TREATMENT IN GENERAL PRACTICE

This article is one of a series on the management of some of the metabolic diseases met with in general practice. The first group of articles on Treatment in General Practice, thirty-five in number, was republished in book form last March by H. K. Lewis & Co., and a second volume will appear in the autumn.

THE TREATMENT OF OBESITY

BY

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The accumulation of excess of fat, in that it always tends to reduce physical efficiency and not uncommonly to imperil life, should be regarded far more gravely than is generally the case. Now although there are a considerable number of different causes of undue rotundity, yet in practice the majority of cases result from excessive food intake, and deserve, therefore, our chief attention. Thus most people over the age of 40 are too fat, although at first glance they might be passed as normal. Fat creeps insidiously into the abdominal wall and the enclosed viscera, producing the middle-age spread as its first sign. At this stage treatment is a simple matter and unassociated with any danger. It may consist of either exercises or reduced food intake, or preferably both.

Most exercises advised for fat people are almost useless, and in many cases very wasteful of physical effort for the result achieved. Thus the contortions made familiar to us from our young days by the gymnasium instructor often produce powerful biceps, a deep chest, and strong abdominal recti. They leave out of account entirely the importance of the oblique muscles of the abdomen and the quadratus lumborum. It is the weakening of these muscles, however, which is responsible for the loss of waist line, pendulous belly, and constipation of those possessed of a redundant paunch. Another objection to current bathroom exercises is that they can be practised only in strict privacy, for their employment in the street would inevitably lead to an observation cell.

Suitable Exercises

What, then, are the exercises which we should advise? In the first place, they must involve all the main muscles of the abdominal wall and pelvic floor. Secondly, it should be possible to carry out some of them, at any rate, *during working hours* without attracting undue attention. In my opinion those described by Hornibrook in *The Culture of the Abdomen* are far and away the best. This book is a better prescription for abdominal obesity, and for that matter for constipation, than any drug or combination of drugs. The principle is this: the abdominal muscles can be contracted and relaxed at will without causing gross movements of the trunk. The viscera, however, are thus kept in healthy turbulence, and fat deposits over and in these muscles steadily disappear. The action is much the same as that which produces contraction of the quadriceps femoris without accompanying extension of the knee-joint.

First, the patient should be taught to pull his abdominal wall in and out while standing and while sitting. This activates the recti chiefly, but also to some extent the obliques. Secondly, he should learn to exercise the obliques and quadratus lumborum by standing and drawing the hips and lower ribs together, first on one side then on the other. This is more difficult to learn and at first involves more movement, but in time the action can be mastered so that the lateral and posterior abdominal

muscles are alternately contracted and relaxed with but little motion of the trunk. Again, they can be carried out eventually in a sitting posture. The patient should be taught to appreciate what is happening by placing his finger-tips over the muscles to be exercised. By this means he will grasp the scheme much more quickly and carry it out more efficiently. Thirdly, the pelvic floor should be exercised by alternately drawing up and relaxing the anus. As a sharp contraction of the relevant muscles takes place in both sexes at the end of defaecation and of micturition it can be explained in this way without difficulty. The reason for these exercises is that the pelvic floor is usually weakened in the obese and tends to the production of incontinence of urine in the female, constipation, rectal prolapse, and piles.

Lastly, the back must not be forgotten. All fat people eventually develop a bad stance, and a healthy abdominal wall cannot be achieved if its main point of attachment is weak and warped. Insistence should thus be placed on the importance of carrying the head and body erect as a positive means to the desired goal. Now although many other excellent exercises have been devised, yet only those described above can easily be carried out from time to time during the day. The muscular contractions can be performed while the patient is travelling, while waiting for a bus, sitting at a desk, and even at the dinner table, without exciting comment. The great secret of successful exercises is that they should be capable of being performed at frequent intervals until they become a habit. This is obviously of far greater value than a quarter of an hour's intense boredom of "bedroom jerks."

Effective as the abdominal contractions are they in no way exhaust the patient, and can thus be carried out by the fattest person, who would be rendered gravely ill by attempting any of the more common violent exercises. When should these exercises be advised? Clearly, to all fat people. But particularly one should use one's opportunity as a doctor to catch the disease at its inception. The complacency with which the middle-aged accept increasing girth is deplorable, and only their doctor can warn them of the danger without the risk of incurring their displeasure.

For those also afflicted with fat arms and neck the same principle of static muscular contractions can be applied. It is noteworthy that fat will not accumulate over a muscle which is frequently used. Observe, for instance, the well-shaped legs of the fattest glutton who has not yet settled down to the almost perpetual recumbency of an over-replete boa-constrictor. The great muscle of eating—namely, the masseter—is a remarkable exception to this rule.

What to Eat

Whereas most people have themselves to blame for the fat which encumbers them, one must admit a large element of bad luck (if such a term may be pardoned) in many. This refers, of course, to an inherited predisposition to fatness. Such people may eat small meals and yet put on weight. Others of lean stock may be possessed of the grossest appetites and yet escape unscathed. The explanation of this is not clear. It may be a matter of complete absorption of foodstuffs in the one and

incomplete absorption, possibly occasioned by rapid transit, in the other. Yet again, glandular deficiency may play a part. However, though the problem is interesting, it does not appreciably affect the nature of the treatment. In these persons a strict dietetic regime is essential, as also in the obviously gluttonous. For all but the most obstinate cases the following dietary (modified from *Obesity* by Leonard Williams) will prove amply sufficient. Weight is lost at the rate of about three to four pounds a week.

On Waking.—A glass of water, Vichy water, or a cup of tea with a teaspoonful of milk or a slice of lemon. Saccharin if required.

Breakfast.—Tea or coffee with two teaspoonfuls of milk. Saccharin. Sole or haddock, or a boiled or poached egg. One slice of dry toast Grape-fruit (no sugar), orange, or apple.

Luncheon.—A glass of water, 4 oz. of chicken, or tongue, or beef: no gravy. Vegetables, fresh or boiled, as given below. One slice of toast thinly spread with butter. Fresh fruit, except banana, grapes, and currants.

Tea.—Tea with lemon and saccharin (if required).

Dinner.—A glass of water. Meat soup skimmed of fat. Fish. 2 to 3 oz. of game or lean meat (except pork). Vegetables, as below. One slice of brown bread. Fresh fruit, as at luncheon. Black coffee.

Vegetables Allowed.—Green vegetables (except peas), celery, seakale, asparagus, salsify, and artichoke leaves.

Condiments Allowed.—Worcester and anchovy sauces, pepper, mustard, vinegar, horse-radish, salt (see later).

Alcohol Allowed.—A tablespoonful of whisky a day or a wineglass of dry Hock or Moselle.

No food of any sort must be taken between meals or at bedtime.

It is popularly supposed that drinking with food increases the tendency to put on fat. There is an element of truth in this. Apart from the rare cases of obesity due to water retention, in which the total fluid intake must be restricted, it is unnecessary to limit the amount of water taken by fat people. The reason why drinking with meals may aggravate obesity is that by washing down the food it encourages further excess. On a standard dietary such as that mentioned no difference is observed as the result of taking fluid before or with food.

Drug Therapy

Many popular saline purgatives are lauded for their weight-reducing properties. In most cases of obesity their only action is to hurry food through the intestinal tract and thus reduce the total absorption. It is, in short, a method of taking away with one hand that which has been given with the other. As free purgation is very deleterious to the health the method has nothing to recommend it.

The administration of thyroid gland is the only mode of glandular therapy as yet worthy of serious consideration. Theoretically thyroid should be prescribed only for those suffering from thyroid deficiency. In general this is a good rule to which to adhere, but owing to the fact that even in the normal person thyroid administration will produce some loss of weight its use must not be absolutely condemned provided that it is given with circumspection. The initial and limited loss of weight in healthy persons is due to increased water excretion. In people fat from any cause this is more marked, and in the almost pure cases of water-retention obesity thyroid can be of great value even though the basal metabolic rate is normal. In fatness associated with the menopause there is often evidence of thyroid deficiency, although this may not be the chief causative factor. An increasing lethargy, dulling and falling out of the hair, and failing memory, are suggestive signs, and when they are present thyroid should be used and will be of value even in spite of a normal basal metabolic rate.

Thyroid (*B.P.*) 1/2 grain before breakfast and dinner should form the initial dose. The patient's pulse rate and symptoms must be taken as a guide to increased dosage. Thus attacks of palpitation, or extrasystoles (especially at night), or a pulse rate persistently 20 beats per minute above the previous average, are to be taken as evidence of excessive dosage. In the absence of such signs the dose may be increased every three days by 1/2 grain twice daily. This increase should be continued either until signs of intoxication appear (in such, reduce the dose by a grain daily) or until the acceleration of weight loss induced by thyroid administration falls off to become almost imperceptible. This remark indicates an important point in the treatment of the obese—namely, the necessity of keeping a graph of weight loss (this the patient can do) and of charting the weight taken on the same scales in the same clothes, or preferably naked, at the same time every three days at least.

Obesity due to Endocrine Deficiency

Apart from myxoedema, which is characterized by sub-normal temperature and pulse, dry and falling hair, loss of outer eyebrow, sluggish mentality, waxy facies with malar flush, and peculiar infiltration—especially about the eyes and supraclavicular regions—spontaneous endocrine deficiency can rarely be referred with certainty to a monoglandular disease. It is probably true to generalize to the extent of accusing the pituitary gland of producing nearly all grossly fat children, and of the fatness which may arise after childbirth. At the menopause the ovary, pituitary, and thyroid vary in their degree of complicity in individual cases. In every instance, apart from hypothyroidism, *the main line of treatment must be dietetic.*

WATER RETENTION

Brief mention has already been made of a rare type of obesity largely due to water retention. This again is probably the result of some failure of the pituitary gland in its water-regulating mechanism, but it is important to recognize it because ordinary dietetic treatment will fail to reduce weight. The patients are usually young (12 to 30 years) and have a peculiar pallor not unlike that of parenchymatous nephritis. They are podgy and pasty, but do not pit. Their appetites are small, and on a diet of low calorie value—for example, 700 calories a day—loss of weight is trivial and not sustained. The urinary output is low—for example, 1 pint a day—yet the intake is normal. If these patients are put to bed the urine output invariably rises within a day to three, four, or five pints, and they lose weight. Such, then, are the characteristics of the water retainer. The accumulation of fluid is a big factor in excessive weight production, but not solely so.

Treatment consists of (1) limiting fluid intake to about 1½ pints a day; (2) limiting salt intake by excluding salt from the dietary, including the processes of cooking; (3) giving a diet of low calorie value as follows:

Six large bananas.

600 c.cm. of skimmed milk.

1/4 of medium-sized cabbage or lettuce.

Divide the above into three or four meals. Loss of weight will be about 1/2 lb. daily. After two to three weeks substitute for two bananas, two eggs and a little butter and green vegetables. Fish and lean meat a week later.

(4) Mercurial diuretics may be administered—for example, salyrgan 1 c.cm. intramuscularly twice a week for six weeks. This may be repeated four times a year if necessary.

OTHER CASES

In the other cases of endocrine deficiency if the first diet given in this paper is ineffective the patient should be put to bed, except for two hours up a day, and kept on the following for a month to six weeks:

Breakfast.—One egg and 1 oz. of bread.

Lunch.—One egg and 4 oz. of vegetables as below.

Dinner.—One cup of bouillon and 3 oz. of lean meat; 4 oz. of vegetables as below.

Vegetables Allowed.—Lettuce, cucumber, spinach, asparagus, endive, celery, mushrooms, tomatoes, sprouts, watercress, cauliflower, radish, cabbage.

Water, as much as needed. No fried foods. A teaspoonful of sodium bicarbonate daily.

It is essential that all the foods mentioned in this diet should be taken. Once a week the patient may have one meal of any food he wants. This is not so generous as it sounds, because after a few days of strict dieting the capacity for eating a large meal is lost. However, a "red-letter day" is something to look forward to, and encourages the victim in his perseverance. The reason for putting him to bed is that virtual starvation is more easily borne when at rest. Furthermore, he can be strictly controlled—a point of importance in children. In adults it is permissible to allow work to be continued on this diet, provided, of course, that there is no evidence of cardiac weakness.

Half to one pound a day is lost on this diet. It is apt to produce constipation and pimples if continued too long. As a rule a month is quite long enough, and during this time five drops of halibut-liver oil should be taken daily. An initial loss of weight of one to two stone having been achieved the following less drastic diet should be prescribed:

Breakfast.—One portion of fruit. One egg and white of one egg. Coffee, tea, bread substitute (for example, Heudebert's breadsticks).

Luncheon.—3 oz. lean meat, fish, or fowl. Half pint 5 per cent. vegetables.* One portion fruit.

Tea.—Tea.

Dinner.—3 oz. of meat, fish, or fowl, and vegetables as at lunch.

9.30 p.m.—Half a cup of orange juice. One oz. bemax.

In addition one and a half glasses skimmed milk daily (for calcium content). One capsule haliverol t.i.d. (for vitamin content).

A fruit portion = one orange; half grape-fruit; one medium apple; two medium peaches; one small pear; one cup strawberries; one cup blackberries.

When the desired weight is attained the diet should be slowly increased by adding butter, bread, and other vegetables. With a little care it is surprisingly easy to avoid return of obesity.

Dangers of Treatment

With the measures outlined above there are no dangers of vitamin deficiency, acidosis, or thyroid poisoning. There remains one fear, however, and that is for the heart. A rapid reduction of weight in the very fat patient of 50 or more may induce myocardial failure. For such persons only the first diet in this paper should be used, and even then a watch should be kept for a rising pulse rate, shortness of breath, and faintness, as signs of too rapid withdrawal of fat. As a useful precaution I regard the prescription of 10 minims of the *B.P.* tincture of digitalis thrice daily as helpful. Should signs of heart weakness appear, a tablespoonful of glucose should be given twice daily for three days, the diet raised to full normal, and the patient kept in bed for a week. Dieting may then be recommenced, but on a modified scale. Such eventualities are very rare, and indeed the plethoric, panting, corpulent caricature is far more likely to regain liveliness and slender lines from dieting than to suffer from a cardiac catastrophe.

*Lettuce, cabbage, cucumbers, spinach, asparagus, marrow, celery, tomatoes, brussels sprouts, cauliflower, radishes, mushrooms, rhubarb, scarlet runners, French beans, grape-fruit.

OBESITY: ITS CLASSIFICATION AND CAUSATION*

BY

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Obesity is a disease which has been known to man from time immemorial, but it has not been until the past twenty or thirty years that a proper realization of the importance of the disease has been reached. The meaning of the word itself, which first appeared in the English language in the early seventeenth century, is not without interest. It takes its origin from the word "obesus," which is the past participle of the Latin word "obedere." The meaning of "obesus" passed through several stages in Roman times and signified, in turn, "that which has eaten itself away," "that which has eaten itself fat," and finally it was occasionally used to indicate fatness, laziness, or slothfulness. It can be deduced that overeating, fatness, and laziness have been associated together from Roman times, and the fact that some English writers of two hundred years ago were aware of the disadvantages of overweight is shown by the following quotation from Pope's *Dunciad*: "He might truly be called a martyr to obesity." This dates back as far as 1728, but the word obesity was rarely used in any writings before the nineteenth century. During the present century, however, the public have taken the keenest interest in the subject and this has helped to stimulate the medical profession to give the disease the most careful consideration.

Definition of Obesity

It is not an easy matter to give a rigid definition of obesity. While gross forms of the disease are easily recognized, mild degrees are less readily appreciated. Indeed it is a matter of some difficulty to ascertain the ideal weight of any individual. We are all familiar with the average tables of weight, but there is some considerable difference between the figures given by the various authorities. A woman of 20 who is 65 inches in height should have a weight of 125 lb. according to Wood,¹ 127 lb. by the tables given by Lawrence,² and 129 lb. by the tables of the Metropolitan Life Insurance Company.

A somewhat different standard is adopted by some writers which is called the optimum or ideal weight. Lawrence and other authors compute this for diabetics by subtracting 10 per cent. from the average weight. While this rule may be excellent for the great bulk of diabetics who are past the third decade of life, exception should be made for young diabetics as they are especially liable to fall victims to tuberculosis. It is universally recognized³ that individuals under 35 years are much better insurance risks if slightly above the average weight. A small reserve of fat seems to protect the individual against the infectious diseases such as tuberculosis, pneumonia, etc., which are the chief causes of death in the first decades of life. After taking various factors into consideration the Life Extension Institute¹ has issued tables by which the woman mentioned above should have an ideal weight of 134 lb. Even with the above large variations only the sex, age, and height have been taken into account. No allowance is made for any difference in the size of the bony skeleton from individual to individual, whereas it is a matter of everyday experience that two men of the same age and height may vary by a stone in weight and both be perfect specimens. To overcome these difficulties various calculations to give ideal weights have been suggested which are based on

* Part of an address given to the Birmingham Branch of the British Medical Association.