

HEALTH EDUCATION ABOUT OBESITY

The results of a two-year follow up

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IN SEPTEMBER 1962 an overweight clinic was started in a cottage hospital to study the problems of obesity. Meetings were held three times a month and were unusual in that the general practitioner, the hospital and the public health service were all integrated.

The role of the general practitioner was threefold:

1. To select patients.
2. To co-ordinate the hospital staff and public health service.
3. To study the results, and infuse curiosity about research into the paramedical workers.

All patients who attended the general practitioner's surgery or who were seen at home for any condition and who were also found to be overweight, were invited to attend the clinic. Only one patient requested to be treated individually in the surgery and did not attend group meetings at the hospital. The hospital provided the premises and administrative and nursing staff for the clinic and maintenance of records. Later a dietician became available.

The public health service provided money and a health visitor who held regular practical visual demonstrations of food values and who also demonstrated the complete diets. After a time satisfactory liaison with the county ambulance authority was established, and this enabled many patients to attend who would have otherwise been unable to do so.

This paper reports the results of the first two years' work.

Method

Education was given by a series of talks, demonstrations, and films which were arranged by the general practitioner and given by the health visitor. The order in which these were given varied from time to time depending upon the needs and numbers of patients attending. It soon became apparent that great flexibility was needed as new patients were continually being enrolled. Each instructional

period lasted about 90 minutes of which half was taken up with weighing and informal discussions. Occasionally the dietician asked to see small groups of not more than five patients who had some special problem in common.

The talks were entitled:

1. The overweight club, its aims and purpose.
2. "Why Diet?" the danger of obesity.
3. "The Psychology of Fasting."
4. Food values. Proteins: Fats: Carbohydrates.
5. Calorie counting. The 1,000 calorie diet: Other methods of dieting,
6. The cost of dieting.
7. The use of drugs.

The demonstrations covered:

1. Protein exchange.
2. Carbohydrate exchange.
3. Special slimming sweets for home cooking.
4. Meals for a day using food allowances.
5. Meals for a week using food allowances.

The films shown were:

1. "What is Margarine?"
2. "Room for Hygiene"
3. "Talking about Kitchens"
4. "The Brink of Obesity"
5. "Nothing to Eat but Food"

In addition a regular newspaper called *Slimming News* and a "Health and Beauty Diary" were made available. (Both of which are obtainable commercially.)

Progress

In the first seven months, 29 patients had been enrolled and had lost a total of four cwt. of surplus fat. Nine of these patients had reached their ideal weight.

It became manifest that there was a general need for instruction in food values, and discussions revealed many errors in belief and prejudice held by the patients. These were fostered by tradition, mass media, and modern advertizing techniques. The role of the general practitioner, the health visitor, and the nursing staff, and dietician became clearer.

An interesting observation was that the more junior the staff in charge of the weighing and informal discussion period, the freer the discussion became by the patients on their personal problems at that time.

Careful thought was given to the design of a record card and those cards from which the following results were taken were designed after the first year's practical experience. Therefore the first half of the results which follow are of a retrospective nature,

and have been transferred from earlier records. However, the figures have been rechecked three times and are considered valid.

There were 40 cases: 32 women and 8 men.

Findings

The definition was adopted that a successful reducer was one who had lost a third or more of their surplus weight, and who had maintained this at the end of the follow-up period.

The longer a man has been overweight the more difficult it is to reduce him. However this is not true for women.

TABLE I
AVERAGE AGE AND WEIGHT

	<i>Males</i>	<i>Females</i>
Average age	60 yrs.	41.6 yrs.
Amount of surplus weight	31.6 lbs.	56 lbs.

THE RESULTS OF TREATMENT

TABLE II
ALL CASES

	<i>Totals</i>	<i>Males</i>	<i>Females</i>
Successful	8	3	5 (4*)
Partly successful†	7	—	7
Failures	25	5	20
Totals	40	8	32

TABLE III
AFTER 50 WEEKS

	<i>Totals</i>	<i>Males</i>	<i>Females</i>
Successful	4	2	2
Partly successful	3	—	3
Failures	15	4	11
Totals	22	6	16

TABLE IV
AFTER 100 WEEKS

	<i>Totals</i>	<i>Males</i>	<i>Females</i>
Successful	1	1	—
Partly successful	1	—	1
Failures	8	3	5
Totals	10	4	6

TABLE V
AVERAGE DURATION OF OBESITY IN YEARS
BEFORE TREATMENT AND ITS RESPONSE TO
DIETING

	<i>Males</i>	<i>Females</i>
Successful	22.1	27.7
Partly successful	—	28
Failures	51.3	25.7

(*One patient attended only once when it was found she had a toxic goitre and further reduction of weight contraindicated.)

†By partly successful is meant those who whilst not losing one third of their excess weight have lost an appreciable amount.

The more often the patient is weighed the more likely they are to lose weight; but women seem to require less encouragement than men (table VI).

Table VII suggests that the greater number of meals eaten per day the more chance there is of success.

TABLE VI
AVERAGE NUMBER OF WEIGHINGS

	<i>Males</i>	<i>Females</i>
Successful	26	18
Partly successful	—	14
Failures	14	11

TABLE VII
THE NUMBER OF MEALS PER DAY

Meals per day	2	3	4	5	6
Successful	1	2	4	—	1
Failures	2	6	4	—	—
Totals	3	8	8	—	1

Age of onset. In 12 out of the 40 cases obesity was first noticed before the age of 21. In the men it appeared in three out of the eight cases and in women 11 out of 32.

Heredity. The influence of heredity appeared to be great. In men four out of the six had an obese father. (The records were incomplete in two cases.) Also five out of six men had an obese mother. (Records were incomplete in two further cases.)

Most of the siblings of the male patients were fat, and all the siblings were fat in four out of the six families for whom records were complete.

Amongst the 22 women for whom there were complete records six had both parents obese and a further 13 had one parent obese. The tendency to have such a high proportion of siblings obese amongst the females was not so apparent.

General impressions

1. *When to treat.* It was felt important to treat obesity in childhood. It was an impression that obesity also tended to occur early in married life in both sexes and during pregnancy and after childbirth in women. At these times we should be aware that fat is likely to accumulate.
2. *Who to treat.* It is essential to treat all obese diabetics, and it is suggested that the mothers of obese children should also receive instruction as should the wives of obese husbands.
3. *The effects of age upon treatment.* Increasing age at the start of treatment did not seem to be a bar to success. Indeed one should not despair of starting treatment in the elderly.
4. *The initial amount of surplus weight.* The initial amount of

surplus weight should not deter one starting treatment, even in cases of gross obesity. The average initial amount of surplus weight which the successfully treated lost was 47 lbs. whilst that of the failures was not much greater at 54 lbs.

5. *Motivation.* More research is needed into motivation and its assessment in relation to the treatment of obesity. The jockey and the model never put on weight, they would lose their job if they got fat.

Discussion

The amount of medical care occasioned by obesity was measured statistically in the National Morbidity Survey. (General Register Office 1958-1962.) In this study 100 practices undertook to record every item of service for a year. The consultation rates per 1,000 population are shown in table VIII.

TABLE VIII
CONSULTATION RATES PER 1,000, FOR OBESITY

<i>Sex</i>	<i>All ages</i>	0-	15-	45-	65 +
Males	8.8	2.0	7.8	16.0	10.9
Females	52.2	5.4	58.3	90.6	30.5

This is a considerable burden of work, yet when the results of treatment are studied over a two-year period it is clear that present methods of caloric limitation have little permanent value. Moreover, there seems to be little significant gain in the long term by adding drugs. Silverstone (personal communication) in a long-term study of obesity in general practice using drugs, found that only 11 out of 32 obese women continued treatment for a year and that the defaulter rate was high. None of the cases reviewed in this paper received any drug for longer than a few weeks. Obesity is a life-long problem, and the prescription of drugs over long periods does not seem to be justified. It would appear from this present study that when intensive health education is given under almost ideal conditions, the majority of our patients can be said to be suffering from intractable obesity. In this work, follow up presented no problems as the health visitor was able to pay domiciliary visits to ascertain the weight and progress of those people who did not attend.

In an attempt to control intractable obesity Duncan and others (1962) imposed a period of total fasting in hospital for periods of 4 to 14 days in 50 cases. This expensive procedure resulted in a loss of about 2.5 lbs. per day and a sense of well-being. There was, however, no long-term follow up to substantiate their statement

that the patients subsequently undertook a one or two day fast as outpatients, "which reassured them that they had a means of effectively combating what had formerly appeared to be a hopeless situation." As a short-term measure complete fasts can be used effectively in dealing with problem cases of obesity, but should not be used indiscriminately. Pregnancy, peptic ulcer, hepatic insufficiency, infections and uncontrollable labile diabetes are absolute contraindications. In a sense fasting proper means complete abstinence from both food and drink but in this medical sense it means complete abstinence from food alone. Water, weak tea or coffee, artificial sweetening agents, and drinks of negligible calorie content such as oxo, and bovril are generally allowed. Vitamin supplements may be given in therapeutic doses, but are usually prescribed to fend off a sense of mortification in the doctor who is often confused about the distinct psychological attitudes to fasting. For example, there is the fasting of prohibition which is supposed to ward off danger; this danger may be in the food itself, or in the act of eating, or in some other evil influence.

Health educationalists might well explore this attitude further. Then there is the strict ascetic fasting when abstention is supposed to have positive consequences for those who practice it; this may induce a state of exhilaration or even delirium, and it is thought by some to favour contact with the supernatural. Was it this that lead Duncan to record the sense of well-being in his patients? Finally there is fasting in the sense of mortification, of which Gandhi was the most striking example. In his hands it became a weapon of moral violence. He was convinced that voluntary abstention was a sign and source of strength, a sentiment with which we in the West would not readily agree.

Fasting has been used as an introduction to the treatment of obesity by Bloom (1959). Patients were again expensively hospitalized, but limited activity was allowed. The weight loss was 2.6 lbs. per day in four males, and 2.7 lbs. per day in five females. This exceeded that which could be explained by caloric energy expenditure.

Follow-up studies were not of long duration and his conclusions were:

1. Patients could lose weight.
2. Food was definitely the major cause of their obesity.
3. They had not been eating simply because they were hungry.
4. They had ample will power to go without food. (One supposes as long as they were in hospital.)
5. That having fasted for a week a reducing diet gave ample satisfaction.

Surely these conclusions are irrelevant for the long-term management of obesity? Who can afford hospitalization every time they want to fast? Who has the discipline to do it at home? Inasmuch

as we do not yet understand why many obese people become fat, and tend to treat them all in a similar fashion regardless of the aetiology without studying their different behaviour patterns, we must admit to being bad doctors.

By taking a careful history it should be possible to distinguish at least four clinical types:

1. The glutton.
2. Those with a family tradition of eating well.
3. Those unfortunate people whose metabolism is such that they put on excess weight despite a reasonable food intake.
4. The compulsive eater who often becomes depressed when food is denied or restricted.

The relationship between obesity and mental health is becoming clear since Stunkard (1959) described 'The Dieting Depression'. Of 100 consecutive obese patients admitted to a nutrition clinic, 72 had been found to have made previous attempts at dieting, and of these 54 reported that such attempts had been associated with untoward depressive reactions. A special clinic was set up to examine some of these patients in more detail, and it was found that the 'Dieting Depression' was characterized by a short period of intense anxiety followed by a long period of depression. Anxiety was often preceded by a period of elation during which the decision to diet was made.

This emphasizes the vulnerability of obese persons to depression during intensive weight reduction, and suggest that reducing diets should be prescribed only if careful evaluation of the patient's past and present life adjustment is made. Certainly from the point of view of practical therapeutics it was found in this series that five of the women who had had symptoms of depression were amongst our most abysmal failures. Perhaps depression should be regarded as an absolute contra-indication to dieting—breaking the diet constituting a built-in safety valve. In one case in this study impotence in the husband resulted in over-zealous attempts to reduce his wife.

Returning again to the work in Philadelphia, Stunkard (1961) in looking again at the Mid Town Manhattan Survey found that there was a close relation between obesity and social class. After the publication of his work there was some controversy about his use of the patients' own estimation of their height and weight. However, subsequent correspondence seemed to establish that there is a reliable correlation between the patient's estimation of both height and weight, and figures found on actual measurement. The point being that one should now ask the question: Is obesity normal in some of the lower social class? And if this is so—to what extent? A simple piece of collective general-practitioner research could easily establish the answer.

Pawan (1959) mentions a classification of obesity in two main types: Regulatory (simple or exogenous) and metabolic (constitutional or endogenous). The former having large appetites and manifest overeating, the latter associated with metabolic abnormalities. In experimental animals the same two types of obesity are recognized.

Regulatory obesity is produced by hypothalamic lesions, and metabolic obesity is seen in genetically determined obesity in mice. These two forms of obesity are inter-related, and they have counterparts in man. Both are associated with increased insulin activity.

An objection to this simple classification is that it takes no account of the social factors which we have seen are so important. These factors may be amenable to health education.

It may be that metabolic disorders ensue in some cases where regulatory obesity has been present for an appreciable period, but the exact relationship of heredity to this process is not yet clear.

It is suggested that further observation on the relationship of the long-term results of the treatment of obesity be made in relation to:

1. Race and social class.
2. Age of onset of obesity and social status at time of onset.
3. Duration of obesity.
4. The initial amount of surplus weight.
5. A detailed break down of the family history of obesity.
6. Mental status.

This could possibly be ascertained by some of the well-known psychiatric screening procedures such as the Minnesota Mental Psychiatric Questionnaire, or the relevant questions or sections of the Cornell Medical Index Health Questionnaire.*

Summary

It will be seen that the problem of obesity is broadly not the same for men as women. Women get fatter much younger, much quicker, and remain fatter for a much longer period of time than do men.

A two-year follow-up of the value of education in the treatment of obesity has shown that, contrary to the old claim of the nutritionists it is not really feasible to change the patterns of eating which people have in the hopes that they may get slim and remain that way. More research is needed into motivation and the behaviour of

*Brodman, K., Erdmann, A. J., Lorge, I., and Wolff, H. G. (1960). *The Cornell Medical Index Health Questionnaire*. Cornell University Medical College.

Dahlstrom, W. G., and Welsh, G. S. (1960). An M.M.P.I. handbook. *A guide to use in clinical practice and research*. Minneapolis, University of Minnesota Press.

Hathaway, S. R., and Meehl, P. E. (1951). *An atlas for the clinical use of the M.M.P.I.* Minneapolis, University of Minnesota Press.

fat people. Knowledge of how to relate these findings to social status and to a change of social status is needed. Future research must show how the doctor can readily distinguish those patients who will successfully reduce their weight from those who are unable to do so. There is a need to gain more understanding about the ways in which men and women in particular acquire attitudes towards the ideal figure, and to measure this concept in influencing the regulation of their weight. We must measure the ages at which this belief is acquired in differing social classes.

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Disinfecting the clinical thermometer. R. J. HOUSE, M.R.C.S., L.R.C.P., and R. J. HENDERSON, M.D. *Brit. med. J.* 1965. **2**, 1414.

A series of tests were carried out to see whether effective disinfection of clinical thermometers could be achieved by thorough wiping in cotton wool soaked in disinfectant. One hundred and fifty-seven patients with clinical septic throats were selected, 106 of whom had positive throat swabs for one or more pathogens. Of ten disinfectants tested the following were found satisfactory—10 per cent ethyl alcohol, Hibitane 2 per cent, Milton (1 in 10), Roccal, T.C.P., and Lipeptol.