“She has a remarkable ability to engage in a task. We use her as a model for the other kids, to show them what we want out of the journaling project,” said my daughter’s nursery school teacher as we sat together on diminutive, paint-splotched furniture. Rather than feeling self-satisfaction at her stellar “performance,” my mind wandered to the greater questions at hand: What is happening to children? How are we being manipulated by the pharmaceutical industry to interpret it? And how can awareness be raised around better solutions other than ADHD medications for kids?
ADHD: Time for a New Perspective

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A candid and uncharacteristically provocative piece titled “The Selling of Attention Deficit Disorder” ran in The New York Times, as part of an effort to raise this awareness. The article discusses the making of an epidemic, much as Robert Whitaker, author of Anatomy of an Epidemic and host of Mad in America, has in his efforts to expose the manufacturing of a profit-driven machine into which our children are being fed. The Times article begins with a bird’s-eye view of the alarming statistics: “Centers for Disease Control and Prevention show that the diagnosis had been made in 15 percent of highschool- age children, and that the number of children on medication for the disorder had soared to 3.5 million from 600,000 in 1990.” It goes on to state “Behind that growth has been drug company marketing that has stretched the image of classic A.D.H.D. to include relatively normal behavior like carelessness and impatience, and has often overstated the pills’ benefits.”

This article focuses on ADHD, but psychiatry is like a blob consuming as much of our population as it can. From 1994 to 2003, for instance, there was an 8,000 percent increase in children 19 and under being treated for bipolar disorder. Critics have implicated direct-to-consumer advertising (only legal in the United States and New Zealand), including comics for kids, financial courtship of doctors who claim to be beyond influence, ghost-written and pharmaceutically funded research, and paid key opinion leaders positioned to dismiss safety concerns. Psychiatric studies funded by the pharmaceutical industry are four times more likely to be published if they are positive, and only 18 percent of psychiatrists disclose their conflicts of interest when they publish data.

Psychiatry is particularly susceptible to industry corruption because of the highly subjective, nonbiological, impressionistic nature of its diagnostic criteria. With our “governing body,” the American Psychiatric Association, heavily funded by pharmaceutical companies, the temptation is all too great to open the diagnostic umbrella to encompass behavioral criteria like “makes careless mistakes” or “often has difficulty waiting his or her turn.”

Perhaps we are all susceptible, as a society, to the pharmaceutical industry’s courtship. However, the availability and ease of popping a pill combines with a hyper-simplified diagnostic label of illness, reducing an incredibly complex and multi-etiologic syndrome into the linear “A medication for B disease” model we have come to love in America.

The trouble with psychiatry is that we are using openlabel, short-term studies to justify lifelong treatments. We have lost all ability to appreciate the natural course of an illness (if we want to call it that), and the realities of long-term efficacy and cumulative burden of side effects. A longitudinal NIMH (National Institute of Mental Health) study, the only one of its kind, demonstrated that after an initial decrease in ADHD symptoms, the medicated group showed
signs of deterioration at three years. By six years, the group suffered worse attentional and behavioral symptoms than unmedicated controls, and increased functional impairment.

Despite claims that stimulant side effects are “generally mild,” data accumulated by psychiatrist Dr. Peter Breggin has demonstrated quite the opposite. Breggin cites studies that demonstrate troubling risks for:

- Motor and vocal tics
- Addiction, withdrawal and rebound
- Growth suppression
- Adverse cardiovascular effects
- Mania, suicidality, psychosis

He explores the premise of creating brain pathology. (Whitaker and other researchers have also expressed grave concern about this possibility.)

Breggin cites a study by Nasrallah et al in which more than 50 percent of treated young adults experienced brain atrophy (confirmed by PET scans), concluding that “cortical atrophy may be a long-term adverse effect of this treatment.” In rhesus monkeys, Wagner et al demonstrated
long-term changes to dopamine levels and receptor density related to compensatory changes the brain undergoes in the setting of chronic intoxication. Subjects abstaining from stimulants for three years were found to have persistent dopaminergic brain changes on PET scans, related to Parkinsonian pathology.

When we interfere with behavior and brain growth, and when we force children to conform to our needs as busy, distracted and often chronically ill adults, we may be fundamentally compromising their expression of self. Breggin cites a 1992 study by Greenough, et al:

Spontaneous or self-generated activities—play, mastery, exploration, novelty seeking, curiosity, and zestful socialization—are central to the growth and development of animals and humans and necessary for the full elaboration of CNS synaptic connections.

I treat many women on the other end of this negligent spectrum of reckless prescribing, helping them to taper off of stimulants before pregnancy. In some cases, I am unable to do so because of the dependency and subsequent withdrawal that emerges.

I would like to peel back the layers of this complexity so that we can take a collective glimpse into what may actually be going on with our children (and adults!) and discover what tools parents have at their disposal before they pick up the phone to a psychiatrist.

The next pages list eight things parents should think about when it comes to underlying drivers of symptoms, drivers that a stimulant in no way addresses. The list focuses on toxic exposures, most derived from diet. Amazingly, a 2012 review of dietary treatment for ADHD published in Pediatrics by J.G. Millichap and M.M. Yee encompasses data establishing efficacy of diets ranging from ketogenic to Feingold to low-sugar, but still claims that, “In practice, additive-free and oligoantigenic/elimination diets are time-consuming and disruptive to the household; they are indicated only in selected patients.”

I disagree, and would state that dietary modification toward a whole-food, high-natural-fat, no-grain diet represents first-line intervention.
Control for these exposures (try it for a month!), and consider benign functional-medicine based interventions, homeopathy, and even neurofeedback, but please consider sparing your child from the relentless cycle of medications begetting medications, long-term inefficacy, and potentially irreversible side effects. Apologies, fines (including a $57.5 million fine levied against New Jersey-based pharmaceutical company Shire, maker of the blockbuster ADHD drug Adderall), and acknowledgement of pharmaceutical corruption of pediatric health are all too little too late. We are going to look back on this era of child drugging with shame and humility, I predict. I encourage you to begin that discovery process now.

The behavioral effects of high and low blood sugar, cortisol, and insulin account for energy levels, agitation and hyperactivity, but there is a more insidious process at work: Sugar causes inflammation and suppresses a growth factor in the brain.

1. **Sugar**: Pick up a food product marketed to a child population and you will inevitably see one to four types of sugar listed in the ingredients. From infant formula to endless processed snacks, sodas and juices, the onslaught pushes our children into reactive hypoglycemia and insulin resistance. The behavioral effects of high and low blood sugar, cortisol, and insulin account for energy levels, agitation and hyperactivity, but there is a more insidious process at work: Sugar causes inflammation and suppresses a growth factor in the brain called BDNF (brain-derived neurotrophic factor). Soda and processed food have been linked to academic errors, inappropriate behavior, and violence, according to research by David Hemenway. Cumulative, longterm effects of sugar on the brain are fast becoming a leading model for Alzheimer’s, confirmation of the brain-based starvation that occurs in the setting of chronic exposure.

2. **Gluten**: Not only can gluten induce inflammation and autoimmunity (including brain-based autoantibodies), it also contains opiate-like compounds called gliadorphins. Gluten-containing foods are almost always processed for increased insulin provocation and made with genetically modified vegetable oils. Consider eliminating all grains (corn, wheat, rye, millet, barley, oats, etc.) and dairy (a cross-reactant) for one month.

3. **Genetically Modified/ Glyphosate-Sprayed Foods**: We now know that the herbicide genetically modified foods are designed to withstand is wreaking havoc on our guts. Our children are vulnerable to this chemical that decimates beneficial bacteria, produces ammonia, binds minerals, and interferes with hormone-managing enzymes, and the metabolizing of other
environmental toxins. Responsible Technology (responsible technology.org) has guides to GMOfree shopping; also consider including fermented foods like sauerkraut (even just the juice) and lacto-fermented pickles in your child’s diet.

4. **Food Dyes and Additives**: Banned in Europe, these food additives may exacerbate cognitive function: Blue #1 and #2 food coloring; Green #3; Orange B; Red #3 and #40; Yellow #5 and #6; and sodium benzoate, a preservative. Relatedly, monosodium glutamate and aspartame are excitotoxins that drive neurochemical changes and behavioral symptoms consistent with attentional impairment and hyperactivity.

5. **Deficiencies and Nutrient Stress**: Deficiencies of B vitamins can arise from dietary restriction— for example, lack of B12 in the setting of animal-protein limited diets and from compromised utilization related to genetic variants such as the MTHFR gene and associated methylation defects. Methylation appears to play a highly relevant role in production of neurotransmitters, pruning, myelination and DNA expression.

A real Goldilocks mineral, iron is a critical cofactor for neurotransmitter production, vital for brain oxygenation and thyroid hormone utilization. Studies linking iron stores to ADHD have been equivocal, but researchers argue for brainbased assessments, such as a 2012 MRI study that identified critical deficiencies in the thalamus of those diagnosed with ADHD. Low serum ferritin has been linked to symptoms of ADHD and also to increased dosing of stimulants for effect.

6. **Thyroid**: Functional thyroid deficiency can result from autoimmune attack of the gland, iodine/nutritional deficiency, or peripheral resistance. Poor access to active thyroid hormone in utero may result from iodine deficiency. Exposure to endocrinedisrupting chemicals such as phthalates and bisphenol A may also serve to impair thyroid hormone trafficking, resulting in a diagnosis of ADHD in a child. Others recommend looking beyond a standard TSH screening to assess for peripheral resistance and low free hormone levels in these children.

7. **Ultrasound in Pregnancy**: There is an accumulating body of evidence that implicates ultrasound technology, in its current unstudied application (in frequency and intensity), in the development of abnormal brain structure. I discussed recent data supportive of this concern in a recent blog post at kellybroganmd .com titled “Perils of Peeking Into the Womb: Ultrasound
Vaccination: Neurobehavioral abnormalities stemming acutely or subacutely from vaccine exposure have been compensated and reported. Putative mechanisms include brain-penetrant additives such as polysorbate 80, and adjuvants such as aluminum and mercury. A primate study done with an unvaccinated control group concerningly demonstrated delayed acquisition of neurodevelopmental reflexes in the thimerosol (an ethylmercury-forming preservative) Hep B vaccinated group (particularly in those with low birth weight and gestational age) relative to the unexposed group. Another rhesus placebo-control (saline) study found that the vaccinated experienced changes in amygdala growth and opiate binding. Studies such as these, along with another one that determined a nine times greater risk for receipt of special-educational services in boys receiving the pre-2001 Hep B vaccine series, raise questions about a connection. We are now learning that there may be no “safe dose” of these metals and that a synergy between environmental chemical exposures and multiple administered vaccines may be more dangerous than previously expected.

By no means a gold-standard study, but much needed nonetheless, a vaccinated vs. unvaccinated comparison California survey commissioned by Generation Rescue found that among more than 9,000 boys age 4–17, vaccinated boys were 2.5 times (155 percent) more likely to have neurological disorders compared to their unvaccinated peers. Vaccinated boys were 224 percent more likely to have ADHD and 61 percent more likely to have autism. For older vaccinated boys in the 11–17 age bracket, the results were even more pronounced. Vaccinated boys were 158 percent more likely to have a neurological disorder, 317 percent more likely to have ADHD, and 112 percent more likely to have autism.