quickly snaked a catheter through her veins, delivering a clot-busting drug to the blockage in her brain and saving her life. But when it came time for the neurologist to deliver her long-term prognosis, the news stung. * “He said, ‘What you see is what you get. Your wife is never going to walk or talk again,’” recalls Bennie Goings, Connie’s husband. “I fired him.” * Then Goings consulted with her other doctors and made an appointment for Connie to undergo hyperbaric oxygen therapy (HBOT), a promising but controversial treatment for stroke patients. * “We were going to take every avenue possible to help Connie recover,” Bennie says.