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ALLERGIC FACTORS IN ASTHMATIC CHILDREN

By

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Morrison-Smith (1961) reported that 1.7 % of school-children in Birmingham area suffered from bronchial asthma. *Fry* (1961) discussed the incidence and some of the problems of wheezy children in his practice. He observed that 5 % of them continued to wheeze after the age of 10 years. The allergic factors in asthma are often overshadowed by recurrent infections of the respiratory tract and by the nervous tension. The purpose of this work was to find out which allergens are responsible for asthma in childhood. This subject was well studied in the U.S.A. by *Speer* (1958), but no recent reports are available in this country.

The Methods of Observation. The children were referred to the Allergy Clinic from the Furness district by their own practitioners. Each child was examined twice a year for a period of five years. The basis of observation was history-taking and skin tests. Provocation tests were considered too dangerous to be used in children.

The Sex Incidence. There were 67 boys and 33 girls examined.

The Age Incidence. Table No. 1 shows the age of the children at the time of their first examination in the Clinic. It is seen that more than half (55 %) were referred when they were over the age of ten years.

This confirms the observation of *Fry* (1961), that most of the wheezy children in their earlier years of life are treated by their own doctors with the hope that they will outgrow the

asthma. Only 9 children were referred under the age of 5 years.

TABLE 1
The Age of Asthmatic Children

Age in years	Boys	Girls
10-15	35	20
1- 5	7	2
5-10	25	11

The Seasonal Incidence. The children and their parents were asked at what time of year the attacks of asthma were more frequent or more severe. It is seen from Table No. 2 that in 42 children asthma was worse in the summer time. This finding points to pollens as the cause of the complaint. There were 20 children whose asthma was worse in the winter, and in 38 children, there was no seasonal difference in symptoms.

TABLE 2
The Seasonal Incidence of Asthma in Children

Spring	Summer	Autumn	Winter	No seasonal difference
None	42	None	20	38

History of Allergy and of Aggravating Factors. The history-taking is all important in diagnosing of asthma. Questions were asked in what circumstances attacks of asthma occurred. The children and their parents were encouraged to tell what was the cause of asthma. Table No. 3 shows the answers.

It is seen that half of the children gave a history of sensitivity to pollens. This is because the Furness peninsula lies close to the Lake District with abundance of pollens in the summer time. House dust was the second important cause of asthma. Common colds were regarded as aggravating factors in 34 cases.

Skin tests. After history-taking and physical examination, each

TABLE 3
Causes of asthma by History Taking.

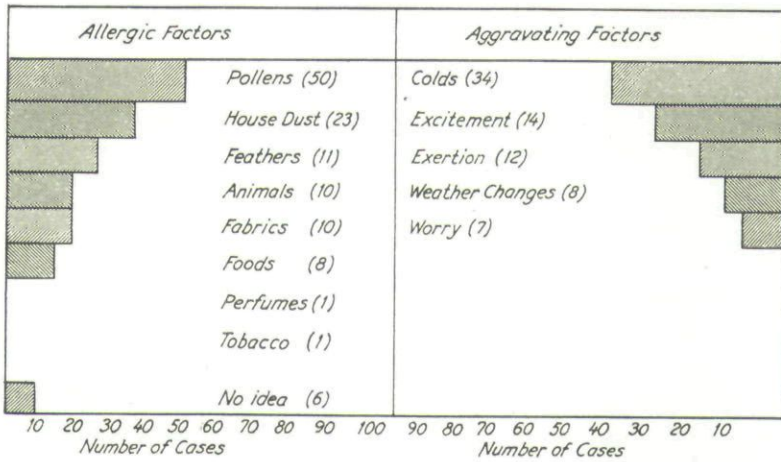


TABLE 4
Results of Skin Tests.

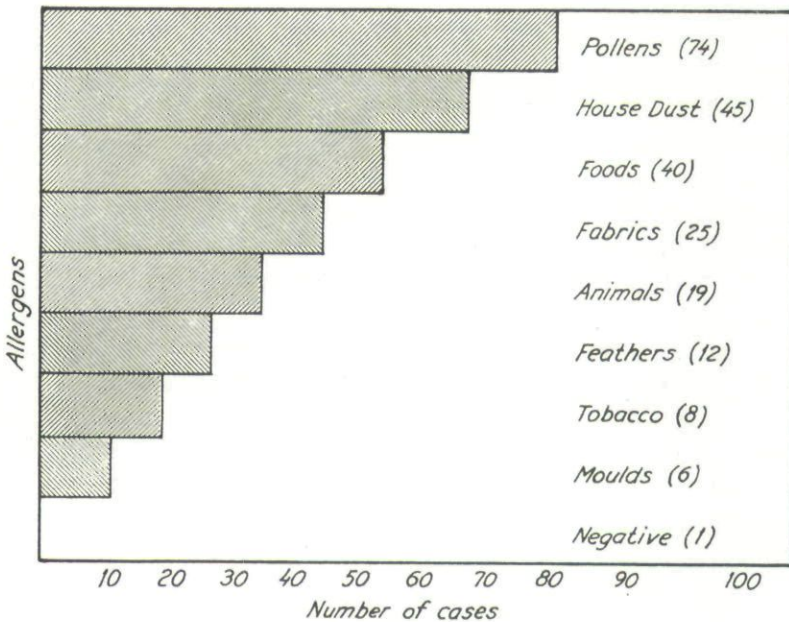
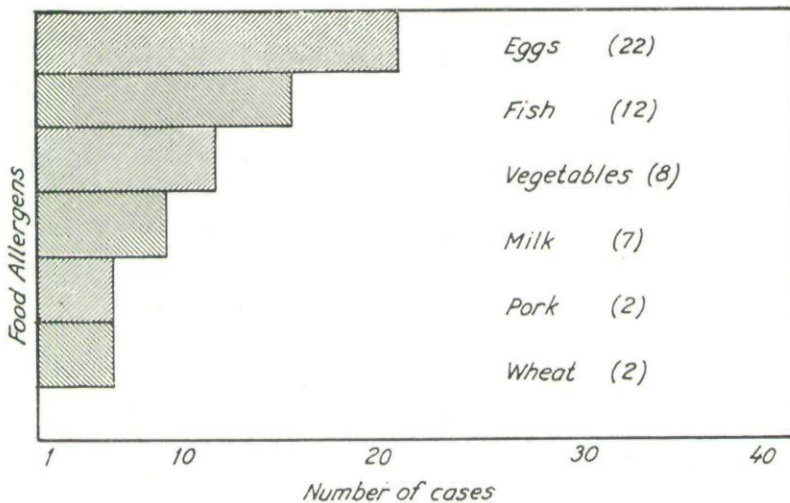


TABLE 5
Positive Skin Tests to Foods.



child was tested by prick method, using Bencard's Hospital Outfit. Multiple sensitivity was found in all children except in 6 cases who suffered from pollinosis and were allergic to pollens only. The space does not allow to elaborate the various combinations of sensitivity. It is seen from Table No. 4 that skin tests point to pollens and house dust as the most important allergens in asthmatic children.

Foods, fabrics and animals follow the next. The animal allergens included domestic pets like dogs, cats, hamsters; also ponies and sheep.

Table No. 5 shows the foods allergens which gave the positive skin reactions. Eggs are heading the list, with fish as the second important food allergens.

DISCUSSION

It has been shown by *Cohen et al.*, (1940), that allergic diseases impair the normal growth of children. *Hansen* (1953) pointed out that asthma in children does in fact lead to pigeon breast deformity of the chest, atelectasis, bronchiectasis, and emphysema. The allergic factors responsible for asthma in

children are multiple. The removal of allergens is not always possible, but much can be done to avoid them. The continuous use of steroids in asthmatic children should be avoided at all costs. The suppression of growth is a big penalty for the easy way out of a problem which should be faced by both the parents and the doctor.

Food Allergens. There were 40 children who, amongst other allergens gave positive reactions to foods. Allergy to foods does not always give positive skin reactions and positive skin tests to foods do not mean that the foods are responsible for asthma. There were 26 children who suffered also from eczema, and it is possible that in some cases foods were causing the eczema. Parents were told not to give the offending foods to children for six months. If there was no improvement in the asthma, the diet restriction was abandoned. Definite improvement in asthma on avoiding the foods was noticed in 15 children. There was not a single case of asthma caused by foods alone.

House Dust. All houses have carpets, blankets, and furniture producing house dust. Instructions were given on how to reduce the house dust to a minimum. Children, allergic to feathers, were told to get rubber pillows. There was no dramatic improvement in asthma on changing of the feather pillows. This was because sensitivity to feathers was combined with sensitivity to other inhalants.

The Fabries. This group of allergens includes wool, cotton, silk and kapok. Children sensitive to fabries were usually sensitive to wool only. Parents were told to replace the woollen pullovers, cardigans, vests, scarves and gloves by garments made of synthetic wool. Mothers were told to use nylon knitting wool.

Pollens. Children sensitive to pollens were advised to spend summer holidays at the seaside and to avoid camping in the nearby Lake District. There were 5 children who were feeling better during the summer holidays in Scotland. Possibly the pollinating season or the pollinating plants were different there.

Other Inhalants. Improvement was noticed in 3 children when the parents stopped smoking in the living room. Removal of pets was not recommended to prevent psychological upset of the children. Parents were told not to buy any new pets in case of deaths of the old ones. The incidence of positive skin tests to moulds was low, accounting for 6 % only.

Specific Desensitisation. Children tolerate the injection well, but no injections were given under the age of 7 years. It was hoped that by that age children would acquire natural immunity to common infections and that asthma would improve. Desensitisation was advised in 55 children who were allergic to pollens and house dust, because these two allergens are difficult to avoid.

The aggravating Factors. The respiratory tract infections called by parents "common colds" were responsible for attacks of asthma in 34 children. Such infections constitute a serious setback in the management of asthma, but preventive measures are not yet available. Immunisation of asthmatic patients with influenzal virus vaccine can reduce the influenza and its sequelae (*Bendkowski, 1961*).

SUMMARY

Observation was kept on 100 children suffering from bronchial asthma over a period of five years in order to evaluate the allergic factors. Among the inhalants, pollens, house dust, and fabrics were found to be the most important allergens. Eggs and fish were the most frequent food allergens.

The problems of finding out the causative allergens and their avoidance were discussed.

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