WHAT'S HAPPENED SINCE THE FEINGOLD DIET?

1974 to 1990
IS THE DIET RIGHT YET?

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Which diet? For which children? Affecting which problems in hyperactivity? To what degree? For how long?

These questions require a detective approach.

I shall consider what has been reported in the research literature, what were the findings from the follow up of 516 families over the last 5 years, and what is important in 1990.

WHICH DIET?

The diet has changed since Feingold initiated the idea. The Low Additive and Amine, Low Salicylate Diet is a good starting point. It can be adjusted to suit the needs of different families. It is not just concerned with all additives, many are tolerated. Salicylates and amines are also important. What about milk, wheat, sugar and other foods? The relevance of these is found by investigation of the family diet history. Food exclusion is not the only option, sometimes limitation of a food intake is enough. The two old adages still apply here:

"It's the dose that maketh the poison" and

"One man's meat is another man's poison".

So don't exclude any food from a child's diet without good reason. The aim is to decrease the symptoms so the child is closer to other children, not to begin a lifestyle that is so preoccupied with everything about food that a different type of abnormality is created. Many issues related to diet not mentioned here have been addressed but have not been found to be important.

Different researchers use different diets, from just the main additive colours, to exclusion of many foods especially milk, wheat, and sugar. What is necessary?

1974 Dr Ben Feingold Allergist USA

The Kaiser-Permanente K-P Diet excluded:

Artificial colours in many sweets and drinks
Artificial flavours in many sweets and drinks
Aspirin - salicylate in tablets
Natural salicylates (information was incomplete) in many fruits
BHA (butylated hydroxy anisole) & BHT (butylated hydroxy. toluene)
(In the 25% who have allergies - remove these)
MSG*

***mentioned but not emphasised**

Food reintroduction - suggests reintroduction of fruit.

Provided the initial concept of a relationship between diet and activity, behaviour and learning difficulties.

Presumed allergies present in around 25%, recommended treat these.

'Immaturity' mentioned but not as important.

"Pattern was one of 'turn-on' and 'turn-off'
These children are normal. Their environment is abnormal"

Research has shown the issue as a very complex one.

Other influences -
1976 - The clinical ecology movement
Book - Clinical ecology, L Dickey, Editor
Grew out of earlier work by allergists especially Theron D Randolf
Elimination diets of various types,
Considered many symptoms including tension-fatigue syndrome
and included environmental factors.
1977 Dr Richard Mackarness Psychiatrist England
Book - Not all in the mind
Cave man diet excludes **grains.** Provided the idea that food, not additives, could affect mood in the general population.
1980 Mrs Maureen Minchin Victoria
Book - Food for thought
Over emphasised and excluded **milk** in many childhood problems.
1980 Dr Alexander Schauss
Book - Diet crime and delinquency
Emphasised **sugar** as the culprit
Said "Sugar makes the delinquent mind"; this was discounted
Years later said colours etc were probably more important.
Also implicated lack of nutrients as factors but mixed this with **megavitamin therapy.**

1985 Dr Ann Swain Dietitian Sydney
Elimination Diet for investigation of hyperactivity, urticaria, &/or angioedema, mouth ulcers, migraine, rhinitis and asthma excludes

Artificial colours
Artificial flavours*
Aspirin - salicylate
Natural salicylates (conducted analysis, & double-blind studies) in many fruit, vegetables, nuts, herbs, spices, tea & coffee
BHA & BHT preservative in some fats, oils and margarines
Benzoates " in soft drinks, & some fruit juices
Sulphites " in cordials, fresh salads, sausages
Nitrates " in corned beef, ham and bacon
Propionates " in most breads, crumpets & muffins
Sorbates " in some cheeses
MSG (mono sodium glutamate) flavour enhancer in savoury foods
Amines - many types, many also contain salicylate; they include
- **chocolate** in sweets, drinks, cocoa, biscuits, topping etc
- **cheeses** (except fresh cottage and cream cheese),
- **bananas**, spinach, bacon, pork, canned tuna, herring, sardines Vegemite, Bonox, beef extracts

(information on amines is incomplete at this time)
Brewers yeast - Vegemite, Promite, Marmite
Perfume, pressure-pack sprays, cigarettes & other strong smells *
And, in H/A children with GI symptoms -
Milk
Wheat and rye
Food reintroduction - developed capsule challenges or equivalent dose foods, and later guidelines for food reintroduction.
Provided the analysis of salicylates in Australian food
Researched a wide variety of conditions in a double-blind way.
Also showed individual variation in tolerance to additives and foods, and introduced the concept of target-organ sensitivity.

RPAH (SWAIN, SOUTER, & LOBLAY) BOOK FRIENDLY FOOD JUNE 91 - AVOIDING ALLERGIES, ADDITIVES AND PROBLEM CHEMICALS.
This is a valuable book especially highlighting Salicylate and Amines in foods.

1987 Drs Eggar, Graham, Soothill, Gumley, and Carter

(Eggar Paediatric Neurologist)
Their oligoantigenic diet excludes

Artificial colours
Artificial flavours
Some fruits Salicylates are not singled out - allows two of the following - apples, pears, bananas, peaches, apricots, and pineapple,
Some vegetables - cucumber, marrow and melon may be used
Preservatives - specifically mentioning
- **Benzoic acid**
- **Nitrites**
- **Propionates**

Amines are not singled out - but the following foods are excluded
- **Chocolate**
- **Cheese,**

MSG, and the following foods -
Milk, beef
Wheat, rye, oats, corn, malt
Soy, beans, peas, peanuts
Eggs, chicken
Fish
Pork
Yeast
Smells are not mentioned
Food reintroduction - provides guidelines on food reintroduction from small to large quantities.
Provided further evidence that additives and foods can both be problems for hyperactive children.

1988 Dr Kathy Rowe Paediatrician Melbourne
Diet free from azo dye additives, artificial colourings and preservatives excludes

Artificial colours
Artificial flavours are not mentioned, allows margarine
Salicylates are not singled out, the following are excluded -
Aspirin
Tomato sauce
Oranges, apples, tomatoes, strawberries
Tea
Coffee
Preservatives (but allows ham and bacon, breads, fats and oils)
Amines are not singled out but the following is excluded
Chocolate
MSG
Eggs
Fish, fresh or frozen
Canned tuna and salmon
Oysters, prawns, lobster
Peanuts
Sugar, limited added sugar is advised

Perfumes, perfumed toiletries, toothpaste and mouthwashes
Food reintroduction - it is advised that tea, coffee, bonox, fruit, eggs, fish and peanuts be introduced cautiously.
She provided discussion of assessment questionaries - most did not include areas that change with diet especially 'sleep' and 'gets high'. Designed the RBRI - Rowe Behaviour Rating Inventory.

1989 Joan Breakey Dietitian Brisbane
The low additive and amine low salicylate LALS Diet excludes

Artificial colours and added natural colours
Artificial flavours and added natural flavours e.g. vanilla, lemon
Aspirin
Salicylates, combining analysis figures and reported reactions i.e. low salicylate golden delicious apples and lemons excluded
Preservatives (all except gallates)
MSG
Amines, combining research figures and reported reactions, exclude
Chocolate
Overripe bananas
All cheeses except cottage, cream, processed and mild cheese
Brewers yeast - greatly limit vegemite, promite and marmite
Most strong smells, paint, petrol, new carpet, cigarettes, glues, cleaning compounds, room deodorisers, crayons, felt pens and rubbers that smell, perfumes, perfumed toiletries and cosmetics, moulds, and strong flowers, (with variation between families).
Milk, wheat etc, limitation or exclusion is dependant on family diet history of problems with various foods.
Food reintroduction - test foods containing one additive trialed one at a time considering dose. Milk etc adjusted individually.
Provided feedback information from families using the diet, helped show more and less important exclusions.
Noted clinical issues of diet management, and the child on the diet.
Noted individual variation in symptoms, diet needs, outcome or not, amount of change with diet in the various symptoms and family motivation.
Used the "Diet detective" approach where families were encouraged to report freely on the outcome in their situation, rather than using a strict diet and presenting for assessment in specific areas.

STAGE 1 DIET TRIAL
If you have found by trial and error that obviously coloured and flavoured food affect your child that is step 1. The next step, if you want to help the child to the maximum he can be helped, is to seek professional help. If you are going to investigate diet do it properly. Some go for years with out of date information or even the wrong diet. Withdrawal often occurs. During the first week symptoms may get worse before they get better.

Should the whole family go on the diet? If some other family members have allergies etc they might be interested in being diet detectives too. It is important that the child knows he is trialing the diet because he has problems. There is no place for the idea that a mother may want to trial the diet but not clarify with the child that she believes he has some problems. To manage cooking for everyone, it may be easier to begin with bland food, and then add usual flavours etc to the meals of those not needing the diet, or they will resent the changes. It is good for the

child to see his parents eating normal food knowing that if he learns to handle himself as well as they do, he may aim for a normal diet in adulthood.

The diet trial should be run for 2 - 4 weeks strictly, to see if there is any effect and, if there is, to see the extent and limit of diet change. If there is any doubt at all a challenge during which all disallowed foods are reintroduced needs to be carried out over a week. If there is no change report this to doctor, and ask what other help is available, go back on a normal diet and put your efforts into managing other treatments well.

STAGE 2 INDIVIDUAL FOOD REINTRODUCTION

2 AIMS -
To find out if the substance is tolerated in any amount, and
To find out if foods containing small amounts can be included in the diet so it can be less strict.

In diet therapy you will obtain a list of foods such that each contains only one additive or substance to test. Only one food should to introduced to test each week. It can be eaten daily and problem areas monitored. If there is no reaction it can remain in. In small, very sensitive children or those with severe problems the dose of test foods can be low at first. Remember there is much individual variation in substances tolerated. If milk, or grains are to be investigated obtain information on how to test these.

Reactions may be: -
1 Immediate - in the very young (under 5 yrs), & the very sensitive
2 Delayed - up to 24 hours
3 Building up - over 3 - 5 days.

Most reactions are not clear, repeat with a varied dose at a later time. After trials decide on the amount and frequency the food can be used, considering what other foods are included occasionally. It seems that each child can cribb to a certain critical threshold and then symptoms appear.

Diet therapy is more than a piece of paper! It is not simple but neither need it be overwhelming, especially with professional help. If the diet works, stick to it so the child benefits. Test foods at home, even if unintended tests occur with help from neighbours, friends, classmates or relations as well!

When testing foods remember that symptoms may be due to a viral or bacterial infection, overtiredness, a smell, additional family stress, or in an occasional child, to an allowed food, so be watchful. Consider a total body load concept.

DIET THERAPY - FOR WHICH CHILDREN?

It is still not known which hyperactive children respond to diet. Only 2.5% of all children who attend Child Guidance Clinics with their many different problems, were referred to diet therapy. It is reported that hyperactivity in boys versus girls is 4:1 to 6:1. In the 516 study group it was 6:1, but neither sex was likely to be better diet responders. There was an effect with age, with the proportion on responders under 9 years significantly higher than the over 9's. If there was a family history of allergy, and where there was an intolerance to any food, (usually most noticeable in infancy) a positive outcome was more likely. In those who were referred to the dietitian good results were just as likely in families who had noticed no connection between food and behaviour. This can be because giving some high additive foods

usually does not show change, even in a diet responsive child, before the LALS diet has begun, as the total load of additives and salicylates is usually high enough to mask any addition.
It was interesting to note that the children who reported problems with chocolate had a greater likelihood of presenting with activity or social problems, whereas those who reacted to milk were more likely to include physical problems (asthma, tummy aches etc). In the study group 48% had problems with some food - 24% with milk, 8% with grains, at least 30% with chocolate, and 11% with other common allergens. About half those numbers needed to exclude the food.

DIET - AFFECTING WHICH PROBLEMS IN HYPERACTIVITY?

The RBRI chart shows most areas - concentration, motivation in learning, perseverance, irritability, excitability, compliance, self-control, tearfulness, disruptiveness, attention span, ability to be reasoned with, restlessness, activity, aimlessness, co-operativeness, aggressiveness, control by parents, tantrums, and sleep. As well note immaturity (many are attending therapists for delays), and allergies - sinus, hay fever, asthma, eczema, reaction to insect bites, nausea & tummy aches, head aches, limb pains, and carsickness. Sometimes allergy and other symptoms in other family members change.

All the problems should be monitored during diet trial. Presenting symptoms do not all change by the same amount in one child, nor do all children change in the same areas.
Remember - food sensitive children can have other medical problems at the same time as being food sensitive. Your doctor is important. Do not get caught up in the idea that once you have found food to be important you look to it to solve all problems. Take care of the child; think carefully about any advice that may be hazardous. Children should not be given enemas.

WHERE DIET IMPROVEMENT OCCURS - TO WHAT DEGREE?

Research on the usefulness of the diet is variable, depending on how the group were selected, which diet was used, and the research design. All acknowledge some change in some children, and show that diet is certainly not useful for all.

It is time to look at what is happening in a new way, and acknowledge that the outcome is rarely an all-or-nothing effect. In some there is no improvement, in some partial improvement (they see an absence of bad days but no big improvement), and in some, improvement such that they are now within the normal range. In the 516, 10% did not respond, 80% improved with 55% achieving normal range, and 10% needed medication as well as diet therapy.
Overall - additives, amines and salicylates are better thought of as AGGRAVATING THE UNDERLYING TENDENCIES IN SUSCEPTIBLE CHILDREN. They do not CAUSE hyperactivity. Reactions and changes on the diet are CHANGES IN THE DEGREE OF SEVERITY of the problems not all-or-none effects.

DIET THERAPY - FOR HOW LONG?

Management changes with age from parents of preschoolers able to control everything, through to expecting early primary-school children to manage without supervision - they can't - to late primary choosing food on camps, at sports and at outings, and beginning to take responsibility for diet decisions. Remember,

the issue is not whether or not the diet has been broken, but whether the child is handling himself in an acceptable manner. The more effort the child makes to contain himself, and this improves with age, the more liberal his diet can be. Food eaten is no excuse for bad behaviour. The child is still responsible for his behaviour. He becomes a "diet detective" "to see if it will help him handle himself better". A stricter diet is needed where learning difficulties are present.

In early teenage symptoms often change or worsen and stricter adherence is necessary for a couple of years. By then all diet responsibility should be moving from the parents to the child. This usually means difficult times in the family while the child tries too many problem foods to test out his need for the diet. Fortunately tolerance improves and older teenagers usually can have more liberal diet.

Research has shown that some adults with asthma, eczema, urticaria, irritable bowel syndrome, migraine and mood problems benefit from dietary intervention, and family members of hyperactive children report benefits. It is probable that children who benefit from diet in childhood will need to pay some attention to diet in adulthood, though the level of strictness may vary. Many are happy to accept dietary restrictions to relieve symptoms.

CAN YOU MANAGE WITHOUT HAVING DIET THERAPY?

Some people do. Each family know their child and family diet history. But more is gained from the dietitian's knowledge of other families, diet research, nutrition, and from support in all the details of managing a special child on this special diet. It is also important to keep updating your information.

Why diet therapy is helpful:-

The diet is difficult

The child is usually difficult

Mothers have all the usual housekeeping problems.

Dads, in-laws, friends, relations, teachers and neighbours all have their views about diet for the child.

The dietitian -

Can apply the diet to the family, especially sorting out information from other sources, working out what applies in that family, so no unnecessary exclusions are made.

Can give ideas on how to minimise the time, and effort which are bigger costs than food expenses.

Can help the child understand the diet and use experience with all the other children being "Diet Detectives"

Can help support parents in fitting in the diet and managing the child on the diet.

Can provide ideas on managing social situations and parties.

Some children have "eating delay" or take longer to progress out of soft, bland foods, so are fussy. This may be related to immaturity, or to having felt uncomfortable after some foods in infancy. These children can be helped.

NUTRITIONAL ASPECTS

Three issues

1 - which exclusions are necessary?

what are the nutritional problems of those exclusions?

2 - how can weight be maintained?

most food sensitive H/A children are thin.

if you are considering whether to completely exclude milk or wheat, you are jeopardising nutrient intake, and usually total

energy intake. Always watch the child's weight. Seek help faster if there is no usual increase and straight away if there is weight loss.

3 - What about vitamins, minerals or herbal treatments? There is no evidence that using vitamins as medications is necessary. If there is some biochemical mechanism not functioning properly that results in food sensitivity, it is not logic to presume that nutritional therapy should help, apart from replacing nutrients that cannot be obtained from excluded food. We don't think that way about diabetes, gout, or enzyme deficiency diseases.

Diet therapy is a negotiation process not a piece of paper. You ask how much you can get away with, or how liberal the diet can be, and the dietitian shows what is most important to carry out, depending on how much you want the problems decreased. Some are happy to have the child not totally out of control, others want to put in the time and effort to get the problems decreased to a minimum.

Any family using diet to help with problems are not helping the child properly if they do not have professional help including a dietitian.

CONCLUSION

The diet has been updated since Feingold - main changes are -

Symptoms that change with diet are not just hyperactivity. They include behaviour, social, learning, mood, immaturity, and allergic problems.

The most likely diet responders are those with allergy in the family, especially if the child reacted to some food in infancy, and who are under nine years. But others do respond.

Outcome is not all or nothing, change is one of degree. There is individual variation in presenting problems and response areas, in the amount of change and in the additives tolerated.