

Psychiatric Syndromes Produced by Allergies: Ecologic Mental Illness

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Introduction

Perhaps no subject, including anger, sex, and money, has been of more interest to man than food. Long before the Old Testament advised the Hebrews about foods, people must have handed down from generation to generation dietary instructions and precautions. Burton (1621) stated in his famous *Anatomy of Melancholy*, "Milk and all that comes from milk increases melancholy." Such a reaction of "melancholy" certainly coincides with the authors' experiences with allergies produced by milk.

Blackley (1873) in a publication on grass pollen sensitivity reported such psychological symptoms as listlessness, restlessness, and insomnia following a sensitivity challenge. In 1916, Hoobler reported behavior disturbances in children due to food allergies, and Shannon (1922) stressed tension as a symptom of allergy.

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This paper was presented at the annual meeting of the Academy of Orthomolecular Psychiatry, April 29, 1972, at Dallas, Texas.

It is not possible to review all the contributions to work on cerebral allergy in a paper such as this. We can only spot a few highlights — and deplore the neglect the medical profession has heaped upon the subject of cerebral allergy.

Rowe (1930) spent a lifetime working on the subject of food allergies. Much of his interest lay in the field of cerebral allergies.

Bringel (1937) reported a fascinating case of a physician's son who, two hours after eating canned fish, developed somnolence, catatonia, incoordination of the eye muscles, nuchal rigidity, and erythema. The boy was unable to talk, but wrote that he thought an enema and a spinal tap would help. The spinal fluid pressure stood at 250 mm and dropped to 120 mm after removal of 15 cc of spinal fluid. Examination of the spinal fluid revealed a W.B.C. count of 2200 with 15 percent eosinophils.

Alvarez (1946) contributed to the subject. Rinkel et al. (1951) wrote an important monograph on the subject, which brought him a small devoted following among a group of allergists.

Davison (1952) published a monograph on

the subject as did Speer (1970). Dohan (1966, 1968) has been emphasizing the association of wheat and milk allergies to schizophrenia. Sadly, however, his contribution has been ignored by the psychiatric establishment. Wheat and milk continue to be fed in mental hospitals, and in some patients with reversible allergic mental illness, the cerebral symptoms from these and other foods are controlled by heavy tranquilization, electric shock treatment, and psychosurgery that is tragically unnecessary in many instances.

Material

Tables 1, 2, and 3 give a summary of allergic reactions of patients suffering from different types of emotional illnesses. Milk, corn, and wheat were examined by deliberate food tests after a four-day fast. Occasionally, nonfasting patients were tested by sublingually placed extracts of milk, corn, and wheat. Foods other than milk, corn, and wheat were tested by sublingual provocative tests, except in a few instances where deliberate food tests were used. A few foods were tested by both methods when either patient or physician questioned the significance of a test. The deliberate food ingestion test appears to be slightly more accurate than the sublingual test using food extracts.

All diagnostic categories except schizophrenia have the disadvantage of being small in numbers and are insufficient for predicting the expectation in a larger group. However, they reveal the possibilities in these categories.

Those in the neurotic group were especially surprising since common symptoms such as phobias of numerous types, hyperventilation, depression, anxiety, weakness, and lethargy, hyperactivity, and numerous other common neurotic symptoms were observed as reactions to foods and commonly-contacted chemicals. This small group of neurotics does not prove that all neurotics develop symptoms from allergic, toxic,

hypersensitive, or idiopathic sources. All but one of these were among the hard-to-treat group of neurotics not responding to usual psychotherapeutic techniques. They represent roughly one-third of the neurotics seen by psychiatrists.

The schizophrenic patients were un-selected, hospitalized cases who are considered to be a fairly representative group of schizophrenics. The evidence of 92.2 percent allergic (toxic, hypersensitive, or idiopathic) reaction in these subjects reveals how important an investigation of cerebral allergy is in this disorder. The symptoms produced by testing reinforce the values of such an examination since every symptom described for schizophrenia was seen in response to testing in the 56 cases reported. We observed the dramatic evoking of delusions, hallucinations, catatonia, psychotic depression, mania, tics, and all manner of schizophrenic symptomatology.

TABLE 1 ALLERGY STATISTICS

Food	No. Tested	No. Positive	No. Negative	Percent Positive
Schizophrenics				
Wheat	53	34	19	64.1
Corn	52	27	25	51.9
Milk	56	28	28	50.0
String Beans	5	4	1	
Tobacco	18	12	6	
Coffee	18	9	9	
Eggs	23	10	13	
Chocolate	17	10	7	
Auto Fumes	15	7	8	
Ethanol	10	3	7	
Peanuts	22	9	13	
Maltox	7	3	4	
Beef	21	4	17	
Tomatoes	17	7	10	
Potatoes	26	10	16	
Oats	14	2	12	
Soy	19	6	13	
Chicken	11	2	9	
Neurotics				
Wheat	10	7	3	70.0
Corn	6	4	2	66.7
Milk	8	4	4	50.0

(table 1 continued)

String Beans	1	1		
Tobacco	4	3	1	
Coffee	2	2		
Eggs Chocolate	5 2	4	1 1	1
Auto Fumes	3 2	3		
Ethanol		1	1	
Peanuts	1			1
Maltos	1	1		
Beef	6	3	3	
Tomatoes	3	1	2	
Potatoes	1	1		
Oats	2	2		
Soy Chicken	2 4	1		1
		2	2	

TABLE 2 ALLERGY STATISTICS

Food	No. Tested	No. Positive	No. Negative	Percent Positive
Manic Depressives				
Wheat	5	4	1	80.0
Corn	2	1	1	50.0
Milk	5	3	2	60.0
String Beans	2	1	1	
Tobacco	1		1	
Coffee	1	1		
Eggs	2	1	1	
Chocolate	2		2	
Auto Fumes	2		2	
Ethanol	2	1	1	
Peanuts	2	1	1	
Maltos	1	1		
Beef	1		1	
Tomatoes	3	1	2	
Potatoes	2		2	
Oats				
Soy	1	1		
Chicken	2		2	
Psychotic Depressive Reaction				
Wheat	2		2	0.00
Corn	3		3	0.00
Milk	3	2	1	66.7
Peanuts		1		
Auto Exhaust		1		
Soy		1		
Eggs				
Potatoes				
Tobacco				
Coffee				
String Beans				
Oats				

Involuntal Melancholia				
Wheat	3	1	2	33.3
Corn	3	3		100.0
Milk	3	2	1	66.7
Chocolate	1	1		
Coffee	1	1		
Eggs	1	1		

TABLE 3 ALLERGY STATISTICS

Food	No. Tested	No. Positive	No. Negative	Percent Positive
Psychosis with Metabolic Disorders				
Wheat	1	1		
Corn	1	1		
Milk	1	1		
<i>(Positive for coffee, tobacco, peanuts, auto fumes)</i>				
Habitual Excessive Drinking				
Wheat	1	1		
Corn	1	1		
<i>(Positive for tobacco, eggs, coffee, beef)</i>				
<i>(No negatives recorded)</i>				
Mongoloid				
Wheat	1		1	
Corn	1		1	
Milk	1		1	

Symptomatology

The allergic symptoms can be produced by sublingual challenge or by fasting and then feeding one food at a time as a challenge. The symptoms produced will vary all the way from a slight itching of the skin to psychotic reactions. One patient cried all afternoon after being given a sublingual test for milk. Another patient, suffering from schizophrenia, was given a sublingual test for cigarettes. Five minutes after the test began, she turned on her mother with a very savage verbal attack which continued for approximately half an hour. Another patient known to be sugar and wheat sensitive suffers from chronic schizophrenia which is rather easily controlled unless he ignores his prescribed diet. Several days ago, this patient ate a slice of apple pie. Following the

ingestion of the pie, he began actively hallucinating, was quite delusional and angry, and uncontrollable. It was necessary to administer 400 mg of thiorazine. After sleeping for eight hours, he awakened in his usual composed state. Another patient suffering from schizophrenia was known to be wheat sensitive. He ate a meal in a Chinese restaurant which contained various mixtures of food. He became actually psychotic for two days following this. An investigation of the food which he ate revealed that it did contain wheat products.

There is no end to the examples which the authors could give from their practice, illustrating the clinical importance of allergies producing psychiatric symptoms. One patient, for example, had been seeing a psychiatrist regularly for five years because of tachycardia. She had had no relief of symptoms during this time. At the psychiatrist's suggestion, she had been examined by a cardiologist who agreed that she had periodic attacks of tachycardia, but could not say what was causing it. He suggested that she take Valium (Diazepam) tablets. This only made her very sleepy and had no effect on the tachycardia. One of us discovered her to have a sensitivity to hydrocarbons. When the gas stove was removed from her kitchen and replaced by an electric stove, and the new stove was well ventilated so that fried fats would not circulate in the room, the patient had a marked relief from her symptoms. Another patient was tested for red food dye. She felt dizzy, confused, and disorganized for two days following the test.

In order to make the subject of cerebral allergies more realistic for the reader and with the hope that we can convince the reader of the importance of cerebral allergy, we are presenting an interview with a patient who was fasted for five days and then given a food challenge of one food at a time to test his reaction to these foods. Previous to this fast, he had been given sublingual tests in an attempt to identify foods to which he was allergic. Because this patient felt that the mild symptoms he experienced from the sublingual food tests were of little importance, he was

fasted and presented with foods one at a time. In this way, it was felt that his symptoms would be intensified. He would be more convinced about the etiology of his emotional illness and thus would cooperate in following a proper diet. This assumption proved to be correct. Although the patient illustrated is suffering from what some people would call a neurotic depression and others would call a passive aggressive personality disorder, the production of symptoms with food allergy is identical in persons who are suffering from the various psychoses.

This man did not have a psychosis produced by his challenge test but, had he been basically schizophrenic, then schizophrenic symptoms would undoubtedly have been produced by the food challenge tests. Of course, other emotional disorders such as, for example, manic-depressive psychosis can be activated by allergic or hypersensitivity states. A patient suffering from a neurosis was chosen to illustrate the effects of food allergies because he was quite verbal and able to clearly describe his exact reactions.

Interview with Patient

Doctor: How old are you now?

Patient: I'm 23 years old.

D: What difficulties made you consult a Psychiatrist?

P: Well, basically, I was feeling very tense and irritable.

D: Can you give me an example of what you mean by tense and irritable?

P: I would find myself losing control over petty issues, especially with my wife and family.

D: In what ways?

P: Well, I would get to the point of violence at the culmination of a mild discussion. I would grab hold of my wife and almost think that I would strike her, at which point I usually would calm down and walk around for two hours.

D: Would you feel tense and hyperactive

when these episodes started?

P: I'm not sure.

D: Were there any elements of depression?

P: Yes. I had been depressed pretty much for the last two or three months. I had less energy. I felt anemic. I felt I had to let my anger out at my children. I tended to try to physically discipline them, which was unlike me, and I could not tolerate anything that wasn't just about normal.

D: Were you tired a great deal?

P: As I said, I've been tired and sleepy. About two months ago I got so I couldn't sleep at night and I would get to sleep, but I would wake up about six times a night.

D: Would you eat anything when you woke up?

P: Yes. I'm a great peanut butter and jelly fan.

D: And would you feel better after eating it?

P: Somewhat. We had a lot of apples too. I would really eat apples, and then I felt better. I actually go on apple eating binges, but at other times I will just munch on them all day long, like when I'm reading. Especially recently, since I haven't been working. I have been doing a lot of reading and it's nice having something to munch on. So it's been apples and some cookies.

D: Would the apples make you feel any different?

P: At the time I wasn't aware of it. I think I probably did feel better.

D: For how long?

P: In retrospect, I can say that immediately after eating apples I felt good, relaxed.

D: Did they give you a lift?

P: Yes, they would give me a lift, even better than a candy bar. I do a lot of hiking and I take apples and candy bars.

D: What are your other favorite foods? P:

My favorite vegetable is green beans. I also like corn. We often have chicken and we eat a lot of hamburger.

D: Did you notice any physical or psychological changes with any of these foods

when you were eating them?

P: I would have indigestion after eating chicken. I always thought it was because my wife cooked lousy chicken. I would also feel badly. I'd feel grumpy and probably a little sleepy.

D: Then you would feel sleepy. Did you have any of the bad temper you mentioned?

P: I did feel sleepy and bad-tempered after the chicken, yes. We have chicken two or three times a week, and apples.

D: In the office we tested you for several things by putting very weak solutions of food beneath your tongue. Two of these tests were for apples and chicken. Do you recall what you felt when you had these solutions underneath your tongue in the office?

P: I believe the first one I had was the chicken. It was given at the end of the day, and I was getting tired. I'd been having no reactions. She gave me the chicken and I began to get a very mild headache. It was hard to tell at first whether I was imagining it. She told me to wait for a while and see if it went away. I waited for about half an hour. By the time I left the office I had a really bad headache. I don't generally get headaches. As a matter of fact, I thought it might be because I was tired. But it didn't go away when I relaxed. I felt it was unusual after awhile.

D: What about apple? What happened then?

P: The apple was much more dramatic. There is very little question about that. There were definitely sharp, very localized pains in my head across the upper right-hand side. I had about two or three of them. They came in a series.

D: How long did the pain last?

P: It didn't last long, about two or three minutes.

D: Did you have any other symptoms associated with this?

P: No, not that I can remember. This test

was at the end of the day, and I was quite fed up with them. I felt cranky by the time I left the office.

D: At what point did you begin to feel fed up?

P: When I got the reaction with the apple. I had about 40 tests in the office, and didn't have any reactions with the other foods. I felt bored until I got to the chicken and the apple. The patients around me who were being tested were having a variety of reactions such as popping in the ears, getting dizzy. I wasn't getting any reactions.

D: Can you tell me what happened in the hospital following the food allergy tests in the office?

P: I was put on a spring water fast for four or five days. During the first day, I was hungry. I didn't feel bad. I came in on a Saturday afternoon. Saturday night, I missed the first meal of my life. Sunday, again, I was mainly hungry, and probably a little tired. It was either late Sunday or Monday that I became depressed, noticeably depressed. I stayed in bed. I was cranky, tired, and stopped talking to people. But Tuesday I felt much better. I was still a little bit depressed, but I seemed to be reviving, and by Wednesday, the fourth day, I felt pretty normal. Again, I am not sure that I really ever overcame the desire to eat completely, but emotionally I felt like a fairly normal human being at the end of the fourth day.

D: Do you mean you felt emotionally stable on the fourth day?

P: Right. I wasn't depressed. I could relax. I was reading. I was so depressed before I couldn't read more than a page, because I was too nervous. Now I could read and relax and listen to records. I couldn't before.

D: So on the fifth day of your fast, you felt more like your old self, before you became emotionally upset? What happened next?

P: On the fifth day, they gave me half a chicken to eat. I was delighted. I felt very happy with the chicken, and I ate it in about three seconds. While I was eating it, it was very obvious to me that I was getting excited. My whole system started getting really keyed up. My metabolism seemed to be going up. I could feel my pulse throb. My fingers started tingling. I could feel pounding in my head and my chest. I literally felt more than a little high, and it kind of surprised me.

D: How long did the high last?

P: It ended abruptly after about half an hour. Suddenly I really got depressed. This is the biggest switch I have ever experienced. I became depressed and tired. I was not really aware of what was happening at the time. All of a sudden, I started lying down. I felt depressed and irritable. Then I called my wife, and she asked what was wrong with me. I telephoned her three hours later, and she said I sounded great, and asked what was wrong with me before. Then I realized that when I had telephoned her the first time I was cranky and irritable.

D: All of this happened coming down off the high produced by chicken?

P: After the initial 30-minute high there was a sudden drop, and I felt very irritable, cranky. I slept for about an hour, I think, and then the minute I woke up when I was still irritable, I telephoned my wife the first time.

D: After you ate the chicken, you felt high; and then you felt low and irritable. Was this irritability and anger anything like that you experienced when you were having trouble with your wife and children?

P: I would say yes. There was really no reason to be angry. And there hadn't been a great deal of reason for me to snap at the children and snap at my wife. And I would say it corresponded pretty closely.

D: What happened next?

P: The next day I was given an apple for

lunch. Almost the identical thing happened. The differences were that I got a higher high on the apple, but the depression wasn't as sudden a transition from the high to the low. I felt my hands tingling again. I even got a little shaky at times.

D: Did you get irritable after the high from the apple?

P: Again, I hit the low after the high. I guess I was more conscious of what was happening, because I recognized the low at once. I got irritable. I stayed in the room and I felt hostile toward people. My roommates can testify to that. Later, I was dragging my body around, feeling that I had no energy at all. I was still depressed.

D: What came next?

P: Saturday I was given a bowl full of corn. With the corn, I had no highs, no lows. I just felt better in my stomach. Then following that I had beans. And it was strange, because I didn't want beans. I didn't want to react to beans. That is one of the foods I like. I believe I suspected that I was already tested in your office, so I didn't expect to react to it. So, when I ate the beans, it really took me aback when I got a high after it. I had almost identically the same feeling that I had with the chicken.

D: How long did the high last?

P: Again, about half an hour.

D: Then what happened?

P: It wasn't quite as rapid as the chicken, but I did have a gradual slip into a depression that lasted for about an hour.

D: Any anger?

P: I would say that the irritability was identical to that produced by the apple and chicken. I was irritable. I removed myself from people because I was getting bad vibes.

D: If you'd had the children around, you might have jumped on them?

P: Exactly. I couldn't tolerate anything rubbing me the wrong way.

D: How long did the bad mood last? 90

P: I believe about an hour.

D: You have been tested for other food sensitivities?

P: The other foods I have been tested for are: tomatoes, cheese, peas, spinach, shrimp, oatmeal, chocolate, fish, and I just had a

multiple vitamin. With none of these did I have any reaction.

D: Have you learned something from this experience?

P: I have been startled. I am convinced I've been poisoned for the last year-and-a-half with chicken and apples and green beans. The surprising thing to me is that these were my favorite foods. Fresh green beans have always been something of a delicacy to me.

Comments

It should be evident from the references cited and from the clinical material used to illustrate psychiatric symptoms resulting from allergic reactions that the whole subject of allergy is of importance to anyone dealing with emotional problems. Physicians generally are aware that certain symptoms may accompany allergic reactions. For example, almost all physicians know that patients suffering from hay fever tend to be tired during the active course of their illness. However, in general neither the allergist nor the psychiatrist is aware of the urgently important role allergies play in producing psychiatric symptoms.

The usual tests for food allergies are carried out on the skin, in the same manner as tests for pollen allergies. Almost any allergist will admit, however, that skin tests for food allergies are no more than 20 percent accurate, which means that skin tests for food allergies confuse rather than aid in the diagnosis of allergic conditions.

In general, two methods are satisfactory and practical for the diagnosis of food allergies. The first method is that which has been championed by Randolph, which consists of fasting a patient from four to eight days. During this time, the patient is allowed

only spring water from glass containers by mouth. No medication whatsoever is administered, including vitamins, minerals, and so forth. At the end of this time, each food is presented one at a time, three times daily, and the psychological symptoms produced by such foods are noted.

During this period of fast, a patient should be chemically isolated insofar as possible and the chemicals in the patient's environment should also then be introduced one at a time. For example, some patients are hypersensitive to chlorinated or fluoridated water. Others are hypersensitive to exhaust fumes from automobiles, to fresh ink, and indeed to any number of substances.

The second satisfactory method of testing patients for food and sensitivities, other than pollen, is to introduce dilutions of the test substances beneath the tongue.

With a hypodermic syringe, 0.2 cc of the fluid is allowed to drop beneath the tongue where it is held for five minutes and then swallowed. During this time, the patient is observed for any symptoms. Should symptoms be produced, one must administer a relieving dose of the allergin or wait until the symptoms disappear before starting the next test. If no symptoms are produced by the test, the next test may start at the end of the 10-minute test. The supplies needed for sublingual tests may be obtained from Hollister-Stier Laboratories, 550 Industrial Park Drive, Yeadon, Penna. 19050. This company will make up special test substances if desired. On the other hand, the physician may personally make up special testing dilutions. One such example is food coloring.

As noted earlier, when one of the patients had a strong psychotic reaction after eating apple pie, the psychotic reaction was broken by a massive dose of thiorazine. The major tranquilizers (that is, the antipsychotic tranquilizers) all have antihistamine effects (Kalinowsky, 1972), a fact which may be of more than passing interest. Acute psychotic episodes can be terminated by

electroconvulsive therapy or by carbon dioxide therapy.

Of further interest is the fact that nicotinic acid, because of its histamine-depleting properties, may also have an effect on allergies. Boyle (1972), at the Miami Heart Institute, has performed an experiment in which two groups of laboratory animals were sensitized to serum. One group of the animals was then given large doses of nicotinic acid. The other group was given no nicotinic acid. Each of the groups was then exposed once more to the serum to which they were allergic. The animals which had received the niacin remained alive, and the other animals all died. The possibility is very strong that niacin is protecting some patients from cerebral allergic responses.

One of us (Newbold) has had an opportunity to administer trans cerebral electrotherapy (electrosleep) to a patient in an emotional crisis brought about by an allergic reaction. This therapy was effective in bringing the patient out of the anxiety and depression which had been precipitated.

Randolph (1971) speaks of bringing patients out of acute psychotic states brought on by allergies by injecting intravenously sodium bicarbonate.

At a recent symposium on cingulectomy sponsored by the Hahnemann Medical College and Hospital in Philadelphia on June 16-17, 1972, M. Hunter Brown, M.D., during the question-and-answer period following his presentation, spoke of one patient to his knowledge who had recovered from dust allergy following cingulectomy.

One patient mentioned earlier as being very sensitive to cigarettes requires maintenance electroconvulsive therapy.

One cannot help wondering how many patients are receiving psychotherapy, chemotherapy, electroconvulsive therapy, and even cingulectomy surgery for conditions which are basically allergic in nature.

Summary

1. A brief history of food allergy was presented. As early as 1621, we have recorded comments regarding emotional changes produced by certain foods.

2. Tables 1, 2, and 3 illustrate the frequencies of food allergies in patients with various emotional difficulties. Allergic and cerebral allergic reactions were found in neurotic, manic-depressive, psychotic depressive, and involuntional elancholia, psychosis with a metabolic disorder, alcoholism, but not in the one mongoloid examined. The 56 schizophrenics are of special interest since the unselected cases represent a fair sampling of the run-of-the-mill schizophrenias. The finding of 92.2 percent of reactions (allergic, toxic, hypersensitive, or idiopathic) in the schizophrenic group reveals such reactions to hold the position of being the immediate cause of symptoms in most cases. No assumption is being made that these reactions are the only cause, but the evidence indicates the need to place these reactions in the differential list of multiple chemical defect causes of schizophrenia. A clinically valuable method has been described whereby exposure to a substance can isolate the patient's chemical in compatibility with specific substances. This makes it possible to reduce symptoms by avoidance.

3. The authors feel that a proper workup of patients with an emotional illness (especially psychosis) should include an allergy-ecology evaluation either by fasting the patient and challenging them with foods or with sublingual provocative test solutions.

4. When it is not practical to test schizophrenic patients for various allergies, it is recommended that the cereal grains (wheat, rye, oats, barley, and com) be excluded from the diet. Milk comes in as a good second and should therefore be excluded. Cane sugar is often cross-sensitive with corn, and it is best excluded. In schizophrenia, allergies are characteristically multiple and not limited to the cereal grains. A cereal grain allergy is usually the source of paranoia.

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