Do 2.5 Million Children Really Need Ritalin? An Integrative Approach to ADHD

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Psychostimulant Use in the United States

- 1970 - 150,000 children
- 1980 - 400,00 children
- 1990 - 900,000 children
- 2003 – 2,500,000 children
- 2007 – 2,700,000 children


Prevalence of ADHD

- Approximately 9.5% or 5.4 million children 4-17 years of age have ever been diagnosed with ADHD, as of 2007.
- Current prevalence of asthma 9.1%
- This increased by 22% between 2003 and 2007.
  As of 2007, 2.9 million children ages 4-17 years (66.3% of those with a current diagnosis) were receiving medication treatment for the disorder
- Percent of boys 3-17 years of age ever diagnosed with ADHD: 11%

CDC- Prevalence ADHD 2007

Prevalence Children Medicated for ADHD – 2003 (CDC)
ADHD - Definition

- Attention-deficit/hyperactivity disorder is an early-onset, highly prevalent neurobehavioral disorder, with genetic, environmental, and biologic etiologies.
- It is characterized by some combination of the behavioral symptoms of:
  - Inattention
  - Hyperactivity
  - Impulsivity
- Some impairment from the symptoms is present in two or more settings (e.g. at school/work and at home).

DSM – IV Criteria-Inattention

- Six or more of the following symptoms of inattention have been present for at least 6 months to a point that is disruptive and inappropriate for developmental level:
  - Often does not give close attention to details or makes careless mistakes in schoolwork, work, or other activities.
  - Often has trouble keeping attention on tasks or play activities.
  - Often does not seem to listen when spoken to directly.

DSM-IV Criteria - Inattention

- Often does not follow instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions).
- Often has trouble organizing activities.
- Often avoids, dislikes, or doesn’t want to do things that take a lot of mental effort for a long period of time (such as schoolwork or homework).
- Often loses things needed for tasks and activities (e.g. toys, school assignments, pencils, books, or tools).
- Is often easily distracted.
- Is often forgetful in daily activities.

DSM-IV Hyperactivity-Impulsivity

- Six or more of the following symptoms of hyperactivity-impulsivity have been present for at least 6 months to an extent that is disruptive and inappropriate for developmental
  - Hyperactivity
    - Often fidgets with hands or feet or squirms in seat.
    - Often runs about or climbs when and where it is not appropriate (adolescents or adults may feel very restless).
    - Often has trouble playing or enjoying leisure activities quietly.
    - Is often "on the go" or often acts as if "driven by a motor".
    - Often talks excessively.

DSM-IV Hyperactivity-Impulsivity

- Impulsivity
  - Often blurts out answers before questions have been finished.
  - Often has trouble waiting one's turn.
  - Often interrupts or intrudes on others (e.g., butts into conversations or games).
DSM -IV ADHD
I - Some symptoms that cause impairment were present before age 7 years.
II - Some impairment from the symptoms is present in two or more settings (e.g. at school/work and at home).
III - There must be clear evidence of significant impairment in social, school, or work functioning.
IV - The symptoms do not happen only during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder. The symptoms are not better accounted for by another mental disorder (e.g. Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder).

ADHD - Diagnosis
• Combination of Clinical interview and Standardized Rating Scales
• No Brain imaging, Neuropsychological testing, or Laboratory testing is recommended for the clinical diagnosis of ADHD.

Genetics
• Highly genetically influenced
• Twin studies show a mean heritability of 77%
• No specific genes definitely identified
• Several “candidate” genes emerging
• Spencer 2007

Neurobiology of ADHD
• Imbalances of dopamine and noradrenergic systems especially in prefrontal areas.
• Resulting in decreased Executive functioning
• Overall, MRI and other imaging studies have implicated abnormalities in the development of the Prefrontal Cortex, basal ganglia, and cerebellum in children with ADHD.

Why the Explosion in the Diagnosis of ADHD?
Possible Explanations
1. There are the same number of children with ADHD but we are better at finding and helping them.
2. We have loosened the definition so more people are being diagnosed and treated.
3. We are actually diagnosing and treating many people who don’t have ADHD, even by a loosened definition.
4. There are more people now who actually have ADHD

So What is Going On?
Are there more kids with ADHD or are we just diagnosing it more?
1. We are better at finding and helping children who really do have ADHD.
   - Kids previously termed lazy or stupid.
   - Kids who dropped out early.
   - “Behavior problems”.
   - “Class Clowns”
   - By identifying and helping these ADHD children we are doing good service.

2. Why the Explosion in ADHD?
   - We have loosened the definition so more kids are being diagnosed.
     Years ago it was only the extremely hyperactive child being treated. Now:
     - The inattentive child
     - The difficult or intense child
     - The rambunctious 3-year-old
     - The child of demanding parents.
     - Preschool kids who “can’t sit still”!

Many conditions can be Misdiagnosed as ADHD, including:
   - Depression or bipolar disease
   - Anxiety Disorder
   - Learning disabilities
   - The Gifted Child (Boredom)
   - Intense or difficult temperament
   - Sleep apnea

ADHD and Intensity
   - ADHD—Hyperactive, Impulsive, Poor Attention Span
   - May or may not be oppositional
   - Internal—Difficult, Oppositional
   - Sensitive
   - Often good attention span

Why the Explosion in ADHD?
   - We are actually diagnosing many children (and adults) who don’t have ADHD, even by a loosened definition.
   - Inadequate evaluations
   - Schools demanding treatment
   - Parents unable to provide appropriate parenting because they are not there.
   - Academic pressure on college kids
   - A pharmaceutical society

The ADHD Evaluation
   - Initial interview is usually about 2-1/2 hours. (for me, usually 2 sessions)
   - Besides the Standard Consult:
     - Need to speak to the parents alone, the child alone, and the family together.
     - Use some type of standardized questionnaire.
     - Also speak to teachers, counselors, school psychologists.
     - Review any previous psych/educational evaluations or other professional consults.
Why the Explosion in ADHD?
There are more children now who actually have ADHD
Genes haven’t changed, environment has:
• Environmental toxins in the prenatal and early childhood environment
• Television and Video
• Poor Nutrition
• Stressed parents who work more and have less time for parenting.

Toxins in Umbilical Cord Blood
• 10 newborns—an average 200 industrial chemicals and pollutants
• Of the 287 chemicals detected, 180 cause cancer in humans or animals, 217 are toxic to the brain and nervous system, and 208 cause birth defects or abnormal development in animal tests

Organochlorines and Child Development
• Dichlorodiphenyl dichloroethylene (p,p’DDE) measured in umbilical cord blood.
• High levels were associated with worse mental and psychomotor development.
• The higher the level, the worse the child’s development at 13 months old.
• PEDIATRICS Vol. 111 No. 5 May 2003

Pesticides and ADHD
• 1139 children 8 to 15 years of age
• “children with higher urinary levels of organophosphate metabolites were more likely to meet the diagnostic criteria for ADHD”
• For the most-commonly detected DMAP metabolite, dimethyl thiophosphate, children with levels higher than the median of detectable concentrations had twice the odds of ADHD
• Pediatrics, June 2010

Does Eating Organic Help?
• Children who ate organic fruits and vegetables had 1/5th the level of organophosphate pesticide metabolites in their urine as those who did not.
• Data suggests that children can “reduce exposure levels from ‘uncertain’ to ‘negligible’ risk”
• Environmental Health Perspectives 2003

Prenatal Tobacco, Lead Levels and ADHD
• 4700 children—4.2% with ADHD
• Risk of ADHD was 2.5 greater with prenatal tobacco exposure and
• Risk of ADHD was 4 times higher in children with high lead levels.
• For blood lead <5:
  − Compared with children in the lowest quintile (nondetectable to 0.7), children with blood lead levels in the highest quintile (2.05) had a 4.5-fold higher risk for ADHD.
Toxins in Umbilical Cord Blood

- 10 newborns – an average of 200 industrial chemicals and pollutants
- Of the 287 chemicals detected, 180 cause cancer in humans or animals, 217 are toxic to the brain and nervous system, and 208 cause birth defects or abnormal development in animal tests
- Effects of more than 1 chemical are synergistic.

Persistent organic pollutants-ADHD

- 248 12 to 15 year olds. Concentration of 3 organic pollutants (dioxins and dibenzofurans) related to:
  - ADHD, 3X more prevalent in those with detectable concentrations of these POP’s.

  *Environmental Working Group 2005

Persistent organic pollutants-ADHD

- LD - 2.5 times more prevalent in those with detectable amounts of these POPS
- POP’s generally come from animal products and breast milk.
- I do not recommend stopping breastfeeding for this reason!

Television and ADHD

- The Average Child Spends almost 4 hours a day watching Television
- Increased television watching at 2 years old, 5 years old, and adolescence is associated with an increased incidence of ADHD both in cross-sectional and longitudinal studies

TV, Video and ADHD

- Pediatrics August 2010
- Not only were both TV and Video game time associated with ADHD
- A 13 month longitudinal study in middle schoolers demonstrated that this was not just a correlation but likely a causal relationship.

- So maybe it is no surprise that with:
  - prenatal and postnatal toxin exposure,
  - massive amounts of television and video games
  - poor nutrition,
  - and parents who have less time for them

  That more kids have ADHD or ADHD like symptoms

  * Does that mean that they all need stimulants?
An Integrative Approach

It is important to see the child in the context of his or her family, friends, school, and community, and not just as someone with a set of symptoms one is trying to fix. Sometimes a change in the home environment, school or teacher is more important than any medicine or herb.

An Integrative Approach to ADHD

• Nutrition – Basic principles
• Nutrition – Food Sensitivities and Elimination diets
• Nutritional Supplements
  – Omega-3 Fatty Acids
  – Zinc
  – Iron
  – Magnesium

Effect of a Restricted Elimination Diet on the Behavior of Children with ADHD: (INCA Study) a Randomized Controlled Trial – Lancet, Feb 2011

• 100 children – 50 on restrictive diet – 50 controls for 5 weeks
• Restricted diet (few foods) Rice, meat, vegetables, pears, water as basic diet
• After 5 weeks 78% of children had 40% improvement on ADHD rating Scales
• All P Values <0.0001
• Equal to or better than most stimulant trials.
• Assessor blinded, but parents and teachers not blinded.

INCA Study – Phase 2

• Double Blind Placebo Controlled Trial of those who responded to elimination diet in Phase I
• Children were given challenge foods (based on IgG levels to specific foods) and relapse of ADHD sx occurred in 19 of 30 children.
• Evaluators, patients and family were blinded as to which foods were being challenged.
• IgG levels were irrelevant.

ADHD and Food Allergy

• 76 children were treated with an Oligoantigenic diet (few foods), 62 improved.
• 28 who improved completed a DBPCFT – foods thought to provoke symptoms were reintroduced. Symptoms worse on active foods than placebo. 48 foods were incriminated.
• Artificial colors and preservatives were the commonest provoking substances.

ADHD and Food Sensitivity-II

- 78 hyperactive children placed on few foods diet
- 59 improved
- 19 children placebo controlled phase and showed objective worsening on provoked food vs. placebo

*Archives of Disease in Childhood. 1993 Nov*

Artificial Colors, Flavors, and Preservatives

- 273 three year olds in a general population enrolled in DBPC
- Given a diet free of food coloring and preservatives.
- Then, a daily drink with colorings and sodium benzoate, or a placebo drink.
- Results: Significant increases in hyperactivity when getting the active mixture.
- Did not matter if they were hyperactive or not at baseline.

*Arch Dis Child. 2004 Jun*

Basic Nutrition – or “When did Pop Tarts become a breakfast food?”

- Maintaining a normal blood sugar
  - Sugar
  - Processed Carbohydrates
  - Protein
- The Glycemic Index

Glycemic Index and Behavior

- 19 normal 5 to 7 year-olds given low, medium, or high glycemic index breakfasts
- Two to three hours after a low glycemic load breakfast:
  - performance on the tests of memory and the ability to sustain attention were better
  - fewer signs of frustration were displayed
  - more time was spent on task when working individually in class.

*Physiology & Behavior November 2007*
Appleton Central

- Appleton Central Alternative Charter High School – kids “struggling in conventional settings” – are disruptive in class, truant, have psychological and emotional problems, come from dysfunctional home environments.
- “Natural Ovens” began a healthful meal program for breakfast and lunch.
- Vending machines selling candy, soda, and chips removed.

Appleton Central -2

- “…I can say without hesitation that it’s changed my job as a principal,” said LuAnn Coenen. “Since we’ve started this program, I have had zero weapons on campus, zero expulsions from the school, zero premature deaths or suicides, zero drugs or alcohol on campus. Those are major statistics.”

Appleton Central -3

- “…students’ disruptive behavior and health complaints diminished substantially. Students also seemed more able to concentrate…”

Appleton Central -4

- “Since the introduction of the food program, I have noticed an enormous difference in the behavior of my students in the classroom,” said teacher Mary Bruyette. “They’re on task, they are attentive. They can concentrate for longer periods of time.”

Omega -3 Fatty Acids and ADHD- What Do We Know?

- Several studies have shown that children with ADHD have decreased levels of Omega-3’s in red blood cells and plasma.
- and that Omega-3 supplementation increases those levels.
- “…clinical trials substantiating the effects of ω-3 fatty acids are also available. In particular, childhood disorders such as ADHD and autism spectrum disorders are associated with a relative lack of ω-3 fatty acids (European Journal Peds 2010)

Adolescents, ADHD, Omega -3’s

- 11 ADHD, 12 controls
- All ate the same amount of Omega 3’s and omega 6’s
- Yet those with ADHD had lower RBC levels of O-3’s and DHA in particular
- Lower O-3 levels correlated with worse ADHD symptoms

* Nutrition Journal 2008
O-3’s and ADHD- What Do We Know?

- A number of studies of Omega-3 supplementation in children with ADHD
  - Most show positive results, some do not
  - Those that were positive tended to include DHA, EPA, and GLA
  - There are lots of unanswered questions about choosing the right supplement
    - O-3’s alone or with other micronutrients.
    - Total O-3 dose
    - Ratio of DHA and EPA

Omega-3’s, ADHD, and LD

- 41 Children with ADHD and LD given a Omega-3’s for 12 weeks or a placebo. EPA 186 mg, DHA 480 mg.
- After 12 weeks, children in the treatment group had significant improvement in their ADHD scores compared to placebo.

Nutritional Journal 2007

High Dose Pilot Study

- 9 children **16.2 grams** EPA/DHA per day.
- Adjusted dose based on AA to EPA ratio
- Overall reduced AA to EPA ratio from 21/1 to 6/1
- Blind observer found improvements in ADHD symptoms
- Only 1 child developed side-effects-diarrhea (resolved when decreased to 8 grams/day).

Nutrition Journal 2007

Omega-3’s and ADHD

- 26 Children randomized double blind Placebo controlled Study
  - 20-25mg/kg EPA, 8.5-10.5mg/kg DHA vs. Sunflower Oil
  - Significant improvements in 30% of patients.
  - Milder improvements in a subset of others.

Paediatric Child Health 2009

What about Flax Oil?

- India – 30 children with ADHD given flax oil with ALA 200mg & 25mg Vitamin C
- 3 month trial – no control group
- RBC membrane DHA and EPA went up significantly (P<0.0001)
- ADHD symptoms improved significantly

Prostaglandins, Leukotrienes, EFA (January 2006)
O-3 Supplementation for ADHD?

- From a research standpoint efficacy is promising but not completely proven.
- From a clinical or practical point of view, the risk/benefit ratio is very high.
- Therefore see no reason not to recommend in most children with ADHD.

ADHD and Iron Deficiency

- Fifty-three children with ADHD and 27 controls.
- The mean serum ferritin levels, were lower in the children with ADHD (mean ± SD, 23 ± 13 ng/mL) than in the controls (mean ± SD, 44 ± 22 ng/mL; P < .001).
- Serum iron, Hemoglobin, and hematocrit were normal.
- Significantly low ferritin in children with ADHD confirmed in 4 other studies; not found in 2

Arch Pediatr Adolesc Med. 2004

Effects of iron supplementation on ADHD

- 23 children with ferritin <30, not anemic
- Treated for 12 weeks with ferrous sulfate or placebo
- The mean Clinical Global Impression-Severity significantly decreased at 12 weeks (P < 0.01) with iron, no change in the placebo group.
- Significant decrease in the ADHD Rating Scale after 12 weeks on iron (-11.0 +/- 13.9; P < 0.008), but not on placebo (3.0 +/- 5.7; P = 0.308).

Pediatric Neurology. 38(1):20-6, 2008 Jan

Effects of iron supplementation on ADHD II

“Iron therapy was well tolerated and effectiveness is comparable to stimulants.”

- Why? Strong association of iron deficiency and impaired cognitive development- iron is coenzyme for tyrosine hydroxylase- needed for dopamine synthesis.
- Important: These children are not anemic. Ferritin must be checked specifically.

Zinc for ADHD

- A number of studies have shown reduced zinc levels in children with ADHD. Most have been in Asia or Europe.
  - 50mg zinc or placebo
  - Significant improvements in hyper, impulsivity, socialization, not attention
  - Mainly in those with low zinc and FFA levels

BMC Psychiatry 2004

Zinc for ADHD

- 44 Patients in Iran with ADHD between 5 and 11
- 20 Ritalin and Zinc (15mg) 20 Ritalin and Placebo
- No zinc levels checked
- Significant difference in ADHD rating scale both teacher and parent.

BMC Psychiatry 2004
Zinc for ADHD

- Arnold (2011) 15 or 30mg zinc in randomized trial with and without amphetamine.
- Zinc alone no results.
- With 30mg zinc - 37% reduction optimal amphetamine dose.
- Overall, Zinc is an important nutritional factor in ADHD. Worth checking and treating in those who are deficient (or low normal?)

Magnesium in ADHD

- 5 studies, all in Europe, show ADHD children have lower magnesium levels than controls (but have to check RBC Mg).
- A few interventional studies showed children with ADHD improved with magnesium treatment, none randomized or controlled.
- Inadequate magnesium intake widely prevalent. One Canadian study found 30% children inadequate magnesium intake.

Putting Them Together

- Huss (2010) open label study. 800 children received for 3 months):
  - Omega-3 EPA (eicosapentaenoic acid) 400 mg
  - Omega-3 DHA (docosahexaenoic acid) 40 mg
  - Omega-6 GLA (gamma-linolenic acid) 60 mg
  - Magnesium 80 mg (21% of RDA)
  - Zinc 5 mg (50% of RDA)

Overall Results
Improvements in Attention

![Graph showing improvements in attention over time.]

Improvements in Emotional Problems

![Graph showing improvements in emotional problems over time.]

Behavioral Management

- Most parents are frustrated, confused, angry, helpless, guilty about their lack of parenting success.
- Often end up in maladaptive patterns with high levels of criticism and negative emotions.
- Helping parents with this is crucial. Can make a dramatic difference in behavior.

Tolson School-the Nurtured Heart

- Tolson School, Tucson. “Failing School” 75% of children from low income families.
- Four years ago entire school began to apply the Nurtured Heart approach
- Behavioral management system based on highly increased positive feedback, clear rules, and well defined consequences, given without ‘energy’

Tolson School

- Discipline problems dropped sharply
- Special education dropped from 31 students to 7 students
- 2 of 519 students on medication for ADHD (0.3%)
- “Performing Plus School” - increasing test scores.

The Nurtured Heart Approach - Howard Glasser

![Image of Howard Glasser's book.]
Valerian - Lemon Balm

- 918 children with “hyperkinesis” and dyssomnia treated for 4 weeks
- In total, 80.9% of the patients who suffered from dyssomnia experienced an improvement
- 70.4% of the patients with restlessness improved clearly.
- Very few side-effects
- Weaknesses – no control group, did not test concentration
- Strength – Very large number of children.

Herbal Combination – “Nurture and Clarity”

- Developed in Israel TCM practitioners
- RDBPCT 80 treatment group 40 controls
- 4 month trial - Outcome TOVA (Test of Variable Attention)
- Highly significant improvement in all outcomes
- No side effects
- Ingredients: Paeonia Alba, withania Somnifera, Centella Asiatica, spirulina Platensis, Bacopa Monieri, Melissa Officianalis

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EEG Neurofeedback

- Children with ADHD have predictable brain wave abnormalities. This can be measured by Quantitative EEG (QEEG)
- They generally have more slow wave (Theta-low arousal) activity and less Fast Wave (Beta-high arousal) activity than controls
- One study –QEEG had 86% sensitivity and 98% specificity for Dx of ADHD

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Homeopathy

- Many reports but only 3 randomized studies.
- 2 of the 3 studies showed positive results, one no difference.
- In one study of 83 children, the correct homeopathic treatment in found in an open study. Then a RDBPC crossover trial in 62 was positive
- Personal experience. Occasionally quite helpful. Little risk of harm.
Traditional Chinese Medicine and ADHD

- A number of open trials have shown effectiveness of either Chinese Herbal medicine or acupuncture, or both.
- Only a few randomized trials reported, all in Chinese, all with positive results, some remarkably positive.
- Randomization and blinding may not meet western medical standards.
- For interested families risk is small if herbs are of high purity.


Nature Deficit Disorder?

- “Last Child in the Woods” Richard Louv
- ADHD partially a result of loss of contact with nature
- One Study – Children with ADHD walked for 20 minutes in a park, neighborhood or downtown.
- Immediately afterword performed substantially better on a concentration test after the park walk than the other 2 walks.
- So perhaps doses of nature need to be added to our supplement list?


How Do I Treat ADHD?

- Clean Up Diet
- Elimination Diets if Indicated
- Check serum Ferritin, lead, zinc, and Magnesium
- Omega-3’s
- Behavioral Interventions (Glasser)
- School Modifications
- Sometimes botanical and other CAM treatments
- Psychostimulants when necessary

Take Home Message

- We need to be careful not to over diagnose ADHD and to allow for many normal variations of learning styles and abilities.
- When we do make the diagnosis, I believe it makes sense to at least explore non-pharmaceutical options which are certainly safe, and may be effective, before moving to psychostimulants.
The Multiple Food Elimination Diet

Sandy Newmark M.D.

This is a diet that eliminates, for a limited period of time, the most common foods to which children are allergic or sensitive. These are:

1. **Dairy Products** – including anything with casein, which is the main milk protein. Rice milk is a good substitute.

2. **Wheat** – including anything with gluten, which is the main protein in wheat, rye, barley and some other grains. There are gluten free, rice based breads, cookies, and other baked items available at Trader Joe’s and other specialty stores.

3. **Corn** – Avoid anything with corn or corn syrup in it. This is in many processed foods and drinks, so you will need to watch for this carefully. Especially watch out for high-fructose corn syrup, which is in many processed foods.

4. **Soy** – Any soy protein or derivative should be avoided.

5. **Eggs** – both yolk and white.

6. **Citrus** – any citrus fruit or juice.

7. **Nuts** – including peanuts, which are actually a legume.

8. Any **artificial colors** or **additives**. Any **preservatives**.

9. **Chocolate**

10. Foods with lots of **sugar** – One cannot entirely avoid sugar, because there is some sugar in almost all foods. Here it is recommended to avoid concentrated sources of sugar such as candy, cakes, donuts, soda, Kool-Aid, etc.

The plan is to **completely** eliminate all of the above for 21 days, watching for changes in behavior, attention, activity level, stool consistency, or any other parameter which may be important in your child. Keeping written notes during this time on a calendar or some
other daily chart can be very helpful. During this trial period it is important to be very strict about avoiding these foods.

After 21 days, if no change or improvement is seen, begin to add the foods back, one food group every 3 days. This is recommended because sometimes, even though a significant change is not seen when the food is removed, when the food is reintroduced changes are noticed.

If changes are noticed, again the foods are added one by one, each 3 days, and any change in behavior or other parameters are noted.

Here is an example:

Johnny is a child with significant hyperactivity and trouble focusing. After 21 days on the elimination diet, his family notices that he is less hyperactive and better able to focus. On the 22nd day, Johnny is given lots of milk and cheese. There is still no change in his behavior. So dairy can be continued at normal levels. On day 25, he is given lots of wheat in the form of bread and pasta. Again there is no change in behavior. So wheat can be continued at normal levels.

On day 28, he is given eggs. That night he is very irritable and by the next day his hyperactivity and lack of focus have worsened considerably. It is assumed that he is sensitive to eggs and these are eliminated from his diet. When the effect of the eggs wears off, and his behavior is again improved, the other foods are reintroduced in the same manner.

A couple of notes:

1. This would not mean that Johnny could never eat eggs again. But he would avoid it as much as possible and know what the consequences were. If for example, Johnny was found to be sensitive to dairy instead of eggs, and he went to a birthday party, his family could decide whether the pleasure and feeling of normalness of eating the ice cream at the party was worth the reaction that would ensue.

2. Some children may tolerate slight amounts of foods they are sensitive to without significant reactions. For instance, a child who is dairy sensitive may not react to a small amount of yogurt occasionally. However, as a general policy these foods should be avoided.

3. If your child is known to be truly allergic to a certain food, do not give him or her these foods at all.

Here’s list of foods that are allowed on the diet.
1) Any meat
2) Any fruit except citrus
3) Any vegetable
4) Any type of bean
5) Rice and various other grains (i.e. Quinoa or Buckwheat) that do not contain gluten.