

# Response to a dietitian's article in HealthLine

See article: <https://www.healthline.com/nutrition/feingold-diet>

Author contact: Katey Davidson, [contact@tasteofnutrition.com](mailto:contact@tasteofnutrition.com)

Editorial contact: Erin Petersen, Editorial Director, [epetersen@healthline.com](mailto:epetersen@healthline.com)

## Does the Feingold Diet Work for ADHD?

1. You write, **“The Feingold Diet, which is purported to manage symptoms ...”**
  - “is purported to” is what Wikipedia editors call "weasel words," not considered acceptable in a professional article.
  - There are so many errors of fact in this article that it is overwhelming to address them all. I will do my best to address them in order of appearance.
2. You write, **“Despite many success stories, this diet has been widely criticized by the medical community ...”**
  - Not exactly. From the beginning, the diet was widely criticized by those with ties to the pharmaceutical and food additive industries, spending large funds to “inform” doctors of their criticisms.
  - When doctors criticize, it is generally because they are quoting unreliable, questionable sources.
3. You continue, **“... for its lack of scientific evidence”**
  - Not true. This is a complaint made back in the 1970s, before much research had been done ... significant research has actually been done over the years in spite of the industry efforts to prevent or derail it.
  - There are over 500 studies on the dangers of food dyes alone.
4. You continue, **“... strict rules”**
  - No. The "rules" basically teach you how to eat the way we all ate about 70 years ago, in the 1940s and 1950s.
  - Plenty of candy and junk foods are allowed in the diet, requiring attention to ingredients, of course, but that is made easier by the 400+ page *Foodlist* and member communications.
  - The more closely one follows the Feingold guidelines, the greater the chance of early success.

- There are many diets out there -- this diet is one of the least restrictive, and far easier than diets for diabetes, weight loss, PKU, or even high cholesterol.

5. You finish the sentence, “... and dangers.”

- Really? It's called real food.... are you claiming this is DANGEROUS?

## What is the Feingold Diet?

6. In this section, you write, “**The Feingold Diet was created by Dr. Benjamin Feingold, a Californian pediatrician and allergist.**”

- To give him proper credit, he was **Chief of Pediatrics** at Cedars of Lebanon Hospital, Los Angeles, CA until 1951 when he became **Chief of Allergy** at Kaiser Permanente Medical Center.
- From 1952 on, he was **Chairman of the Central Research Committee** of Kaiser Foundation Hospitals of Northern California.
- This is far more than just a "pediatrician and allergist."

7. You write, “**He originally designed the eating pattern for his young patients with allergy symptoms, such as hives, asthma, and eczema.**”

- No -- actually, he was using the elimination diet designed by Dr. Lockey of the Mayo Clinic for patients with asthma and allergies when triggers were not easily identifiable.
- Dr. Feingold’s patients were ADULTS as well as children.

8. You write, “**After noticing behavioral improvements, he began using the diet to help children with ADHD, autism, dyslexia, and other behavioral issues.**”

- Not really. HE did not notice behavioral improvements since HE was not a psychologist or psychiatrist.
- This improvement was reported to him by parents and -- in his first reported case -- by the psychiatrist treating one of his adult patients.
- Dr. Feingold was not treating children with autism. Years later, as more and more children were being diagnosed with autism, their parents began to try the Feingold diet. They reported to the Feingold Association – a members’ support group – that the diet can also help children with autism.

9. You write, **“The diet eliminates artificial colors, sweeteners, substances known as salicylates, and three preservatives — butylated hydroxyanisole (BHA), butylated hydroxytoluene (BHT), and tert-Butylhydroquinone (TBHQ).”**

- The use of the term “sweeteners” is confusing to the reader, who may think it means that sugar is eliminated.
  - As you mention later on, Dr. Feingold did NOT eliminate sugar or other natural sweeteners.
  - This can be clarified by changing “sweeteners” to “artificial sweeteners.”
- He did, however, eliminate artificial flavorings, which are not mentioned in the sentence above.
  - Some flavorings may contain a salicylate radical, but in general no information beyond "flavoring" is given on packages. While they may not ALL be bad, the parent has no way to know which one(s) are okay or which one(s) are in the product. Better to just avoid them all.
- TBHQ is misspelled – it is tert-Butylhydroquinone

10. You write, **“While salicylate sensitivity does exist, no evidence suggests a firm connection between this sensitivity and behavioral issues.”**

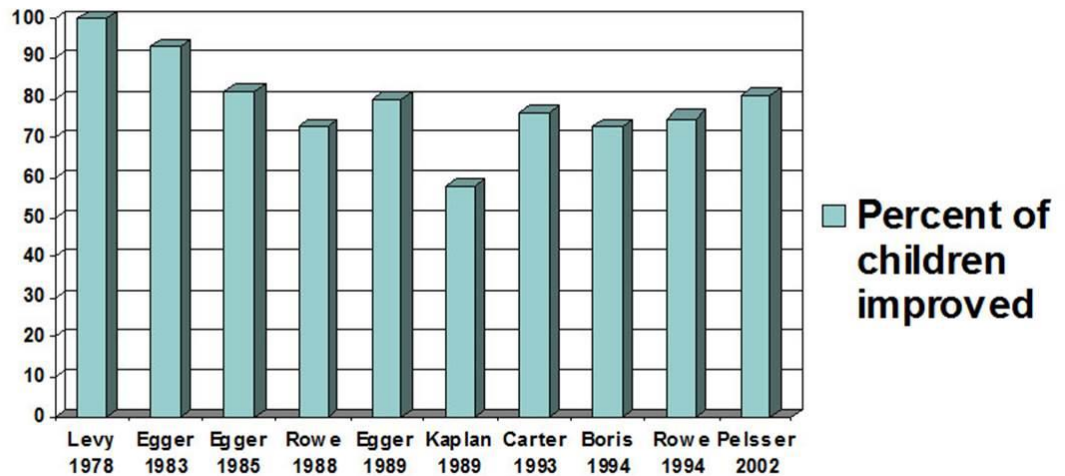
- Indeed, yes there is evidence. See the following studies, remembering that it only takes TWO double-blind studies of a drug to consider it an approved Level A treatment for ADHD.
- When you read these, remember asthma & eczema are symptoms commonly co-occurring with adhd – and such symptoms often subside with removal of salicylates.
  - 1) [\*\*Abrishami 1977: Aspirin intolerance—a review\*\*](#)
  - 2) [\*\*Bennett 1998 The Shipley Project: Treating Food Allergy to Prevent Criminal Behaviour in Community Settings\*\*](#)
  - 3) [\*\*Ceserani 1978: Tartrazine and prostaglandin-system\*\*](#)
  - 4) [\*\*Conners 1976: Food additives and hyperkinesis: a controlled double-blind experiment\*\*](#)
  - 5) [\*\*Fitzsimon 1978: Salicylate sensitivity in children reported to respond to salicylate exclusion\*\*](#)
  - 6) [\*\*Konikowska 2012: The influence of components of diet on the symptoms of ADHD in children\*\*](#)

- 7) [Settipane 1975: Aspirin intolerance. III. Subtypes, familial occurrence, and cross-reactivity with tartrazine](#)
- 8) [Sommer 2015: Treatment of aspirin exacerbated respiratory disease with a low salicylate diet: a pilot crossover study.](#)
- 9) [Sommer 2016: A novel treatment adjunct for aspirin exacerbated respiratory disease: the low-salicylate diet: a multicenter randomized control crossover trial](#)
- 10) [Spector 1979: Aspirin and concomitant idiosyncrasies in adult asthmatic patients](#)
- 11) [Stenius 1976: Hypersensitivity to acetylsalicylic acid \(ASA\) and tartrazine in patients with asthma](#)
- 12) [Stevens 2013: Mechanisms of behavioral, atopic, and other reactions to artificial food colors in children](#)
- 13) [Ward 1990: The influence of the chemical additive tartrazine on the zinc status of hyperactive children: A double-blind placebo-controlled study](#)

11. You write, **“Despite anecdotal reports from some proponents, there’s little evidence that this diet improves behavioral problems in children with ADHD or other conditions. Furthermore, no research connects any ingredients or foods to worsened behavior.”**

- ALL new treatments begin with anecdotal reports -- that is the way science works.
- Unfortunately, a number of the early double-blind studies were designed to fail. Why? Because they were designed and funded by the Nutrition Foundation, a group of companies such as Coca Cola and Dow Chemicals.
  - People today do not remember who the Nutrition Foundation was; here is a list of some of their members:  
<https://www.talkingaboutthescience.com/library/nutrition-foundation/>
  - and here is an actual list of their officers & trustees:  
<https://www.talkingaboutthescience.com/DOCS/NutritionFoundation.pdf>
  - The National Advisory Committee on Hyperkinesia and Food Additives was a committee of the Nutrition Foundation, *not* a government committee. Thus [this report](#) was actually the Nutrition Foundation reporting .... to itself.
- Nevertheless, early studies which first put children on the diet in order to then challenge them with various amounts of food dye showed improvement (variations depended on how closely they followed the actual Feingold Diet).
- Below is a chart:

## Comparison of Diet Studies



12. In the Summary, you write, **“The Feingold Diet aims to improve behavioral problems in children by eliminating food preservatives, colors, sweeteners, and salicylate-containing foods.”**

- Again, this will confuse people because “sweeteners” will be assumed to include sugars, only three (3) specific preservatives are eliminated, and you again omitted artificial flavorings.
- SUGGESTION: **“The Feingold Diet aims to improve behavioral and health problems by eliminating petrochemical preservatives, synthetic food dyes, artificial flavorings/sweeteners, and a short list of salicylate-containing foods.”**
- Notice that I left out “children” since this diet works for adults just as well.... according to parents of children for whom it was used.

## How to follow the diet

13. You write, **“To follow the diet, your child must only eat from a strict list of approved foods, completely avoiding others. ...”**

- It would be more accurate to let parents know that the "strict list of approved foods" takes up more than 400 pages.
- The list includes lots of snacks, sweets, desserts, and junk foods including hot dogs, ice cream and enough candy to satisfy any child.

14. You write, **“After a set period, you can slowly reintroduce certain foods to see if your child’s symptoms return.”**

- The salicylate-containing foods are not introduced after a “set period.” The timing depends on the response the person has to the diet on Stage 1.

15. You write, **“Feingold recommended making all meals from scratch so that your child doesn’t accidentally eat forbidden ingredients. He asserted that food labels are often incorrect or misleading and should not be trusted. ”**

- Yes he did recommend that .... in the 1970s.
- Over the past 5 decades, the Feingold Association has been diligently contacting companies in order to bring accurate information to their members.
- Cooking from scratch is not required. There is even a booklet of what can be eaten in fast food restaurants.

16. You write, **“Despite these claims, food labels are highly regulated and monitored for accuracy”** ([1Trusted Source](#)).

- How "regulated" they are does not mean that they can be depended on for this particular diet.
- Regulations include allowing ingredients below a certain percent to not be listed.
- Items added to an ingredient purchased by the manufacturer do not have to be listed on the ingredient list since the manufacturer himself did not add it.
- Take a look at your milk that says it has added Vitamin A palmitate. Does it say whether that ingredient is preserved with mixed tocopherols (natural) or with BHA/BHT? it doesn't have to tell you, but Feingold members need to know.

17. You write, **“Intentionally restricting your child’s nutrient intake brings up many ethical and medical concerns and should never be attempted without first consulting a health professional.”**

- Surely, with a master’s degree in nutrition you know synthetic food dyes, artificial flavorings, and petrochemical preservatives are not *nutrients*.
- While it is true that salicylate-containing foods are often healthful foods such as apples, this is not for life. Once the child (or adult) has had a good response to the diet, they can learn which ones they tolerate. If they happen to be intolerant of apples, that is no less important than the person who is allergic to peanuts – and who must avoid peanut butter no matter how healthful it may be.

- However, even children who are quite salicylate-sensitive can usually eventually tolerate at least small amounts of their favorite salicylate-containing foods. There seems to be improvement over time, reasons for which are illustrated by the work of [Eagle \(2014\)](#).
- Meanwhile, parents are helped in choosing replacements. Oranges are not the only sources of vitamin C, for example. In fact, two studies on this very subject were conducted early on, both concluding that children on the diet were MORE likely than others to meet the RDA of nutrients. See:
  - [Dumbrell 1978: Is the Australian version of the Feingold diet safe?](#)
  - [Harper 1978: Nutrient intakes of children on the hyperkinesis diet](#)

## Substances and foods to avoid

### 18. You list **all the FD&C food dyes -- including orange B and green 3 which are barely used, and Red 2 which was banned years ago.**

- However, you neglect to mention the D&C dyes such as Red 28 or Red 30 used in toothpastes and medications.
- ALL synthetic colors -- indicated by a color and a number -- are eliminated on the diet. Not avoided; eliminated altogether.

### 19. Under “artificial flavorings” you list vanilla.

- Perhaps this is just a typo, since I am sure you are aware that vanilla is made from vanilla beans. Natural vanilla flavoring is not eliminated. VANILLIN is the artificial vanilla flavoring – and it, indeed, is eliminated. There are hundreds if not thousands of other artificial flavorings – far too many to list.
- Make it simple: If it says "ARTIFICIAL FLAVORING" or just "FLAVORING" then it is not allowed unless it has been researched by the Feingold Association and found to be a natural flavoring. (For example, the "flavoring" listed in ground turkey is usually just the herb rosemary which aids in preservation but is a natural flavoring.)

### 20. You list “synthetic pesticides” as something eliminated.

- While the Feingold Association doesn't like pesticides and educates the parents about avoiding them, they are not eliminated.
- Parents are NOT required to provide all organic foods for their families.
- Except for a few highly sensitive or ill children, most do just fine without needing to go all-organic.

## Foods to avoid

### 21. You write, “The following foods are high in salicylates and must be culled during the diet’s first phase:”

I will cross out incorrect items and add comments below each bullet:

- **Fruits:** apples, applesauce (~~colored or artificially sweetened~~), ...
  - Since applesauce is made from APPLES, all forms of it are eliminated on Stage 1.
  
- **Vegetables:** ~~alfalfa sprouts, broccoli, chicory, cucumbers, eggplant, endives, okra, peppers, pickles, radishes, squash, sweet potatoes, spinach, watercress, and zucchini~~
  - I don't know where you got this list, but the *only* vegetables eliminated on the Stage 1 Feingold Diet are cucumbers and peppers. All other vegetables are fine on Stage 1.
  - Pickles are only eliminated if they are made from cucumbers.
  - We have recipes in our recipe books for zucchini pickles for the adventurous moms.
  
- **Nuts and seeds:** ~~almonds, chestnuts, and other nuts and seeds~~
  - No -- ONLY almonds are eliminated.
  - All other nuts and seeds are just fine on Stage 1.
  
- **Grains:** ~~breakfast cereals (unless free of preservatives and coloring) and processed crackers~~
  - No --- ALL grains are acceptable.
  - For cereals and other processed foods, you simply have to use the *Foodlist* to avoid those with additives.
  
- **Spices:** ~~allspice, anise seeds, cayenne, cinnamon, cloves, curry, eumin, dill, ginger, mustard, oregano, pimento, rosemary, tarragon, thyme, and turmeric~~
  - Chili and Cloves are the only spices eliminated on Stage 1.
  - Curry and allspice contain cloves.
  - Pimento is not a spice -- it is a pepper, so yes it is eliminated on Stage 1.



- **Drinks:** coffee, tea, ~~diet soda, and fruit juices~~
  - Diet sodas sweetened with stevia are acceptable.
  - Fruit juices from acceptable fruits (and without nasty additives) are acceptable.
  - Coffee and tea are on the salicylate list and so they are eliminated at the beginning.
  
- **Other items:** ~~jams, jellies, mint flavoring, chewing gum,~~ and any foods with food coloring or additives
  - Jams and jellies are just fine as long as their ingredients are acceptable.
  - Natural mint flavoring is fine. Dr. Feingold originally confused oil of wintergreen with mint. Oil of wintergreen is a salicylate and eliminated on Stage 1.
  - Chewing gum is fine as long as the flavoring is natural and the gum base doesn't contain BHT/BHA (often not listed, so one must check the *Foodlist* for acceptable brands).

22. You write, **“Furthermore, foods containing gluten or the milk protein casein may need to be eliminated, though Feingold recommended visiting an allergist before removing either compound from your kid’s diet.”**

- The Feingold Association was asked to mark those products containing gluten or casein in the *Foodlist* in order to accommodate those children who have allergies because it is so common in this population.
- It is not part of the basic Feingold Diet and does NOT need to be listed here unless you want to remark about how helpful the Association is in providing this information for its members.

23. In your summary, you write, **“You must eliminate any foods containing artificial colors, flavors, preservatives, sweeteners, or salicylates from your child’s diet.”**

- You are almost right, with the following caveats:
  - "Flavors" are not eliminated unless they are ARTIFICIAL flavors (or unspecified on the label and not otherwise identified by the company).
  - "Preservatives" are not eliminated except for the three you yourself listed -- BHA, BHT, TBHQ. There are many other preservatives.
  - "Sweeteners" are not eliminated except for the synthetic ones. Sugar, Honey, Maple syrup, Alcohol Sugars, Stevia, Monk Fruit, and similar natural sweeteners are all acceptable.

- **Suggested corrected sentence:** “You must eliminate any foods containing synthetic colors, artificial flavors, the preservatives BHA, BHT, and TBHQ, and artificial sweeteners (except stevia). In the beginning a selected list of salicylates are also eliminated.”

## Substances and foods to eat

24. You write, “**While Feingold suggested limiting added sugars, he saw no reason to avoid sugar completely. Stevia and sugar alcohols like xylitol and sorbitol are allowed.**”

- It should probably be noted that Dr. Feingold did not suggest limiting sugars specifically for those on the diet; he suggested limiting sugars for general health, a suggestion most physicians would agree with.

25. You write, “**Stevia is a natural, plant-derived sweetener. Meanwhile, sugar alcohols have a chemical structure similar to those of both sugar and alcohol. Despite the name, they don’t contain any ethanol — the compound that results in intoxication.**”

- As Dr. Feingold pointed out, the alcohol sugars are laxative, so one should be careful about the amount consumed. Again, this is a general observation, not specifically for the diet.

26. You write, “**The diet encourages fresh, whole produce that’s low in salicylates, such as:**”

- **Vegetables:** bean sprouts, beets, Brussels sprouts, cabbage, carrots, cauliflower, celery, kale, lettuce, mushrooms, onions, peas, potatoes (except sweet potatoes), and sweet corn”
  - Why are sweet potatoes singled out as an exception? Sweet potatoes and yams are acceptable. Perhaps you are thinking of red potatoes that are occasionally colored red with food dye?
  - Beans are also left out – all kinds of beans are acceptable, and leaving them out of a vegetable list may be confusing.
- **Protein sources: beans and lentils**
  - What about chicken, meat, fish, eggs, and cheese? ALL these ordinary items are acceptable on the diet.
  - I would suggest putting beans and lentils under “vegetables” in spite of their protein content, to avoid confusion.

27. In your summary, you write, “**Fruits and vegetables low in salicylates are encouraged, and all foods not banned are technically allowed. These include foods containing sugar, sugar alcohols, and stevia.**”

- To be accurate, some foods quite "high" in salicylate are acceptable while others technically "low" are not. Swain in 1985 and 1988 did some extensive measurements of salicylate levels .... but she never identified the types of salicylate in each food. In other words, the difference in toxicity between *methyl salicylate*, *ethyl salicylate*, *octyl salicylate*, etc. remains unknown, leaving the possibility that a small amount of one may be far worse than a large amount of the other.
- You might have obtained some of your information from the Australian “Failsafe” diet. That diet uses the Swain list and is far more restrictive than the Feingold Diet. The Feingold Diet eliminates only those salicylates shown clinically to be the most likely to cause problems, based on research done for aspirin-induced asthma in Germany. It has stood the test of time.
- I do not understand why you say that "all foods not banned are technically allowed." They are ACTUALLY -- really, and truly – allowed.

## Is the Feingold Diet effective?

28. You write, “**Despite many personal success stories, most studies from the 1980s and 1990s have failed to demonstrate the Feingold Diet’s effectiveness.**”

- The 1980s and 1990s was a long long time ago in scientific circles. Let's see what your "trusted sources" are:

### 2Trusted Source,

This is Adams (1981) -- 39 YEARS AGO!

- He reported using 26.3 mg food dye as his challenge, but he apparently can't add. I added up his list in Table 2 and only got 18.8 mg.
- In 1977, the National Academy of Science had already published a report on 12,000 people, showing that children ate up to more than 300 mg food dye per day.
- He tested the children more than 4 hours AFTER giving them the snack -- most children will have a reaction within two hours, and such a small amount of dye may give a short-term reaction that could be missed when testing is delayed.
- Adams concluded the DIET didn't work ---- but he never tested the DIET; he only tested a small amount of food dye.

- Sure, Adams "failed to demonstrate" the diet's effectiveness ... because he never intended to do so.
- Nevertheless, he writes: **“9 of the 14 variables “showed a tendency toward deterioration for the artificial snack.”** With only 18 kids in the study, it is pretty hard to get anything to actually be "significant" mathematically, so deterioration on more than half the variables should not be ignored.

### [3Trusted Source,](#)

This is the Haavik (1979) study -- 41 YEARS AGO!

- This is a study on ONE BOY who was diagnosed with seizures, tuberous sclerosis, and mental retardation -- but not ADHD.
- Every time they put him on the diet, his seizures got better and they were able to stop his meds. I'd say this looks to be EFFECTIVENESS for seizures. (Later, [Egger \(1989\)](#) showed that 80% of children with epilepsy plus other symptoms improved on a Feingold-type diet, while none of the children with epilepsy alone improved.)
- Haavik commented that the child wasn't less hyperactive. THAT wasn't even one of his diagnoses! He was only three years old, not an age usually diagnosed with ADHD anyhow.

### [4Trusted Source,](#)

This is the Mattes "current reappraisal" ... from 1983! 37 YEARS AGO!

- This is an opinion piece. He claims that there is only "anecdotal evidence" -- which he does not quote or cite.
- He claims when the diet works it is only a "placebo effect due to increased attention."
- He presents NO PROOF of any of his opinions, but that hasn't stopped people from quoting him *ad nauseum*.
- His claims were not true then ... and for sure they are not true now!
- <https://www.talkingaboutthescience.com/mattes1983/>

### [5Trusted Source.](#)

This is the Kavale & Forness meta analysis ... from 1983!

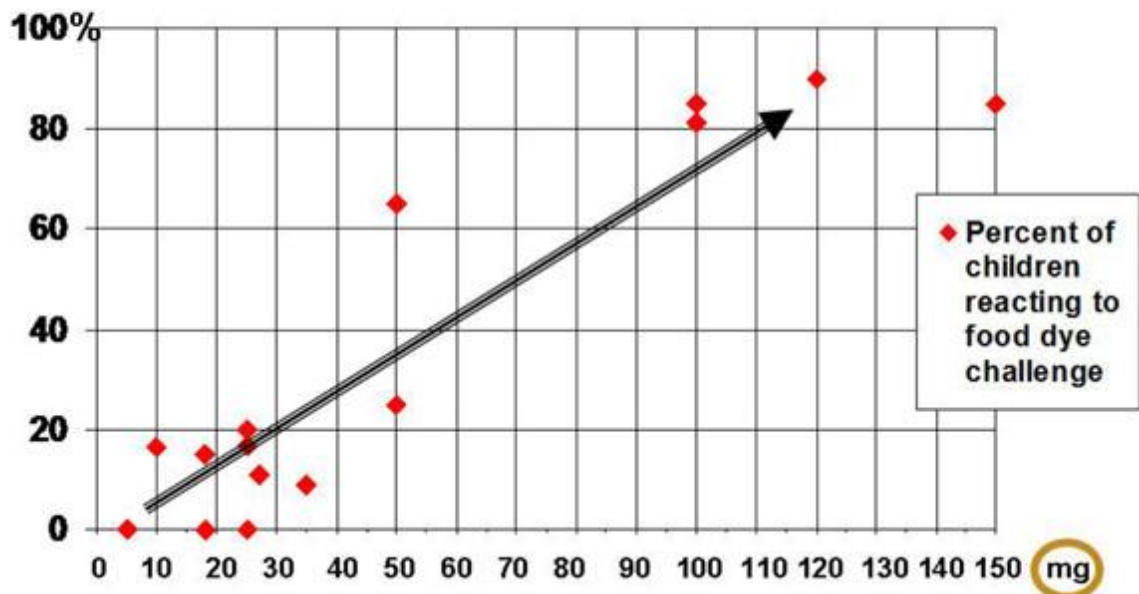
- It is OLD ... a review of 23 studies from the 1970s! Enough said.

29. You write, “As a result, little funding and research have been dedicated to the diet for the past few decades. Nonetheless, some scientists have criticized the framework of these older studies and called for more research”

- Your "trusted source" ([6Trusted Source](#)) is Dr. Bernard Rimland's 1984 review and criticism of the Kavale & Forness meta analysis above.
  - Rimland specifies that Kavale & Forness missed the effect of GIGO ... "garbage in, garbage out" in the reviewed studies
  - <https://www.talkingaboutthescience.com/studies/Rimland1984.pdf>
  - In spite of his excellent analysis, Rimland's paper, too, is very old and cannot tell us anything about recent research.
- Take another look at the old research when organized according to how much food dye (alone) was given as a "challenge" to children who had improved on an open Feingold Diet. Bear in mind that as early as 1977, The National Academy of Sciences published a [study of 12,000 people](#), showing that some children were consuming in excess of 300 mg food dye per day.

## Graphed against mg of dye used

It is a dose-response !!



- To account for the past 4 decades of research, I will list some relevant research below, but bear in mind that
  - (a) many studies didn't want to use the name "Feingold" in their study since they would be attacked by pharma & food additive industry agents, so
  - (b) they often used the more restrictive but less controversial "few foods" or "oligoantigenic" diet. This was a diet that got similar results but can safely be assumed to be a diet NOBODY would want to actually use. Also
  - (c) much of the research addressed only a single piece of the diet or modified the diet. Yes, this can be confusing, so you have to take each piece and then add them up. Finally
  - (d) all the reviews include the old studies from the 1970s, some of which were funded and/or designed by the food additive industry itself, and that tempers their conclusions. Nevertheless, here is a list of some -- but by no means all -- of the studies and reviews on the effectiveness of the diet. These are simply the ones I happen to have in full text so you can see them linked to the page discussing them.
  
- Here is the list:
  - 1) (2019) [A collection of studies on the relationship of food dyes to health](#)
  - 2) [Arnold 1999: Treatment alternatives for Attention-Deficit/ Hyperactivity Disorder \(ADHD\)](#)
  - 3) [Arnold 2012: Artificial food colors and attention-deficit/hyperactivity symptoms: Conclusions to dye for](#)
  - 4) [Bateman 2004: The effects of a double blind, placebo controlled, artificial food colourings and benzoate preservative challenge on hyperactivity in a general population sample of preschool children](#)

- 5) [Bennett 1997: The Health of Criminals Related to Behaviour, Food, Allergy and Nutrition: A Controlled Study of 100 Persistent Young Offenders](#)
- 6) [Bennett 1998 The Shipley Project: Treating Food Allergy to Prevent Criminal Behaviour in Community Settings](#)
- 7) [Boris 1994: Foods and Additives are Common Causes of the Attention Deficit Hyperactive Disorder in Children](#)
- 8) [Breakey 1997: The role of diet and behaviour in childhood](#)
- 9) [Carter 1993: Effects of a Few Foods Diet in Attention Deficit Disorder](#)
- 10) [Dengate 2002: Controlled trial of cumulative behavioural effects of a common bread preservative](#)
- 11) [Dufault 2018: Food labeling requirements may explain lower autism and ADHD prevalence in the United Kingdom](#)
- 12) [Eagle 2014: ADHD impacted by sulfotransferase \(SULT1A\) inhibition from artificial food colors and plant-based foods](#)
- 13) [Egger 1992: Effect of diet treatment on enuresis in children with migraine or hyperkinetic behavior](#)
- 14) [Ghanizadeh 2015: The effect of dietary education on ADHD, a randomized controlled clinical trial](#)
- 15) [Goldenring 1980: Effects of continuous gastric infusion of food dyes on developing rat pups.](#)
- 16) [Goyette 1978: Effects of artificial colors on hyperkinetic children: a double-blind challenge study](#)
- 17) [Hoekstra 2011: Is there potential for the treatment of children with ADHD beyond psychostimulants?](#)
- 18) [Kamel 2011: The Potential Health Hazard of Tartrazine and Levels of Hyperactivity, Anxiety-Like Symptoms, Depression and Anti-social behaviour in Rats](#)
- 19) [Konikowska 2012: The influence of components of diet on the symptoms of ADHD in children](#)
- 20) [Lanphear 2015: The impact of toxins on the developing brain.](#)
- 21) [Lien 2006: Consumption of soft drinks and hyperactivity, mental distress, and conduct problems among adolescents in Oslo, Norway](#)
- 22) [Liu 2005: Biosocial bases of aggressive and violent behavior — implications for nursing studies](#) (note zinc ... and see Ward below)

- 23) [Ly 2017: Elimination diets' efficacy and mechanisms in attention deficit hyperactivity disorder and autism spectrum disorder.](#)
- 24) [Malakar 2014: Minding the greens – Role of dietary salicylates in common behavioural health conditions](#)
- 25) [McCann 2007: Food additives and hyperactive behaviour in 3-year-old and 8/9-year-old children in the community: a randomised, double-blinded, placebo-controlled trial](#)
- 26) [Niederhofer 2006: A preliminary investigation of ADHD symptoms in persons with celiac disease](#)
- 27) [Nigg 2012: Meta-Analysis of Attention-Deficit/Hyperactivity Disorder or Attention-Deficit/Hyperactivity Disorder Symptoms, Restriction Diet, and Synthetic Food Color Additives](#)
- 28) [Novembre 1992: Unusual reactions to food additives](#)
- 29) [Pelsser 2002: Favourable effect of a standard elimination diet on the behavior of young children with attention deficit hyperactivity disorder \(ADHD\): a pilot study](#)
- 30) [Pelsser 2009: A randomised controlled trial into the effects of food on ADHD](#)
- 31) [Pelsser 2010: Effects of food on physical and sleep complaints in children with ADHD: a randomised controlled pilot study](#)
- 32) [Pelsser 2011: Effects of a restricted elimination diet on the behaviour of children with attention-deficit hyperactivity disorder \(INCA study\): a randomised controlled trial](#)
- 33) [Pollock 1990: Effect of artificial food colours on childhood behaviour](#)
- 34) [Ríos-Hernández 2017: The Mediterranean Diet and ADHD in Children and Adolescents](#)
- 35) [Rowe 1994: Synthetic Food Coloring and Behavior: A Dose Response Effect in a Double-Blind, Placebo-Controlled, Repeated-Measures Study](#)
- 36) [Saab 2012: The effect of diet supplementation on children with ADHD](#)
- 37) [Sarantinos 1990: Synthetic Food Colouring and Behavioural Change in Children with Attention Deficit Disorder: A Double-Blind, Placebo Controlled, Repeated Measures Study](#)
- 38) [Schab 2004: Do artificial food colors promote hyperactivity in children with hyperactive syndromes? A meta-analysis of double-blind placebo-controlled trials](#)
- 39) [Schmidt 1997: Does oligoantigenic diet influence hyperactive/conduct-disordered children—a controlled trial](#)
- 40) [Schnoll 2003: Nutrition in the treatment of Attention-Deficit Hyperactivity Disorder: A neglected but important aspect](#)
- 41) [Schoenthaler 1986: The Impact of a Low Food Additive and Sucrose Diet on Academic Performance in 803 New York City Public Schools](#)
- 42) [Schoenthaler 1991: Applied Nutrition and Behavior](#)



- 43) [Sonuga-Barke 2013: Nonpharmacological Interventions for ADHD: Systematic Review and Meta-Analyses of Randomized Controlled Trials of Dietary and Psychological Treatments](#)
  - 44) [Starobrat-Hermelin 1998: The effect of deficiency of selected bioelements on hyperactivity in children with certain specified mental disorders](#) (zinc again -- see Ward)
  - 45) [Stevens 2011: Dietary sensitivities and ADHD symptoms: thirty-five years of research](#)
  - 46) [Stevens 2013: Mechanisms of behavioral, atopic, and other reactions to artificial food colors in children](#)
  - 47) [Stevens 2014: Amounts of artificial food colors in commonly consumed beverages and potential behavioral implications for consumption in children](#)
  - 48) [Stevenson 2010: The Role of Histamine Degradation Gene Polymorphisms in Moderating the Effects of Food Additives on Children's ADHD Symptoms](#)
  - 49) [Stevenson 2014: Research review: the role of diet in the treatment of attention-deficit/hyperactivity disorder—an appraisal of the evidence on efficacy and recommendations on the design of future studies.](#)
  - 50) [Uhlig 1997: Topographic mapping of brain electrical activity in children with food-induced attention deficit hyperkinetic disorder](#)
  - 51) [Verlaet 2014: Nutrition, immunological mechanisms and dietary immunomodulation in ADHD.](#)
  - 52) [Vojdani 2015: Immune reactivity to food coloring](#)
  - 53) [Ward 1990: The influence of the chemical additive tartrazine on the zinc status of hyperactive children: A double-blind placebo-controlled study](#) (note, he only used HALF a mg dye!!)
  - 54) [Weiss 2012: Synthetic Food Colors and Neurobehavioral Hazards: The View from Environmental Health Research](#)
  - 55) [Yu 2016: Sugar-Sweetened Beverage Consumption Is Adversely Associated with Childhood Attention Deficit/Hyperactivity Disorder](#)
- Of course, there are also "negative" studies and reviews; one of the most famous is [Millichap 2012: The diet factor in attention-deficit/hyperactivity disorder](#). For reasons that were surely more political than scientific, this "comprehensive" review (which ignored almost everything but the very old studies) was picked up and featured in almost every newspaper and computer news outlet in the world. You can see more about it at <https://talkingaboutthescience.com/DOCS/01-2012.html>

## Research on food additives

### 30. You write, “Recent reviews have found little evidence that salicylates or artificial food additives lead to or worsen hyperactivity, ADHD, or autism in children or adults”

Looking (again) at your "trusted sources..."

#### 8Trusted Source,

- This is Pelsser's review (in 2017) of 14 older meta-analyses, and is not a review of diet studies, but only of food dye.

#### 9Trusted Source,

- This is Nigg's 2015 review, mostly of the same old studies from the 1970s and 1980s.
- Of the 24 studies included, 17 of them used 50 mg or less of food dye.
- In fact, 3 of them used 15 mg or less for their food dye "challenge."
- Of the remaining 7 studies, one (Rapp 1978) didn't say how much he used, and one (David 1987) used a high dosage but was challenging children whose parents had come to him for help because their response to the diet was unstable, and he wanted to prove to them that their effort at diet was useless. If you “challenge” children who have not improved, what do you expect to see?
- This doesn't leave Nigg a lot of useful studies for analysis – nevertheless, he did conclude, "**approximately 33% of children with ADHD may respond to a dietary intervention.**"
- Even if 33% were all, it would still be a good idea to try diet before medication, in the hopes of preventing a lifelong dependence on psychoactive drugs.

#### 10Trusted Source

- This is the Stevens (2011) review of 35 years of research.
- In spite of having to include the bad old studies, she was able to conclude that "**A trial elimination diet is appropriate for children who have not responded satisfactorily to conventional treatments or whose parents wish to pursue a dietary investigation.**"
- This may be faint praise, but it is not "little evidence" as you reported.

31. You write, “**While some improvements in behavior may occur in a small subgroup of children with food sensitivities, the Feingold Diet should not replace treatments administered by your healthcare provider**”

- NONE of the 3 "trusted sources" you list support your statement.

8 Trusted Source,

- This is Pelsser's review of studies on artificial food color elimination
- It really is NOT related to the Feingold Diet which includes far more than just food dyes.

9 Trusted Source,

- This is the Nigg review from 2015 in which he reviewed all the old studies. He concluded, "**approximately 33% of children with ADHD may respond to a dietary intervention.**" 33% is not a "small subgroup."

11 Trusted Source.

- This is the Arnold 2012 article summarizing 35 years of "imperfect research," as he puts it, and reviewing his contribution to the 2011 FDA hearings. He says that the effect of food dyes on children's behavior is "not confined to those with diagnosable ADHD."
- In his conclusions, he suggests the food dyes may "push a youngster over the diagnostic threshold," that they can affect the brain without crossing the blood-brain barrier, and that they may cause a "deleterious effect on classroom climate from most children deteriorating slightly."
- He even suggested that the reported effects are "reminiscent of subclinical lead poisoning ... which lead to the eventual removal of lead from gasoline."
- Moreover, he points out, the daily consumption of food additives has quadrupled in the past 50 years.
- It's too bad you didn't use his [older paper from 1999](#), in which he concluded that the oligoantigenic (extreme Feingold-type diet) had "**convincing double-blind controlled evidence**" and was "**supported by at least 8 double blind studies.**"

## Calls for more research

32. You write, **“Many scientists call for more research on food additives and behavior due to the large number of methodological flaws or inconsistencies in the available studies”** ([7Trusted Source](#), [8Trusted Source](#), [9Trusted Source](#), [11Trusted Source](#)).

- I agree - more studies should be done; unfortunately, there is no profitable drug outcome, so there is little incentive.

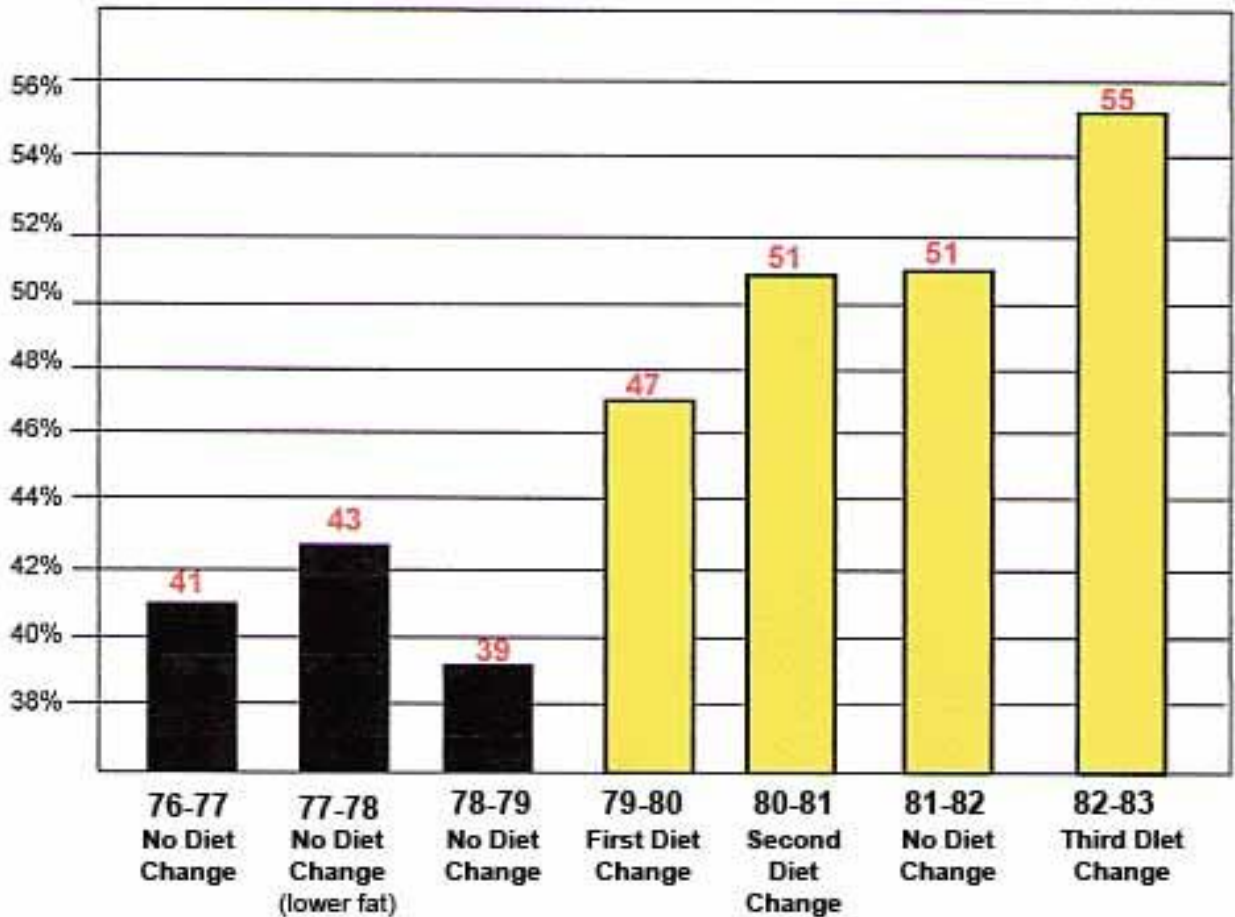
33. You write, **“... since over 3,000 natural and artificial food additives exist, it’s difficult to study each one’s relation to hyperactivity.”**

- Well, there are today over 12,000 food additives in use... while that is technically “over 3,000” you may want to update your figures.
- On the other hand, it is totally unrealistic to expect a study on each additive, proving it to be harmful before considering removal --- why not put the onus on the companies to prove these additives SAFE before allowing them to be used?
- Meanwhile, it is actually easy enough to simply eliminate all the "artificial" additives using the Feingold Diet guidelines. One does not need to prove each one individually harmful, since they are not individually listed on ingredient lists anyhow.

34. You have here and elsewhere **complained of studies being small, involving only parental reports, etc.**

- It is true many of the studies are small, and that the early ones, in particular, rely heavily on parent reports.
- Take a look, then, at the biggest study to date -- over a MILLION children were involved in the [Schoenthaler study](#) over a 4-year period. As they restructured their breakfast/lunch programs to approach the Feingold Diet, the behavior improved with each incremental change. This was measured by national tests, not parent reports.
- See Table 1 below from the Schoenthaler study on public schools:

**Table 1: National Rankings of 803 New York City Public Schools Before & After**



**Diet Changes.**

## Safety of food additives

35. You write, “The Food and Drug Administration (FDA) considers food additives and colors safe for consumption based on the available science. Only nine artificial food colors are permitted, and none have been directly linked to hyperactivity or behavioral disorders” (14Trusted Source).

- Although it is true that the FDA says this, the science doesn't agree.
- I have collected over 500 studies showing the adverse effects of food dyes. See at <https://www.talkingaboutthescience.com/lotsa-studies/>

36. You write, **“For children with suspected sensitivities, an elimination trial by a trained health professional like a registered dietitian can test for these sensitivities while ensuring a nutritionally adequate diet for your child”**

- Let's face it, a registered dietitian is generally NOT trained in use of the Feingold Diet.
- No lab tests exist to identify in advance whether the child will respond to the diet, since this is not an allergy issue.
- The parent, however, is very capable of following the Feingold Association's simple guidelines to eliminate the food additives involved. That is the "test." If the child gets better, you already have the treatment.
- Since NONE of the food additives being removed add anything nutritionally important, and ALL the salicylates removed (at the beginning) can be replaced by non-salicylate fruits/vegetables, the nutrition of the children is in no danger.
- In fact, as mentioned above, two studies on the nutrition of children on the Feingold Diet found that their nutrition and intake of nutrients was superior to those on a "normal" diet.

37. You write, **“Though artificial additives and food dyes aren't tied to hyperactivity in children, parents should still focus on providing a balanced diet comprising whole, minimally processed food.”**

- Are you seriously saying that a parent is quite capable of providing a high quality balanced diet of minimally processed food for their family, but they are NOT capable of removing Red 40 without the help of a registered dietitian?

38. In your summary you write, **“No evidence suggests that the Feingold Diet prevents, treats, or cures ADHD or other behavioral issues in children or adults. Yet, children with sensitivities to certain food additives may benefit from avoiding them.”**

- This statement cannot hold in the face of the 50+ studies I have listed above, nor even in the face of some of your own “trusted sources” such as Nigg who said 33% of children responded, or Arnold who said the diet is supported by at least 8 double blind studies.
- Please take another look at the very first chart I have provided above (page 5). Those studies could not be done without first putting children on the diet and having them improve.
- More than half of the children did improve in each study. That alone indicates that the diet affects “behavioral issues.”

## Potential downsides of the Feingold Diet

39. You write, **“The Feingold Diet restricts many healthy foods, including certain nuts, fruits, and vegetables. It also forbids any foods containing synthetic additives or dyes.”**

- The diet, as specified above, restricts ONE nut (almonds), THREE vegetables (tomatoes, cucumbers, peppers), and several fruits -- but that is only for the first few weeks until the child (or adult) has experienced a good response. At that point, they learn slowly which items are tolerated by trying them out.
- In what world is avoiding synthetic additives and dyes a bad thing?

40. You write, **“Such restrictions may not only make grocery shopping difficult, especially for parents planning family meals, but also demonize foods starting at an early age, which may promote a negative relationship with food later in life”** ([15Trusted Source](#), [16Trusted Source](#), [17Trusted Source](#)).

- There is not one single piece of proof of this statement in any of these resources (or any other papers). This is simply an opinion.
- If the entire family is using the diet, everybody gets the same meals so complications are minimized.
- When the entire family uses the diet, others often find benefit (e.g., my migraines disappeared).
- There is a learning curve, but it is mainly a matter of buying Brand A over Brand X -- the Feingold Association materials help with this part, and parents also share information on Facebook member groups.
- It is not a bad thing to teach a child to say "no" to foods that may make him ill. Indeed, the child who learns to say NO to Red 40 at a young age will have far less trouble saying NO to addictive drugs as a teenager. Drug usage does not appear to have been a problem for Feingold teens. Below are two examples:
  - Joan Syron said that Tommy was accustomed to turning down Hi-C in kindergarten, so he had no problem avoiding harmful drugs as a teenager.
  - Judy Schneider talked about the time she warned her teenage daughter about using drugs. The girl responded, “Mom, I can’t even handle a lifesaver; why would I mess with drugs?!”
- Usually, the child himself learns that eating certain foods makes life hard, makes his "angry" come out, gives him headaches, etc. They feel better without that food.
- Finally, some "foodless foods" should indeed be demonized. This is part of teaching children what is good to eat. Can you imagine a Caveman family allowing their children to eat anything that looked good? They had to TEACH their children how to hunt and gather safe foods, while avoiding harmful ones. Should we do no less?

41. You write, **“Most medical professionals agree that children should not be on restrictive diets except in rare circumstances involving conditions like phenylketonuria, celiac disease, food allergies, or epilepsy — and then only under medical supervision”** ([15Trusted Source](#), [16Trusted Source](#), [17Trusted Source](#)).

- This is not a “restrictive diet.” It is the way ALL people used to eat before we saturated our foods with petrochemicals. It is called eating “REAL FOOD.” The salicylate “restriction” is only temporary and most children shortly tolerate some or all of them.
- Would you call a vegetarian diet “restrictive?” What about a Kosher or Hallal diet? And do people choosing such diets require medical supervision? Why on Earth should avoiding food dyes and/or processed foods become a medical-supervision issue?

## Difficult to follow

42. You write, **“Most processed foods contain additives to increase freshness, enhance flavor or appearance, and maintain quality. The Feingold Diet allows none of these foods, even as a rare treat.”**

- This appears to be intended to make one think that processed foods are superior to fresh, natural, minimally processed foods. That is untrue. Processed foods may require these additives because the processing generally ruins their natural appeal and flavor (or because there are no natural ingredients present).
- Nevertheless, there really are numerous processed foods that are acceptable on the Feingold Diet – including junk food and candy. Kids on the Feingold Diet never need to feel deprived, as the diet allows plentiful “treats.”
- Would you argue that it is important to allow kids to smoke pot just because some consider it a “treat?”
- That said, not ALL additives are eliminated anyway – only those most likely to cause problems. Other additives (nitrites, benzoates, MSG, etc.) are noted in the *Foodlist* next to acceptable products containing them, so that those wishing (or needing) to avoid them can do so.

43. You write, **“Furthermore, it requires parents to make many dishes from scratch to prevent children from accidentally consuming a banned ingredient. Thus, it may strain financial resources and increase meal prep time, especially if other family members require different meals”** ([18Trusted Source](#)).

- Your “trusted source” is talking about specific allergies, not the Feingold Diet.
- While it may have been necessary in the 1960s and 1970s to make many items from scratch, this is no longer true. The Feingold Association maintains a product information service that updates the 400+ page *Foodlist* several times a year. Many of those listed products are prepared foods such as hot dogs or frozen hamburgers; breads, mayo, deli meat – it’s all in there and most are available at your local grocery store.



44. You write, **“Finally, the diet may increase food anxieties, particularly at restaurants, schools, or celebrations like birthday parties, as there will be few foods your child can eat”** ([18Trusted Source](#)).

- Again, your “trusted source” is writing about food allergy and is NOT writing about the Feingold Diet.
- With guidance from the Feingold Association, there is no need for any such “food anxiety.”
- Yes, the child brings his lunch to school – the same way a Jewish or Islamic or vegetarian child may do. The parent is encouraged to include desserts, at least in the beginning.
- Parents provide teachers with approved snacks the child likes in the case of unplanned snack events or parties, and many parents (myself included) become Room Mothers to make sure ALL the classroom snacks are approved. When I brought in a pink & white cake for the class Valentine’s Day party, none of the children had to know the pink icing was made with beet juice from canned beets and it tasted just like the stuff from a bottle; maybe better.
- As for restaurants, that is even easier. Even the beginner can have a hamburger at McDonald’s or a steak (with salt, pepper and garlic, not gravy) with a baked potato (with real butter) at a fine restaurant. Drinks? My child loved making his own lemonade with a glass of water, sugar, and the sliced lemons at a restaurant. Some parents bring their own salad dressing in a little bottle, but my kids liked to squeeze a slice of lemon provided by the restaurant. No “anxiety” here, and the child and parents were both pleased with the good behavior that allowed such trips to restaurants to even be possible, which had not been the case “before Feingold.”
- To quote another parent, she was complaining about having to send “special” cake & candy for her child to have at a birthday party, when she realized her child had never been invited to any parties before the diet.

## May lead to nutrient deficiencies

45. You write, **“The Feingold diet forbids many healthy foods, such as certain fruits, vegetables, nuts, seeds, and breakfast cereals, which may lead to nutrient deficiencies.”**

- This has been covered above – it is simply wrong.
- The Feingold Diet does not “FORBID” healthy foods – although a specific list of salicylate-containing foods are removed at the beginning, that is part of the testing of the diet, and is not excessive.
- Furthermore, while “certain fruits” is accurate, there are only two vegetables (three if tomatoes are considered a vegetable), and ONE nut. NO seeds are removed.

- There are plenty of acceptable breakfast cereals available – since when are the sugar-and-dye laden types like Fruit Loops considered essential for a balanced diet?
- As covered above but repeated here, two studies have long ago debunked the myth of nutrient deficiencies. On the contrary, children on the Feingold Diet do better nutritionally than others.
  - [Dumbrell 1978: Is the Australian version of the Feingold diet safe?](#)
  - [Harper 1978: Nutrient intakes of children on the hyperkinesis diet](#)

46. You write, **“Though your child may be able to get enough nutrients on the diet with careful planning, it can be overwhelming for parents to prepare meals that fit the diet’s restrictions, provide adequate nutrients, and are enjoyable.”**

- The effort during the “learning curve” is usually considered well worth it when the child responds -- and daily tantrums, calls from school, and monthly doctor appointments are a thing of the past.
- What you write above is an opinion, not science.
- That said, the purpose of the Feingold Association is to help parents begin the diet without getting overwhelmed and to support them when they run into trouble. Parents who go it alone with a short list from their doctor may have more difficulty, to be sure.

47. You write, **“If your child is a fussy eater, which occurs more often in children with hyperactivity, this poses an additional risk of nutrient deficiencies. That’s because your child may only prefer commercial items that aren’t permitted on the diet”** ([19Trusted Source](#), [20Trusted Source](#)).

- Yes, parents of fussy eaters do worry. Surprisingly, however, their children often become much less fussy on the diet. This may be related to [Ward’s findings](#) that the food dyes actually cause ADHD children to lose zinc, leading to worsening symptoms – and he was using only a HALF a mg of dye.
- The method recommended by the Feingold Association is to begin the diet for a picky eater by replacing those foods the child eats with acceptable foods that are similar, and letting the child help pick out new “treats” from the acceptable foods lists. If problems continue, they may want to ask their doctor to test for zinc and/or vitamin B deficiencies. Low zinc can cause food to taste bad, while lack of vitamin B can cause lack of appetite.

48. In your summary, you write, **“The Feingold Diet is highly restrictive and difficult to follow. Thus, it may lead to nutrient deficiencies and food anxiety, which are particularly dangerous for children.”**

- Obviously, this conclusion is incorrect. It has been addressed above.

## The bottom line

49. You write, **“No evidence suggests that the Feingold Diet prevents or treats ADHD, autism, or other behavioral disorders in children or adults.”**

- Per all the above, this is an obviously incorrect conclusion.
- Dr. Feingold never claimed to prevent or treat autism, by the way.
- To date, there has been no research on the diet’s effects on adults at all – so no conclusion can be drawn. Parents who put their children on the diet, however, frequently report benefits – sometimes dramatic ones (including myself).

50. You write, **“Plus, it’s overly restrictive, time-consuming, and may lead to nutrient deficiencies.”**

- Following Feingold Association guidelines, this is not true, and the “nutrient deficiencies” claim was disproved *more than 4 decades ago*, and is covered above.

51. You write, **“If you suspect your child has a sensitivity to additives or other foods, work closely with a health care professional who can safely guide you through an elimination trial.”**

- Most parents have been to many physicians and other professionals before they learn about the Feingold Diet. Most of them (including myself) never suspected the food. They usually arrive at the Feingold Association’s door after years of struggling with medications and side effects.
- My own son suffered years of mood swings, hallucinations and Tourette’s syndrome (triggered by meds) as well as ADHD. It was only after his doctors gave up and labeled him a “medication failure” and “hopeless case” for whom I “should not expect much” did we find out about the Feingold Diet. This diet “cured” his behavior and mood and TS problems, as well as his asthma and chronic ear infections. Today he is a successful engineer.
- No doctor was able to “guide me” – that service was done by the Feingold Association.

## 52. You conclude, “You should never replace medical treatment with a diet.”

- When the diet is more effective than medication, why not use it?
- Many people use both the Feingold Diet and medication, for two reasons:
  - (1) The medication dosage can often be lowered with maximum benefit.
  - (2) Even if medication is the main therapy, you still have to eat – so you may as well eat the best quality diet you can.
- I don’t need to consult a dietitian before I buy a cake at Whole Foods with natural dye in the frosting rather than buying one at Kroger’s that uses Red 40 (and the Whole Foods cake tastes better, too).
- One of the biggest regrets I have is that I let “medical treatment” rob my son of three years of his life before I found the diet. Medicine will always be there for those children who don’t sufficiently benefit from the diet. But as the least harmful treatment, the Diet should be offered before psychoactive drugs.
- I hope you will consider rewriting your article, or asking the Feingold Association for help in doing so – because your article is doing a disservice to all parents of children with ADHD who come to your page for advice.

Shula S. Edelkind-Noesges, BA, MS

Talking About The Science

[www.TalkingAboutTheScience.com](http://www.TalkingAboutTheScience.com)

### Background:

- Research Specialist, Feingold Association of the United States
- BA with high honors, Agnes Scott College, 1998
- Member, National Honors Society for Psychology 1997
- Certificate from Center for Mind-Body Medicine for completion of *Food as Medicine: Integrating Nutrition into Medical Education and Clinical Practice*, 2004
- Invited to testify at the FDA, 2011  
Video: <https://youtu.be/NIYygfXNKXM>
- Prepared collection of over 500 studies on food dyes for presentation to the OEHHA, 2019, by request of the Center for Science in the Public Interest.  
Book (cover added): <https://talkingaboutthescience.com/DOCS/OEHHA-2019.pdf>
- Author, *Behavior, Learning & Health: The Dietary Connection*  
Book: <http://www.adhddiet.help/BLUEBOOK.pdf>
- Outstanding Alumna for Service to the Community, Agnes Scott College, 2020