

# Treatment of Obesity in Family Practice

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This paper describes the experience of a senior family practice resident in managing obesity using behavior modification techniques. Weight reduction was begun and continued by 9 of 32 identified obese patients. Patients who were successful in losing weight were those who kept accurate intake diaries, returned for follow-up, and had made prior attempts at weight loss. Patients who were unsuccessful in losing weight were those who kept incomplete intake diaries, had no continuing physician-patient relationship with the investigator, and had made no prior attempts at weight loss. The method of management described allowed efficient use of physician time so that the time required was well within the limits set by a busy family practice setting.

Obesity is estimated to be the most prevalent, potentially controllable health problem in the United States.<sup>1</sup> Considerable effort devoted to the management of this problem has resulted in well-documented successes.<sup>2</sup> Application of proven effective treatment measures has been prevented by preconceptions of failure<sup>3</sup> as well as frustration over apparent rejection by patients of the physician's best therapeutic efforts.<sup>4</sup> This paper examines the results of a modest treatment program for obesity designed and tempered by experience in a family practice setting. Prior objections of lack of patient compliance and excessive requirements of physician's time are discussed and methods of overcoming these objections are presented.

## Materials and Methods

The patients described in this paper are a portion of the population served by the Fairfax Family Practice Center, Vienna, Virginia, one of five community-based training programs for family practice residents under the auspices of the Medical College of Virginia. Participants in the study were all the patients in whom the investigator had made the diagnosis of obesity between September 1975 and March 1977. Some were self-referrals for the problem of obesity, but most were not. The diagnosis was based on general appearance and was confirmed by reference to the Metropolitan Life Insurance Company Tables of Average Weights. At the time of diagnosis, an attempt was made to enlist the patient in a follow-up program specifically for obesity. An appointment was made for a follow-up visit, usually with a discussion about the need for long-term care, and slow and sustained weight loss rather than crash dieting, plus the necessity for a lifelong change in eating habits for weight maintenance rather than roller-

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coaster weight changes. Patients were then weighed and their heights measured. They were instructed to keep a detailed diary of all oral intake with specific reference to meals, snacks, liquids, and "nibbling." The diary was required to show the time of day, type of intake, an estimate of amount of intake, and any particular feelings identified immediately before, during, or after the intake. Instructions for the next visit included an admonition to wear approximately the same clothes to each appointment, thus preventing the necessity for complicated guesses about how much weight to subtract for heavier shoes, heavier pants, or a different dress. Patients were encouraged to weigh only on the investigator's office scales to insure consistency and to avoid the false security or discouragement which could result from apparent weight change or lack of change on the basis of different scales or frequent measurements. Intake during the recording period was to be approximately the same as in the prior three to four months or the last period of stable weight, whichever was longer. An attempt was made to schedule follow-up appointments at the same time of day to avoid factitious weight gain or loss with changes in gastric, bowel, or extracellular fluid space content. A brief explanation was given of the relationship between stable weight and stable intake. Patients were encouraged to consider the two-week recording process as only the recording of typical intake while maintaining a constant weight. They were informed that a change of two pounds in either direction from the weight recorded at the first visit could invalidate the record because that would indicate either a decrease or increase of intake from usual amounts and would make future diet planning impossible. Table 1 shows the comparison between stages of treatment and the numbered office visits.

At the second visit, a more complete record of historically significant events was obtained approximating guidelines established by other investigators.<sup>4</sup> Significant social, sexual, and personal circumstances were explored at this time and at other visits. The weigh-in was repeated and questions were asked to assess the degree of compliance with prior instructions. The patient's dietary record was inspected and a general discussion started about the patient's perception of the relationship between food intake and body weight as well as the difference between his/her estimated

intake before and after the diary was started. There was almost universal surprise at the true volume of intake.

Instructions given at the second visit, as outlined below, followed guidelines established in previous studies by several authors.<sup>4,5</sup> An attempt was made to solidify the patient's beginning realization that weight control depends on total caloric intake control and that long-term success requires a permanent change in eating habits. Reminders of the usual long course of gradual weight gain led naturally to the expected long course of gradual weight reduction, with a realistic goal of an average loss of one pound per week. The concept of weight loss by eating a maintenance diet was presented as an alternative to weight loss by sudden starvation. The rationale for that method was based on prior failures in the patient's earlier attempts at weight loss or the failure of dieting friends. The need for practice over a long course to maintain a change in years of old eating habits was emphasized. If not asked, the patient's anticipated question of "How will I know how much to eat?" was answered by an explanation that any change in intake must result in change in body weight, and the amount to be eaten can only be determined by personal experience.

Examination of the patient's intake diary suggested obvious changes by elimination of "binge" eating, changing sizes of portions from two or more of any food serving to only one, and diminution of divisible portions by one half. When presented with information about the relative food value of carbohydrate, protein, and fat, patients readily saw the benefits of substituting carbohydrate or protein for fat and the rationale for trimming fat and avoiding foods with high fat content. Any obvious fatty food preference (butter, cream, bacon, etc) was pointed out as a possible deterrent to weight loss unless modified, and suggestions were made as to possible substitute carbohydrates or protein. Other hints included:

1. switching from 10 or 11-inch dinner plate to a 6 or 8-inch *salad plate*;
2. chewing and otherwise *eating slowly*;
3. eating a *salad before meals* to satisfy appetite and then relying on the meal to satisfy hunger;
4. confining eating to planned times, usually *three meals and a snack per day*;
5. going to *bed earlier*;
6. drinking water or other noncaloric drink when

Table 1. Progress Table

Patient's Initials	Prior Attempts At Weight Loss?	(1st Visit) Obesity Reason For Initial Contact?	(2nd Visit) Kept Diary?	(3rd Visit) Initial Loss?	(4th Visit) Followed Up?	(5th Visit) Continued Loss?	10% Weight Loss?
NS	-	-	-				
BM	+	-	-				
LB <sub>a</sub>	-	-	-				
KD	-	-	-				
RC	-	+	-				
DH	-	-	-				
VB	-	-	+	-			
SH	-	-	+	-			
LC	-	-	+	-			
CT	-	-	+	-			
LD	-	+	+	-			
MM	+	-	+	+	-		
MD	+	+	+	+	-		
WS	-	-	+	+	+	+	-
SC	+	+	+	+	+	+	-
CY*	-	-	+	+	+		
RP	+	-	+	+	+	+	
FC	+	-	+	+	+	+	
LB <sub>b</sub> *	-	-	+	+	+	+	
EL	+	-	+	+	+	+	+
JK	+	-	+	+	+	+	+
TB	-	-	+	+	+	+	+
EB	+	+	+	+	+	+	+

+ = yes  
 - = no  
 \*Patients CY through LB<sub>b</sub> were still in treatment at the completion of this study.

hungry, since *thirst* is sometimes interpreted as hunger;

7. *eating foods relatively low in food value* (ie, lettuce, pickles, raw carrot, cucumber, string beans, plums, ice cubes, bouillon) at times of greatest hunger.

The key phrases in these suggestions (italicized above) were written on the patient's intake diary to serve as memory aids. Final instructions were to continue the intake diary, aiming for a 25 percent reduction in total intake, to return for a revisit in two weeks wearing the same or similar clothing, and to be expecting a 3 to 5 lb weight loss.

The second visit was counted as the beginning of treatment. The instructions given at the first two visits could be given in the amount of time it takes to read them slowly as recorded in this paper. Prior studies indicate that a nurse may be able to give these instructions with no diminution in therapeutic benefit.<sup>6</sup>

The third visit almost always revealed: (a) profound surprise and satisfaction at the initial weight loss; (b) irritation at the degree of hunger induced by decreased intake; and (c) great motivation to continue weight loss if only the hunger could be controlled. Taking advantage of the initial success,

the expected plateaus in the stair-step pattern of weight loss were explained. The hunger problem was dealt with directly as an unavoidable early unpleasantness in dieting but predictions of diminished severity relieved considerable anxiety. Depending on the degree of comfort the patient felt in regulating the new level of intake, the instructions for the next two-week interval included discontinuation of the intake diary and reassurance that not much weight loss would be expected in the next two weeks, even if food intake was as little as the prior two weeks. Discouragement was anticipated and the patients were encouraged by reminders that things would become easier with practice, results would be long-term rather than rapid, and the most difficult time of any diet is the third and fourth weeks.

At semiweekly subsequent visits, brief reviews of altered intake (holidays, relatives' visits, special occasions, dining out, etc) were used to further solidify the now clearcut relationship between intake and weight. Careful probing of unsuspected alterations in intake was occasionally productive. Rapid weight loss of more than two pounds per week was discouraged as indicative of starvation dieting rather than maintenance dieting. Biweekly visits continued until the target body weight was reached. Planned follow-up includes quarterly weight checks.

## Results

The diagnosis of obesity was made in 32 patients, including two teenagers. The age range of the patients was 13 to 75 years with a mean of 43 years. There were 12 males and 20 females. In nine patients with whom the investigator had established no continuing relationship, the diagnosis was made as a peripheral finding during a visit for episodic care. None of these nine returned for follow-up (see Figure 1). Of the remaining 23 patients, 18 did not represent obesity as one of their primary concerns until the subject was broached by the investigator. Of the 23 patients, six did not return after initial instructions were given, leaving 17 patients, seven males and ten females, who kept intake records and returned for at least one follow-up visit (74 percent). These 17 patients are represented in Figure 2, showing body weights in pounds plotted against time in treatment. Re-

sponses to the treatment program were variable (Figure 1), including total, partial, or nonparticipation as shown. Four patients (17 percent) achieved ten percent body weight loss. Nine patients continued to make significant progress to the time of publication.

Twenty of the original 32 patients failed to reach the stage of initial weight loss corresponding to visit number three in the follow-up procedure. Of those who failed to lose weight initially, 15 (75 percent) had failed to keep their intake diaries as instructed. Of the 17 patients who kept their diaries correctly, nine (53 percent) began and continued weight reduction, three (18 percent) had only initial weight loss, and five (30 percent) had no net weight change. One of the five patients with no net weight change actually lost 9 lb, but that loss was in association with gastrointestinal bleeding requiring a three-week hospitalization (LC). Another of the four with no net weight change was lost to follow-up (SH) after he suffered a debilitating cerebrovascular accident.

One patient (EL) not only lost 42 lb but also stopped abusing alcohol after one week of inpatient treatment in a hospital alcohol detoxification unit. Three patients (LB<sub>n</sub>, LD, and RC) had no obesity problem when first seen but developed that as a sequel to successful treatment of depression, which was the primary diagnosis in all three.

Of the 23 patients who returned for one or more follow-up visits related to obesity, 11 failed to lose weight initially. These 11 patients seem to be different in that only one of them had made any prior attempts at weight loss, while 8 of the 12 who at least began weight loss had made some prior attempts. Even so, it is apparent that lack of prior attempts at weight loss will not allow prediction of failure in any patient. An initial failure may even be an encouraging event and may be necessary to convince a patient that weight is unavoidably related to caloric intake.

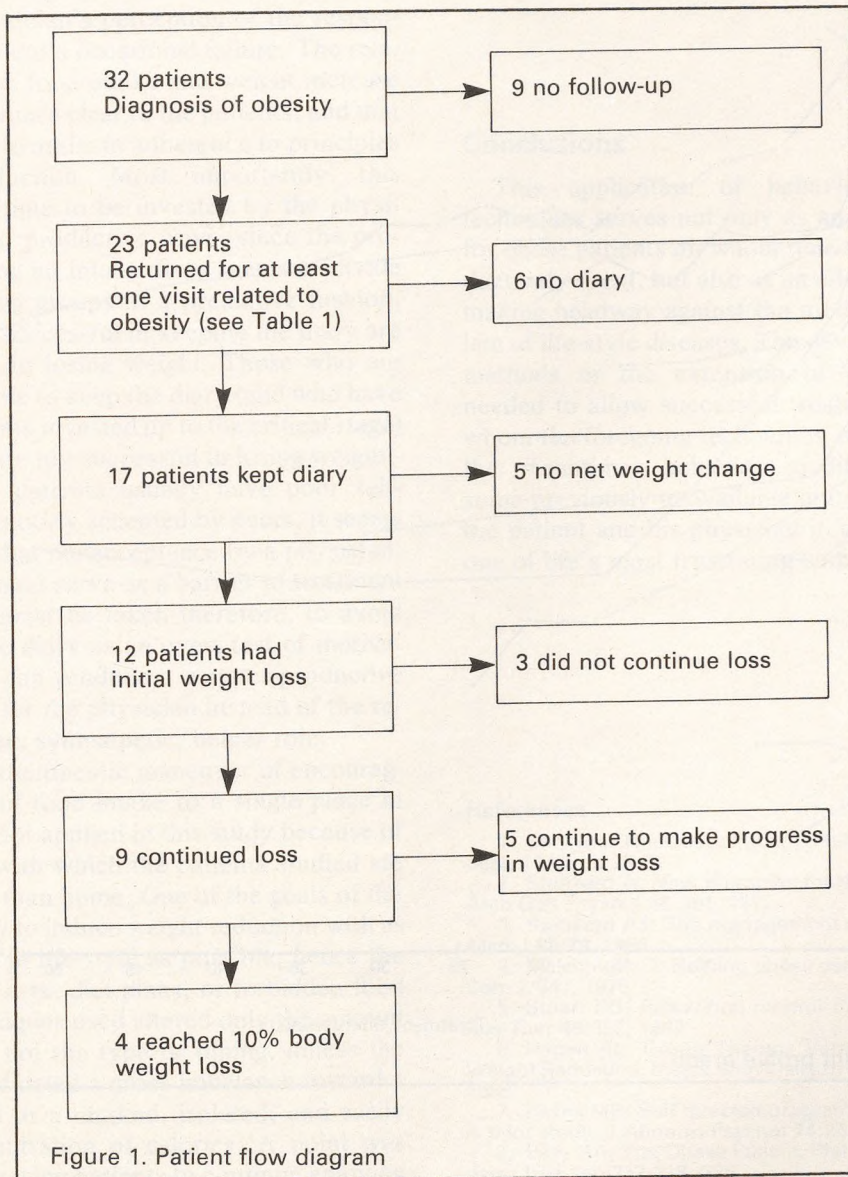
## Discussion

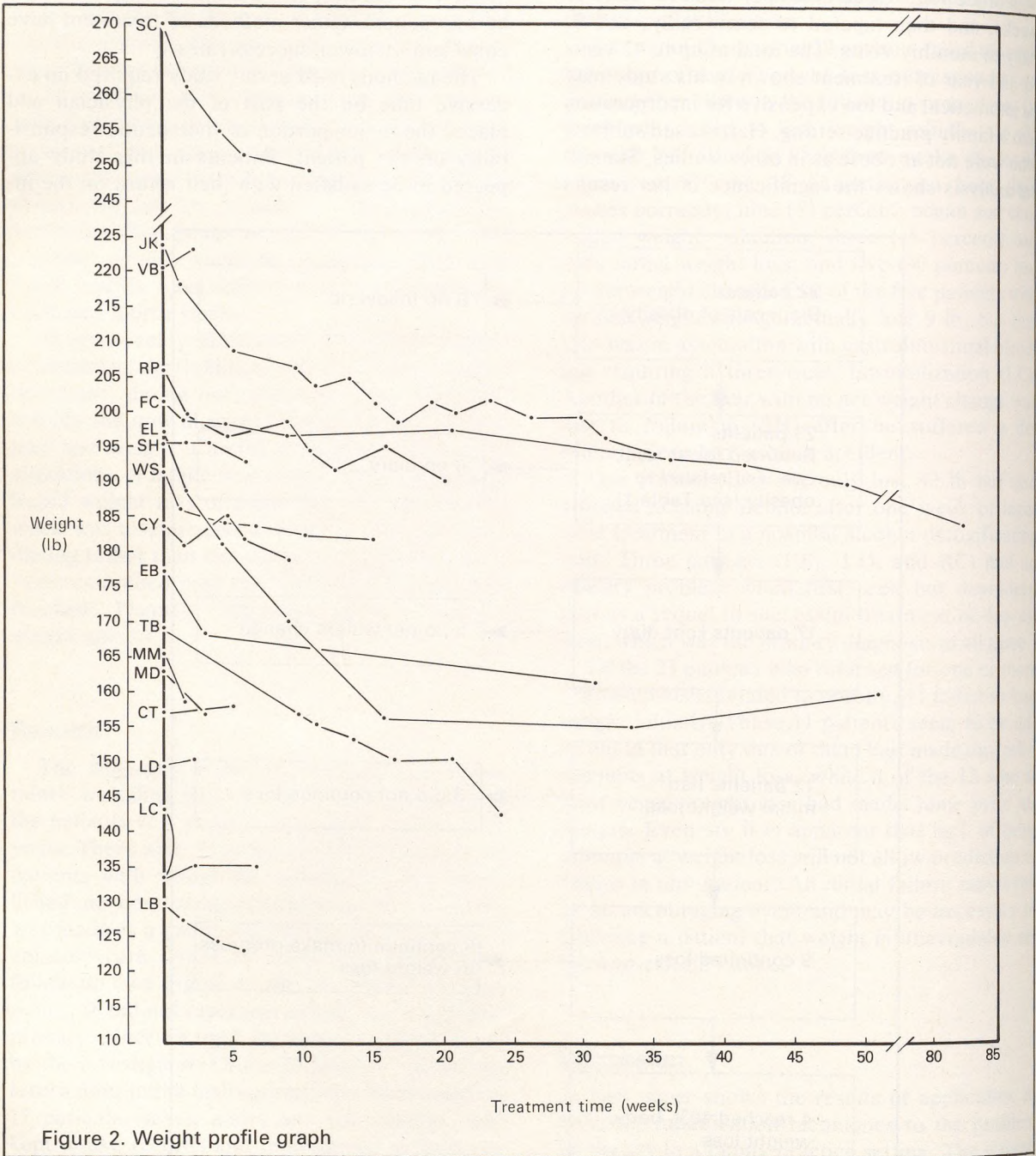
This paper shows the results of application of behavior modification techniques to the problem of obesity in a family practice setting. The overall success rate (success being defined as beginning and continuing weight loss) was 28 percent if all patients are included, and 39 percent if only the

patients with whom a continuing relationship was established are included. This compares to the 80 percent success rate of Stuart<sup>5</sup> and the 21 percent success rate of Harris.<sup>7</sup> Stuart's program began with office visits three times per week for 12 to 18 weeks, and then tapered to semiweekly, and finally to monthly visits. The total of up to 41 visits for the year of treatment shown in his study may be impractical and too expensive for incorporation into a family practice setting. Harris used subjects who were not as obese as in other studies. Statistical analysis shows the significance of her results

despite smaller weight losses. Defining success in her study as beginning and continuing weight loss rather than losing a certain number of pounds results in a higher success rate, but the 16 treatment sessions in the first two months of treatment may be impractical. Other methods of treatment have considerably lower success rates.<sup>8</sup>

The methods used in this study required no excessive time on the part of the physician and placed the major portion of therapeutic responsibility on the patient. Patients in this study appeared to be satisfied with their return on the in-





vestment resulting from paying regular office visit charges for follow-up visits related only to obesity. The modest success obtained is important, showing that a very prevalent problem can be managed in such a setting. Perhaps more important are the timesaving elements of the treatment coupled with the degree to which frustration on the part of the physician can be avoided. The patient assumes responsibility for intake management and has the pleasure of success when he/she adheres to the techniques outlined. The physician can adopt a supportive, encouraging role rather than a condemning, discouraging role, thereby markedly limiting the physician's perception of the responsibility for a patient's occasional failure. The relationship between food intake and weight increase or decrease becomes clear to the patients, and that insight appears to assist in adherence to principles of weight reduction. Most importantly, this method allows time to be invested by the physician in the most productive ways, since the process of recording an intake diary seems to divide patients into two groups in a predictive fashion. Those who are successful in keeping the diary are also successful in losing weight. Those who are not willing or able to keep the diary (and who have required little time invested up to the critical stage) are those who are not successful in losing weight.

Since obese patients usually have poor self-images and are poorly accepted by peers, it seems fair to assume that nonacceptance by a physician, in any form, would serve as a barrier to treatment success. Care must be taken therefore, to avoid using the intake diary as an overt test of motivation since that can produce a counter-productive adversary role for the physician instead of the required accepting, sympathetic, helper role.

The proven therapeutic maneuver of encouraging restriction of food intake to a single place in the house was not applied in this study because of the frequency with which the patients studied ate at places other than home. One of the goals of the study was to try to induce weight reduction with as little alteration in life-style as possible; hence the lack of caloric lists, diet plans, or forbidden food lists. The techniques used altered only the amount of food eaten, not the type or timing, unless the usual intake indicated a gross imbalance toward a particular food or a marked, isolated, and easily changed concentration of calories. A point was made of encouraging patients to continue enjoying

meat, potatoes, desserts, and candy, but to reduce the quantity consumed. Some patients discovered skewed intake patterns and, of their own volition, changed them, but most continued to follow their previously established food preferences.

The patient flow diagram (Figure 1) suggests the necessity for a continuing relationship between the physician and the patient. This supports the concept of a central role for the family physician in the treatment of obesity.

## Conclusions

This application of behavior modification techniques serves not only as an effective screen for obese patients on whom time can be most productively spent, but also as an effective method of making headway against the modern health problem of life-style diseases. The development of new methods or the extension of present ones is needed to allow successful treatment of those in whom the foregoing techniques are ineffective. In the meantime, behavior modification permits some previously unavailable gratification for both the patient and his physician in efforts to control one of life's most frustrating complications.

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