Therapeutic Fasting in Morbid Obesity

Long-term Follow-up

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• The weights of 207 morbidly obese patients were reduced via prolonged fasting. Half the patients fasted for close to two months, losing a mean of 28.2 kg; one fourth fasted for less than one month; and the other fourth fasted for more than two months, with a mean 41.4-kg loss. This latter group was heavier initially, and more than 50% attained near-normal weight. Patients with onset of obesity in childhood had the lowest tolerance for fasting and the lowest success rate in attaining normal weight. Over a 7.3-year follow-up period in 121 patients, the reduced weight was maintained for the first 12 to 18 months. Subsequently, regain proceeded equally in all groups irrespective of length of fast, extent of weight loss, or age at onset of obesity. Regain to original weight occurred in 50% within two to three years and only seven patients remained at their reduced weights. Regain to greater than original weight was more common in childhood-onset obesity.

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Total fasting was first recommended as an effective treatment for obesity by Folin and Denis[1] in 1915. Since it has been demonstrated that long fasts can be conducted with relative safety,[2] it was hoped that prolonged abstinence from food may break established dietary habits and thereby improve long-term prospects. Recently, a number of lay publications have claimed dramatic results, prompting many requests for physician-supervised fasting. Few long-range studies of weight reduction by fasting have been published. In this review a critical assessment of late results was carried out. Degrees or duration of obesity and the length of the fast were examined in relation to the magnitude of weight loss and duration of reduced weight maintenance.

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PATIENTS AND METHODS

Over a period of several years, 207 obese subjects (192 men and 15 women) were hospitalized for weight reduction by fasting. The mean age was 42.2 years, and the mean weight 143.0 kg. Mean excess weight for patient groups with childhood- and adult-onset obesity was not statistically different. Fast periods of about two months' duration or longer were planned. Patients still overweight after fasting were encouraged to reduce as outpatients, but were not supervised on a regular basis. The goal was a reduction to less than 30% excess, because at lower weight morbidity and mortality are not significantly increased.[3] Weight data were obtainable in 121 subjects of the original group, covering a mean follow-up period of 7.3 years.

RESULTS

Changes in weight are summarized in the Table. Half of the patients were able to fast for close to two months, one fourth tolerated the fast for more than two months, and one fourth for less than one month. This latter group included 17 patients who, for various reasons, never actually commenced fasting and others who discontinued the fast prematurely because of inability to adhere to the regimen. This group was distinguished by the largest percentage of subjects obese since infancy (below age 5).

The longer the fast periods, the more extensive was weight loss and the more frequent normalization. Of the 207 patients, 79 reduced to within 30% of their ideal weights in one uninterrupted fast. Although losses in the others were substantial, many were still markedly obese after the fast, and further dieting was necessary. In the group unable to fast for more than one month, dieting produced only a 4.8-kg additional loss and only 26% attained near-normal weight. Those fasting for more than two months were able to shed another 10.0 kg with calorie restriction.

Maintenance of Reduced Weight

Fast-induced weight losses were maintained for 1 to 1½ years by the great majority of the 121 patients. This was the case regardless of extent of weight loss, age at onset of obesity, or duration of the fast. Thus, normalization of weight or a more recent onset of obesity or a longer total fast did not result in longer periods of freedom from obesity. After the early postfast interval of weight stability, a steady regain was observed in virtually all patients (Figure). Fifty percent of the group had reverted to the original admission weight within two to three years, and nine years later fewer than 10% weighed less than they had originally. Rates of regain to original weight levels were the same for patients with adult- and childhood-onset obesity. Of the 121 subjects, only seven had maintained reduced weights over the entire follow-up period.

Regain beyond original admission weights was more common among the childhood-onset obese (42%) than among those whose obesity developed in adult life (25.6%). After regain, 25 patients were readmitted for a second fast period, which also failed to result in lasting benefits. Adherence to the second fast was less faithful and weight losses less extensive.

COMMENT

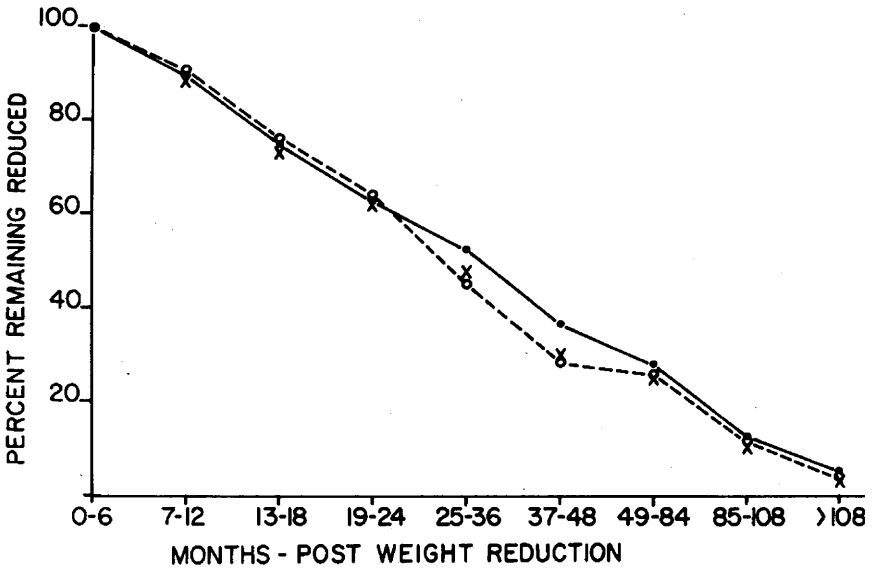
Three out of four patients tolerated fast periods approaching or exceeding two months, attesting to the acceptability of total fasting. A two-month fast turned out to be a reasonable and desirable goal since shorter periods (< one month) were marked by poorer results while longer fasts (> two months) achieved only moderately better results. The observation that the heaviest group had fasted longer, lost more weight, and reached the lowest weight excess suggests that this group was more determined to reduce because the greater degree of obesity had caused more serious problems.

The group obese since infancy had the poorest record with regard to adherence to fasting. The dropout rate was highest and the smallest number of patients reached near-

Mean Weight Changes in Three Groups Fasting for Varying Periods

Group	N	Duration of Fast, Days	Baseline Weight, kg	Baseline Weight Excess, %	Weight Loss With Fast, kg	% of Subjects Fasting to < 30% Excess	Minimum Weight After Fasting Plus Dieting, kg	Weight Excess After Fasting Plus Dieting, %
1	49	< 30	138.6	78.4	14.1	22.4	120.0	53.6
2	101	30-60	140.0	89.9	28.6	36.6	105.1‡	41.8
3	57	> 60	151.0*,†	96.7	41.4	54.4	105.0‡	35.9
Total	**207**	47	143.0	89.0	28.2	38.2	108.4	43.1

*Difference from group 1 is significant at $P < .05$.
†Difference from group 2 is significant at $P < .01$.
‡Difference from group 1 is significant at $P < .001$.



Percent of patients remaining at reduced weights at various time intervals following accomplished weight loss. Solid line represents 60 subjects with obesity onset before age 21; broken line, 42 subjects with obesity onset after age 21. X represents mean experience.

normal weight. The longer duration of the obese state and overeating in the earliest period of life may have caused a pattern of food dependency more difficult to overcome than a habit acquired later in life. These findings differ from those of Johnson et al[4] but agree with those of Mullins[5] and Young et al,[6,7] who described greater weight losses in those who developed obesity as adults.

In several reports, the frequency of successful fasts and maintenance of reduced weight varied from 16% to 60%.[8-13] However, in these, the follow-up periods were considerably shorter, explaining the differences in success rates. At equivalent follow-up intervals the results in the present study were comparable. Continued intensive medical supervision throughout the follow-up period may have been another factor for the observed disparities.

Only a handful of patients kept a near-normal weight, and this required continuous conscious dieting. The rate of regain was quite uniform, regardless of baseline weight, degree of weight loss, length of the fast, or duration of obesity. Many patients thought that the temporary weight loss was worth the effort since it had resulted in better health and quality of life. Reemployment was facilitated and earnings increased.[14] In the treatment of the Pickwickian syndrome, or to make necessary surgical procedures possible and safer, this approach was decidedly useful.[14] It is of interest that normalization of weight with its social and medical benefits and the prolonged abstinence from food failed to alter eating habits or prevent regain. More recently, substantial losses have been reported with protein-sparing "modified fasting,"[15,16] but long-term follow-up data are not available as yet. It remains to be established if semistarvation on an outpatient basis, including measures to modify eating behavior, will enhance long-term results. The experiences in this group have not been encouraging and, in morbidly obese subjects, the addition of behavior modification may have only limited benefit.

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