Staff Meeting Bulletin
Hospitals of the » » »
University of Minnesota

Hay Fever in Children

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STAFF MEETING BULLETIN
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INDEX

Published for the General Staff Meeting each week during the school year, October to June, inclusive.

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William A. O'Brien, M.D.

I. LAST WEEK

Date: February 20, 1942

Place: Recreation Room
Powell Hall

Time: 12:15 to 1:15 P.M.

Program: "Treatment of Fractures in War Time"
Wallace H. Cole

Discussion
Owen H. Wangensteen
Wesley Spink
Wallace H. Cole

Present: 145

Gertrude Gunn,
Record Librarian

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II. ANNOUNCEMENTS

1. THURSDAY
March 5, 8:00 p.m., Room 116, Millard Hall, Professor H. A. Abramson, Columbia University, New York City, "Fundamental Studies of Allergens."

2. SATURDAY
February 28, 11:30 a.m., Erling S. Hegre, "The Influence of Light on Hypophyseal Secretions," and John H. Randolph, "Lipoid Content of the Human Pars Nervosa."

3. FRIDAY
February 27, at 8:00 p.m., Northrop Memorial Auditorium, Dr. John Tate, "Physics in War and Peace."

4. LIST
Of Doctors in Roentgenology Course:

Walter C. Andrews, Frederic, Wis.; G. I. Badeaux, Brainerd; F. W. Behmler, Morris; L. H. Bendix, Annandale; Frank E. Boyd, Jr., Flandreau, South Dakota; Lorne A. Campbell, Clear Lake, Wis.; W. W. Canfield, Houston; Harold J. Dvorak, Milwaukee, Wis.; George Engstrom, Belgrade; Allen R. Foss, Missula, Mintana; M. W. Garrison, Minot, North Dakota; D. A. Gregory, Milbank, South Dakota; Walter Halloran, Jackson; M. I. Hauge, Clarkfield; R. S. Hunt, Fairmont; R. R. Heim, Minneapolis; George W. Ittner, Jr., St. Paul; B. W. Jarvis, Lowry; L. E. Jensen, Audubon, Iowa; Eugene M. Kay, Milwaukee, Wis.; E. T. Lietzke, Beresford, South Dakota; John H. Lloyd, Mitchell, South Dakota; M. E. Mosby, Long Prairie; Woodrow Nelson, Minot, North Dakota; Ernest A. Olson, Pine Island; Arthur E. Perley, Waterloo, Iowa; H. R. Powers, Emmetsburg, Iowa; J. W. Prentice, Ashland, Wis.; John P. Ritchey, Missoula, Montana; Alden F. Risser, Stewartville; Henry J. Roemer, Winona; J. T. Rose, Lakefield; E. J. Schwinghamer, New Rockford, North Dakota; Alvin J. Swingle, Mandan, North Dakota; Robert D. Thielen, St. Michael; Hubert Van De Erve, Carrington North Dakota; C. W. Vandersluis, Bemidji; Charles Waterbury, Waterloo, Iowa; C. Gordon Watson, Soudan.

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III. HAY FEVER IN CHILDREN

Albert V. Stoesser

Much has been written concerning hay fever or seasonal pollinosis but physicians have difficulty with the treatment of this allergic disease. A lack of enthusiasm has developed and children especially have been neglected. Many have not received proper treatment. It was not until 1932 that the hay fever patients attending the Pediatric Outpatient department received specific therapy. From then on up to 1936, various methods described in the literature and in the circulars of commercial organizations supplying poller extract were tried. Gradually some of the old procedures were discarded and new schedules were adopted. The result was that during the next five years the majority of children received satisfactory relief from seasonal pollinosis.

About 20% of the children with allergic diseases have the typical symptoms of hay fever. The disease is most common in the male. The onset occurs quite early in life. Although a few patients show symptoms during the first year, a much larger number begin to manifest signs in the second year and often there is a gradual increase during the preschool period. However, the majority of the children do not come for treatment until they attend school. The symptoms usually increase in severity during the school years, and the failure of the child to be in good condition in the fall of the year when he returns to school, leads to a trip to the doctor.

Table 1 reveals the incidence of pollen allergy during the various age periods and Table 2 gives a survey of the hay fever patients attending the University and Minneapolis General Hospital pediatric allergy clinics during the 5-year period extending from 1936 to 1941.

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Table 1

Relative Importance of the Common Allergens During Various Age Periods

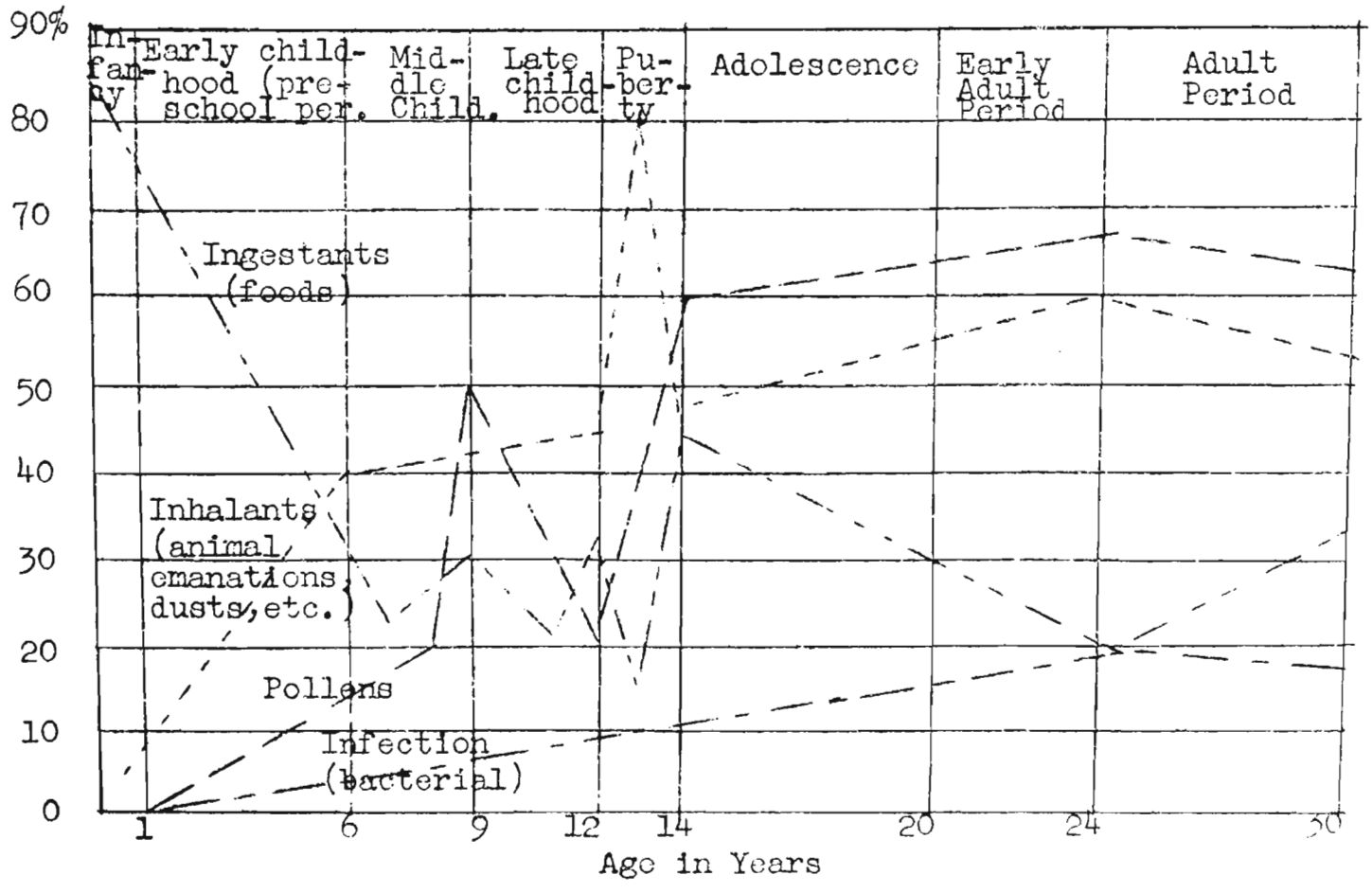

Table 2

Number of Children with Hay Fever attending the University and Minneapolis General Hospitals from 1936 to 1941

Males - 342	Females - 71	
	Age at First Visit	Age at Onset
Below 1 year	0	3
1 to 5 years incl.	34	177
6 to 10 years incl.	176	154
11 to 15 years incl.	203	79
Total	413	413

The care of the children with seasonal pollinosis is not a hard task. The majority of the young patients will respond satisfactorily to the methods outlined in the recent medical journals. The standard rules offered by some pharmaceutical companies do not apply to children. The child's treatment must be flexible. The patient is growing and his allergic state is changing. This requires constant supervision by the physician and thereby important facts are learned concerning diagnosis and treatment.

The diagnosis of hay fever includes for all the children the cutaneous tests with the sixteen groups of pollens which have been prepared by Ellis and Rosendahl. They are as follows:

1. Maple (box elder) - aceraceal
2. Birch - Beutlaceae
3. Poplar - Willow - Salicaceae
4. Elm - Nettle - Urticaceae
5. Sedge - bulrush - Cypereceae
6. Ash - Oleaceae
7. Oak - Fagaceae
8. Grass- Gramineae
9. Walnut - Juglandaceae
10. Plantain - Plantaginaceae
11. Dock-sorrel - Polygonaceae
12. Alfalfa - Leguminosae
13. Pigweed - Amaranthaceae
14. Russian Thistle - Chenopodiaceae
15. Sage - wormwood - Compositae
16. Ragweed - Ambrosiaceae

The pressure-function method was employed. A drop of n/10 sodium hydroxide was placed on the cleansed skin of the forearm. A small amount of the dried pollen mixtures was stirred into the drop by means of a toothpick. Two to four punctures were made through each drop. This simple procedure gave the results shown in Table 3.

Table 3

Number of Positive Cutaneous Reactions
to the Pollen Groups in 413 Children with Hay Fever

1.	Maple (Box Elder)	69	9.	Walnut	33
2.	Birch	23	10.	Plantain	24
3.	Poplar - Willow	55	11.	Dock - Sorrel	39
4.	Elm - Nettle	38	12.	Alfalfa	58
5.	Sedge - Bulrush	30	13.	Pigweed	115
6.	Ash	65	14.	Russian Thistle	146
7.	Oak	54	15.	Sage - Wormwood	209
8.	Grass	72	16.	Ragweed	306

The following number of interesting observations were made in connection with the cutaneous testing.

1. A few of the patients gave no definite positive reactions to the pollens. The majority of these cases were found to have had clinical symptoms for only one year. In some instances, the child's own serum was injected into his skin, and the tests were reapplied. Positive reactions then appeared indicating that the skin of these individuals had not yet become sensitive in the natural way.

2. Many of the younger children showed relatively small cutaneous reactions, but these were considered as positive since they were larger than the control test. Specific treatment based on the tests yielded favorable results.

3. There were patients who gave marked positive reactions to the tree and grass pollens and small areas of erythema to the weeds. Some of these children had symptoms only during the season when ragweed pollinates.

4. The sage-wormwood mixtures occasionally produced a large wheal surrounded by an extensive area of erythema which engulfed the adjacent ragweed pollen reaction. These children responded well to treatment with a pollen extract containing little sage-wormwood and much ragweed.

5. The grass-pollen group or mixture gave a marked-positive reaction in a few patients. The test was of no clinical significance. On the other hand there were children who gave weak cutaneous reactions to grass pollen, and they required specific treatment with the grass pollen extract.

6. The most favorable results from the skin testing were obtained during the winter months.

The treatment of 310 children who received specific pollen therapy was along the lines recommended by Ellis. Each treatment set was prepared in the University Hospitals pharmacy and consisted of four dilutions of a pollen extract designed especially for the patient for whom it was prescribed. Solution No. 2 was the weakest and solution No. 5 was the strongest. Solution No. 1 was not furnished with the set since this high dilution was only employed occasionally in determining the reaction of the patient to the extract by cutaneous testing which was accomplished as follows:

Step 1. Using a tuberculin type syringe, inject intradermally on the flexor surface of the forearm approximately .02 cc. of Sol. #2.

Step 2. At the end of 15 to 20 minutes observe the reaction and classify the sensitivity according to Table below:

Classification of Sensitivity

	Sol. #1	Sol. #2	Sol. #3	Sol. #4
Concentration cc. Mg. Nitrogen	.0001	.001	.01	.1
Sensitivity Classification	Degree of Reaction			
A	Marked	Marked +		
B	Moderate	Marked	Marked +	
C		Moderate	Marked	
D			Moderate	Marked or Moderate

A marked reaction is characterized by distinct pseudopod formation rendering the outline of the wheal irregular, and is normally 1 to 2 centimeters in size. Such a reaction with Sol. #2 indicates a Class B sensitivity.

A marked plus reaction differs from a marked reaction only in size, spreading over a larger area. This type of reaction to Sol. #2 indicates a Class A sensitivity.

A reaction is considered moderate when there is definite increase in the size of the wheal produced by the intradermal injection, the outline remaining smooth. This type of reaction to Sol. #2 indicates a Class C sensitivity.

If in doubt as to classification of patient as A or B sensitivity, a test dose of strength Sol. #1 may be prepared (extemporaneously) by diluting .1 cc. of Sol. #2 in a tuberculin syringe to 1 cc. with sterile normal saline. If in doubt as to classification B or C, apply the test with Sol. #3. If no marked reaction is obtained with Sol. #3, apply test with Sol. #4; a marked reaction with this strength, when such reaction has not been obtained with a weaker dilution, indicates a Class D sensitivity.

After arriving at a classification sensitivity the inoculations were started with the amounts suggested for the class of patient in the following dosage schedule.

Dose No.	Date	Multiple of First Dose	Class A			Class B			Class C			Class D		
			Solution No.	Dose in cc.	Dose in Units	Solution No.	Dose in cc.	Dose in Units	Solution No.	Dose in cc.	Dose in Units	Solution No.	Dose in cc.	Dose in Units
1		1	2	.05	5	2	.1	10	2	.2	20	3	.05	50
2		2	2	.1	10	2	.2	20	2	.4	40	3	.1	100
3		4	2	.2	20	2	.4	40	2	.8	80	3	.2	200
4		7	2	.35	35	2	.7	70	3	.14	140	3	.35	350
5		10	2	.5	50	3	.1	100	3	.2	200	3	.5	500
6		15	2	.75	75	3	.15	150	3	.3	300	3	.75	750
7		20	3	.1	100	3	.2	200	3	.4	400	4	.1	1000
8		30	3	.15	150	3	.3	300	3	.6	600	4	.15	1500
9		40	3	.2	200	3	.4	400	3	.8	800	4	.2	2000
10		60	3	.3	300	3	.6	600	4	.12	1200	4	.3	3000
11		80	3	.4	400	3	.8	800	4	.16	1600	4	.4	4000
12		100	3	.5	500	4	.1	1000	4	.2	2000	4	.5	5000
13		120	3	.6	600	4	.12	1200	4	.24	2400	4	.6	6000
14		160	3	.8	800	4	.16	1600	4	.32	3200	4	.8	8000
15		200	4	.1	1000	4	.2	2000	4	.4	4000	5	.2	10000
16		240	4	.12	1200	4	.24	2400	4	.48	4800	5	.24	12000
17		300	4	.15	1500	4	.3	3000	4	.6	6000	5	.3	15000
18		360	4	.18	1800	4	.36	3600	4	.72	7200	5	.36	18000
19		420	4	.21	2100	4	.42	4200	4	.84	8400	5	.42	21000
20		500	4	.25	2500	4	.5	5000	5	.2	10000	5	.5	25000
21		500	5	.05	2500	5	.1	5000	5	.2	10000	5	.5	25000

As more and more cases were treated, important information concerning the specific therapy was collected and the salient facts may be listed as follows:

1. All pollen extracts should be freshly prepared just before a special treatment set is made up for each patient. Glycerine has a stabilizing effect on the extracts.

2. The preparation of a proper combination of pollens requires knowledge of the onset and duration of the child's hay fever symptoms, the list of pollens which are known to be prevalent in the atmosphere in the patient's locality during the season of illness, and the record of the positive skin tests reactions to the pollens.

3. If too many different pollen groups are placed in a treatment mixture, the dilution of each pollen becomes so great, that no effective dose of the most important pollen can be given to the child.

4. Never add pollens which are not airborne such as dandelion, goldenrod, etc. even though these plants may give positive cutaneous reactions.

5. The child who has hay fever in the spring usually has positive tests to more than one tree group. Mixing all of these groups in one treatment solution seldom gave good results.

6. Box Elder, cottonwood, and oak produce much pollen and they therefore are most significant in preparing a tree pollen treatment set.

7. Birch, elm and ash if they do not give strong skin test reactions can be omitted from the prescription.

8. Occasionally a child responded poorly to the tree pollen mixture employed for treatment. In such a case, a new combination was prepared the following year placing more emphasis on the trees which produce the most pollen.

9. Once the correct preparation of tree pollens was obtained in the treatment extract, the child gave a most satisfactory response. Hyposensitization then appeared to be quite easy.

10. The number of children reacting clinically to grass pollen was small. Th cases were all fairly well controlled by an average number of preseasonal inoculations. The amount of relief, however, was not as high as in the cases of tree pollen sensitive patients.

11. The majority of the children who had polinosis during the late summer were sensitive to ragweed. There were a few patients who did not respond well to the therapy with the ragweed pollen mixture. They gave positive cutaneous reactions to the sage-wormwood group and when this was added to the treatment set, the results were better.

12. There were children who had positive skin reactions to pigweed, Russian thistle, sage-wormwood ragweed. Many of these were relieved by treatment with a mixture of sage-wormwood and ragweed but there were some who responded only to inoculations with an extract containing pigweed and Russian thistle. The ragweed could be omitted.

13. The fifteen dose schedule recommended by commercial organizations did not give good results. The children required 25 to 35 inoculations and they were usually started in the late winter or early spring.

14. The maximum number of pollen units attained in the dosage schedule of Class A was usually not large enough to give optimum results and therefore it was necessary to move over into the schedule of Class B or C. This could be done easily if an early start had been made with the inoculations.

15. All injections were made into the subcutaneous tissue from which absorption is relatively slow. The intradermal method was not permitted on account of the danger of rapid absorption.

16. Epinephrine was not employed routinely along with pollen extract inoculations because investigations have shown

that it causes a delay of about 20 minutes in absorption after which the rate is only slightly slower than without the drug.

17. Constitutional reactions were few in number. When they did occur, the following were considered:

A fixed limit of tolerance which may be present for many years. A constitutional reaction can be induced repeatedly in the child at about the same dosage level. No attempt should be made to increase the amount injected beyond this point.

The change from a large volume of a weaker extract to a small volume of a stronger extract.

The use of too concentrated extracts, too frequent injections, too large an increase in dose, errors in dosages, too large an initial dose and improper technique of administration.

18. The patient's limit of tolerance was judged not only by the development of a constitutional reaction but also by the occurrence of marked local reactions at the site of injection, evidenced by pain, swelling and erythema. Minor reactions were ignored but reactions of a marked degree indicated a reduction or repetition of the last dose, or the use of a longer period between injections or both.

19. When persistent efforts to increase the number of pollen units failed because of constitutional or severe local reactions, weekly inoculations of the tolerated amount of the pollen mixture were made in hopes of giving the child a reasonable degree of protection. Some of the children were benefited by doses which were quite small in comparison with the average.

20. The severity of the hay fever regularly experienced by the patients was not a trustworthy guide as to the size of the dose of the pollen antigen that was tolerated. Some children who had severe attacks of seasonal pollinosis were relatively tolerant and could take large doses, whereas others who had less severe hay fever were more sensitive to the pollen extracts.

21. There were indications that a better guide was the reaction to the cutaneous tests. Children who exhibited the most markedly positive skin test were unable to tolerate the large doses of the usual treatment series of injections while on the other hand those showing weak reactions, tolerated and actually required the large doses of the pollen antigen.

22. In every instance, complete relief was obtained when the "stop-dose" was reached 3 to 4 weeks before the hay fever season and then continued until its onset.

23. Rapid preseasonal or co-seasonal methods were not adopted chiefly because these forms of therapy were not successful in children taken care of by other investigators. If one must start late he must be satisfied with a moderate maximum dose and the consequent partial protection. Large increases of injected pollen extract should not be made after the child is inhaling large amounts of the offending pollen. Too much treatment at the wrong time may destroy much of the tolerance already built up by the preseasonal effort.

24. Practically all the patients received treatment throughout the hay fever season. The dose of the pollen mixture was reduced one half or more and it was during this period of treatment that some of the patients received epinephrine along with the inoculations.

25. There were children who, although they were being given small doses during the hay fever season would have done better without treatment but the injections were continued in order to lead on to the perennial therapy. Pollen filters often help in this situation.

26. Frequent cold days during the late summer resulted in many instances

in a persistent nasal congestion with resultant nasal obstruction but very little irritation. Sensitiveness to cold seemed to play a part in these patients.

27. The response to the weed pollen mixtures as shown in Table 4 was almost as satisfactory as that to the tree pollens and better than to the grass pollen group. The cases which did not receive complete relief were analyzed and one or more of the following conditions was considered the cause of the failures:

Complication of the hay fever by food or house dust sensitivity.

Omission of one of the causative pollens.

Underdosage.

Long duration of the hay fever. Children with a history of 2 to 4 years of seasonal pollinosis yielded better results than those who have had the disease for over 6 years.

Failure to employ the perennial regime.

Natural resistance to hyposensitization. About 5 to 10% of the pollen sensitive individuals are not helped by any known method of specific therapy.

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Table 4

Results from the Injection Treatment of Specific Pollen Extract Mixtures in 310 Children with Hay Fever*

	Long Preseasonal Therapy						Perennial Therapy			
	Trees		Grasses		Weeds		Trees		Weeds	
	No.	%	No.	%	No.	%	No.	%	No.	%
Good	19	79.2	7	36.8	115	59.0	6	100	49	59.8
Fair	2	8.3	8	42.1	61	31.3	0	-	17	20.7
Poor	3	12.5	4	21.1	19	9.7	0	-	16	19.5
Total	24		19		195		6		82	

*Nine children received separate treatments for sensitivity to trees and weeds, and seven for sensitivity to grasses and weeds.

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Perennial treatment was carried out whenever possible after a successful season. The dose was reduced to 1/4 or 1/2 of the largest amount received before the hay fever season. The interval was lengthened to 2 or 3 weeks but not 4 weeks thereby avoiding any reactions. Interesting observations were made and they are as follows:

1. If the injections are returned to a weekly basis and the dose gradually increased 2 months before the next expected hay fever season, the response is most satisfactory as is revealed in Table 4.

2. Cooperation must be good. The parents had to bring the children to the clinic according to the schedule. Failure to do so often was a reason for dropping the case. Some patients welcomed this for they were tired of making endless visits to the doctor.

3. Cases with positive cutaneous reactions to many of the pollen groups did not respond favorably each year to the perennial therapy. It soon was discovered that there was a shifting sensitivity to the tree or the weed pollens, and the same treatment extract could not be used from one year to another in order to give the best relief.

4. Children successfully treated by the perennial method rarely had winter colds. There is so far no explanation for this.

5. After three or more years of perennial treatment the question came up as to whether it could be discontinued. At first it was thought that a decrease in the reaction of the skin tests might be an indication of an increasing resistance. However, there was no constant change. Some children revealed less positive cutaneous reactions after 2 or 3 years of therapy, others showed stronger positive skin tests. Those with the weaker reactions often required and could take higher doses the following year to secure optimum clinical results.

6. A few patients who had received treatment over several consecutive seasons through puberty have since been able to get along satisfactorily without any specific therapy.

Many of the physicians who have carefully treated and observed the patients with seasonal pollinosis have wanted to know the nature of the hay fever producing substance or substances in pollens. Chemical studies have been going on for 20 years but the sum of all this work is difficult to evaluate because of the contradictory reports and lack of uniform methods for quantitative investigations. The pollen extract contains more than one active substance all of which are of complex chemical natures. Some of the substances contain much carbohydrate and others resemble protein. They are inactivated by heat and alkaline media. They are slowly inactivated in the presence of proteolytic enzyme. The pollen extract cannot be identified definitely with any one nitrogenous constituent but the specific activity of fresh pollen extract closely parallels the total nitrogen content which therefore can serve as a reliable indirect criterion in the standardization. One unit represents the quantity of pollen extract containing 0.00001 milligrams of total nitrogen. It is the unit referred to in the Ellis dosage table.

There have been numerous attempts to alter the standard pollen extracts so that large doses could be given with fewer inoculations. The following modifications have received consideration but none have become popular.

1. Emulsion of the extract in lanolin and olive oil.

2. Alum precipitated pollen.

3. Tannic acid precipitated pollen - "pollen tannate"

4. Gelatin pollen extract mixture consisting of 4 parts of gelatin and 1 part of an aqueous extract of pollen.

5. A salt of active pollen substance avoiding thereby foreign matter such as oil, alum or gelatin.

6. A rapidly frozen aqueous pollen extract with the residue dissolved in sesame oil.

Oral pollen therapy has been recommended by many writers in spite of questionable results. The oral administration of pollen if it is successful has several advantages. It is more acceptable to many patients, especially children who do not like the idea of the needle. The dose can be taken when a visit to the physician is not convenient or possible for it is available when needed. This form of therapy is not potentially as dangerous as is the inoculation method.

The allergic child receiving oral pollen is managed exactly as if he were being treated by the hypodermic method with the exception that the oral dose of pollen antigen is much larger than that which is given by injection. When

the maximum doses are reached it is not necessary to administer the entire daily dose at one time but it may be taken several times a day in a divided form.

Thirty-six children ranging in age from 6 to 15 years of age were given oral pollen therapy. All the patients had positive cutaneous reactions to the ragweed pollen group and clinical symptoms of hay fever during August and September. In previous years these cases had responded favorably to the regular inoculation form of therapy. "Panoral" of Lilly* was used. It is a whole pollen preparation which contains all the antigenic substances of the pollen grain. It is sterilized by a special method which does not alter the antigenic potency of the pollen. The sterile pollen is mixed with food starch milled for thorough admixture and filled into capsules in doses of 500, 2000, 8000, 30,000 and 60,000 units. Each capsule or pulvule is colored as a means of identification.

The dosage schedule which was employed is as follows:

Fall Type "Panoral"
Preseasonal

Dose	Units	Pulvules (Filled Capsules) Color
1	500	1 pink
2	1,000	2 pink
3	1,500	3 pink
4	2,000	1 yellow
5	4,000	2 yellow
6	6,000	3 yellow
7	8,000	1 green
8	16,000	2 green
9	24,000	3 green
10	30,000	1 brown
11	60,000	1 brown
12	60,000	2 brown

*Supplied by Research Laboratory of Eli Lilly and Company.

The regular build-up doses were administered twice a week after a meal. The maintenance dose was continued throughout the hay fever season using 60,000 units daily in the majority of the cases but in some of the older children this was increased to 120,000 units.

Two of the patients had gastro-intestinal reactions which were overcome by reducing the doses of oral pollen. One child developed urticaria. The results were not encouraging. Three of the cases had little hay fever but the remaining 33 children showed marked symptoms of seasonal pollinosis. (See Table 5) Certainly the oral pollen therapy should not be offered as a substitute in patients who have already responded well to the hypodermic method.

The theory that the liberation of histamine in the tissues is the immediate cause of the symptoms and signs of allergy led to the use of its antagonist, the enzyme histaminase for the prevention and alteration of these phenomena in such diseases as hay fever. Twenty-one children between the ages of 5 and 13 were selected to receive the enzyme. All of these cases were known to have typical symptoms of hay fever beginning about the middle of August and lasting until frost and to give positive skin test reactions to the ragweed pollen group. At the first signs of seasonal pollinosis, the histaminase was started. Forantil of Winthrop** was used. It is a fluffy grayish or yellowish slightly hydroscopic powder consisting of fine and course particles, obtained from the muscosa of the small intestines and the kidneys of hogs. The powder is standardized biologically in histamine-detoxicating units, 1 unit being the amount which will inactivate 1 mg. of histamine hydrochloride during incubation at 37.5°C for 24 hours. The drug is made up into 5 unit enteric coated tablets.

Each child was started with one tablet, three times daily before meals.

**Supplied by Research Department, Winthrop Chemical Company.

After a few days the dose was increased to two tablets or 10 units, and in some of the cases another increase was made to three tablets or 15 units. All the patients took the medication well but continued to have hay fever during the season. Any fluctuation in the symptoms that did occur could be accounted for by an associated change in the pollen concentration of the atmosphere (See Table 5). Recently, the recommendation has been made to try the new histaminase tablet containing 10 units thereby giving the patient larger doses of the enzyme. This has not been done.

Potassium chloride and other potassium salts have been shown to relieve in some instances the symptoms of the common allergic diseases. The effectiveness of small doses of the salts has been so striking at times that it has led to the belief that the potassium ion is intimately related to the problem of allergy. Bloom of Tuscon has treated a group of individuals with simple seasonal pollinosis. He has felt that the potassium chloride was beneficial in the majority of the cases.

Here in the pediatric allergy clinics, the potassium salts have been tried in many of the young children with hay fever who have reported too late for specific pollen therapy. Forty-three patients ranging in age from 3 to 10 years were given potassium chloride. Each child received one 5 grain tablet three times daily, after meals. The tablet was dissolved in one half of a glass of cool water or a fruit juice such as grape juice and the mixture was slowly sipped. Drinking it too rapidly often causes nausea, abdominal distress, and even vomiting. In some of the older children of the group, the dose was increased to two tablets or 10 grains.

Eight of the patients were unable to continue the treatment for more than one week. They refused the medication because of nausea. The remaining 35 cases gave more encouraging results than had been expected. Nineteen children were relieved throughout the hay fever season to such an extent that the parents were pleased. Sixteen patients failed to respond satisfactorily (See Table 5). All of these cases were placed on a low sodium chloride diet in conjunction with the potassium chloride therapy before the ragweed pollen season had ended. Improvement followed in only a few instances. However further studies are indicated.

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Table 5

Results from Various Forms of Non-Specific Treatment in 103 Children with Ragweed Pollen Sensitivity

	Oral Pollen		Forantil		Potassium Chloride		Coli. Metabolism	
	No.	%	No.	%	No.	%	No.	%
Good	-	-	-	-	-	-	-	-
Fair	3	8.6	-	-	19	44.2	-	-
Poor	33	91.4	21	100	24*	55.8	3	100
	36		21		43		3	

*Eight children were unable to continue this form of therapy for more than one week.

Investigations with the product called Cold Metabolin of Tosse which consists of a filtrate of the Escherichia coli were reported by Elsbach in the June 15, 1941 issue of the New York State Journal of Medicine. The writer asserted that the metabolic products of the colon bacillus have a therapeutic value at least equal to that of specific inoculations in allergy. Shortly after this article appeared its context was reproduced in Time Magazine of June 30, 1941 and in Dr. Logan Clendenning's health column with the captions "Last Sniffle" and "New Hay Fever Remedy Tested Successfully." Immediately physicians became interested in trying the preparation. The author (A.V.S.) was able to obtain last summer enough material to treat as a clinical experiment three children with moderate ragweed pollen sensitivity. All of these cases failed to respond to the Coli Metabolin.

The product is being advocated for the treatment of allergic rhinitis, seasonal pollinosis and bronchial asthma. Both the doctors and the public still are enthusiastic about it. However, in Current Comment of February 7, 1942 number of J.A.M.A. there appears the following concerning Coli Metabolin (Tosse):

"This preparation has been the subject of numerous inquiries received at the headquarters of the American Medical Association. The majority of the inquiries appear to have arisen as a result of articles in lay publications based on a short communication by Dr. Ernest J. Elsbach published in the New York State Journal of Medicine. From the Council report it may be inferred that critical investigators still consider the Elsbach article premature and unscientific since little evidence is presented to justify the enthusiastic attitude of the author. According to the Council, the composition and exact mode of action of Coli Metabolin (Tosse) are indefinite and the claims of the firm are not supported by available scientific evidence. Thus, Coli Metabolin (Tosse) has been declared unacceptable for inclusion in New and Non-official Remedies."

Considerable attention has been focused recently upon the relation of fungus spores to allergic diseases of the respiratory tract. At times large quantities of wind-borne spores may be present in the air; fungus seasons similar to pollen seasons have been observed; cutaneous tests to fungi are often positive. The question as to how much symptoms of respiratory allergy are actually due to molds is still highly controversial.

Kind assistance was received in collecting the data from A. Karlstrom, E. Shaperman, A. Moss and W. Sako, of the Department of Pediatrics.

Summary and Conclusions

1. The long preseasonal and perennial forms of specific pollen therapy still are the best treatments for hay fever in the child.

2. The oral administration of pollen did not give satisfactory results.

3. Enzyme therapy with histaminase (Forantil) failed completely.

4. The use of potassium chloride benefited enough children with seasonal pollinosis to warrant further investigation.

5. Coli metabolin therapy appears to be of little value in the care of hay fever.

6. No conclusions can be reached concerning fungi or molds.

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IV. GOSSIP

The Minnesota Society for the control of Cancer held its annual meeting on Tuesday, February 24, in the Fine Arts Room of Coffman Memorial Union. This society, which is affiliated with the American Society for the Control of Cancer, is organized for educational purposes. Dr. William D. Stovall, Professor of Hygiene, University of Wisconsin Medical School, Madison, was the principal speaker at the dinner in the evening. He spent the day with us at the Hospital and all former Wisconsinites dropped whatever they were doing and hustled out to shake hands with him wherever we went. He is apparently so well known that one person overheard him speak as he walked around a corner, recognized his voice, and he too joined the line of well-wishers. Dr. Stovall packs a lot of common sense as well as good speaking ability into his slender frame. Long a member of the Wisconsin staff (nearly 30 years), he still retains a New Orleans flavor in his speech as a relic of his southern origin. Wisconsin representatives do well by their alma mater wherever they go.

We are on our way to Bemidji to speak at the teachers' college. Even the best trains give a rough ride during the winter. A porter explained it to me by saying it was due to ice on the tracks. The frozen ground is a more logical explanation. Up hill and down hill, around curves and down straight of ways the train bounced and jolted through the night. In the morning there is a 5:00 o'clock call in order to get off and hustle for the hotel. As usual the temperature drops during the night and in the morning all the exit pipes on the washbowls are frozen solid. This causes great consternation among some passengers from Jersey who discuss it at length. After more sleep at the hotel I go to the teachers' college assembly in the gymnasium. "Fit to Fight" is the theme this year. Careful distinctions are drawn between physical defects and physical efficiency - and the hour passes. Dr. Eliot of the Science Division, who presides, impresses me favorably. As conservation chairman he stopped winter fishing. The taking of great numbers of fish interferes with the natural cycle according to the doctor. He is instructing a group of students in technical laboratory methods, including some interesting experiments with sulfonamide compounds. He has perfected bacteriologic techniques for the local physicians. The tissue sectioning laboratory is a model of efficiency and neatness. As a result of this aid the medical profession in Bemidji is doing many things well and the students are developing a scientific viewpoint, which again emphasizes the great possibilities of small colleges located close to the people.

The Minneapolis group of industries has been holding a series of monthly meetings at the Nicollet Hotel on the subject of safety. The first part of the evening consists of sectional meetings in charge of trained persons. This is followed by a general assembly in the ballroom at which a more general topic is discussed. I spoke to the group last week and found them to be most attentive and interested. Generally speaking, male audiences differ from female audiences largely in the matter of tension. Strange as it may seem groups of men like these present a high strung effect. Women on the other hand appear to be more relaxed and attentive. But the good ladies worry over the prospect of widowhood. Because of sex differences (biologic or care) women tend to outlive men. Even the prospect of spending all their time in light, carefree occupations does not appeal. One of them wondered why we couldn't do something about it as the average age at widowhood in the United States is now 55. Enormous numbers are created each year. Women also have interesting reactions which they call intuition. One of them told me recently that her employer started to sell junk to the Japanese shortly after World War No. 1. She told him that she didn't believe it was a wise thing to do, but he laughed it off as so many Americans have done..... The pharmacists had their course at the Center last week. A new section for hospital pharmacists has been created. It would seem important enough to be made the topic of a special course....