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EDITORIAL DEPARTMENT

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THE RELATION OF OBESITY TO DIABETES MELLITUS

In a recent issue of the *Journal of the American Medical Association*, January 8, 1921, there appeared an article by Dr. Elliott P. Joslin on "The Prevention of Diabetes Mellitus," which is most timely. Heretofore very little attention has been given to the prevention of chronic diseases occurring in the latter half of life, and since diabetes occurs principally in this period, the possibility of preventing its development has been viewed with pessimism. It must be noted, however, that the rapid increase in the death rate of diabetes, from 10 per hundred thousand population in 1900 to 18 per hundred thousand in 1915, and to 26 per hundred thousand in Boston, should awaken our interest in the prophylaxis of this disease. Joslin estimates that there are probably five hundred thousand diabetics in the United States at the present time.

One salient fact which is clearly demonstrated in this article is the intimate relation of obesity to diabetes. Forty per cent of Joslin's cases gave history of marked obesity preceding the outbreak of the disease. This pre-diabetic stage, of having

gained considerable weight, far above the normal average, should cause apprehension, and not only should the urine be examined for glycosuria, but the sugar content of the blood should be repeatedly studied, since blood sugar increase is noticed some time before glycosuria appears.

A common mistake is to pay little or no attention to the variations above the normal average weight, until perhaps a life insurance examination reveals a glycosuria. As Joslin states, it is too often true that during life patients are weighed, and at death they are measured, and it is only by weighing and measuring patients that variations from the normal may be detected. It is a good plan for doctors to keep the tables of normal weights for different ages and heights where they can be referred to constantly. Such tables have been compiled by the Association of Life Insurance Medical Directors and Actuarial Society of America, of New York, published 1912.

Joslin found that the maximum weight usually coincided with the onset of diabetes. He gives interesting tables of variations over and under the normal average of 1,000 diabetic patients, and

"there was no instance in which diabetes occurred when the maximum weight was 31 or more per cent below the normal zone, whereas there were 273 persons who developed the disease among those who were 30 or more per cent above it."

In all of these groups the same fact is apparent that the disease appeared when the patient increased in weight above the average.

"Persons in the community at large who are from 6 to 20 per cent above weight are from six to twelve times as liable to diabetes as their counterparts in the same group below weight."

THE PENALTY OF OVEREATING

The conclusion is that diabetes is largely a penalty of obesity. Fat implies excessive eating, too little exercise, or a combination of both. Diabetes appears in the substandard class, representing the purer and sim-

pler type of the disease. Joslin concludes that

"It is rare for diabetes to develop in an individual above the age of 20 years who is habitually underweight, and when it does so develop, the case will usually be found to be either extremely severe, extremely mild, or associated with a marked hereditary taint, or degenerative stigmas."

The most common decades of onset of diabetes are the fifth and sixth, in which period the noticeable and outstanding peculiarity is the tendency to put on flesh, and the overweight is more marked than in any other period of life.

Nervous excitement or nervous strain, as a contributing factor, is discredited, after having studied 40,000 soldiers returning from the front, for he failed to find glycosuria. But, after several months' inaction, he observed that the incidence of the disease among the same soldiers had increased with increased weight. Syphilis, which has been thought by some authorities to be a factor in the production of diabetes, was found by Joslin to occur less frequently in diabetes than in the general population.

Obesity is dominant in the other so-called etiologic factors. As Joslin states, conjugal diabetes is more from exposure to the same food than from each other. In the Jewish race, there is the tendency to overfeeding that begins in childhood, and is apparent throughout the individual's life, and this is the cause of diabetes rather than racial tendencies. For the same reason the disease is seen among the well-to-do class, addicted to overeating. Heredity may contribute the environment that exposes the individual to overweight.

Joslin's observation that hyper-alimentation is the most important etiological factor in diabetes seems borne out by the fact that since the German food supply has been cut down for a number of years the obese German is no longer to be found, but those

who went into Germany after the signing of the armistice to investigate food conditions and nutritional diseases were informed that diabetes had practically disappeared in that country. It is also said that nephritis and the other diseases of middle life have decreased markedly among the Germans since they can no longer gorge themselves as they did before the war.

THE DUTY OF THE MEDICAL PROFESSION IN PREVENTING DIABETES

The possibility of preventing the ever-increasing number of diabetics lies in popularizing the habits that will prevent overweight. Every obese patient should be instructed in the correct habits and manner of living that will enable him to reduce to the normal average for his height and age. The facts of the danger of obesity should be made very plain.

As in all diseases, early diagnosis is important, and the sooner the condition is found, if properly treated, the greater are the chances of overcoming it. Glycosuria is detected only by laboratory examinations, and consequently if it is to be found, the physician must make routine urinalysis. The life insurance companies are doing much to detect diabetes in its incipiency by insisting upon the annual or semi-annual examination of the urine of their policy holders.

The responsibility of the medical profession does not end with caring for the diabetic any more than it does in treating those afflicted with tuberculosis, the nutritional antithesis of diabetes. The campaign of education to prevent tuberculosis has had remarkable results. Similar methods to inform the public of the dangers of overeating will not only decrease the death rate from diabetes; it will add much to the efficiency of those inclined to obesity.