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TREATING OVERWEIGHT PATIENTS

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EXCESS WEIGHT has become a medical problem of increasing importance in recent years. This has been due to a gradual awareness by the public of the influence of weight on disease. The knowledge that a person can accomplish weight reduction without suffering slow starvation, prostrating weakness, agonizing hunger pains, or the cynical remarks of friends has been obscured by pseudoscientific writings in the popular press. These writings are larded with testimonials and advocate the use of secret formulas which promise miraculous results. Magazines continually skirt the edge of scientific knowledge with their advice on methods of weight reduction through the use of appetite-appeasing drugs. Beauty culture establishments entice the ladies with courses of massage, calisthenics, or dancing, each accompanied by diets which range from simple starvation to simple nonsense. Not to be outdone, the appliance builders advertise belts, girdles, supports, and various mechanical "reducers" which, with the same promise of weight reduction, they sell our more corpulent brothers.

The medical profession, through its failure to educate the public in proper eating habits, is largely responsible for the present uncertainty regarding obesity diets. Doctors have been so preoccupied with the problems of trauma and disease that they have ignored the public's growing interest in the problem of excess weight. There are indications that the average physician feels the problem of

The simplest to prepare and most easily obtainable high-protein, high-fat, low-carbohydrate diet, and the one that will produce the most rapid loss of weight without hunger, weakness, lethargy, or constipation, is made up of meat, fat, and water. The total quantity eaten need not be noted, but the ratio of three parts of lean to one part of fat must be maintained. Usually within two or three days, the patient is found to be taking about 170 Gm. of lean meat and 57 Gm. of fat three times a day. Black coffee, clear tea, and water are unrestricted, and the salt intake is not reduced. When the patient complains of monotony, certain fruits and vegetables are added for variety. The overweight patient must be dealt with as an individual. He usually needs help in recognizing the factors at work in his particular case as well as considerable education in the matter of foods.

excess weight is so time consuming and unrewarding that it does not merit his interest. This discussion will not go into dietary detail, but rather it will attempt to provide a method—an approach that may enable us to cope more successfully with these patients.

Chairman's address, read before the Section on General Practice at the 106th Annual Meeting of the American Medical Association, New York, June 4, 1957.

An overweight patient is defined as one whose weight is more than 10% above the average for his age and height, with allowance for hereditary and familial characteristics. Dublin and Marks' study of life insurance records indicates that the normal weight for persons aged 25 to 30 years is the ideal weight and that this weight should remain constant throughout life.¹ The vast accumulation of medical literature on obesity and related subjects is characterized by a lack of simple, easily understood, clinically applicable dietary instructions for daily use which will produce lasting results. Patients, however, when supplied with simple rules, sensible methods, tasteful diet, sympathetic understanding, regular supervision, and encouragement, will produce long-term results that are quite surprising in their effectiveness.

The opinion, generally held, that excess weight has a deleterious effect on the body and that its presence is a cause of such disease as arteriosclerosis, diabetes, hypertension, and myocarditis is not easily proved. From statistical evidence, there is little doubt that excess weight increases mortality rates in all age groups, and the earlier the age at which excess weight appears the greater the increase in mortality rates. Independent studies of Barr² and Dublin³ indicate that, as a group, overweight individuals, when excess weight has been lost and normal weight is maintained, will have mortality rates not significantly different from rates of groups whose weight has always been normal. Thus, while we have indirect evidence that the popular opinion in regard to the harmfulness of excess weight is correct, we have no direct evidence. A survey of the current literature failed to produce a single study in which the conclusions were supported by carefully documented clinical or experimental evidence. The greater mass of words on this subject appears to be unsubstantiated opinions, expressed with vigor and conviction but offering little proof of scientific value.

Popular Explanations for Excess Weight

The popular explanations now being offered by lay and medical writers for the excess weight that individuals are concerned about merits some mention. For purposes of our discussion, we exclude disease types of obesity such as myxedema, Fröhlich's syndrome, diseases of the central nervous system that are found in the presence of hypothalamic lesions, and glandular syndromes of considerable rarity. This leaves the common or simple type of obesity, which is present in the largest number of our overweight patients and which will be the subject of this discussion. This common simple type of overweight is considered by most individuals and, I am sorry to add, by many physicians to be due to thyroid or glandular malfunctions

—a theory long since discredited by many excellent writings in the field of metabolism. One of the more comprehensive of these writings is by Newburgh,⁴ whose paper I commend to all who are inclined toward the glandular theory.

Another explanation, very popular at the present, is one advanced by the psychiatrists.⁵ This theory would place the blame for excessive eating on all sorts of fetal, infantile, childhood, adolescent, and adult emotional conflicts. If one subscribes to this school of thought and is aware of the number of examples of excess weight in the audience at a medical convention, he is forced to the conclusion that the medical profession is extremely maladjusted emotionally. Then we have the reasonable concept that the American people are the best-fed people in the world and have at their command the most food, in its most acceptable forms. We have the highest level of economy in the world and the most ingrained habits of self-satisfaction of any people. This habit of satisfying our tastes by overindulgence of good food is, I believe, the most rational explanation for the great number of patients we must treat for excess weight.

The knowledge of fat and carbohydrate metabolism is rapidly being advanced as more studies utilizing radioactive isotope techniques are reported. It has been demonstrated that, while the total quantity of fat in the body is being reduced, fat has been simultaneously synthesized from carbohydrate containing tagged carbon atoms.⁶ This would indicate the presence of some mechanism under whose control the storage or utilization of carbohydrate and fat is maintained. Metabolism research indicates a complex interrelationship of enzymatic and hormonal influences, stimulated or depressed by changing blood and tissue levels of carbohydrate, fat, and the end-products of their oxidation.

The clinical application of this mechanism to our problem of excess weight can be stated thus: If the carbohydrate intake is held well within the capacity of the tissues to oxidize the pyruvic acid formed from it, then all the carbohydrate ingested can be completely changed to carbon dioxide and water. Restriction of carbohydrate intake removes the stimulus to insulin production, so that the fat-storage activity of insulin will be held to a minimum. The anterior pituitary fat-mobilizing principle will then predominate over the fat-storing forces. Fat will be mobilized from the adipose deposits of the body, oxidized to ketones in the liver, and circulated to the tissues in this easily combustible form.⁷ By whatever dietary method reduction of excess weight is accomplished, this normal mechanism of ketogenesis must be brought into play, for it has long been known that, while carbo-

hydrate can be readily converted into fat in the body, fat cannot be converted into carbohydrate in any significant amounts.

According to Pennington,⁷ Dr. Vilhjalmur Stefansson, anthropologist and arctic explorer, observed that Eskimos were never obese when following their accustomed diet of lean and fat meat but that obesity appeared among them with great rapidity when concentrated carbohydrate foods were introduced. During calorimetric tests at the Russell Sage Institute in 1928, a man lost excess weight while eating a diet of lean and fat meat with a calorie value of 2,000 to 3,000 calories daily. As 80% of the calories in this diet were derived from fat, it was apparent that his body was able to burn more food on this diet than on an ordinary mixed diet.⁸ Kekwick and Pawan⁹ recently reported significant loss of weight on a calorie intake of 2,600 per day, provided this intake was given mainly in the form of fat and protein. These observations, when considered together, would support the idea that a high-fat, high-protein, low-carbohydrate diet should be beneficial, regardless of which mechanism was considered to be the cause of the excess weight—excessive carbohydrate intake or faulty carbohydrate metabolism.

Application of Present Knowledge

To successfully apply our present knowledge of metabolism to the clinic patient with excess weight requires more than a scientific understanding of the chemical and enzyme reaction involved in his make-up. If one is to guide an overweight patient successfully through a program of weight loss and then to maintain the weight, it is necessary to utilize the patient's own emotional drives and personality needs to stimulate and direct his efforts. If a woman decides to reduce because her family and friends urge her to do so, success is not often obtained. However if she decides to reduce to increase her own attractiveness, it is not difficult to carry out a successful program and to obtain and maintain the desired result. The overweight businessman is seldom sold on the idea of losing excess weight by the desires of his wife and family. However, his cooperation is readily obtained when the problem is discussed in terms of efficiency, rates of depreciation of bodily mechanisms, and tables of longevity. The general fact that a 30% increase in weight before the middle decades increases the mortality rates as much as 75 and 80%¹⁰ is one the businessman readily understands, as he deals in factors of obsolescence and depreciation daily in his business.

The need to individualize the approach, to adjust the diet to the patient's taste, to develop the confidence and desire of the patient by simple and

easily understood explanations, and to constantly guide the first few steps of the program are obvious factors for success. Still, the average physician does not bother to carry them out. The most brilliant and studious physician is of no use to his patients unless he can gain their cooperation and guide them through the steps that are necessary for continued good health. It has been found that the cooperation obtained and the results achieved are directly related to the interest and effort expended by the physician. The sure way to be unsuccessful is to have your nurse weigh the patient, then do a rapid physical examination, dash off a prescription for the newest combination of drugs, hand out a printed diet sheet, and say, "Come back in a month and let's see how much weight you have lost."

In general, physicians treat patients with excess weight by prescribing drugs or diet or a combination of these. For patients with simple excess weight, there is no drug available which, when used without additional therapy, will cause a loss of weight. I can find no series of cases reported in which the double-blind technique of medication was employed where results demonstrate effective loss of weight from the use of drugs alone. Thyroid has no effect on weight loss. Amphetamine-type drugs by themselves do not cause loss of weight, and their use in mixtures containing thyroid, bulk-producing substances, and cathartics should be condemned. The appetite-appeasing effect of the amphetamines may be of limited benefit in selected cases when combined with the education in and use of proper eating habits. Especially beneficial are the long-acting forms now available which are combined with sufficient amounts of sedative to avoid side-reactions so common in patients using the amphetamines. I find that Dexamyl Spansules (sustained-release capsules containing dextro amphetamine sulfate and amobarbital) are helpful in establishing the success of a program in the first few weeks, while education and diet adjustment are being established. Rarely do I use the rapid-acting forms of appetite-appeasing drugs.

Natural Diets

Proper eating is the natural and complete answer to the problem of excess weight. The words diet and dieting should be avoided. To the patient with excess weight, these words have acquired a meaning associated with a miserable, frustrating experience, ending in failure to reach even the most modest goal of weight reduction. This is especially true with patients who have had previous experience with total reduction of food or low-calorie diets in which starvation was obtained by counting calories. Starvation can result in nothing but failure for two very sound reasons. First, starvation reduces weight,

not by selective reduction of adipose deposits but by wasting of all body tissues. Starvation is accompanied by weakness, loss of energy, lethargy, constipation, and other unpleasant side-reactions, and, when the starvation diet is discontinued, the excess weight is regained. Second, starvation makes no effort to correct the original cause of excess weight. Therefore any success obtained must be maintained by chronic undernourishment, with the attendant long-range disastrous consequences common in malnutrition.

That the usual low-calorie diet is rarely successful is readily understood in the light of our present knowledge of carbohydrate and fat metabolism. A low-calorie, low-fat diet is usually unsuccessful due to the ease with which the carbohydrate present is converted into fat by the body coupled with the fact that the presence of carbohydrate suppresses the fat-mobilizing ability of the pituitary gland and increases the fat-depositing activity of insulin.¹⁰ Also, this type of diet is usually deficient in bulk, as its caloric value is derived from concentrated type foods; hence, a constant feeling of emptiness accentuates the patient's desire to eat. With low-calorie diets, no effort is made to reeducate the patient with respect to eating habits, so that, if normal weight is attained, the original defect in eating habits remains uncorrected. To be successful, any method of reduction of excess weight must correct the basic underlying cause which led to the original weight gain.

It is possible to lose weight without counting the calorie intake, without being weak, hungry, lethargic, irritable, and constipated. There is no magic or mystery, no fancy rules to follow, and the entire program may be successfully conducted without radical change in one's normal routine. True, there are many small items that enhance the speed of weight loss, but the key to long-term success is the simple return to normal eating habits. Normal eating habits might be described in technical language as adhering to a high-protein, high-fat, low-carbohydrate diet.¹¹

Several years ago, while I was considering a personal problem of excess weight, it became evident that huge numbers of calories in my daily total came from three to four large glasses of milk, two to three bottles of soft drinks, numerous slices of bread, and an educated taste for cookies, candy, and sweets in general, all of which are concentrated carbohydrates. Cereal grains, historically, were cultivated in order that limited agriculture areas might supply food to support population densities not otherwise possible. They are concentrated forms of food, readily assimilated by the body, containing small residue of bulk, and so may be eaten in quantities far in excess of the calorie needs without sen-

sation of fullness. All carbohydrate foods and most drinks fall into this category, either by virtue of their origin or the reaction of the body to them. Milk is actually a liquid infantile food, the use of which man has carried over into his adult life and which, in general, satisfies the definition of concentrated carbohydrate.

The simplest to prepare and most easily obtainable high-protein, high-fat, low-carbohydrate diet and the one that will produce the most rapid loss of weight without hunger, weakness, lethargy, or constipation is made up of meat, fat, and water. The total quantity eaten is not important, but the ratio of three parts of lean to one part fat must be maintained, as any decrease in the fat portion will reduce the weight loss. Few people can consume 12 oz. of lean meat and 4 oz. of fat three times a day. Usually, within two or three days, the average will be about 6 oz. lean meat and 2 oz. fat three times daily. I have yet to find a patient on this diet who complained of not having enough to eat, of tiredness, weakness, or constipation. The type of meat and method of cooking are immaterial, although cured or so-called luncheon meats are less effective. Few meats have adequate fat naturally present, so fried suet is added to maintain the proper ratio. Black coffee, clear tea, and water are used without restriction. Reduction of salt, while not required, will increase the speed of weight loss. From a practical standpoint, two to four weeks is about the limit a patient will continue this diet, so, at the first complaint, it is modified by the addition of all 3% and 5% fruits and vegetables for the sake of variety. This produces sufficient change to maintain patient cooperation for a long time, with continued weight loss and without disagreeable side-effects.

For patients who eat away from home and for maintenance of weight in patients who have completed weight-loss programs, we use a simple rule to direct their eating. They are allowed meat with fat, vegetables, fruit without juices, and no added salt but other seasoning to taste. They are instructed to eat their meat and fat first, using a salad seasoned to taste for variety; to follow with vegetables, including potatoes; and to complete their meal with fruit for dessert. This provides a diet high in protein and fat, moderate in carbohydrate, and containing large amounts of bulk and a moderate amount of salt. To illustrate the use of this rule, for dinner this evening order a rare steak, baked potato, chef's salad with Roquefort dressing, spinach, cauliflower or stringbeans, and black coffee. Eat the meat with the salad; follow with vegetables and potatoes to satisfaction; ignore the rolls and fancy dessert; drink water, black coffee, or plain tea.

Reeducation in Eating Patterns

In conjunction with the modified meat, fruit, and vegetable diet I use, in selected cases, a long-acting appetite-appeasing drug for the first few weeks while educating the patient into the proper method of eating. This, I find, gains the cooperation of the patient and provides time to reeducate him in his patterns of eating and to adjust food items to his individual needs. I prescribe a small number of capsules, check the patient's weight regularly, discuss individual eating problems, and answer questions. Once progress is established and the patient becomes aware that the loss of weight is the result of proper eating habits, the withdrawal of medication has presented no problem. Rather than list the details of the composition of food, I endeavor to show the principle by which successful weight reduction can be obtained and weight maintained. This is a matter of education of ourselves as well as the overweight patient to cultivate more natural eating habits which, if followed, will correct the basic cause of overweight without the intolerable suffering of restrictive starvation-type diets.

In this paper, as with patients, I purposely refrained from discussing the rapidity with which weight is lost. On any diet, no matter how restrictive, there may be several days of actual weight gain before the diet's effect becomes apparent. Also it is well known that when weight loss occurs it does not follow a constant day-to-day pattern. Actual weight loss occurs in bursts, interspaced with periods of near-stationary weight, but the over-all pattern is a predictable one and should average approximately 1.5 lb. per week or 6 to 8 lb. per month. On the strict meat, fat, and water diet, this loss is often increased 100%. The more moderate diets are most practical for long-term use. Patients are instructed to weigh themselves at weekly intervals, using the same scale, at the same time of day, with the same stage of dress and to record the date and weight in a notebook.

For women, and they comprise the vast majority of dieting patients, the phenomenon of weight gain associated with menstruation is explained, and its appearance in the patient's weight chart is noted. With all patients, the reasons for weight loss in sudden bursts is discussed—that fluid, shifting from its relatively stable intercellular position through the cell wall to the extracellular space, where it becomes available for excretion from the body, is not a continuous process, and that periods of sudden weight loss occur at irregular intervals which correspond to this shifting of body fluids in response to the diet.¹² The whole process of educating the overweight patients and establishing and maintaining a more normal pattern of eating habits entails discussing all of the factors which may be present

in a particular case. This cannot be done by the use of mimeographed instructions, diet sheets, or prescriptions. To those who are especially interested in detailed instructions for patients, I suggest you refer to those outlined by Pennington.¹³

Summary

The patient with excess weight not caused by disease must be dealt with as an individual whose excess weight may be due to excessive carbohydrate intake or a disturbance in his carbohydrate metabolism. Evidence from widely different sources, when examined in light of recent metabolism studies, seems to justify the use of high-protein, high-fat, low-carbohydrate diets for successful loss of excess weight. There are apparent defects in the rationale of the commonly used low-calorie restrictive diets, and there should be a return to a more natural type of diet. Drugs may be used, but their defects should be considered. Common foods such as cereals and milk are excellent, but, in my way of thinking, they have no place in the diet of the overweight individual.

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