

The ideal dietary consists, then, of these three foods in just such quantities and proportions as will serve to replace waste tissue and allow for growth, and will supply enough heat and energy for the day's work in the surroundings in which the person happens to be at the time.

It follows from this that, as all these factors are constantly varying, the diet must vary both in kind and quantity too. It is easy to see how this comes about. Take the proteids first; a child or young man has not only to replace waste, but has to take in enough proteid to allow for growth as well, whereas a middle-aged person, who has finished growing, has only to replace waste. If such a one eats as much proteid—in proportion to his body weight—as he did when young, he has too much proteid floating about in his economy, and he is apt to become gouty, or develop high arterial tension, as we have seen in previous articles. Whenever there is too much taken in of any kind of food, there is always trouble after a time in disposing of the excess.

If, however, we eat too much carbohydrate or fat, we get a chain of troubles, which may lead, amongst other things, to obesity, and that is what we have to deal with now.

With an ideal diet, all the carbohydrate, and nearly all the fat, is burnt up in the body completely. That is to say, nothing is left but carbonic acid gas and water, the former being excreted in the breath and the latter by the skin and kidneys. Only enough fat is left to cover the body sufficiently to act as a protection against cold, the precise amount depending, therefore, on the temperature of the climate in which the person is living at the time. Obesity, therefore, is due primarily either to an unduly large intake of carbohydrates and fat in the food, or to something wrong with the mechanism which should burn these up completely to water and carbonic acid gas. In either case, more fat is left than is required, so it is stored up under the skin and round certain internal organs.

In health, the greater part of this burning up takes place in the muscles. When these are in action, combustion is at its best, and this is the reason why athletes and soldiers on a forced march require an amount of sugar, and, in colder climates, of fat also, which would make an ordinary person sick. The man who never eats sweets when he is occupied in sedentary work at an office (because he knows from experience that he is bilious if he does), when he goes for his holiday and—let us hope—takes plenty of exercise, often eats jam and starchy milk puddings with avidity and advantage.

Similarly in summer we do not consume so much butter, bacon and other fats as we do in winter.

In the large majority of cases, obesity is due to eating too much starch and sugar and fat, combined with a deficiency of bodily exercise. There are, however, people who are fat for none of these reasons, but because some change, of the nature of which we really know very little, has taken place in the mechanism of their metabolism, whereby they do not sufficiently burn up the small quantity it may be of carbohydrates and fat that they do take. A common example of this is the temporary fatness that so often follows pregnancy, especially after a first child, and the reason here is that during pregnancy changes necessarily take place in the mother's economy, in consequence of her having to provide for the child as well as herself, and it often takes a little time to return to the normal afterwards.

Coming now to the symptoms of obesity, the first point is that obesity is not merely a question of size. What matters is not how fat the patient is, but to what extent the fat that he has is causing him inconvenience. Many people who appear to be distinctly corpulent suffer but little inconvenience, and others begin to feel ill directly they put on weight at all.

We can divide the symptoms of obesity into two classes, those of which the patient is conscious, and those which are not so apparent, but which render him less fit to live an ordinary life than his thinner brethren.

The commonest symptom in the first class is laziness, a disinclination for exertion, which itself results from the fact that the body is heavier, and movement therefore requires more effort. Shortness of breath is another sign, and a most important one, because it indicates that the limit of safety is being reached, and that the patient is passing from the stage where fatness is only a nuisance to that when it becomes a danger. Another sign is somnolence. Many fat people, like the classical fat boy in "Pickwick," sleep the greater part of the day as well as by night.

Many fat people suffer also from dyspepsia of the type that is characterised more by pain some considerable time after food than by loss of appetite, and is due to excess of hydrochloric acid in the stomach. Constipation, too, is often associated with obesity.

The most important symptoms, however, are those of which the patient is not really conscious, and the first of these is the condition known as fatty heart. Here there is a deposit

[previous page](#)

[next page](#)