Elimination Diets for Children's Behavioral & Physical Symptoms

Research Methods 2019 Winter C Semester

Skills: Locate Peer-Reviewed Research, Perform
Systematic Literature Review, Evaluate and
Interpret Statistical Data, Design and Plan an
Experimental Research Project Using Ethical
Procedures, Identify and Justify the Program Needs



Introduction

- Families and health care practitioners are seeking out viable and practical non-pharma approaches to treating ADHD and behavioral concerns.
- Elimination diets have a 45-year history in the literature showing positive effects.
- Strong body of literature and RCT on effect of eliminating food dyes and preservatives on behavior.
- A dozen RCT trials on elimination of allergenic foods (i.e. dairy, wheat, corn, peanuts) over the last 10 years.





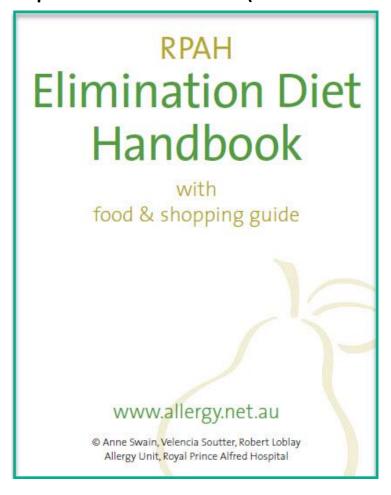


Elimination Diets for Children's Behavioral & Physical Symptoms

Feingold Diet (since 1970)

foodlist and shopping guide The Feingold Bluebook Behavior, Learning, and Health: The Dietary Connection

RPAH Diet: Royal Prince Alfred Hospital – Australia (since 1985)



Problems

- No recent studies on food elimination diets such as "few foods"
 (lamb, chicken, rice, potatoes, cabbage, pears, etc.) a.k.a.
 "oligoantigenic diet" despite multiple positive trials in the past 20 years and "research gaps".
- No studies done on Feingold Diet or Royal Prince Alfred Hospital Diet (RPAH) for 20 years, Yet these are the "accessible" and supported ones!
- No control for preselection of subjects based on their prior diet response.
- Experimenter did not collect the data from parents.
- Studies used their own variation of the elimination diet rather than standard ones.







7 Best Elimination Diet Trials 1985-2011

TABLE 1. Summary of Characteristics of Studies Included in Meta-Analyses of Randomized Controlled Trials of Dietary and Psychological Treatments^a

	First Author (Reference)	Treatment	Control	Reported Design Quality ^b	Numbers Randomized		Characteristics		ADHD Measure	
					Treatment	Control	Age (Years; Mean or Range)	Male (%)	Most Proximal Assessment	Probably Blinded Assessment
	Restricted elimination diets									
2011	Pelsser (16)	Elimination diet	Waiting list	3	50	50	3–9	86	P-ARS	None
1994	Boris (31)	Known antigenic foods	Placebo	5	16	16	7.5	69	CPRS	CPRS
1989	Kaplan (32)	Known antigenic foods	Placebo	3	25	25	3–6	100	CPRS	CTRS
1993	Carter (33)	Specific provoking food	Placebo	5	19	19	3–12	74	CPRS	Test session observation
1985	Egger (34)	Specific provoking food	Placebo	5	31	31	3–12	88	Psychologist rating	Psychologist rating
2009	Pelsser (35)	Elimination diet	Waiting list	3	15	12	3–9	81	CPRS	None
1997	Schmidt (36)	Oligoantigenic	Control diet	4	49	49	7–12	96	CTRS	CTRS

Artificial Colors, Flavors, and Preservatives

8 Recent Well Designed Studies (2011-2014)

Food dyes continue to be positively correlated with ADHD and behavior symptoms



January 14, 2016

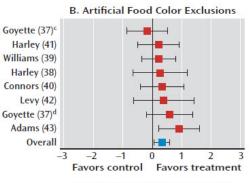
The Science Linking Food Dyes with Impacts on Children's Behavior

A possible link between food ingredients and adverse behaviors such as hyperactivity was first raised in the 1970s. Over the past 40 years, many double-blind studies have concluded that food dyes and other ingredients can impair behavior in some children.

In 2011, even the FDA acknowledged the growing body of evidence, concluding that

Exposure to food and food components, including artificial food colors and preserving be associated with adverse behaviors, not necessarily related to hyperactivity certain susceptible children with ADHD and other problem behaviors, and possibly susceptible children from the general population.¹

The agency, however, still has not pursued any action to protect or even inform th



Overall SMD=0.32, 95% CI=0.06, 0.58 Test for overall effect: Z=2.43, p=0.02 Heterogeneity: χ²=5.49, df=7, p=0.60, l²=0%

Hypothesis

- The RPAH diet will have a higher correlation with symptom improvement than the Feingold Diet
- Both experimental diets will have higher correlation with symptom improvement than control diet (MyPlate)







Methods

- Blinded Randomized Control Trial
- Recruited from pediatric behavioral clinic in S.FL
- Institutional Review Board (IRB) approval and review
- Recruitment brochures for screening
- Consent forms and assent from children over 7 years old
- Inclusion and exclusion criteria
- Compensation: Free meals for 8 weeks
- 15 subjects per group (2 experimental and 1 control diet)
- Group 1: Feingold Diet Group 2: RPAH Diet Group 3: Control







Methods

- Official Questionnaires used for rating symptom severity
- Both the parents and the blinded psychologist will be able provide feedback about the child's symptoms and progress. (subjective and objective)
 - ADHD Rating Scale (ARS) based on the DSM-V, collected by the in-clinic psychologist
 - The Abbreviated Conner's Scale (ACS) filled out by parents and collected by researcher.
 - Strengths and Difficulties Questionnaire (SDQ) about emotional symptoms, conduct, and peer problems (collected by the researcher from the parents)





Methods

- Each group will receive a menu with 6 options for breakfast, lunch, dinner, and snacks & 3 beverage options
- Meal delivery service
- Ensures patient compliance and solves biggest issue with diet implementation (accidental inclusion of non-allowed foods)
- Menu and meals prepared by a Dietitian chef.
- Parents fill out ACS questionnaire daily and researcher collects data once a week in-clinic while child eval. by psychologist.
- 8 week trial giving time for behavior changes.
- At 4-weeks, additional foods start being re-introduced (3 days)







Statistical Analysis

- ANOVA for baseline score comparison between groups
- Repeated measures ANOVA to test if differences exist between groups.
- Paired t-test to compare each individual to his baseline.







Possible Results and Implications

- Improvements in behavior scores for both experimental groups compared to control
- Why? MyPlate diet may add additional foods known to increase behavioral reactions (i.e. fruits, spices)
- RPAH stronger effect than Feingold Diet due to being more restrictive at baseline.
- Implications: Ease of implementation and available resources for these two diets vs. the "few foods" or other variations.
- Increased compliance and willingness by practitioners to recommend the diet.
- Study may lack external validity.







