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THE IMPORTANCE OF NUTRITION IN THE PREVENTION AND CURE OF LEPROSY *

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Alteration of metabolism through diet has always been a basis of medical treatment. By selection of the food one may increase the healing power of the body, whether to prevent or to overcome disease. During the past decade treatment of this sort has shown excellent results in the chronic infectious diseases, especially in tuberculosis of the skin. Since leprosy is very similar to skin tuberculosis, particularly as regards metabolism, it seems logical to attempt to influence it in a similar way. This, of course, would not be in a specific manner, but only through a general alteration of the patient's condition.

Through the centuries there has been a belief in an important relation between leprosy and diet, a belief that has not existed in connection with any other infectious disease. Long before physicians tried to influence other diseases through nutrition there were, in various places, allowances and prohibitions of foods for lepers. In Surinam, in the 17th century, the Dutch physician, Fortestu, held that there was a causal relationship between diet and leprosy.

In the course of centuries the population of Surinam has been persuaded of such a relationship, and today there is hardly another

* This article as it appears here was prepared from a literal translation made by Mr. K. Wegner of the author's German manuscript.—EDITOR.

people as firmly imbued with the belief that leprosy can be cured, as well as caused, by certain foods. With as firm a conviction today as centuries ago, the greater part of the population of Surinam attempts leprosy prophylaxis and leprosy therapy by avoiding all foods supposed to be injurious. Like many another popular belief the old "Treefglaube" of Surinam, the belief in the effect of nutritional injury on the leprosy processes, has a genuine basis, one of observation confirmed by experience. Unfortunately, however, the popular beliefs as they exist are determined more by superstitious perception than actual experience, and as they play an important role in daily life they sometimes lead to practices which endanger public health.

Of the numerous general influences which affect the resistance to extremely chronic infectious diseases the importance of the nutritional condition has long been recognized. That prolonged qualitative and quantitative undernourishment affects unfavorably the course of such diseases is an old experience. For example, in Germany during 1916 to 1918, as a consequence of the blockade, there was a great increase in morbidity and mortality due to tuberculosis. Undernourishment and malnutrition cause serious injury to which the body in childhood is especially sensitive, and damage done at that time is overcome with the more difficulty the younger the person was when it was done. It is said that German school-children born during the period mentioned show, sixteen years afterward, retardation as a result of the hardships of that time.

Leprosy, like tuberculosis, is a disease which attacks people particularly during youth, ordinarily without any past or immediate disturbance of health, and appears years afterwards. It is therefore never possible to say with certainty when the disease actually began. Lampe, in Surinam, has pointed out the importance of infection in infancy; according to his observations the infection occurs almost exclusively during that period¹. Diminution of resistance through undernourishment must influence the course of the disease greatly. The greater the constitutional depression, the earlier the disease will appear and the more unfavorable will be its course.

In view of the limited pathogenicity of the leprosy bacillus it may be said that the development and course of the disease is not influenced so much by the virulence of the germ as by the capacity of

¹ See Lampe, P. H. J. Fate of children born of leprosy parents in the Groot-Chatillon leprosy asylum, in the first issue of this JOURNAL, page 5.

resistance and state of immunity of the patient. These are in close relationship with the nutritional state, especially during childhood. All things that weaken the body cause an extension of the disease in leprous regions, and an aggravation of it in leprous individuals. Rogers and Muir long since pointed out this fact emphatically. Leprosy is primary a disease of poverty; and an increase in the standard of living automatically brings a retrogression of leprosy morbidity.

The diet commonly used in tropical countries, including Surinam, consists almost entirely of rice that is rendered inferior by polishing, or some other cheap form of carbohydrates, together with a little salted meat or salted fish. Such a diet, poor in proteins, fats and vitamins—or any diet in which the foods are denaturated by preservation or preparation—is entirely unsatisfactory for healthy people and must be disastrous for many people living in regions where there is leprosy.

Lampe has pointed out the occurrence in Surinam of spontaneous recovery from leprosy. There is, indeed, a much greater tendency to self-cure than with tuberculosis, malaria, filaria, carcinoma or other severe diseases. This tendency is made most effective through the employment of a correct diet, in addition to other general measures calculated to increase the functional capacity of the organism. Here is an important and promising point of attack in leprosy therapy.

Dietary studies of the past ten years (by Gerson, Sauerbruch, Hermannsdorfer) have established certain rules. A diet should be prescribed that is rich in vitamins, certain mineral salts, and fats, rather limited in carbohydrates, poor in animal proteins, and especially free from salt. The following plan of meals, which has been tried for some time with the children of the Polyclinic School, is based on their rules.

DIET USED

Morning.—Oatmeal with milk; some sugar; fresh butter or, as a butter substitute, any other fresh fat or oil. To the oatmeal may be added lemon or orange juice, according to taste. A tablespoonful of cod-liver oil.

Breakfast.—Sandwiches (black or rye bread); one or two egg-yolks, raw; a glass of milk; an orange or banana.

Dinner.—Fresh vegetables in plenty daily, especially leafy vegetables such as spinach. (Vegetables should not be boiled longer than necessary and the water, which extracts the valuable minerals, should not be thrown away; steaming is preferable). Legumes in abundance—peas, beans, especially soy beans.

Rice, instead of that made inferior by polishing, should be unpolished ("undermilled") if possible.

Afternoon.—Milk, bread with butter and plenty of honey.

Supper.—Oatmeal as in the morning; oranges or bananas; a tablespoonful of cod-liver oil.

The *recommended foods* include butter, milk and egg-yolk; at all meals the patients should take as much as their taste permits of such fatty foods, or oils such as olive or soya-bean oil. Living foods, as fresh vegetables, salads and raw fruit, especially the citrus fruits, bananas, papaya, etc. should be given in abundance. One tablespoonful of cod-liver oil should be given after eating.

The *forbidden foods* are salt, salted fish and meat, all other foods that are highly denatured by preservation or preparation, coffee and tobacco. Fresh meat or fish is seldom given; for anemic patients the preferred meat is beef or pork liver, roasted.

According to my experience the diet therapy is especially indicated and successful when there are extensive inflamed, erythematous infiltrations of the skin, and with edematous swellings and nodular infiltrations of the secondary period of the disease-process. Good results are to be expected when the predominant feature is a tendency to inflammation and edema, or to allergic hypersensitiveness. This last condition, as a rule, is against animal proteid allergens.

As a consequence of the deprivation of salt there can be seen a dehydration of the tissues and a decreased susceptibility to inflammation. The infiltrations are reduced and absorbed in a surprisingly short time—six to eight weeks—in the neighborhood of edematous swellings which have already disappeared. There remains only a circumscribed pigmentation.

A trial of the diet treatment is also to be advised for children who cannot stand the so-called "specific" treatment with chaulmoogra preparations, or who can stand only inadequate treatment of that kind.

The requirement for lasting results with the nutritional treatment of leprosy is prolonged, careful and energetic use of the special diet. The difficulties that are met in the beginning because of the deprivation of salt can easily be overcome, at least with intelligent patients who desire to be cured, by use of the different spices. The critical time in the beginning of the diet can be met by some skill in the kitchen in selecting meals that excite the appetite. Forced alimentation is useless and dangerous.

It is always of value to watch the weight chart. The initial reduction in weight at the beginning of the treatment, due to dehydration, is remarkable.

His observations have brought the writer to the conclusion that it is possible, by means of nutritional therapy, to obtain a change of prognosis in leprosy.

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DESCRIPTION OF PLATE

A patient of mixed blood, 9 years of age, with moderately advanced cutaneous leprosy (C-2).

FIG. 1. Before the beginning of the diet treatment.

FIG. 2. After one and one-half months of diet treatment.

FIG. 3. After four and one-half months of diet treatment.



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