

point of view of the genetic, traumatic, and environmental factors related to its development. While recognizing that, in the last analysis, an excess of caloric intake is always associated with the development of obesity, he emphasized that this alone gives little insight into the underlying disturbances. Emphasis on caloric balance has probably clouded the picture of the multiplicity of factors that may lead to an excessive intake and has resulted in a failure to evaluate properly the patient whose problem is excessive fat.

Experimental studies with the inherited obesity associated with a yellow strain in mice and with the inherited "hyperglycemic-obesity syndrome" in mice have called attention to the possibility of a genetic role in the obesity in man. The studies of Mayer with carbon-labeled acetate point to an inherited disturbance of acetate metabolism with a resultant increase in lipogenesis. No similar studies have been made in human obesity, but the possibility remains that an inherited enzymatic or hormonal defect could be present in certain instances.

The neuropsychiatric aspects of obesity are discussed. The association of obesity with experimental lesions of the autonomic nervous system, the hypothalamus, and the frontal lobes of the brain, calls attention to the possibility that disturbances in the neurovegetative system may lead to a train of events which end in overeating. The psychiatric aspects of the so-called "obesity-personality" are discussed with warning directed toward the danger of confusing causal with associated factors.

The significance of socio-economic factors is given its proper place. Food intake as a sign of prosperity and conviviality, and as a part of the celebration of important events in the life of the individual and family is emphasized. This paper also calls for a reassessment of the role of physical activities in the problem of overweight. It emphasizes that in the slow, steady increase in weight with age, the part played by decreasing physical activity without concomitant decrease in caloric intake must be given its proper consideration.

The importance of the problem of obesity in the United States cannot be overemphasized. To those who are concerned with this problem, a perusal of the papers by Keys and Brozek, and by Mayer will be helpful in evaluating the present status of the problem of determining who is fat and why. These papers cause one to wonder whether an excessive lean body mass carries the same penalty as excessive body fat. They should lead to a more careful distinction between overweight and overfat. And, very likely, they will increase the patience of those confronted with the problem of obesity by divert-

ing their attention from the fact that the obese individual does overeat, or has overeaten, to a consideration of the factors that lead to his overindulgence in food.

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THE PREVALENCE OF OBESITY

Every doctor knows that obesity is common, but it is surprising to find that there is little published information regarding the present-day prevalence of overweight. As stated in a report prepared by the United States Public Health Service,* "There is no current information for the United States from which estimates of the prevalence of an excessive accumulation of fat in the body can be drawn."

The standard tables of heights and weights which have been most widely used are based on an investigation of the Association of Life Insurance Medical Directors and Actuarial Society of America published in 1912. For that investigation, data on height-weight relationships were collected on 221,819 men insured between 1885 and 1900 and on 136,504 women insured between 1885 and 1909. From these data, tables were prepared showing average weights for each inch of height for each five-year age group. It was not until recently that adequate attention has been given to the fact that standards based on height and weight alone are inaccurate indicators of overweight. Tables of "desirable weights" taking into consideration measurements of build and body type were developed by the Metropolitan Life Insurance Company in 1942 and 1943, and are now widely used. These tables show a range of weights for each inch of height according to the type of body frame. Consequently, the muscular man with heavy frame and sthenic build need not be compared with the slim individual of the same height but with lighter frame.

The limited data from four sources regarding the prevalence of overweight in the United States are presented in the report of the Public Health Service. These sources included a study of impairments among insurance examinees, insurance company estimates and observations made in multiple screening projects in Richmond, Virginia, and in Atlanta, Georgia.

The study conducted in 1938 by the Life Extension Institute among 10,000 life insurance policy holders (3,025 females and 6,975 males, aged ten years and over who were presumably free from illness) showed

*Estimated Prevalence of Overweight in the United States. 69:1084-86, Nov. 1954.

that 27.3 per cent (25.8 per cent of the males and 30.9 per cent of the females) were 10 per cent or more overweight. The estimates presented by the Metropolitan Life Insurance Company in 1942 and 1943 indicated that at least 20 per cent of the population over the age of thirty or about 15,000,000 persons, were 10 per cent or more overweight, and 6.7 per cent, or about 5,000,000, 12 per cent or more overweight. In the multiple screening project in Richmond, Virginia, conducted for six months in 1950 by the City Health Department in co-operation with the United States Public Health Service, it was found that 21.4 per cent of the screenees (33,799 persons aged 15 to 59 years who were presumably free from illness) were 10 per cent or more overweight and that 10 per cent were 20 per cent or more overweight. In a similar screening project conducted in 1950 by the Atlanta City and Georgia State Health Departments in co-operation with the United States Public Health Service, it was found that 24.8 per cent of the persons screened (182,207 persons aged 15 to 39) were 10 per cent or more overweight and 12.8 per cent were 20 per cent or more overweight. In both these screening projects a relatively higher percentage of Negro females than of white females were overweight. In the case of males there was a smaller percentage of difference in the same direction.

These observations made at different times and in different locations indicate that more than 20 per cent of the population of the United States are overweight (that is, 10 per cent or more above the standard weight for height, age and build); 6.7 to 12.8 per cent are 20 per cent or more above "desirable weight."

These statistical observations confirm the clinical observation of practicing physicians. In view of the etiological relationship of obesity to diabetes, it is evident that a high percentage of the persons susceptible to diabetes because of inheritance, are strongly exposed to a contributory factor which should be subject to correction.

HUMAN EXPERIMENTATION

At the close of World War II information was revealed concerning certain types of cruel and inhuman experimentation on men and women which had been carried on under the Hitler regime. Public opinion in this country and elsewhere was stirred to indignation. That doctors and scientists should have shown such disregard of human life had previously been considered unthinkable.

This problem has been considered by the World Medical Association, and at the annual meeting in Rome last

fall its Committee on Medical Ethics formulated a set of guiding principles to be observed when experimentation is carried out on human beings. The text of these "principles" adopted by the General Assembly is as follows:

*Principles For Those in Research and Experimentation**

1. *Scientific and moral aspects of experimentation—The word experimentation applies not only to experimentation itself but also to the experimenter. An individual cannot and should not attempt any kind of experimentation. Scientific qualities are indisputable and must always be respected. Likewise there must be strict adherence to the general rules of respect of the individual.*
2. *Prudence and discretion in the publication of the first results of experimentation—This principle applies primarily to the medical press and we are proud to note that in the majority of cases this rule has been adhered to by the editors of our journals. Then there is the general press which does not in every instance have the same rules of prudence and discretion as the medical press. The World Medical Association draws attention to the detrimental effects of premature or unjustified statements. In the interests of the public each national association should consider methods of avoiding this danger.*
3. *Experimentation on healthy subjects—Every step must be taken in order to make sure that those who submit themselves to experimentation be fully informed. The paramount factor in experimentation on human beings is the responsibility of the research worker and not the willingness of the person submitting to the experiment.*
4. *Experimentation on sick subjects—Here it may be that in the presence of individual and desperate cases one may attempt an operation or treatment of a rather daring nature. Such exceptions will be rare and require the approval either of the person or his next of kin. In such a situation it is the doctor's conscience which will make the decision.*
5. *Necessity of informing the person who submits to experimentation of the nature of the experimentation, the reasons for the experiment and the risks involved—It should be required that each person who submits to experimentation be informed of the nature of, the reason for, and the risk of*

*World Medical Journal 2:12, Jan. 1955.