

Dietary management of hyperkinesis and behavioural problems

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This paper was presented at the Post Congress Paediatric Seminar of the International Congress of Dietetics in May, 1977, to report on clinical experiences of the Australian version of the Feingold K-P diet by a dietitian in private practice.

The sample upon which the report stated in the introduction was based, comprised children seen by a dietitian in private practice — 15 hyperactive children via a community health centre after testing and found positive to a colour sensitivity test (Salzman 1976); the remainder referred privately by general practitioners, as well as eight adults from GPs and a local psychiatrist, for a trial of the diet for chronic agitation, overactivity,

with or without associated depressive episodes. The average period of diet use by the group was six months, ranging from two to 16 months.

Questionnaires were given to parents and individual adults at monthly follow-up meetings, to help understand the factors involved in the use of the diet within the family. Findings from questionnaires were consistent with findings from group discussions and individual clinical follow-ups.

Areas of improvement

The areas which did improve were hyperactivity, aggression, anxiety, socialization and concentration on evaluation by the Conners rating scale by parents. When children broke the diet, parents reported that they wrote numbers and letters back to front, added instead of subtracted in maths, and guessed words when reading. There were also reports of a decrease in eczema, fewer upper respiratory tract infections, diar-

rhoea and headaches. Abdominal and muscular aches, bed wetting and nightmares were also decreased.

Other factors making children excitable, such as visitors or noisy TV shows, did not excite to the former extreme level and resolved rapidly with removal of stimulus.

There were changes in eating patterns, with two-thirds of parents reporting less trouble at meal times, and constant requests for particular foods ceased. It is accepted that hyperactive syndrome children often exhibit reluctance to eat specific foods, on grounds of unpleasant texture. It was noted that this tendency decreased on the diet, and was accompanied by an improvement in appetite and a wide range of foods being accepted. Some children seemed unusually hungry during the first three months.

With careful dietary instruction, intakes of nutrients reached recommended dietary allowances for Australians, and no vitamin



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- Of the 71 families using the diet, 62 felt sufficient change to continue adherence. Thirty-five had a "dramatic" response as evinced by changes in behaviour, learning difficulty, sleep patterns or bedwetting.
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supplementation was necessary. There has been anxiety about the vitamin C in this diet, and so foods that could be used as a source were stressed with instruction in nutrition. It has been documented that there is an interaction between ascorbic acid and salicylate metabolism such that increasing levels of vitamin C decreases renal excretion of salicylate.⁴

The problem areas

Problem areas included recipes for drinks, replacing fruit excluded, providing variety, changing the family's eating pattern, coping with outings and parties, gaining cooperation from family members and baby-sitters, and managing the diet when the cook is unavailable.

These problems were resolved as far as possible in the initial consultation where a menu plan, recipes, ideas for encouraging children to eat well, suggestions for birthday parties, and guidelines on testing foods for tolerance were given. Follow-up consultations, phone calls, group discussions, the use of diet diaries and ideas in a newsletter also helped with management.

Just as other areas of behaviour were a problem, so often was the behaviour where eating was concerned, though nutritional deficiency before the diet was not present. Guidelines for discipline were given individually. Perhaps development in eating patterns is immature in these children in that non-soft meat and vegetables were accepted later than in other children. Refusal of food was

often related to its temperature, texture, taste, appearance, or to general fussiness. Vomiting, especially after outings, was not unusual.

It was found that the quantity of certain types of food required to be controlled in individual cases. These foods were:

Eggs:

In 10 per cent of group, these were better tolerated when obtained from hens which had not been given feed containing dye to enhance yolk colour, as sensitivity seemed to be mostly to yolks, or correlated with some intolerance to eggs during infancy.

Milk:

Also correlated with intolerance to milk in infancy. It is interesting to note that milk is limited to one cup per day in the diet plan for patients with salicylate-induced urticaria compiled by Noid *et al* of the Mayo Clinic. Perhaps the problem may be related also to insufficient rinsing of utensils in the bottling process. There are possibly sufficient azo derivatives used in detergents, disinfectants, etc., involved during processing, to elicit reactions in highly sensitive individuals. The recently reported increased levels of iodosanitisers in milk is an example.

Bread and flour products:

One quarter of those responding to the questionnaires controlled intake of these, and in some

there had been an overall decrease in bread eaten on the diet. Some wheat breakfast cereals also were a problem. In one adult, all wheat products had to be eliminated before hyperactivity was controlled. The use of wholemeal bread is advised in the diet in the General Infirmary at Leeds, England.

Potatoes:

Excluded from the Mayo Clinic Diet; again had to be completely excluded in one case before good results were obtained.

Bananas:

After discovering these were better restricted to one per day it was noted that they were excluded by Michaelson and Juhlin,³ as were peas, because of naturally occurring benzoates and salicylates. Tolerance varies with a change in varieties.

Pumpkin and Zucchini:

A not unreasonable restriction, as they belong to the same biological family as does the excluded cucumber.

Peanuts:

Especially if red-shelled, or slightly stale; perhaps sensitivity is due to mould growth.

It was also necessary to control oatmeal, honey, malt and sugar. Pineapple became one of the staple fruits and had only occasionally to be excluded. Occasional mouth ulcers resolved when cooked pineapple pieces and pineapple drink were used. No citrus grown in Queensland were tolerated, perhaps because of the particular varieties and conditions of growth. No evaluation of salicylate content (total or volatile) of Australian fruits has been published. From various overseas reports there are many variables determining

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- An effort to find out where the diet did not work produced an investigation of foods still included.
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salicylate content, and extrapolation from these is not reliable.

Elimination of all spices, coconut, chocolate, cocoa and soup cubes produced a recognizable improvement in a significant number. Many can tolerate ginger, also mustard and curry occasionally, and a sensitivity to such items as spaghetti and some biscuits which contained margarine were on a subtle level. This could be explained by evidence comparing the metabolism of tartrazine and other azo dyes.¹

Recurrence of symptoms

Despite attempted re-introduction of foods in virtually all of the families with close monitoring of all behaviour and learning changes, only two felt there was sufficient tolerance to amend the diet. It is important to stress that a non-tolerated food need not produce a recurrence of florid hyperactive symptoms, but may alter specific areas such as enuresis, learning disabilities or allergic manifestations; or show a behavioural symptom not characteristic of hyperactivity, such as anxiety or tearfulness. A build-up with continuing intake of the offending item results eventually in the recurrence of former symptoms.

A loss in effectiveness of the diet may occur by these reintroductions, but may not be recognized initially, and a wide range of foods may seem to be tolerated. A reappraisal of introduced items may be necessary.

In testing for tolerance, no more than one item should be tested per fortnight for, although frank hyperactive symptoms may resolve within a few days, other effects, such as those on school work, may last up to a week.

Involvement of the doctor

Another reason for success with the diet in this group was the involvement of the doctor, psychologist and social worker, who provided counselling and guidelines on general behaviour modification. It could be argued that these other factors are producing the change, but it is stressed that each child acted as his own control, and infringements caused a prompt return of initial hyperactive symptoms.

Patient responsibility

Emphasis was very much on patient responsibility for the diet. The degree to which the child chooses to adhere to the diet himself affects the degree of response. Difficult children have been taken off the diet and then have decided to return to it themselves. About 75 per cent of these children adhere to the diet without any supervision; this high proportion continues to surprise parents and therapists. Usually the child feels so different from other

children when off the diet, that he enjoys the way he functions while adhering to it. Conversely, there are usually problems where the parents act as sleuths on the child. The problems in this situation are also related in part to the fact that the whole family is not adhering to the diet.

Changes in the siblings, especially girls, were a decrease in allergic manifestations, car sickness, tenseness, irritability, self-defeating behaviour, anxiety, tearfulness, competitiveness, fussiness and perfectionism; this resulted in consequent improvement in family interaction. This might be an expression of the effect of these foods on the more feminine personality. Destructive, aggressive behaviour very quickly comes to notice, but parents rarely complain about a fussy little girl who never breaks a toy and follows rules to the letter! Parents report a decrease in psychological symptoms, such as anxiety and talkativeness in themselves, but also adhere to the diet because of reduction in upper respiratory allergic manifestations, headaches and skin problems including dermatitis and acne. This could be compared with the work of Michaelsson and Juhlin,³ where provocation tests with aspirin, benzoates and azo dyes produced subjective symptoms such as headache and irritability.

Sensitivity

Of the 71 families in this group, 76 per cent reported a history of

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- Overall, because of the need for instruction where nutrient intake, especially vitamin C is concerned, the help with problem areas, the investigation of suspected foods, the reintroduction of excluded foods, and the evaluation of the efficacy of the diet, the importance of individual dietary supervision is stressed.
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- One of the most significant findings in the use of this diet was the effect it had on parents and siblings of the hyperactive children.
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some allergic manifestation, and 10 per cent salicylate sensitivity. Hence the use of this diet in families with a history of salicylate sensitivity, especially where allergic manifestations are present, needs to be considered, particularly as salicylate is documented as aggravating such underlying conditions.⁶ The occurrence of bad dreams after intake of intolerated fruit has been reported.

Sensitivity symptoms seem to show more markedly after the diet is established, even though they were not clearly definable before. The reason for symptoms can be ascertained by using the diet diary, and the diet adjusted accordingly.

Areas of non-improvement

From a questionnaire, areas reported as not improving with the diet included obedience, excitability, repetitive talk, peer group and family relationships, tantrums and sulking. These are interactional, and it is interesting to note that the complaints ceased or became less significant when the mothers and siblings adhered to the diet, or had help with behaviour modification and counselling. The report from mothers adhering to the diet was satisfaction with the response.

In individual situations where overall the child became more manageable, but where specific areas of behaviour remained a problem, the use of behavioural techniques by the psychologist or general practitioner often produced improvement. It was com-

mented that though these techniques were tried previously, they were more effective with the child on the diet.

To sum up . . .

From the above discussion, it is evident that management of the Feingold diet is not significantly different from many other dietary regimes, whether diabetic, gluten free or low protein, which may be managed without dietary supervision.

However, better results appear to be obtained, with patients happier and more compliant with individual help from a dietitian.

The Feingold concept has broadened the base of diet therapy further into behavioural areas, with the awareness of the significance of the effect of compounds other than nutrients in food.

Can we safely assume that the hyperkinetic syndrome induced by specific foodstuffs or additives is an isolated occurrence, or is it the tip of an iceberg of human behaviour patterns being influenced by hitherto unsuspected environmental factors?

Summary

The approach to the Feingold diet need be no different from that of well established dietary regimes. Of the group studied, the benefits far outweighed the effort involved in many families. The potential of treatment of these disorders with dietary intervention must be considered as a part of their overall management.

Addendum

The Conners Rating Scale is based on a Parent's Rating Questionnaire which is made up of over 90 questions. Details of the questionnaire, and of the Australian booklet version of the Feingold K-P diet are available from the author.

References

1. Amos, H. and Drake, J. J. (1976). *Journal Human Nutrition*, **30**: 165.
2. Cook, P. and Woodhill, J. (1976). *Med. J. Aust.*, **2**: 85.
3. Michaelsson, G. and Juhlin, L. (1973). *Brit. J. Dermatol.*, **88**: 525.
4. *Modern Medicine of Australia*. Sept. 20, 1976, p. 55.
5. Noid, H. Earleen et al. (1974). *Arch. Dermatol.*, Vol. **109**.
6. Platts-Mills, T. and Denman, A. (1976). *Journal of Human Nutrition*, **30**: 141.
7. Private correspondence. Dietetic Dept. Leeds Area Health Authority (Teaching) Western District, Leeds LS 1 3EX.
8. Ros, A., Juhlin, L. and Michaelsson, G. (1976). *Brit. J. Dermatol.*, **95**: 19.
9. Salzman, L. K. (1976). *Med. J. Aust.*, **2**: 248.

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