

The Bipolar Child Newsletter

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Carbohydrate Cravings in Children With Bipolar Disorder

One of the questions we asked on the initial survey for *The Bipolar Child*, concerned a craving for carbohydrates: did the child or adolescent crave starchy foods such as potatoes, breads, pastas, and macaroni and cheese? or sugary foods such as candy, cookies, and ice cream? We'll never forget the follow-up phone interview we had with a young woman who had indicated a craving for carbohydrates all through her childhood and into the present. As we asked her to describe the cravings, there was a giggle at the other end of the phone. She asked: "Would you consider a gallon of Breyer's chocolate chip mint every night a craving?"

She went on to tell us that her craving was so strong that she would buy half a gallon and eat it in the car and then go back to the store and buy another one. We asked if she kept a supply of plastic spoons in her car. She laughed out loud and said: "No, I would use my fingers. It was savage."

Adolescents have recounted pouring sugar straight out of the box down their throats; and mothers have told us that long ago they nicknamed their children "Carb King" or "Spud." We recently interviewed "Spud," but first we asked her mother to describe her daughter's tremendous intensity about eating potatoes. "What if she doesn't get them?" we asked. "It gets really, really *ugly*," she replied quietly. When we asked her what "ugly" meant, she said: "See what Katie will tell you. Katie will be totally honest about it."

We reached Katie on the phone and she explained:

Say I'm doing my homework, and suddenly I get a craving for potatoes. I shut down and can't think of anything else. I get into "mission mode" and start to worry: What will I do if I can't get them? I will be totally lost. Where can I go from here? I won't be able to get off this.

If my mother says: "I don't have potatoes, Katie, and I'm not going out in this weather to get them," I get really, really angry. Most of the times we have a huge screaming match, but sometimes I push her because I am so mad. I see my mother as my enemy because she's not supplying me with what I need. She is a total obstacle to what I need. The word "no" is evil. It is not acceptable.

She also said that after she storms off, she comes back 15 minutes later and apologizes because she can't believe she acted that way over a potato.

Katie isn't the only one who craves potatoes. The mother of a nine-year-old boy wrote to us and said:

As far as the carbs, he is a bread and mashed potato child. I almost force-feed him anything else. He would eat huge piles of mashed potatoes if I let him. He loves and gets obsessive about eating them, and during the mornings and evenings he is just ravenous and I almost have to follow him around to keep him from eating everything in sight - mostly bread, chips, and stuff. I don't keep a lot of sweets around for that reason.

Many parents report that their children are extremely finicky about the foods they eat, and some eat only white foods (bread, pasta, French fries, potatoes, and rice); or eat an equally narrow repertoire of food that consists of four or five items with a preference (or aversion) for certain textures. Some crave one kind of

food to the exclusion of all others, and then, after a month or so, seem to lose all interest in eating it.

Parents watching their children's weight ballooning as the kids maraud through the kitchen day after day, night after night, wonder anxiously (and often with some level of disgust) what they can do to stop these gorging, out-of-control behaviors.

What Is Going On?

While it has long been known that adults who suffer Seasonal Affective Disorder (SAD) have a marked craving for carbohydrates in the winter months and are not as ravenous about starchy or sweet foods in the spring and summer months, there are no published studies about children and this phenomenon. However, when the researchers of the Juvenile Bipolar Research Foundation looked at a sample of over a thousand children at risk for, or diagnosed with bipolar disorder, over 65% of the parents endorsed the item "craves sweet-tasting food or carbohydrates" at a frequency rate of "often," or "very often or almost constantly." In other words, it wasn't always seasonal.

This would fit with the poor regulation of drives - particularly *appetitive* and *acquisitive* drives - seen so often in the childhood form of the disorder. Natural drives become obsessive and overwhelming and difficult to modulate. Although survival of the human species has depended on a sometimes hell-bent foraging and storing of food, this is natural instinct writ large and inappropriate for life today when supermarkets are often a block or two away, and refrigerators and cabinets typically boast an abundance of food.

The Biological Basis

The appetitive craving for carbohydrates is modulated by a complex cascade of neuropeptides, hormones, and the receptors through which they act and are acted upon in various feed back loops. One of these peptides, Neuropeptide Y (NPY), is thought to play a major role in the craving for carbohydrates.

Neuropeptide Y is produced by a dense cluster of cells inside the hypothalamus at the base of the brain known as the *paraventricular* nucleus. NPY is the most abundant behaviorally active neuropeptide in the brain. Studies show that injections of NPY into the ventricles of the brain, cause an animal to forage and to consume carbohydrates to the exclusion of all other foods.

Among the actions of central NPY, the peptide exerts an influence on neuroendocrine systems that regulate appetite, circadian rhythms, and, through effects on the hypothalamic-pituitary-adrenal (HPA) axis, the stress response that regulates the output of corticosteroids that, in turn, influence carbohydrate metabolism. Typical symptoms and abnormal behaviors that represent a dysregulation of appetite are carbohydrate cravings, binge eating, hoarding, bulimia, and anorexia-all commonly associated with mood disorders. Though tempting to anticipate, there is little direct evidence of altered functioning of NPY in such behaviors. Moreover, there are no clinical treatments yet that directly alter NPY functions.

The Sense of Deprivation

Remember Katie's telling us that she found her mother's "no" to her need for potatoes "unacceptable," and that she saw her mother as an obstacle getting in the way of what she needed?

Katie's mother's "no," or her inability to meet Katie's needs at that moment in time, catapulted her into a rage?

Children and adolescents with bipolar disorder appear to have a low threshold for anxiety and are over-reactive to stressful events (real or perceived) such as deprivation, loss, rejection, and humiliation. (This may be why these children so over-react to the simple word "No," which in its expression contains elements

of deprivation, loss, rejection, and humiliation.)

Something else stands out in Katie's comments: her worry that she would be lost if she didn't get what she needed and couldn't get past her fixation on the food: "What will I do if I can't get them? I will be totally lost. Where can I go from here? I won't be able to get off this."

Children and adolescents with bipolar disorder often have rigid and inflexible thinking. They get stuck, and they have difficulty estimating time and cause-and-effect, and become "prisoners of the present." Katie's anxiety about being trapped in time and space without access to the potatoes that are the source of her intense cravings, arouses irritability, and great fear as well as anger.

Hoarding and Hiding

A craving for carbohydrates leads to a number of behaviors that are manifestations of the appetite dysregulation that may help to define one aspect of the core syndrome of bipolar disorder in childhood. Those behaviors include foraging (going after and finding the food), bingeing and hoarding.

In the animal world, foraging and hoarding (provisioning for winter or famine) are necessary for survival. But many parents report dismay when they discover these hoarding behaviors when they simply move the beds in their kids' rooms. The space behind or to the side of the beds reveal caches of candy bars, potato chips, soda cans, and cookies. Empty wrappers are strewn around these "nests." The kids may be hoarding for a time when they may need immediate access to carbohydrates. It is part of the acquisitive drive and the appetitive dysregulation.

Katie hoards, and she doesn't hide her need behind the bed. She concocts this potato casserole (potatoes, cheese, and sour cream), and has to know that half of it is in the refrigerator in case she has a sudden craving. She guards this casserole aggressively. When we asked her what would happen if her younger brother decided to have a late-night snack of potato casserole, she laughed and said: "That would never happen. He is afraid of the wrath of Katie!"

Medication-induced Cravings

Not only do many of the children with bipolar disorder gain weight from constant bingeing, but, unfortunately, some mood stabilizing drugs and atypical antipsychotics can cause weight-gain (sometimes in alarming amounts and extraordinarily rapidly). Moreover, children seem to be even more sensitive than adults to the weight-gain effects of antipsychotic and other psychotropic drugs.

Some of the medications used to treat bipolar children cause an extreme, insatiable hunger. The mother of a boy on a commonly-prescribed mood stabilizer made a list of the fantastic amounts of food her son was eating in the first few weeks on the medication. In a few hours he consumed: five packets of instant oatmeal with tons of sugar on top, four potatoes, two cheeseburgers, two pieces of chicken, one hamburger bun, one piece of coffee cake, sixteen ounces of grape juice, and twenty ounces of Mountain Dew.

Some of the modern antipsychotic drugs, including olanzapine (Zyprexa), quetiapine (Seroquel) and clozapine (Clozaril, and generics), can be particular offenders for many children. We have heard of children gaining two pounds a day with certain of the atypical antipsychotic drugs. While it is not understood completely, one theory postulates that the degree of weight gain is correlated with the drug's affinity for histamine (H-1) receptors. Olanzapine and clozapine and quetiapine have greater affinity for H-1 receptors than do risperidone (Risperdal) or aripiprazole (Abilify). These drugs also seem to have synergistic effects on the H-1 receptors, as well as certain serotonergic receptors implicated in regulating appetite.

The hunger and weight gain do not happen to all children, but should be anticipated. Low-calorie snacks and

drinks as well as an increased daily exercise schedule should be planned. Ideally, the child should be seeing a nutritionist who can explain all of this in a calm matter. Some physicians add the anticonvulsant topiramate (Topamax) to the medication mix in moderate doses, as this drug has appetite suppressant effects. However, its status as an effective mood-stabilizer remains uncertain, and it is not FDA-approved for that purpose. Other newer anticonvulsants, including zonisamide (Zonegran), may have similar appetite-reducing effects, again with uncertain effects on mood and behavior.

Light therapy in adults seems to have an effect on carbohydrate craving, but no studies of this phenomenon have been reported in the young.

Life in the Fast-Food Nation

Parents of bipolar children have the deck stacked against them in this country. Carbohydrate-dense fast food is so available on every street corner, as well as in the school cafeteria, that urges can be satisfied easily. Rapid increases in serum glucose levels result in subsequent rapid decreases, and this drop jump-starts intense carbohydrate cravings. Cycles of craving and bingeing, are easily set off in children who are already biologically primed for these cycles.

And these cycles, unfortunately, promote mood swings - even in people who don't have the disorder.

In director Morgan Spurlock's fascinating documentary film, *Supersize Me*, he limited his diet to three meals a day of McDonald's carbohydrate-dense food, intending to play out this experiment for a month.

Within days he was waking up feeling terrible, and, besides gaining 32 pounds over several weeks and almost destroying his liver, he suffered intense mood swings from the rapid doses of carbohydrates into his body, and the subsequent drop in glucose levels. "I feel sick and unhappy," he revealed mid-project, "and then I eat and feel really, really good. So good, I feel crazy."

Referring to his cravings, the doctor monitoring the experiment told him: "You're craving these foods; they have become a drug for you."

The pursuit of carbohydrate-dense food that many of the children experience is so difficult for parents to combat - and not just because of Neuropeptide Y and other chemical cascades.

Mr. Spurlock's documentary points out that the average child in America sees 10,000 television commercials a year advertising sugary cereals, soft drinks, fast foods, or candy. By the time children can speak most of them can say "McDonald's."

When the director assembled a group of teenagers and adults (with the White House as a backdrop), they stumbled through the Pledge of Allegiance, but they could quickly recite the theme tag of McDonald's and other fast-food establishments. Children in America are subliminally primed to crave junk food, and this reinforces the innate longing for fixes of carbohydrate-dense foods in children and adolescents with bipolar disorder.

So What's A Parent to Do?

A friend of ours with a fifteen-year-old teenager who had early-onset bipolar disorder put her ideas into an e-mail. She wrote:

We've been battling the carbohydrate-addiction problem for years. We see his urgent need to eat certain foods, and we wonder if the meds are pumping up his appetite or the disorder itself is causing the compulsion to eat. We see the same "mission mode" around foods that we see in so

many other areas of his life. In fact, our parenting sometimes feels like 24-hour mission control.

The food thing, though, seems most important because obesity is such a health risk and can do so much to damage self-esteem. I don't think there's a perfect solution, but there are a few little strategies that we've found helpful.

One is to limit - not eliminate - availability of binge-provoking foods. For example, Jeremy loves these certain cereal bars. They're not bad things to eat, it's just that he can't eat just one or even two. I don't want to have a situation where the rest of the family can't have anything in the house because we're trying to keep Jeremy from eating. So I still buy the things that are enjoyed. But I put most of them away in a cabinet in the garage where he'll never look. I take a few items from the box and put them in the kitchen pantry, one per day per kid. That way I can keep my eye on the quantity consumed without totally depriving.

It's like bird-feeding. You put a little seed out on the platform, and when it's gone you replenish it.

Jeremy's mother (and Katie seconded this) feels that a small meal before dinner is helpful. Jeremy's mother said:

I require him to eat a fruit or a vegetable or a salad before he starts the main meal. That way he fills up a little before digging in to the meat and potatoes. I know people who try to cut out the carbs, and believe me, it doesn't work. It leaves him feeling too unsatisfied and angry.

After the meal, we sometimes impose a waiting period before any dessert. Sometimes he gets involved with the computer and forgets all about it for quite a while.

Despite all these steps, he's still overweight to one degree or another. There are seasonal ups and downs. He loses in the summer and gains toward the winter, like a bear before hibernation. He can't regulate his cravings, and our job is to be his regulators. But really, you can only control so much.

She closed by saying:

Bottom line, I think we have to be realistic and not rigid. Sometimes I think it's okay for our parenting to have more give. Winter is not the time to crack down. In the summer there are more opportunities for constant exercise and for distractions from the obsession.

It's important that we all keep our sanity - right?

In Conclusion

When we spoke to Katie in a follow-up phone call, we briefly mentioned a few of the biological factors that might be at play concerning her overwhelming need for carbohydrates. She liked the idea that there was something called Neuropeptide Y, and that the cravings didn't necessarily mean she was willful or horrid, or that she was necessarily trapped and couldn't find a better way to resolve the problem.

Her mother also seemed to relax after she read this newsletter, and gained some sympathy for Katie's problem. She thinks she can be less angry and more tolerant of Katie's irrational demands, which are, after all, not of her own choosing.

We'll write again soon. Meantime, at this time of mid-winter and always, we wish you and your children the

best,

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ADDITIONAL NEWS: (New on the JBRF Web site)

For those of you who have been asking about the new DVD, *Educating and Nurturing the Bipolar Child* by Janice Papolos, it is available on the Web site of the [Juvenile Bipolar Research Foundation](http://www.jbrf.org).

This DVD is a compassionate look at what a student with bipolar disorder faces minute-to-minute throughout the school day.

It reveals to the viewer the often unrecognized, and insidious factors that severely impact the children in the academic environment, causing them such frustration and such a sense of failure, in school and at home. These include:

- | Executive function deficits
- | Severe anxiety
- | Poor working memory
- | Difficulty with the concept of time
- | Difficulty with tasks requiring sequencing
- | Disorders of written expression
- | Reduced alertness in the morning (sleep inertia)

The presentation is less than an hour long, and it gives teachers and parents easy-to-implement strategies and tools that make learning less stressful and more fulfilling.

Each DVD is \$20.00, and all proceeds support JBRF research projects.

To order a copy of Educating and Nurturing the Bipolar Child, please [click here](#) or visit the Web site of the Juvenile Bipolar Research Foundation. (<http://www.jbrf.org>)