

A SURVEY OF THE POSTOPERATIVE CONSEQUENCES  
OF THE SMALL INTESTINE BYPASS FOR  
MORBID OBESITY

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We hereby recommend that the THESIS prepared under our supervision by Jane Emily DeLoach

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## CHAPTER I

### INTRODUCTION

Obesity is a problem of major importance in the United States. It is considered one of the major health hazards in this country and is conceded to be one not easily treated. Seemingly, it is a simple problem in that an obvious correction is available; consistent and continuous lowered food intake. The obvious solution, however, is too simplistic. Even with the most careful medical supervision and support, the problem most often eludes permanent solution.

The physiologic and psychologic aspects are complex and constitute for the obese person a threat to wellness and productive living. Cardiovascular disease, diabetes mellitus, gout, thrombophlebitis, respiratory problems, stasis ulcers and cirrhosis are but the primary medical threats to the obese. Other effects that serve to cripple the obese are occupational disabilities, emotional connotations, and social stigmata.

The morbidly obese person finds himself in an extreme situation. Extreme situations often require radical solutions. One such solution is the use of surgical intervention to induce weight loss. The small intestine

bypass procedure has been employed in selected cases for nearly two decades. The procedure remains experimental and controversial. Bypass of the ileum is based on well understood physiologic principles. Equally well understood functional complications can be expected and often do occur. A further consideration is that while the problem of grotesque size usually is solved, the underlying cause of the condition, and its implications, may remain unresolved.

Consideration of the use of the small intestine bypass requires exploration of the problem of obesity. Here, the concern is with the morbidly obese. For these persons, their life is dominated by body size. It follows, that election of the bypass, with full knowledge of the possible complications, implies a desperate resolve.

In summary, obesity of all degrees is a prominent problem. Morbid obesity is a health threatening and highly insolvable problem. Exploration of the full consequences of the bypass procedure to the patient represents an area not fully explored.

#### Statement of the Problem

The problem of this study was to explore the postoperative life of patients following small intestine bypass, to identify the actual physical and psychosocial

consequences that occurred as a result of the procedure..

### Purposes of the Study

The purposes of the study were:

- 1) To examine the rationale for the surgical procedure employed in and the pathophysiologic consequences of the small intestine bypass for obesity;
- 2) To systematically investigate the full consequences of the small intestine bypass encountered by a group of such patients, so as, to increase and enhance the understanding of nurses caring for persons electing the procedure.

### Background and Significance

Morbid obesity is a chronic and pernicious disorder. It is "the most common nutritional disorder confronting the physician in this country today (Braunstein, 1971, p. 391)." Furthermore, the nature of obesity is to perpetuate itself, once it has developed. (Wilson et al, 1969).

Few of the numerous weight reduction methods are permanently successful in treatment of the morbidly obese. (Fox, 1972). In a comparison of eight studies reviewed

by Stunkard and McLaren-Hume; Brightwell (1974) found in pooling the samples, that of 1369 persons under medical treatment for obesity, only 5 percent lost more than 40 pounds.

A morbidly obese person has a minimum of 100 pounds excess weight. One estimate states that 100 pounds of fat contains 400,000 calories and that it would take 6 to 12 months of absolute fasting to utilize this number of calories (Fox, 1972).

"When an obese person seeks medical care, his personal tragedy may equal or exceed that of patients with more socially acceptable diseases. The suffering and frustration associated with the obesity, however, may go beyond that of other physical ailments (Kalisch, 1972, p. 1126)." There is considerable evidence to support Kalisch's statement. Maddox, Anderson, and Bogdonoff reported the medical management of obesity to be "difficult and rarely successful (1966, p. 394):" In this study of medical management in an outpatient clinic, findings indicated that physicians perceived obesity as incurable and only slightly improvable.

The etiology and management of obesity represent a complex problem. According to Conrad "overeating implies the existence of an emotional problem" and, being a

"psychological problem, the most effective treatment is psychotherapy (1954, p. 223, 224)." However, following a study of bypass patients, Solow, Silberfarb, and Swift (1974) theorized that the psychosocial disturbances seen in the morbidly obese were as much a consequence of the condition as a cause of it.

Whether or not the cause of overeating is seen as a psychological problem, its perpetuation is compounded by numerous other factors. In a report by Gordon, Goldberg, and Chosy (1963), 27 different metabolic anomalies found with or as a result of obesity were summarized. The group states in their study of obese persons it was apparent "that a number of metabolic anomalies could be demonstrated. . . in which the obese subjects behaved entirely different from normal control subjects (p. 50)."

In 1962, Duncan and his group noted that there had been no effective improvement in the treatment of obesity. They proposed intermittent periods of total fasting for the management of intractable obesity. The report of this method and its success was accompanied by the caution, that like major surgery and potent drugs, it should be used only in highly selected cases.

Brightwell (1974) reports that, though widely used, diets and drugs produce only temporary weight

reduction. While proposing behavior modification as a new technique of promise, he states that "only some rather heroic measures, such as surgical removal of a portion of the alimentary tract, have generally produced permanent weight loss (p. 52)."

In 1967, an editorial in the Journal of the American Medical Association carried the following statement. "At present there is no surgical method of intestinal bypass for weight loss which is both safe and permanent." Specific reference was made to the jejuno-colic bypass. Continued experimentation with and modification of the bypass procedure resulted in those surgical techniques, which at present, are being widely used. Surgical intervention to induce weight loss in morbid and intractable obesity is intended to be a highly selective procedure.

To summarize, obesity is a complex problem. Methods for permanent solution of the disorder have not been notably successful. Metabolic, psychologic, and social factors are implicated in the etiology, perpetuation, and management of obesity. Surgical intervention to produce permanent weight loss is a radical and still experimental method of management.

#### Definition of Terms

- 1) morbid obesity--a condition in which persons

are either 100 pounds over ideal weight or weigh two or more times their ideal body weight, and have maintained this weight level for at least 5 years (Scott et al, 1970; Payne et al, 1973).

- 2) small intestine bypass--one of several surgical procedures in which most of the small intestine is bypassed whether by jejunocolic end-to-side anastomosis, end-to-side jejunoileal anastomosis, or end-to-end jejunoileal anastomosis.

#### Delimitations

The study was structured in regard to the following delimitations:

- 1) Subjects participating would have had a small intestine bypass for the treatment of morbid obesity performed at least 6 months prior to data collection;
- 2) The subjects would live in the Dallas - Fort Worth Metropolitan area;
- 3) The subjects would be drawn from the case-loads of two surgeons.

#### Assumptions

For the purposes of this study it was assumed

that:

- 1) Obesity is an important medical hazard in that it shortens life expectancy and contributes significantly to the development of numerous physical and psychological disorders;
- 2) The rationale for small intestine bypass is based on two concepts; morbid obesity is a serious disorder, and, longterm dietary controls are usually unsuccessful;
- 3) Election of the radical surgical procedure by the morbidly obese person implies highly significant personal feelings and represents a "last-ditch effort" to control it.

#### Summary

The preceding chapter contains the framework within which the present study operated. The intention of and rationale for the survey have been delineated.

A survey of literature concerned with the development of the small intestine bypass, as well as a brief overview of the problems of obesity, are presented in Chapter II. Chapter III contains the procedure for the collection and treatment of data. The data resulting from the survey appear in Chapter IV. A summary, conclusions, and recommendations are presented in Chapter V.

## CHAPTER II

### REVIEW OF LITERATURE

The review of literature was directed to three areas. First, a general overview of the problem of obesity is presented. Second, the development of the bypass procedure together with the rationale and physiologic implications are reviewed. Finally, two previous studies done concerning the psychosocial consequences of the bypass are summarized.

#### The Problem of Obesity

Obesity lends itself to various quantifying definitions. MacBryde (1964) uses the figure of 20 per cent over optimal weight to describe those persons he considers dangerously or morbidly obese. According to the criteria used for consideration of the small intestine bypass, some consider morbid obesity to be either 100 pounds over ideal weight (Payne et al, 1973) or 2 or 3 times ideal weight (Scott et al, 1970).

MacBryde (1964) estimates 6 million Americans are dangerously obese. Baunstein (1971) reports that approximately 30 per cent of adult Americans are at least 20 per cent overweight. Lindner (1974) numbers overweight

Americans at 60 million.

Precise definitions of obesity are not generally agreed upon. However, these are not necessary for an understanding of the problem of obesity.

In the United States today, obesity is considered to be "one of the more serious health problems" (Conrad, 1954) and one of the "most important health hazards" (Wilson et al, 1969). It is the most common nutritional disorder (Braunstein, 1971) and the most frequently occurring physical abnormality (Conrad, 1954). Obesity is involved in the occurrence of numerous physical disturbances; cardiovascular disease, gallbladder disease, diabetes mellitus, toxemias of pregnancy, arthritis, hypertension, thrombophlebitis, stasis dermatitis, gout, infertility, and menstrual irregularities (Wilson et al, 1969; Conrad, 1954; Fox, 1972).

Obesity is a social phenomenon as well as a physical and psychological problem. Social stigmatization compounds or complicates the psychological factors underlying its causes. Stigmatizing attitudes result in the obese person finding "his condition a constant barrier to attaining the full priveleges, opportunities, and status accorded to others (Kalisch, 1972, p. 1125)."

There are many reasons for the negative social

image imposed on fatness. First, these include the claims relating leanness to good health. Second, obesity is visual evidence of self-indulgence and lack of control. Third, fatness is considered unsightly (Maddox, Back and Liederman, 1968). Finally, in the United States, "overslenderness is equated with attractiveness (Bruch, 1969)."

These negative connotations are not the only source of conflict for obese persons. Further conflict occurs in trying to rid themselves of the unwanted pounds. Conrad (1954) has said that obese persons develop a dependence on food, seek escape in food, and use food to narcotize their anxieties. While dieting, they must cope without the pleasure of eating (Weiss and English, 1957).

The stuffing syndrome was defined by Kornhaber (1970) as a clinical entity. It is characterized by hyperphagia, withdrawal, and depression. Hyperphagia is marked by food intake without regard to bodily needs and stuffing (food intake that exceeds appetite). It is a regressive adaptation. Because this is also a "self service" adaptation the person withdraws from a healthier "object oriented" gratification. In order to function in his environment, he interacts on a superficial and de-personalized level. "He presents a facade to the world (p. 582)."

A cycle ensues in which stuffing is a reward to

compensate for the unhappiness. Often the eating behavior arouses guilt feelings. These serve to reinforce the withdrawal. The person may operate on this level for a lifetime.

True clinical depression may result if the stuffing, as an adjustment mechanism, fails to provide gratification. Kornhaber points out that to treat the stuffing syndrome, obesity must be recognized as a chronic illness and psychological support should be provided during the period of withdrawal from food.

Two other eating patterns may be found in obese persons, the "binge-eater" and the "night-eater" (Kornhaber, 1959). The "binge-eater" ingests huge amounts of food in response to specific precipitating circumstances. This is a compulsive reaction and is usually followed by guilt. The person condemns his behavior and often diets, only to regain the weight on another "binge!"

The "night-eater" is a person who takes in large amounts of food during the evening and night. This is often associated with sleep disturbances. Usually he is not hungry early in the day. This behavior is related to mood swings and does not arouse guilt and self-condemnation.

Recognizing the relationship of obesity to medical hazards, Wilson et al (1969) stress that the

emphasis should be on detection and prevention. This is especially true since the nature of obesity is to perpetuate itself, making treatment exceedingly difficult. These writers list thirteen factors leading to the development and perpetuation of obesity. Among these are familial and genetic predisposition, dietetic and metabolic factors, eating habits in which caloric intake exceeds bodily needs, increase in the number of adipose cells with the development of obesity, propensity of the extra cells to be refilled with fat after reduction in weight, and failure of the satiety centers in the regulation of food intake.

Rakoff (1967) discusses the similarity between obesity and addiction. In any addiction, there is a loss of control over appetite. The addictive eater, like the drug addict or alcoholic, uses food to produce pleasure and reduce anxiety, not to satisfy physiologic needs. The treatment of any addiction is difficult and success only follows complete abstinence from the offending substance. Since the food-addict cannot totally abstain from food, he may be thought of as the victim of a "self-sustaining addictive process (p. 1120):"

Conrad (1954) has summarized his study of the psychologic implications of overeating. These are:

1. Overeating implies existence of an emotional problem;
2. Overeating may be used to allay anxiety, obtain gratification, or express hostility.
3. Because the overeater is orally fixated, he regresses to oral mechanisms whenever he is anxious;
4. The individual, feeling discontent or self-pity, may resort to food as a prime source of gratification;
5. Eating may be an expression of hostility;
6. An understanding of the implications of overeating affords the therapist a clue to underlying emotional problems;
7. Since obesity is a psychological problem, the most effective treatment is psychotherapy (p. 223, 224).

Berblinger (1969), on the other hand, points out that psychotherapy is only one factor in the treatment of obesity. He states "all that a summary of the psychological aspects of obesity can actually say with certainty is that many obese persons overeat when they are emotionally upset and, also, that these obese persons manifest more symptoms of emotional instability than the average person (p. 159)."

In a study of college women, Friedman (1959) tested underweight, normal weight, and overweight subjects to determine if psychological differences could be identified. Using a small sample he demonstrated that overweight and underweight women were less objective and more hypersensitive. Social ascendancy was found to be lower in the underweight group. No other significant variations were found. However, no morbidly obese persons figured in the study.

A similar study on markedly obese men was reported by Weinberg, Mendelson, and Stunkard (1961). The eighteen men and normal sized controls were tested for distinctive personality characteristics. No significant differences were found between the two groups. The study presented this conclusion, "the failure to find even suggestive points of difference, however, in conjunction with Friedman's similar negative results with obese women, indicates caution in accepting purported personality profiles in obesity (p. 1036)."

The concept of body image is considered important in relation to obese persons. Gorman (1969) defines body image as "the concept of one's own body, based on present and past perceptions (p. 6)." This concept is modified by ongoing experiences. The image tends to be idealized and not based on perception. Rather, it is a

conception or picture of the body in the mind.

It is important to note that obesity takes two forms in regard to the concept of body image. There is a distinction between juvenile obesity (obesity of childhood or adolescent onset) and simply obesity (adult onset). In studies done, the juvenile onset obese showed disturbances and distortions of body image, whereas, the simple obese did not display such abnormalities.

Craft (1972) stated that "negative feelings about his body, feelings reinforced by society and health professions, may and often do contribute to a lessened self esteem in the obese person (p. 678)." Reinforcing this attitude is the general attitude that fat people could lose weight with enough effort, but they lack the discipline.

Stunkard and Mendelson (1961) reported that there are only two specific manifestations of neurotic behavior related to obesity; overeating and disturbances of body image. The disturbance of body image takes the form of overwhelming preoccupation with the person's own fatness. These people see themselves as grotesque and view the world in terms of their body weight. The writers point out that while this disturbance might be expected in all obese persons, it occurs only in a minority of them. Emotionally stable obese individuals seem to outnumber

the emotionally disturbed. Stunkard and Mendelson found in their research that the image disturbance occurred almost exclusively in the 'juvenile obese'. In view of this the authors questioned why "the entwining of neurosis with obesity creates such a difficult problem (p. 38)."

Stunkard conjectures it may be because obesity is the only condition in which a disturbance in bodily integrity is found coupled with a disturbance in impulse control. Obese persons are considered to be responsible for their condition.

Mendelson (1964) pulls together the puzzle of psychological factors in obesity by placing them on a continuum from the obese person who is emotionally stable, continuing to those persons who eat as a compensation for or as a defense against emotional tensions, to those persons whose eating disorder is the central issue in their lives (p. 1379). There is no common denominator in the emotionality underlying obesity.

Evidence has been cited to support the view that obesity, especially morbid obesity, is a complex problem. It is a psychologic, metabolic, physical, and social disorder. Its management is equally complex.

Gordon (1963) and Duncan (1962) and their groups recommended intermittent fasting under hospital control

in the treatment of obesity. Brightwell (1974) proposed behavior modification for treating the obese. Conrad (1954) recommended psychotherapy as the proper treatment. Braunstein (1971) suggested caloric restriction and increased physical activity with attention to salt and water metabolism. Whatever the approach, the results are discouraging. Weight loss is not attained or the resulting loss is not maintained.

Hilde Bruch has said:

Whatever the inner problems of obese people whose self-regulatory controls are not properly programmed and who feel hopeless and helpless in their struggle to keep their weight within proper bounds, they are compounded and reinforced by the hostile cultural attitude which regards even a mild degree of overweight as ugly and abnormal, and condemns it as a sign of greed and self-indulgence. It is my personal conviction that this hostile attack on weight is a shameful evil that has contributed to overweight and obesity's becoming serious health problems. Whatever the relationship between overweight and life expectancy may turn out to be, there is no doubt that the current campaign against it is damaging in its effect on mental health. (p. 386)

Bruch goes on to say that physicians have participated in the "condemning cultural attitude." Awareness of the underlying physiological and psychological factors should produce a more "tolerant and respectful approach" than a method of treatment directly attacking the weight alone (p. 386).

To summarize thus far, obesity is a complicated problem. A reading of research in this area indicates that positive methods of prevention or successful approaches to treatment have not been forthcoming. Not only is extreme obesity a difficult problem, it is one generally avoided by medical personnel. The prognosis in the treatment of obesity is grim. The use of a radical surgical procedure represents the attempt to find a permanent solution in selected cases. The procedure does not purport to cure the causes, only to alleviate the unfortunate results of the chronic disorder.

Development of the Small Intestine Bypass Procedure  
Rationale and Implications

Development of the small intestine bypass resulted from several important clinical trials following a study on the nutritional importance of the small intestine reported by Kremen, Linner, and Nelson in 1954. This study was conducted on dogs to test the results accruing to procedures in which 50 to 70 per cent of the proximal or distal small bowel was resected. Conclusions of the study revealed that that amount of small intestine could be sacrificed without serious interference with the normal nutritive state. It was shown that sacrifice of the distal bowel resulted in greatly diminished fat absorption plus weight loss. Removal of the same length of proximal

bowel did not produce significant weight loss or interference with fat absorption. Though up to 70 per cent removal of the small bowel was consistent with adequate nutrition, it was noted that a portion of small intestine was absolutely essential to life.

Kremen and his associates offered this observation:

Another consideration which to date has not received clinical trial is the possibility of treating extreme cases of obesity by removing from intestinal continuity sufficient small bowel to produce weight loss without any serious hazards or impairment. It is entirely possible that such an effect could be obtained by the sacrifice of most of the ileum with preservation of the ileocecal juncture (p. 445).

The relation of small bowel resection to nutrition was the subject of a study by Kaiser et al (1960). Following small bowel resection weight loss, anemia, dependent edema, tetany, avitaminosis, steatorrhea, and endocrine imbalances occasionally occurred.

In a similar study of the effects of massive small bowel resection on the digestion and absorption, Althausen (1950) found that the absorptive capacity in the small intestine increased with time. The capacity to absorb water and sugars (glucose and galactose) increased first. The absorption of amino acids increased second. The absorptive capacity for fats improved somewhat, but

remained low.

Jordan (1967), in a paper on the physiology of the small intestine, brought out the importance of the ileum in the absorption of bile salts. Reduction of bile salts in the upper intestine resulted in poor digestion of triglycerides and malabsorption of fat. It has been shown that fat absorption occurs primarily in the proximal small bowel. The bile salt pool circulates twice during the digestion of a meal. This recirculation depends on the absorption of bile salts in the distal ileum. Resynthesis of bile salts, even if increased 10 times, does not replace that lost through failure to reabsorb. The result in faulty micellar formation and fat absorption is manifested in steatorrhea, and calcium and vitamin deficiencies.

Two further investigations (Potter and Bassett, 1966; Weinstein et al, 1969) pointed to the occurrence of enhanced intestinal absorption over a period of years following small bowel resection. In some individuals small bowel lengthening occurred. Another compensatory mechanism was epithelial cell hyperplasia in the bowel resulting in enhanced absorption. The jejunum specifically increased its absorptive capacity for water and sodium.

Buchwald (1964) studied the "primacy of the ileum" in vitamin B<sub>12</sub> absorption. Of the six bypassed patients studied all had markedly lowered to negligible absorption of this vitamin.

Diarrhea may cause binding of calcium with fat in the small bowel. A high fecal fat content may lead to a calcium deficit. The secretions of the intestines are rich in potassium. Diarrhea results in the loss of large quantities of that element (Snively, 1960). Furthermore, potassium is not stored in the body; a daily intake is essential. Potassium ions are necessary for glycogen storage in the liver (Given, 11).

Person's with impaired bowel absorption may exhibit extreme muscle weakness (potassium deficit) or trembling of fingers, tingling around the mouth or in the fingers, abdominal cramping, or tetany (calcium deficit).

The patient's body is confronted with serious metabolic and digestive adjustments following bypass. Transit time through the bowel, retention of a portion of ileum, and the retarding action of the ileocecal valve are physiologically important. The jejunum or ileum can absorb with equal facility most nutrients with some important exceptions. Vitamin B<sub>12</sub> and bile salts are specifically absorbed in the distal ileum. The bulk of

water absorption takes place in the terminal ileum, cecum, and ascending colon. Carbohydrates, proteins, and medium chain triglycerides are absorbed easily in the jejunum. Fat absorption and micelle formation depend on bile salts. Bile salts are recirculated following absorption in the distal ileum. Due to the formation of calcium soaps in the presence of steatorrhea, calcium and the fat soluble vitamins A, D, E, and K are lost in increased amounts (Braasch, 1971) Deficits in vitamin A (loss of skin integrity or hair loss), vitamin D (poor calcium utilization), or vitamin K (hemorrhagic tendencies) are often seen in bypass patients.

Malabsorption and nutritional deficits can be avoided in many cases. Numerous patients do not manifest watery diarrhea and steatorrhea sufficient to cause imbalance. Most do, however, and dietary supplements and dietary controls are usually sufficient to avoid serious problems.

The first sizable clinical trial of the use of the small intestine bypass for obesity was reported by Payne, De Wind, and Commons in 1963. At the time the report was published, the group had been performing the jejunocolic shunt for 7 years. The study included 10 patients who had 15 to 20 inches of jejunum anastomosed

end-to-side to the transverse colon. A large part of the jejunum, all of the ileum, and all of the right colon were bypassed.

When the patients attained a loss to ideal weight levels, complete or partial intestinal continuity was restored. In the partial revisions, 15 inches of jejunum were anastomosed to from 10 to 42 inches of ileum. During the period of shunting, the patients lost weight at an average rate of 2.36 pounds per week, for an average loss of 123 pounds in one year.

The results reported by the group were as follows. In those patients with elevated blood pressures, normal pressures were recorded after significant weight loss. Serum potassium levels fell in all patients, even with large supplemental intake. Hypocalcemia occurred in the group as a whole, being severe in 4 patients. Serum cholesterol levels fell to normal range. Serum carotene levels were low consistent with malabsorption. All showed a decrease in the number of erythrocytes and hemoglobin content. Low serum protein levels were seen in all. Carbohydrate metabolism alterations occurred. Slight to moderately severe fatty changes occurred in the liver.

Six of the 7 patients in which full intestinal continuity was restored, regained their preshunt weights. It was noted in the discussion following presentation of

the paper, that the group had abandoned the procedure as of 1963 because of these results.

In 1962 Lewis, Turnbull, and Page reported on two women receiving bypasses of all of the ileum. In these subjects 20 inches of jejunum was anastomosed to the transverse colon or to the cecum. The effect on serum cholesterol and lipoproteins was studied. Results showed that on a fat free diet that those values were sharply decreased and the patients stabilized at about 90 pounds under preoperative weights. Four years later this same group (Lewis, Turnbull, and Page, 1966) reported on eleven grotesquely obese patients receiving jejuno-colic shunts. This second investigation supported earlier findings of an approximate 50 per cent decrease in serum cholesterol and lipoproteins.

This research also reported marked difficulty in maintaining electrolyte balance in 6 of the 11 patients. Another finding was that the patients failed to adhere to good eating patterns after achieving the desired weights. This indicated that their problem was more than one of weight adjustment. The subjects craved large amounts of fluid and salty foods and lost the desire for sweets. The period of adjustment was two to ten months, after which fluid and electrolyte balance was less of a problem.

Based on the findings of lowered cholesterol following small bowel bypass, the procedure was used in the treatment of hypercholesterolemia and atherosclerosis. Buchwald and Varco (1967) presented data from 24 patients who had undergone bypass in the treatment of these disorders. In these individuals 1/3 of the distal small bowel was bypassed with anastomosis of the proximal 2/3 to the cecum. Results demonstrated a significant reduction in circulating cholesterol. Sustained weight loss did not occur, which was not the object of the shunt.

Sherman et al (1965) gave a detailed report of a 410 pound female who lost 220 pounds in one year following a jejunocolic shunt (18 inches of the jejunum to the transverse colon). She suffered marked losses of body nutrients and electrolyte imbalances. Transit time of food (mouth to anus) was as short as 15 minutes.

At one year the shunt was revised with 15 inches of jejunum anastomosed end-to-side 10 inches proximal to the ileocecal valve. Her weight stabilized and showed some increase after the revision. Emotional and social factors were improved for 3 years. However, following this period she had episodes of depression, especially when her weight began to increase.

The final report on the jejunocolic procedure

to be reviewed is that of Shibata, MacKenzie, and Long (1967). This group reported on 11 obese patients. The procedure used varied the amount of jejunum at 15, 20, or 25 inches. One of the monitoring criterion was fecal fat excretion.

Inches of Jejunum	Wt. Loss	Fecal Fat Excretion
15 in.	48%	84%
20 in.	42%	33%
25 in.	26%	16%

Transient anemia and bleeding tendencies were demonstrated. Carbohydrate absorption, which was initially reduced, had returned to normal by one year. Protein absorption was lowered. There was little absorption of vitamin B<sub>12</sub>.

Morgan and Moore (1967) report on a single case using the jejunoileal bypass based on results of the jejunocolic shunt with subsequent revision. Weight loss was seldom permanent with revision. Their rationale for the surgery was that maintenance of the weight loss was as important as the actual loss. They contended that in creating a caloric leak there was a "therapeutic zone between significant diarrhea on the one hand and negligible loss of absorptive capacity on the other (p. 76)." They

pointed out that retention of the ileocecal valve contributed to the ability to reabsorb gastrointestinal water and control loss of cations.

In Morgan and Moore's patient, bypass was performed as adjunct to an intermittent fasting diet. After losing 180 or her 458 pounds by dieting, bypass was performed. For a time after surgery a 1000 calorie diet was maintained. When liberalized, the weight stabilized at about 200 pounds. In this patient panniculectomy, thigh plastic surgery, and mammoplasty were necessary to remove redundant skin. Four years after treatment the patient reported she was working, sexually active, and proud of her appearance.

Large scale use of the jejunoileal bypass was reported by Payne and DeWind in 1969 and Payne et al in 1973. As of the later date 153 cases were reported. The mortality was 6 per cent. The 1969 report offered these conclusions: a relationship of mutual respect between patient and physician is essential, the shunt was of distinct benefit to selected patients, long range benefits are to be expected in the control of factors leading to cardiovascular disorders, the jejunocolic shunt should not be used, the jejunoileal shunt should be considered investigative and performed only when proper facilities to handle complications are available (p. 146).

The 1973 report presented the criteria for considering the bypass. The patient must be at least 100 pounds overweight. All other forms of treatment must have been tried without success. The patient must be emotionally well motivated and willing to cooperate. He must be aware of the drastic metabolic changes that may occur and give fully informed consent. Also, he must be agreeable to revision or restoration of intestinal continuity if this becomes necessary.

Three reports by Scott and Law (1969) and Scott et al (1970 and 1971) present their use of the jejunoileal shunt and the development of a variation of the technic. The procedure of the first report was that of 14 inches jejunum anastomosed end-to-side to the ileum 4 inches from the ileocolic valve. These measurements have been arrived at by Payne who stated at the time of Scott's report that these lengths were critical. One or 2 inches more of jejunum or ileum in continuity usually resulted in insufficient weight loss.

Conclusions were that this procedure could be performed with "symptomatic sequelae" which were acceptable to the majority of patients. However, the development of hepatomegaly and fatty liver was of concern. Because of this, subsequent hepatic failure was considered a potential hazard of the bypass.

Results of the 1970 report by Scott et al found that the "voracious appetites" and "large caloric intakes" continued after the bypass. In the early months, severe diarrhea had been a significant problem, despite efforts to control it.

Scott described a new technic in 1971 in which 12 inches of jejunum was anastomosed end-to-end to 12 inches of ileum. For drainage of the bypassed jejunoileum, the proximal end of the ileum was anastomosed to the side of the sigmoid colon. In this and other shunts, the closed blind end of the bypassed small bowel was sutured to the mesentery to prevent intussusception. The technic sought to avoid the reflux of nutritive chyme into the blind loop of the ileum, which slowed weight loss or caused weight gain after stabilization.

Salmon (1971) reported on a comparison of the three shunt procedures; jejunoileal end-to-end, jejunoileal end-to-side, and jejunocolic as performed on dogs. The findings indicated that the end-to-end jejunoileostomy produced the best results.

The technic subsequently used by Salmon for human subjects was 10 inches of jejunum end-to-end to 20 inches of ileum proximal to the ileocecal valve. The proximal ileum was joined end-to-side to the transverse

colon for drainage. Of the 120 subjects presented, 10 were males and 110 females. Age distribution ranged from 17 to 65 years. Weight loss was directly related to size. The greater the size, the more rapid was the weight loss.

There was a great variation in the severity and duration of troublesome diarrhea. Approximately 13 per cent continued to have diarrhea after 2 years, while 36 percent had no diarrhea on hospital discharge. Most of the electrolyte disturbances occurred in the first year. Major potassium and calcium deficiencies were not a problem. Salmon stated that maintenance of weight loss obtained with the bypass was of greater importance than the initial weight loss or the minor complications to the patient.

Bleicher, Cegielski, and Saporta (1974) in a presentation of their experience with the bypass, examined the postoperative complications that may occur. In the adaptive period (first 1 or 2 years after bypass) there were several metabolic disturbances; "some fortuitous, others adverse, some transient, others irreversible (p.67)." Among these changes was the reduction in blood glucose levels. This often corrects the adult-onset diabetes seen in obese persons. Hypokalemeia was usually not severe enough to cause muscle weakness and responded to

oral supplements. Tetany resulted if calcium deficits were severe, but this is usually not the case. Serum iron levels tended to drop but were sustained with oral iron preparations. The absorption of fat soluble vitamins A, D, and K, as well as B<sub>12</sub>, was impaired. Injections at intervals prevented deficiencies. Enteric coated drugs were not absorbed well. Malabsorption of other drugs could be anticipated.

Other complications reported by this group were. perianal irritation, proctitis, hemorrhoids and anal fissures, abdominal cramping and pain, gastrointestinal bleeding, liver damage, and excessive weight loss. (p. 68, 69). Potential complications were: wound necrosis, hernia, and infection; bowel obstruction; intussusception; myocardial infarct; pulmonary embolism; and gastric ulcer (Payne and DeWind 1969).

Benefits reported by Bleicher et al were: irreversible weight loss, freedom from dieting and use of amphetamines or other potent drugs; improved cardiovascular and respiratory status; low serum cholesterol levels; self-limitation of diabetes mellitus; regulation of the menstrual cycle; and elimination of socioeconomic handicaps. (p. 70)

Several studies have been devoted to the problem of fatty degeneration of the liver which may occur following

bypass. Maxwell, Richards, and Albo (1968) state that the changes in the liver fat seen after bypass may be related to the undernutrition produced by the shunt. Other factors contribute such as destruction of dietary choline due to alteration of the small bowel bacterial flora.

Another report (Thompson and Meyerowitz, 1970) commented that obesity as such may produce liver changes. Following bypass some deterioration may occur but improvement of liver architecture was demonstrated in the majority.

Shibata, MacKenzie, and Huang (1971) studied liver function in ten post-bypass patients. Preoperative fatty changes were found in most of the patients. Post-operative fatty infiltration increased in 6 patients, decreased in 2, and showed no change in one. Liver function tests were normal in all preoperatively; abnormal in the early post-bypass period, and returned to normal by one year's time. Holzbach et al (1974) demonstrated a threefold increase in hepatic lipids in the weight loss period following bypass.

Prevention of hepatic injury was investigated by McClelland et al (1970). The experiment was conducted on the hypothesis that protein-caloric deprivation may be the important factor in liver damage after bypass. Liver

damage is considered the most serious potential side effect of the bypass.

In the experiment done on dogs (with later application in one human subject), the bypass was accompanied by exteriorization of the proximal end of the bypassed jejunum. Jejunostomy feedings of medium chain triglycerides and pre-digested gelatin were tube fed at a rate sufficient to provide protein and caloric intake, but insufficient to prevent weight loss. Normal liver functions tests resulted throughout the post-bypass course with the supplemental feedings.

Starkloff (1974) comments that the interest in as well as the experience with the bypass procedure are increasing. In Starkloff's series of 600 obese persons interviewed, 402 were bypassed. It was his feeling that "surgical treatment is sound and rational, and the only method of therapy that results in sustained, substantial weight reduction (p. OR-1)."

#### The Psychosocial Consequences of Bypass

Two previous studies are available on the psychological and social consequences of the bypass in morbidly obese persons. Wittkower (1971) reviewed a study carried out by Engel. Fourteen subjects figured in the study. Psychiatric examinations of the persons preoperatively

revealed "moderate neurotic depression" to "severe depression." Although all but 4 had discomfort and complications, 9 persons stated they preferred the side effects to restoration and the regaining of lost weight.

Psychological followup revealed that several continued in a depressed state. Engel thought this not surprising as it could be attributed to the loss of the "defense" of obesity (using the obesity as a defensive shell). Many of the patients showed positive gains and favorable changes. An example was that several women freed themselves from "exploitive relationships" with men.

In general, Engels findings were these. The adverse psychological reactions following bypass support the view that for some, fat is a defense. The general absence of psychotic reactions points to the fact that the continued oral gratification possible has an important effect. Those patients conspicuously aided by the bypass in terms of social behavior, self-image, and achievement, gives credence to the "vicious cycle" theory of obesity--loneliness leads to overeating, overeating to obesity, and obesity to isolation and loneliness (p. 28).

Solow, Silberfarb, and Swift (1974) reported observations of 29 morbidly obese persons who underwent bypass. Psychiatric interviews preceded surgery and followed at 6 month intervals for up to 26 to 46 months.

Of the group, 20 were women and 9 were men. Ages ranged from 19 to 53 years. The general impression at followup was one of marked improvement. Physical and social activity was increased. There was "an improvement in mood, self-esteem, interpersonal and vocational effectiveness, body image and activity levels, as well as a notable decrease in the use of denial (p. 300)." The subjects no longer felt trapped and helpless and were less depressed. They no longer had to worry about everything they ate or feel guilty about their eating. The subjects seemed to be more normally responsive to satiety cues.

Twenty of the 29 stated without reservation that they would repeat the surgery. In general, the subjects had found healthier means of coping with life. Solow et al state that "the 'obese personality' (to the extent that it exists) seems to have been as much a result of the obesity as it was the cause in our massively obese patients (p. 303)."

### Summary

Chapter II has presented an introductory overview of the problem of obesity. The difficulty in assigning causes, avoiding perpetuation, and successfully treating the disorder were discussed.

Second, the development of the small intestine bypass was discussed. Studies supporting the rationale for the bypass as well as the physiologic implications were reviewed.

Finally, two studies concerning the psychosocial consequences of the bypass were summarized. These investigations support the view that the procedure is a sound and rational method of treatment for obesity.

## CHAPTER III

### PROCEDURE FOR THE COLLECTION AND TREATMENT OF DATA

#### Introduction

The study was conducted using a non-experimental, descriptive survey design. The procedure for collection of data describes the sample group, selection of the study subjects, and the manner in which the data was collected. Second, the instrument for collection of data and its manner of development is described. Finally, the manner in which the data was treated is set forth.

#### Procedure for the Collection of Data

##### The Sample Group

The sample group consisted of persons who had had a small intestine bypass for the treatment of morbid obesity. To obtain the sample population, the researcher contacted two surgeons in the Dallas metropolitan area who have performed the operation for the past several years. The proposed study was discussed with both physicians and their cooperation requested. They enthusiastically endorsed the project. Names, addresses, and dates of the surgery of their bypass patients were supplied by the physicians. Permission to study their patients was granted.

The sample population numbered thirty.

#### Selection of the Study Subjects

The study subjects were conveniently selected from the sample population. Sex and age were not factors in the selection. Only those persons who lived in the Dallas - Fort Worth Metropolitan area and who had had the bypass performed at least six months prior to interview date were placed in the group.

The intention of the study was that the group would number 20+5. The upper limit was sought to increase the significance of the data collected.

The sample, drawn from the sample population numbered 26 persons. The sample population represented part of the total available population. Of the 26 individuals contacted, one declined the interview and contact could not be arranged with 3 others. Of the 22 active members, 20 represented one surgeon and the remaining 2 the other surgeon.

#### Collection of Data

Data collection was accomplished over a four week period of time. Each of the proposed subjects was contacted by mail with a letter explaining the study and requesting their cooperation. Anonymity was guaranteed

to each subject. The contact letter appears in Appendix A.

The introductory letter was followed within several days by a telephone call. If consent to an interview was granted, a date, time and place for the interview was set. To initiate the interview the researcher identified herself, presented her credentials, and explained her interest in the study.

The subject was prewarned that the questionnaire was personal in nature. It was explained that the purpose of the study was to identify the full consequences of the surgical procedure for those electing it. It was pointed out that this was an area to which the subject would make a valuable contribution. Once again, the subject was assured of anonymity. If the individual cared to examine the questionnaire, he or she was free to do so.

The subjects were questioned on each individual item. They gave their spontaneous responses and could make additional remarks. The subjects were free not to respond. In this case "prefers not to respond" would have been recorded. It is noted, however, that in all the interviews, each subject responded to every question. With the exception of certain factual data, the questions were open-ended.

The anticipated time for completion of the

interview was approximately one hour. However, no time limit was set. The range of interview durations was from 50 minutes to 3 hours. The average time used by a subject was approximately 1 hour and 45 minutes.

### Description of the Instrument

#### Development of the Tool

No validated tool pre-existed for this research, therefore one was constructed for the purpose of the study. Many of the items were based on subject matter derived from readings on obesity. Other questions were based on the known consequences of the bypass as previously reported on by surgeons instrumental in developing the procedure. Still other questions were suggested by the two cooperating surgeons whose patients were to be studied. Finally, certain psychosocial items were included because they had produced significant findings in two previous studies.

A preliminary draft of the questionnaire was examined by an advisory committee. Suggestions were made and the tool was adjusted accordingly.

#### Validation of the Tool

The questionnaire was submitted to a panel of experts for criticism and validation. Several additions, and no deletions, were made in compliance with the views

of the panel. The instrument was determined to be capable of obtaining the information sought in keeping with the study's purposes.

The panel of experts consisted of three qualified persons. One was a psychologist (active in testing) on the faculty of the University of Texas Southwestern Medical School. The second was a surgeon who performs the bypass procedure and who has done considerable study on the results. The third was a man who had undergone the bypass procedure and who, because of personal and professional contacts, had a thorough understanding of the procedure and its implications.

#### Description of the Tool

The instrument for interview was constructed around eight areas of inquiry. The first was general information. This portion included dates of interview and surgery, demographic facts, and information related to education and occupation.

The second area was concerned with information pertaining to reduction diets attempted, weight variations related to diet, age of onset of obesity, and eating patterns both pre and postoperatively. The preoperative medical profile constituted the third area of inquiry.

It consisted of a medical history and information as to specific physical problems.

The fourth was the preoperative life form. These questions were all open-ended and were concerned with psychosocial factors. The patient's feelings and attitudes about himself and life before the bypass were explored. In this category the patient's reasons for electing the surgery were sought.

The postoperative medical profile was elicited. The questions were structured around the potential physical complications of the bypass. Occurance, qualification, and outcome of the actual complications were noted. Seventeen specific sequela were listed with provision for "other" responses.

The sixth category was a record of postoperative hospitalizations. The reason, date, and resolution were recorded.

The central thrust of the research was incorporated in the category, postoperative life form. This area investigated the full range of psychosocial aspects of the subjects post-bypass life. A close correlation was maintained between the content of the questions asked concerning preoperative life and postoperative life.

The final area of inquiry surveyed the patient's

opinions of hospitalization and nursing care at the time of the bypass. Opportunity for recommendations or free commentary were provided for in the instrument. The interview questionnaire appears in Appendix B.

#### Procedure for the Treatment of Data

The data collected in the survey was subjected to two modes of treatment; tables and narration. No attempt at statistical inference was made. This was in keeping with the non-experimental, descriptive survey design of the research. As most of the questions were open-ended to allow the subject free expression, no measurement of the quality of the responses was made.

The purpose of the tables was to consolidate all demographic, factual, and structured data. This treatment was used to clarify and simplify data lending itself to quantification. The preoperative medical profile was displayed in two tables with the group divided by sex. This method was chosen because many of the females' medical problems were sex related.

The postoperative medical profile was developed in table form for the group as a whole. Where the event of a medical problem did not lend itself to a yes, no, or

factual answer, qualifications are those expressed by the patient. For example:

Kind of problem	Qualify	Outcome
gallstones	yes	surgery
diarrhea	severe	much improved

For those "feelings" or "attitude" questions to which there was a general commonality of response, table presentation was used for the data. Further, for all those "feeling" questions for which a yes or no answer was appropriate; table presentation of the data was used.

The bulk of the data collected concerning the diet and weight profile, preoperative life form, post-operative hospitalizations, postoperative life form, and opinions on hospitalizations and nursing care was treated in narrative form. This mode of treatment was in keeping with the purpose of the survey, which directed itself to a survey of the consequences of the bypass as experienced by the subjects.

#### Summary

Chapter III has presented a description of the methods of data collection and the mode of treatment of the data. The data was collected from a conveniently

selected study group meeting the delimitations set. Data was collected during a prearranged interview with information recorded by the researcher. The instrument used was constructed by the researcher and verified by a panel of experts. Data collected by these means was consolidated and presented in tables wherever quantification of facts or figures was feasible. That data collected through openended questioning was treated in narrative form.

## CHAPTER IV

### ANALYSIS OF DATA

#### Introduction

A survey was conducted to explore the post-operative consequences of the small intestine bypass for morbid obesity. A total of 22 subjects were interviewed, having been chosen by convenient selection for placement in the study group.

Data will be presented in each of the categories of inquiry. Tables will be used to simplify factual data where appropriate. A summary of the findings will be presented.

#### Presentation of Data

##### Description of the Study Group

The study group was composed of 15 females and 7 males. They ranged in age from 22 to 54 years. The subjects were all caucasian. The interval between bypass surgery and the time of interview varied from 8 to 34 months. Marital status was as follows: 15 married, 1 widow, 3 single, 2 divorced and 1 separated. The status had changed for only one subject since bypass, a woman had separated from her husband (at the time of interview). All of the married subjects, one divorced

woman, and the woman separated from her spouse had children.

Demographic data for the 22 subjects appears in Table 1.

TABLE I

## Demographic Data

Subject	Sex	Age	Marital Status	Education
1	M	46	M	college
2	M	37	M	college
3	M	36	M	H.S.
4	F	29	Sing.	college
5	F	35	Div.	H.S.
6	M	40	M	college
7	F	32	Sep.	10th gr.
8	F	43	M	college
9	M	41	M	college
10	M	37	Sing.	Degree
11	F	39	M	degree
12	F	48	M	10th gr.
13	F	32	M	college

TABLE I (con't)

Subject	Sex	Age	Marital Status	Education
14	F	30	M	college
15	F	32	Div.	degree
16	F	54	M	college
17	F	38	Wid.	degree
18	F	36	M	11th gr.
19	F	32	M	10th gr.
20	F	29	M	H.S.
21	F	25	M	H.S.
22	M	22	Sing.	college

Fourteen of the subjects had some college preparation or had earned a degree. Four were high school graduates, and four had not completed high school. Of the males, six of the seven were employed. The married females were all housewives, though some had had occasional employment. Of the five females living without a spouse (either widowed, single, divorced, or separated) all were employed.

The employment status had changed since bypass for only four of the individuals. One married man had not been able to work since the bypass, 34 months prior, because of continuing illness and depression. A married woman stopped working after bypass because she "felt free" to stay home. One divorced woman took on a new job after bypass because she felt her improved appearance warranted the change. A married man changed to a larger company and enjoyed an increase in salary. He too attributed the change to his improved appearance.

The makeup of the study group exhibited several interesting facts. Two of the females were registered nurses and one of the males a licensed vocational nurse. Of the group, two individuals were brother and sister, and two women were aunt and niece. Many of the group had known each other prior to bypass through business

contacts or had met while under physician directed dieting.

#### Diet and Weight Profiles

The diet and weight profiles of the members revealed much similarity. Multiple methods of dieting were used by 19 persons. Seven subjects stated they had been on diets "all their lives". Of the group, 15 reported having used Weight Watchers. Prolonged dieting periods with the use of drugs usually a combination of amphetamines, tranquilizers, and diuretics, had been used in 15 cases. Of those 15, four reported serious illness attributed to the drugs, two requiring hospitalization. All reported extreme nervousness while using the drugs. All except 3 reported making at least 10 serious attempts at dieting. Fasting had been used by 2 subjects. Only three had dieted as few as 2 or 3 times for significant weight losses.

Weight losses credited to dieting varied from 30 to 267 pounds. Only four subjects had exceeded 100 pound losses. These amounts were 113, 125, 150 and 267 pounds. For the eighteen remaining subjects, the average weight loss from dieting was 63 pounds.

Maximum adult weights reported by the group ranged from 219 to 545 pounds. Weights at the time of

bypass varied between 219 and 504 pounds.

Losses resulting from the bypass ranged from 39 to 163 pounds. Seventeen of the group had exceeded 100 pound losses since bypass. The one unusual case of limited weight loss was reported by a woman who had lost only 39 pounds 10 months post-bypass.

Childhood onset obesity was reported by 13 subjects. Onset of obesity at puberty was found in 7 and adult onset in 2 of the group. The weight profiles for the group are displayed in Table 2. The subjects are identified by sex and age.

TABLE 2

## WEIGHT PROFILES

Sex	Age	Age of Onset of Obesity	Interval since Bypass Months	Largest Amount Lost Dieting	Maximum Adult Weight	Minimum Adult Weight
1. M	46	C	34	30	330	170
2. M	37	A	24	125	440	195
3. M	36	C	23	90	417	260
4. F	29	C	20	65	356	220
5. F	35	P	19	113	270	?
6. M	40	C	17	68	425	260
7. F	32	P	17	60	232	135
8. F	43	C	14	60	254	116
9. M	41	A	14	65	350	?
10. M	37	C	12	267	545	278
11. F	39	C	12	84	260	119
12. F	48	P	12	90	265	142

TABLE 2 (con't)

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	Weight at Bypass	Weight Now	Loss Since Bypass
1.	330	175	145
2.	380	220	160
3.	365	202	163
4.	356	222	134
5.	270	173	97
6.	369	230	139
7.	232	148	84
8.	254	116	138
9.	318	195	123
10.	504	350	154
11.	260	146	114
12.	265	145	120

---

TABLE 2 (con't)

Sex	Age	Age of Onset of Obesity	Interval Since Bypass Months	Largest Amount Lost Dieting	Maximum Adult Weight	Minimum Adult Weight
13. F	32	C	12	50	248	160
14. F	30	P	11	50	230	127
15. F	32	C	11	150	359	150
16. F	54	C	11	50	276	118
17. F	38	C	11	90	334	180
18. F	36	C	10	38	219	140
19. F	32	P	9	48	247	125
20. F	29	P	9	65	288	189
21. F	25	P	8	70	349	168
22. M	22	C	8	75	338	230

C=childhood onset

P=onset at puberty

A=adult onset (21 yr.+)

TABLE 2 (con't)

	Weight at Bypass	Weight Now	Loss Since Bypass
13.	248	153	95
14.	230	112	118
15.	359	260	99
16.	280	180	100
17.	334	200	134
18.	212	173	39
19.	247	159	88
20.	278	190	88
21.	349	207	142
22.	338	225	113

C=childhood onset

P=onset at puberty

A=adult onset (21 yr.+)

Many similarities in diet patterns were revealed. The majority of the group stated they had eaten 3 meals a day with continuous snacking. Several were erratic eaters; mealtimes were not regular. Of the group, eleven described themselves as "night-eaters"; eating large amounts of food late in the day and at night. One subject reported he even got out of bed at night to eat. Two described themselves as "foodaholics" and two as "compulsive" eaters. One of these stated she hid food around the house so the family would not know how much she was eating. Another said, that when angry, she ate things she didn't even like. Two of the subjects expressed the opinion that they did not consider themselves "gluttons" and had not felt they ate more than normal size persons.

Comments concerning the change in these former eating patterns following bypass were varied. Five persons said they ate more since the bypass. Eating less was reported by nine. Of these nine, 3 subjects said they had little appetite. Of those that ate less, the reasons given were either that they "felt full" more quickly or had lost interest in food. The remaining 8 subjects stated that their pattern of eating was about the same as before.

Food intolerances after the bypass were not general. The most often reported was an intolerance to

fatty or greasy foods. Five subjects could not eat sweets. Others had developed an aversion to spicy foods, alcohol, carbonated beverages, fresh fruit, or milk.

#### Preoperative Medical Problems

The preoperative medical profiles were divided by sex for tabulation. The problems reported, which were medically treated, appear in tables 3 and 4.

TABLE 3

## PREOPERATIVE MEDICAL PROBLEMS: MALE

Age Group	20-30 n=1	30-40 n=4	40-50 n=2	Totals
Severe Hypertension (200/100+)		1	1	2
Degenerative Hip Process			1	1
Diabetes		1		1
Malaria		1		1
Pneumonia		1		1
Traumatic Injuries		1		1
Elevated Serum Cholesterol		1		1
Shortness of Breath			1	1
Hemorrhoids		1		1
Ruptured Gallbladder	1			1
Hiatal Hernia	1			1

TABLE 4

## PREOPERATIVE MEDICAL PROBLEMS: FEMALE

Age Group	20-30 n=4	30-40 n=8	40-50+ n=3	Totals
Toxemia of Pregnancy	2	2		4
Epilepsy	1			1
Hypertension	3	1	2	6
Severe Hypertension (200/100+)	1	2	1	4
Cholecystitis	1			1
Appendectomy		1	1	2
Urinary tract infections		1		1
Irregular menstrual periods		2		2
Hemorrhoids	2	2		4
Pneumonia		1	1	2
Multiple miscarriages		3	1	4
Spinal Fusion		1		1

TABLE 4 (con't)

Age Group	20-30 n=4	30-40 n=8	40-50 n=3	Totals
Diabetes		1		1
Shortness of Breath	2	2	2	6
Varicosities			1	1
Hysterectomy		2	1	3
Broken bones		1		1
Arthritis			1	1
Amphetamine Poisoning		1		1
Spastic colon		1		1
Bells Palsy		1		1

The most frequently reported problem in both groups was hypertension. Shortness of breath was reported by 6 females and 1 male. Toxemia of pregnancy (4 subjects), multiple miscarriages (4 subjects), and hemorrhoids (5 subjects) were the other prominent problems. Three women had had hysterectomies.

All those subjects reporting hypertension had benefitted by the bypass, experiencing markedly reduced or normal pressures by the time of interview. The 2 subjects (1 male and 1 female) reporting diabetes had experienced a return to a normal state. Shortness of breath had cleared in all affected subjects. The elevated serum cholesterol level reported preoperatively had been reduced to normal range.

#### Preoperative Life Form

In the category of preoperative life form, the majority (14) of the subjects reported they had been active. Their activities and interests were varied. Eight of the subjects reported little or no activity outside of employment or housework. Only two reported they had done nothing but "lay around the house" when not at work. The men especially reported being active in sports and outdoor

activities. One man stated he knew he was getting too fat when he couldn't climb a tree to his deer blind.

In describing their feelings about life before the bypass, four of the 22 said they had positive or happy outlooks. One male said, "Life is a banquet, and all the poor fools are starving."

Eighteen subjects expressed experiencing feelings as despondency, depression, withdrawal, or feeling "wretched"; even suicidal. One woman reported that what kept her going was her "Christian outlook"; "Life has meaning and we have to persevere." Underlying the depression were such feelings as discouragement, disgust with self, concern with their anger, and feeling their life was ruled by their size.

Most subjects reported they had given up on dieting. The situation seemed "hopeless". Several reported they felt too tired to get out of bed in the morning. About a third of the group expressed fears about their health and were worried about having a heart attack or stroke. One man stated he felt superior, had money and an education, but was "stymied" by his size. In expressing their feelings about themselves before bypass, a variety of adjectives were used. The majority of the subjects (16) expressed strongly negative feelings.

Comments varied from: "I felt I was a loser--had failed at everything I started", "I hated everyone, and felt

everyone hated me", to "I cared about myself, but felt ugly." Many expressed feeling unacceptable to others and ashamed and painfully self-conscious of their size. Several stated they felt people laughed at them. Some had had embarrassing experiences when this in fact occurred to their face.

One man stated, "I acted happy, but felt like an outcast." A woman said she felt personally inadequate and realized her outgoing and capable postures were a facade. Several stated that they had forgotten how it felt to feel good.

Positive feelings about self pre-bypass were expressed by 6 of the subjects. One said she felt she "had alternatives." Another said she felt positive about herself. One woman stated she had made a good adjustment to her obesity and did not feel left out. Good feelings about self were expressed by three men, who stated they used their size to "manipulate" people.

In general the subjects stated they saw themselves as "very fat" or "obese". Some were stronger in their expression using such terms as a "freak", a "blob", or a "big, old, ugly woman". Several stated they did not see themselves as they were; didn't have a real conception of their size. Others said that how they saw themselves depended on their mood; if depressed they felt "huge".

Four subjects stated they saw themselves in terms of their personality, not their size. One man offered, "You've got to see yourself as fat when you can't tie your shoes".

The respondents, in the main, felt others saw them as they saw themselves. Many felt others saw their fat first and then their personality. Even some of those who said they felt loved by family and friends, felt others laughed at them or were disgusted with their size. The feeling that others saw them as repulsive or unacceptable was a common feeling. Only 2 subjects stated they felt people saw them in terms of their personality and not the size. One stated he knew people saw him as large but they didn't make him aware of it. Two men expressed the view that others saw them as "big, fat, happy man".

#### Reasons for Electing the Bypass

The reasons for electing the bypass are presented in part in Table 5. Reasons differing from these common responses are discussed separately.

TABLE 5

REASONS FOR ELECTING THE BYPASS

Reasons	Number Reporting
Overriding concern with health and potential hazards of obesity	9
Knew the weight could not be lost with dieting	6
To stop gaining	2
Spouse's or family's attitude toward size	2
Wanted to look better and feel better	2

The table displays the major reasons stated though most subjects expressed a combination of reasons. One woman stated she used hypertension as an excuse to go ahead with the bypass, but the real reason was her husband's attitude toward her size. Three felt the surgery was a miracle; as much to stop gaining as to lose weight. Three subjects expressed the idea that they wanted to live to see their young children grow up. Three expressed desperation, saying they would have done anything to get the weight off.

One man not listed in the table specifically had the bypass so that he could have a total hip replacement after weight loss. This man had injured his hip in

a fall as a young man. His extreme obesity had compounded the problem and made orthopedic surgery inadvisable.

The majority of the subjects heard of the operation from other bypass patients or read about it in newspapers or magazines. Only one subject was specifically advised to have the surgery by another physician. Most of those who consulted internists or family physicians were advised against the procedure. After learning of the bypass procedure and finding surgeons who performed it, the majority said they were adamant about their decision and determined to have the bypass done. Only two members of the group had had psychological counseling prior to the bypass. All subjects said they felt they had given fully informed consent in electing the surgical procedure.

#### Expectations

The expectations of results from the bypass were many and diverse. The most common expectation (10 subjects) was to "lose weight and keep it off". Another was to extend the life span and enjoy better health. Five subjects wanted to feel better and look better.

One woman stated "I thought it was too good to be true, I thought I would fail at this too." Another said she wanted to keep her husband at home; "under all that fat there was a human." Three subjects said they wanted

to look and feel like "normal" people.

Many felt that the size change would affect other feelings. A common expression was that they had done everything they could do; this was the last chance to lose weight. One subject stated she didn't know what to expect. Yet another expected to improve her marriage, but if not, "I would be in better shape to make a new life."

Two subjects stated that they anticipated more trouble postoperatively than they had had; 7 others that they were surprised by how badly they felt and had not expected it. One man offered this comment, "I know it sounds crazy, but I really expected to go to the operating room and come back thin; I was surprised to wake up and find myself a big, fat man."

#### Postoperative Medical and Physical Problems

The postoperative medical record for the group reveals some commonality of response. This quantified data appears in Table 6. The outcomes of these problems is discussed in general following the table. Specific treatment is given to those several persons who had complicated medical problems.

TABLE 6

OCCURANCE OF POSTOPERATIVE MEDICAL AND PHYSICAL PROBLEMS

Kind of Problem	Number Reporting
Diarrhea:	
Severe	12
Manageable	10
Nausea/Vomiting	
Severe	6
Slight	6
None	10
Hemorrhoids	11
Extreme Thirst	15
Evidence of Metabolic Disturbances:	
Extreme muscle weakness	4
Contraction or drawing of hands	6
Tingling of mouth	3
Cramping of muscles	2
Skin disorders	8
Vitamin Deficiency	7
Loss of Hair (Head)	11
Hernia	3
Easy Bruising	10
Cholecystitis	2

TABLE 6 (con't)

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Kind of Problem	Number Reporting
Kidney Stones	4
Liver Damage and/or jaundice	2
Evisceration	1
Irregular Menstrual Periods	5
Edema	3
Anal Ulcer	1

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Severe diarrhea was reported by twelve subjects. This was quantified by the patients as almost continuous and requiring restriction to the home for a period of one to several months. Manageable diarrhea was reported by ten. Those persons either had little trouble and were able to resume reasonable activity or return to work in several weeks post-bypass. All of the subjects reported this problem was greatly improved and did not interfere with their life schedules. Only two felt the diarrhea was still a problem.

The other postoperative problems were in various stages of resolution. The severe to slight nausea and vomiting reported had greatly improved or disappeared in all.

Hemorrhoidal pain was severe during the period of copious diarrhea. Only one subject underwent a hemorrhoidectomy.

Metabolic disturbances and skin disorders responded to supplementary cation or vitamin replacement and were transient. Easy bruising, hair loss, and irregular menstrual periods were of long duration and continued to be a problem. The fierce thirst reported by 15 of the subjects was a continuing and slowly abating problem, with the passage of time. Vitamin deficiency was reported if the patient had been told by the physician there was evidence of its presence. The initiation or increase of dietary supplements improved this disorder.

Only six of the 22 subjects reported serious complications. The first case in this category was a man who reported hospitalization for evisceration, multiple incisional hernias, hemorrhoidectomy, and severe depression. At interview this man's physical problems had been corrected. In addition he had undergone a total hip replacement. He had not returned to work and was still being treated for depression. He stated he would make the same decision "today" to have the bypass.

Another man experienced approximately a year of physical debilitation. Three weeks postoperatively he suffered physical exhaustion and collapse. This occurred

again at four months. On both occasions he was hospitalized for fluid and electrolyte replacement. After this his severe nausea and vomiting began to improve. He then required hospitalization for removal of a kidney stone. At nine months post bypass he suffered another period of exhaustion and physical collapse; not requiring hospitalization. The interview took place 13 months post-bypass. He was working full time and felt well. His only complaint at this time was easy tiring. His weight was in the ideal range for his height and he was very pleased with the final results, but said he would not repeat the decision because of the severe illness he experienced.

Four of the female subjects reported difficult postoperative courses. The first suffered nausea, vomiting, anorexia and exhaustion for many months before seeking help. At 9 months and again at 10 months post-bypass she was hospitalized for fluid and electrolyte replacement under the care of a hometown physician. At one year she returned to her surgeon and was hospitalized for tests and observation. She was subsequently put on liquid high protein supplementary feedings in addition to her regular diet. At interview she was regaining her appetite and strength, the nausea was controlled and she had begun to resume physical and social activity. She stated she would not re-elect the bypass because of the sickness she

experienced.

Eight hospitalizations following bypass were reported by another woman. These were for nausea, pancreatitis, a cholecystectomy, a choledochoduodenostomy, anal ulcer repair, and finally, insertion of a jejunostomy feeding tube. The interview took place several days after the latest hospital discharge. At this time the subject reported a feeling of improving physical wellbeing on the jejunostomy supplementary feedings. This woman in addition to the nausea and vomiting had experienced a complete loss of appetite. Slight liver damage also was reported. She felt hopeful about her condition and offered the comment, "I would do it again (have the bypass), I feel it was the only chance to change my life." She stated she felt she had become a strong person because of her suffering.

The fifth subject reporting serious postoperative problems was a woman who had a partial shunt revision at nine months post-bypass because of liver damage and jaundice. The procedure was a side-to-side jejuno-jejunostomy with a feeding jejunostomy. Her nausea and vomiting had led to a marked state of malnutrition and metabolic disturbance. At the time of interview she was three months post-revision. Her condition had improved, she was feeling stronger, her appetite was good and she was taking medium chain triglyceride oil by mouth. She stated she

would "probably" still elect the bypass and commented, "I would rather be dead than that fat." In fact, at the time of revision, had refused a total reversal of the bypass.

The final unusual case was reported by a young mother who embarked on a vigorous schedule three months post-bypass. She carried out all of her home activities along with a full schedule as a university student. In spite of a loss of appetite and five hours of sleep a night, for seven months she felt she "could take on the world." Edema of the legs, weakness, and amenorrhea finally prompted her to return to her physician. Loss of pubic hair, loss of sexual drive, breast atrophy, and malnutrition were evident. Supplemental high protein feedings, vitamin and potassium supplements, and hormone therapy over a three month period had begun to produce improvement in her condition by the time of interview. The young woman had maintained her heavy schedule. The subject was very slim at 116 pounds, attractive and vivacious. She stated she had not associated her increasing symptoms with the bypass. She believed she would say yes again to the bypass, because "it has so improved my outlook."

Four other subjects had hospitalizations after the bypass. One for severe colon spasm and later a kidney stone. Another was hospitalized for a cholecystectomy.

Kidney stone was the reason in one other case. In the final instance one young woman experienced normal delivery of a healthy infant, 16 months post-bypass. A total of nine of the 22 subjects reported hospitalizations following the bypass.

#### Postoperative Life Form

Postoperative life form showed considerable change for many of the study subjects. General statements were given to the question, "In what ways is your life different since the bypass?" These general comments were complemented with specific inquiry into psychosocial changes experienced.

The majority of the subjects offered positive statements. Thirteen of the group said that they felt "different" and in some way "better". Four of the subjects stated that they felt the same about their lives. Another four stated that they felt different but not better in that they were weak and tired. One subject said his life was different and "worse".

Individuals offered such comments as: "I see myself completely differently as a person;" "I know now things will be different because I am accepted by people," "I feel that I look like other people;" "I didn't realize how handicapped I was before." One woman said she realized

she had used her fat as an excuse for laziness and had settled for "second best", but now was "headed in the right direction." Two persons stated they felt more confident and that they had done all they could do about the problem of obesity. The less positive attitude was expressed by one subject in saying, "I don't know what I was looking for, life is different but not better."

#### Marital Life

Changes in marital life are presented in Table 7. In general no marked changes occurred in this area.

TABLE 7

CHANGES IN MARITAL LIFE

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Status	Number
Status unchanged since bypass; single, widowed, divorced	6
Separated from spouse since bypass	1
Same spouse, quality improved	4
Same spouse, quality unchanged	8
Same spouse, quality deteriorated	3

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Improvement in the degree of satisfaction was attributed by the subjects to be due to improved outlook or increased acceptance on the part of the spouse. Those marriages unchanged were equally divided between those considered by the subjects to be "happy" or "unhappy". The three which had deteriorated were directly related to the bypass. In one case the wife had disapproved of the bypass. She herself was obese and she resented her husband's weight loss. In the second instance, the relationship

between the partners had been reversed. Prior to the bypass the husband had been domineering and scornful of the wife's size. Following the bypass, he became dependent and jealous. This in turn had aroused in the wife feelings of disgust. Continuing illness following bypass had produced marked strain on one relationship.

The wives of three bypassed men had gained weight in the post-bypass interval. In two cases this gain was considerable. These women were bitter about their size change in view of the husband's improved appearance.

#### Physical and Social Activity

The level of physical activity before and after bypass was reported the same by 10 subjects. In 2 cases this was little or none, due to depression. The other 8 had maintained their usual activity. Two individuals stated they did much less because of their weakness. Increased activity, searching out new interests, and more pleasure in the things undertaken was expressed by 10 individuals.

The changes in social activity were in the main positive. Ten subjects reported increased social contact. The reasons given for this were: following through on opportunities, not feeling ashamed, and feeling more acceptable. Three women stated they were no longer ashamed

to meet their husband's friends. Seven persons stated the amount of social activity was the same, but four of these reported it was "more fun" or they "enjoyed people more". Four individuals reported little social activity; but this was not a change. Less social activity was reported by one subject because of illness.

#### Child-parent Relationship

An improved child-parent relationship was reported by eight subjects. Seven persons stated this relationship was the same and good. Improvement was based on such reasons as having more patience, feeling less angry, taking more interest in personal activities, or because the subjects felt more at ease with themselves. Three subjects reported a deterioration of the parent-child relationship. In one case the children were less accepting of the parent. Two parents had fat children who resented the change in parental size.

#### Sexual Life

Eight subjects reported that their sexual life was the same. Loss of sexual drive due to the illness following bypass was reported by three. Nine subjects stated that their sexual life was improved. Two men reported they derived more pleasure from sexual

intercourse now for two reasons: formerly, their size had made position a problem and they had worried about pleasing the partner. One woman stated she was more easily aroused now and another that she felt "like a woman". A man stated he was aware of being sexually attractive to other women at his "new size" and this increased his pleasure. One of the single men said he was looking forward to his sexual life improving when "I get to a fighting size". Another single man stated his improved appearance had afforded him more sexual opportunity. For one man his sexual life had suffered because of the wife's nonacceptance of his size change.

#### Body Image

The subjects were asked several questions concerning their new size. Does your change in size please you; does your change in size worry you; to yourself do you look slimmer; do you feel slimmer and lighter; do you feel more (or less) attractive now? This data appears in Table 8.

TABLE 8

DATA RELATED TO CONCEPT OF SIZE

Question	Yes	No
Does your change in size please you?	21	1
Does your change in size worry you?	4	18
To yourself, do you look slimmer?	19	3
Do you feel slimmer and lighter?	21	1
Do you feel more attractive?	20	2
Did your change in size please your family	18	4

Though pleased with the change, two persons said they often felt like the "old self". The one not pleased felt she was too thin now and had lost her bosom. Pleasure was derived from feeling better, looking better, and the enjoyment of buying "regular" sized clothing. Four subjects were worried by the new size. Two were concerned they would keep losing and get skinny. One man stated he could not manipulate events or people as before, while another shied away from arguments because he felt "weak".

In spite of their losses, 3 subjects did not look slimmer to themselves. Only one did not feel slimmer.

All but two persons felt more attractive.

Body image (how do you see yourself now) varied from no change to marked change. An improved self image was expressed by thirteen individuals. Seven subjects saw themselves as "the same". This was expressed by saying they often felt "like the old fat self" or that they still "had hangups" about being fat. A common expression was that they saw themselves as "normal". The change to smaller and "off the rack" clothes seemed to have the greatest effect on the image of self. Two subjects saw themselves as "thin" or "boney".

The self image in most cases coincided with how the subject felt others saw him. In general, the group felt others viewed them as "more acceptable" or "more normal". The majority took pleasure in the compliments they received but gave more credence to their own feelings about themselves.

#### Differences in Feelings

When asked if in general they felt different now, only four stated that they did not. The most common response was one of feeling more hopeful and better able to cope. Twelve of the 22 gave strongly positive responses to this question. Such comments as: "life seems different

in all areas: "I can take the world on," "I feel like a more complete person," "I feel more feminine," and "I feel like a normal person now" were given.

#### Importance of Bypass to Physical and Emotional Health

Twenty of the group of 22 felt that the bypass was important to their physical health. This was of interest in that five of the group had experienced serious postoperative complications. Of the group, 16 felt the bypass was important to their emotional health. This data is shown in Table 9.

TABLE 9

IMPORTANCE OF THE BYPASS TO PHYSICAL AND EMOTIONAL HEALTH

Question	Yes	No
Do you feel the bypass was important to your physical health?	20	2
Do you feel the bypass was important to your emotional health	16	6
Do you feel better now physically?	14	8
Do you feel better now emotionally?	16	6

The subjects expanded more on the subject of emotional health than physical. Two stated they used to cry "all the time". Several stated that they would have "real" problems if they had continued to gain weight. Two subjects felt they had learned "how to cope". A young woman commented that pre-bypass she felt she "was fading fast emotionally" and now felt "definitely" more in control. "I feel like a real human being now" was

expressed by 2 subjects. Another 2 were depressed and had not gained emotionally from the bypass. Three felt their emotional outlook was the same as before. One of the men felt the bypass had "hurt" his emotional health in that many family problems had occurred as a result.

Though 20 subjects stated that they felt the bypass was important to their physical health, only 14 stated that they felt better physically. Eight said they felt "tired", "sick" or "weak". The sixteen that stated they felt the bypass was important to their emotional health, also felt better emotionally.

#### Habits

Eleven subjects were smokers and 11 did not smoke. The habits had remained the same for all.

Thirteen of the group "remembered" being told not to drink alcohol after the bypass. Two of the 22 had never used alcohol and continued that habit. Four subjects reported heavy use of alcohol and of these, 3 drank considerably less post-bypass. One subject continued her former heavy intake until she became seriously ill and at interview reported she had quit drinking alcohol entirely. Increased tolerance for alcohol was reported by 5 persons. Decreased tolerance was experienced by two persons. Of

the 16 who classified themselves as occasional social drinkers, 5 stated they drank less.

### Expectations

Table 10 presents the data on fulfilled expectations. The subjects were asked if they had gotten the results they expected from the bypass. Only two stated they had not.

TABLE 10

#### FULFILLMENT OF EXPECTATIONS

Question	Yes	No
Did you get the results you expected from the bypass?	20	2

Of those subjects reporting no to the question, one said she had not expected the severe illness (this subject had had a partial revision of the bypass). Another stated she had expected to lose more and faster. Five of the 20 who stated yes added that they had not expected so much sickness but felt that their expectations were met. Hopes for further weight loss were reported by

five. In all cases, the primary expectation reported at the interview time was rapid and substantial weight loss. Thirteen subjects were under the 2 year postoperative interval and were still losing weight. Most of this group anticipated further changes in size, as well as in physical and emotional well-being.

#### Reelection of the Bypass

Table 11 presents the variation in response to the question: If you were making the decision today, concerning the surgery, what would it be? Why?

TABLE 11

#### DATA ON REELECTION OF THE BYPASS

Question	Yes	No	Undecided
Would your decision to have the bypass be the same today	17	2	3

Two subjects stated they would "definitely not" reelect the bypass. In one case the reason offered was the severe illness experienced. The other subject's family had deteriorated because of his wife's nonacceptance of

the resulting weight loss. Only one of those 2 undecided offered illness as a reason. The other had had little trouble post-bypass but stated: "I'm not fat now, its hard to say."

In spite of serious complications and continuing poor health (though improving), three stated they would re-elect the surgery. They did add that if they had been asked the question at the height of their illness, the response would have been no. The woman having a partial revision fell into this category. At interview she stated, "I'd rather be dead than fat." A second woman who had had eight hospitalizations since bypass and was taking supplementary feedings through a jejunostomy feeding tube, also reported she would "do it again". She felt it was "the only way to change my life." The final subject still ill at interview and stating she was re-elect the bypass, added that her problems stemmed from not realizing how important it was to take good care of herself after the procedure.

In general, those subjects responding yes were strongly positive in their comments. One young woman said, "I would have fed myself through a tube for 5 years if necessary." Several said they would do it again, "only sooner"; "wouldn't wait a minute." One man offered, "Sure I'd do it again, I like to see my kneecaps."

Many felt they had tried everything else and that the bypass was the only answer to their problems. A middleaged woman stated, "I feel so sad whenever I see a very fat person, I know they would rather be dead than fat." Another subject offered, "The little pain of the surgery and the trouble after doesn't compare to the agony of fatness."

Several subjects stated they had learned how strong they were since the bypass and would repeat it for the results. Most of the group said they would discuss the bypass with those considering it, but stress that the decision must be a personal one. Others said they would recommend the bypass to others without reservations.

#### Opinions of Nursing Care

The subjects were asked about hospital and nursing care to determine if stigmatizing attitudes were expressed by the professionals giving that care.

Opinions on hospitalization and nursing care at the time of the bypass surgery were varied. Table 12 displays the opinion data.

TABLE 12

OPINION OF NURSING CARE AT THE TIME OF BYPASS SURGERY

Category	Response
Nursing Care:	
Generally Good	17
Generally Poor	4
Extremely Poor	1
Nurses were sympathetic and understanding:	17
Nurses were not sympathetic and understanding	5

A strongly negative report was given by one man who stated that at bypass and during two subsequent hospitalizations for intractable vomiting and diarrhea, the nurses had "taken the attitude" and expressed it that "you got yourself into this, you suffer." Four subjects who felt the nursing care was poor stated the reason was they could not get help when they needed it. Almost without exception the subjects who felt nursing care was generally good also stated they had family members with them during

their post-surgery period and were not completely "dependent" on the nursing staff.

Comments and recommendations concerning hospital care were varied. One common response was the need to give more careful attention to intravenous infusions. The subjects felt the frequent restarting of the infusions was "unnecessary" as well as painful. Another common response was the need to direct more positive care to the pain and discomfort associated with the nasogastric tubes.

Several subjects stated that they had experienced severe back pain after the surgery and felt the nurses should have been aware of this and direct means to relieve it. One person (a nurse) said that bypass patients require special care directed to cleansing them after the severe postoperative diarrhea begins, as their size gets in the way of proper self care.

Other opinions were that the patient needed to feel the nurse was "on his side" and "make you feel it". One woman referred to the "stigma of obesity" stating nurses needed more understanding of these patient's feelings. "They (the nurses) treat you like children," added one woman. Another stated that the workers in the hospital (as people elsewhere) are rude to fat people.

All of the subjects felt that education concerning the bypass should come from the physician, not

the nurses. Of interest in this regard were comments by many of the subjects to the researcher to the effect that they wished "someone had written a book about all this." A large number of the subjects stated that they had been so determined to have the surgery, that they realized they had not listened to or retained various aspects of the advice offered by the surgeon.

#### Additional Remarks

Additional remarks coming from the interview touched on several subjects. A comment repeated by several was the importance of having the family's (especially the spouse's) support in electing the bypass.

A 43 year old woman expressed the idea that all fat people like herself have serious emotional problems. Surgery will not change this, she felt, and believed psychotherapy was indicated following bypass.

One young woman felt patient's needed more detailed information on what to look for post-bypass concerning nutritive deficiencies and metabolic disturbances. Several stated they would have liked written information in this regard as well as pictures describing what had been done inside them.

Comments on the problems of the obese were made. A young woman stated she had "very strong feelings"

about "people exploiting fat persons". She commented that "fat people are so vulnerable to any commercial offer" that promises weight loss. Several commented that "fat people wear their feelings on their sleeves."

Two women stated that physicians have "very negative" attitudes and "disgust" for fat people. The group was unanimous in their praise of their own surgeons, feeling that not only had they received excellent care, but that the surgeons were understanding of their problem. A man stated that people treat fat persons as if they were "dumb"; "you have to prove you have sense if you're fat."

#### Summary

The data collected from the 22 subjects has been presented. The 15 females and 7 males represented an age span of 32 years; from 22 to 54 years of age. Juvenile or adolescent onset obesity was reported by 20 of the 22 subjects.

All but two suffered the "stuffing syndrome" according to their descriptions of their eating patterns. "Night-eaters" were more common than self-described "binge eaters". Also, all but 2 had experienced repeated dieting without permanent weight loss.

Though 9 of the subjects stated they had decreased their food intake, and 13 had maintained or

increased the former intake, most felt relieved of the guilt associated with food. This data would seem to support Engel's (1971) findings that continued oral gratification is an important aspect in some of these persons; as well as Solow's (1974) findings that after bypass there was a more normal response to satiety cues.

Those positive psychosocial gains reported by members of the group, as well as the improved emotional outlook reported by sixteen subjects, supports Engel's proposal that the bypass interrupts the "vicious cycle" of obesity.

The most prominent psychosocial gains were a feeling of increased social acceptance and improved body image. The expression of feeling "more hopeful" and "better able to cope" seems to support Solow's opinion that the psychosocial disturbances associated with morbid obesity are as much the consequence as the cause of the obesity.

## CHAPTER V

### SUMMARY, RECOMMENDATIONS, IMPLICATIONS AND CONCLUSIONS

#### Summary

The problem of this study was to identify the consequences of the small intestine bypass for morbid obesity. A survey was conducted to determine those consequences for a group of persons having undergone the procedure.

A review of literature was done. An overview of the problem of obesity was presented. The historical development of the bypass procedure was discussed along with the physiologic implications of the surgical intervention. Two studies conducted to investigate the psychosocial effects of the bypass were reviewed.

A non-experimental, descriptive survey was conducted. Twenty-two individuals were interviewed to obtain data on the postoperative consequences experienced.

Data was obtained on the preoperative and postoperative life form, diet and weight variations, and the pre and post operative medical, physical, and psychosocial problems. The data was presented in table and narrative form. In addition, the subjects offered opinions on

nursing care at the time of the bypass, general recommendations, and additional remarks about the problems accruing to obesity or the bypass.

The postoperative life course had varied considerably for the group. However, sixteen of the 22 had not experienced any serious medical complications and had considered the resulting problems manageable.

In general, the data revealed that the majority of the subjects felt they had benefited from the bypass in one or more ways. Twenty-one of the 22 subjects were pleased with the change in size. An improved self-image was expressed by 13 members of the group. Gains in physical and emotional health were expressed by all but a few of the subjects. Also, the majority stated they felt better physically and emotionally.

Twenty subjects stated they got the results they expected from the surgery. The primary expectation was substantial and permanent weight loss. Seventeen individuals said that their decision to have the bypass would be the same at present.

#### Recommendations

Based on the findings of this study, the following recommendations are made:

1. A long term study of a group of bypassed patients should be conducted to determine what long term gains are experienced, how the physical and medical status of the person changes, and if the body image and self-concept reveals permanent alterations.

2. A controlled study of a group of bypass patients should be conducted to determine if systematic preparation and weekly followup by a professional nurse would result in an easier adaptation to the physical and psychosocial consequences and the avoidance of certain medical complications.

3. A study should be conducted, directed toward developing a booklet of programmed information on; the anatomical changes, the physiologic changes, the importance of nutritive intake, the signs of potential medical and physical complications, and the reasons for close medical and nursing followup. The benefits of this information to bypass patients should be tested.

### Implications

The present study revealed certain implications in the use of the bypass as a treatment for obesity. It was shown that many of the subjects could have benefited from greater understanding of the physiologic implications

of the bypass. This indicates a need for ongoing education after the bypass so that the patients are aware of the numerous changes going on in their bodies and the means at their disposal to minimize ontoward effects.

The opinions and recommendations of the study group indicate that professional nurses and physicians need to increase their understanding of the problems of obesity and modify their negative feelings about the obese. Otherwise, effective health care cannot be given.

In dealing with bypass patients, nurses should ensure that postoperative pain, whether caused by incisional or other factors, be properly handled. Close attention to intravenous infusions and naso-gastric tubes is expected from the nurse. Patient comfort and confidence often hinges on attention to such details.

Data revealed that family support is imperative to these persons after bypass. A screening of the feelings of significant others seems as important as investigation of the personal motivation. A need for family counseling before and after the bypass is indicated.

Finally, since these persons are undergoing profound physical and emotional changes, psychological support would be well advised post-bypass.

### Conclusions

The results of the study demonstrated that in this group of persons, the majority experienced positive gains from the bypass. The physical and medical problems for the greater part of the group were minor (to date). The data seems to support the view that for most of this group the bypass was a rational and beneficial solution to the problem of morbid obesity.

In view of the psychosocial problems experienced pre-bypass by these obese persons, it can be concluded that nurses need to educate themselves about the syndrome of obesity. Effective and comprehensive nursing care requires that the nurse give this care without prejudicial judgement.

APPENDIX A

Dear

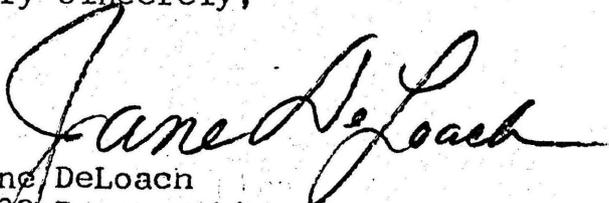
I am writing to you to ask for your participation in a study I am doing for my Master's Thesis at Texas Woman's University College of Nursing. I am a registered nurse studying persons who have had a small intestine bypass as treatment for obesity.

I have discussed this with your surgeon and he is agreeable to the study. You can make an important and significant contribution to this project. I guarantee that the source of all information will remain anonymous.

I hope that you will agree to participate in the project. I will call you in a few days to set up an appointment time convenient to you for an interview.

If you have any questions, please call me at 368-4951 any evening.

Very sincerely,

A handwritten signature in cursive script that reads "Jane DeLoach". The signature is written in dark ink and is positioned above the typed name and address.

Jane DeLoach  
6329 Prestonshire  
Dallas, Texas 75225

APPENDIX B

QUESTIONNAIRE FOR INTERVIEW

GENERAL INFORMATION:

Date of interview \_\_\_\_\_

Date of surgery \_\_\_\_\_

Sex \_\_\_\_\_ Age \_\_\_\_\_ Marital status \_\_\_\_\_ Ethnicity \_\_\_\_\_

Number of children \_\_\_\_\_ Ages \_\_\_\_\_

Education \_\_\_\_\_

Occupation \_\_\_\_\_

Former occupations \_\_\_\_\_

DIET AND WEIGHT PROFILE:

How many times have you been on a serious diet? \_\_\_\_\_

What kind of diets were they? \_\_\_\_\_

Did you lose weight? \_\_\_\_\_ How much? \_\_\_\_\_

What has your maximum adult weight been? \_\_\_\_\_ Minimum? \_\_\_\_\_

At what age did you begin being overweight? \_\_\_\_\_

What was your weight at the time of surgery? \_\_\_\_\_ Now? \_\_\_\_\_

What was your eating pattern before surgery? \_\_\_\_\_

\_\_\_\_\_ Has this changed? \_\_\_\_\_

How? \_\_\_\_\_

PREOPERATIVE MEDICAL PROFILE:

General medical history \_\_\_\_\_

Kind of problem	How treated	Status
-----------------	-------------	--------

1.	_____	_____
----	-------	-------

2.	_____	_____
----	-------	-------

3.	_____	_____
----	-------	-------

4.	_____	_____
----	-------	-------

PREOPERATIVE LIFE FORM:

Before your surgery, what were your day-to-day- activities?

\_\_\_\_\_

hobbies/interests? \_\_\_\_\_

Can you describe your general feelings about life before you decided to have surgery? \_\_\_\_\_

In general, how did you feel about yourself? \_\_\_\_\_

How did you see yourself? \_\_\_\_\_

How did you feel others saw you? \_\_\_\_\_

Why did you decide to have the operation? \_\_\_\_\_

Did someone advise you? \_\_\_\_\_ who? \_\_\_\_\_

What results did you expect from the surgery? \_\_\_\_\_

POSTOPERATIVE MEDICAL PROFILE:

What types of physical and medical problems did you experience?

Kind	Qualify	Outcome
------	---------	---------

Diarrhea

Nausea

Vomiting

Food Intolerances

Hemorrhoids

Metabolic Disturbances

Heart Trouble

Respiratory

Easy Bruising

Hernia

Diabetes

Liver Problems/Jaundice

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Vitamin Deficiency

Gallstones/cholecystitis

Kidney Stones

Skin Problems

Hair Falling Out

Other

POSTOPERATIVE HOPITALIZATIONS:

Reason

Date

Outcome

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POSTOPERATIVE LIFE FORM

In what ways is your life different since the operation? \_\_\_\_\_

Marital \_\_\_\_\_

Occupational \_\_\_\_\_

Day-to-day activities, hobbies, interests \_\_\_\_\_

Social \_\_\_\_\_

Relationship with children \_\_\_\_\_

Sexual \_\_\_\_\_

Physical activity \_\_\_\_\_

Other \_\_\_\_\_

How do you see yourself now? \_\_\_\_\_

Does your change in size please you? \_\_\_\_\_

Why? \_\_\_\_\_

Does your change in size worry you? \_\_\_\_\_

To yourself do you look slimmer now? \_\_\_\_\_

Do you feel slimmer and lighter ? \_\_\_\_\_

Do you feel mor (or less) attractive now? \_\_\_\_\_

How do you feel others see you now? \_\_\_\_\_

Did the changes please your family ? (spouse, children, parents)

\_\_\_\_\_

In general, do you feel different now? \_\_\_\_\_

Do you feel the operation was important to your health? \_\_\_\_\_

physical \_\_\_\_\_ emotional \_\_\_\_\_

Do you feel better now physically? \_\_\_\_\_

Do you feel better now emotionally? \_\_\_\_\_

Did you get the results you expected? \_\_\_\_\_

Do you smoke? \_\_\_\_\_

Were you told not to drink alcohol after the surgery? \_\_\_\_\_

What were your feelings about this? \_\_\_\_\_ Do you

abstain completely? \_\_\_\_\_

If you were making the decision today concerning the surgery,

what would your decision be? \_\_\_\_\_ Why? \_\_\_\_\_

\_\_\_\_\_

#### OPINIONS ON HOSPITALIZATION AND NURSING CARE :

What is your opinion of the nursing care you received while

in the hospital for the bypass? \_\_\_\_\_

Did you feel the nurses understood your concerns and were

sympathetic? \_\_\_\_\_

Do you feel there were specific ways in which the nurses could

have offered support and education that was needed? explain\_\_

\_\_\_\_\_

What recommendations would you make for the improvement of

nursing care for patients having this surgery? \_\_\_\_\_

ADDITIONAL COMMENTS AND REMARKS \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## LIST OF REFERENCES

### Books

- Berblinger, Klaus W. "Obesity and Psychologic Stress." Obesity, ed. N. L. Wilson. Philadelphia: F. A. Davis Company, 1969.
- Bruch, Hilde. Eating Disorders. New York: Basic Books, Inc., 1973.
- Given, Barbara A., and Simmons, Sandra J. Nursing Care of the Patient with Gastrointestinal Disorders. Saint Louis: C. V. Mosby Company, 1971.
- Gorman, Warren. Body Image and the Image of the Brain. St. Louis: W. H. Green, 1969.
- Snively, William D. The Sea Within; the Story of Our Body Fluids. Philadelphia: J. B. Lippincott, 1960.
- Weiss, Edward; English O. S. Psychosomatic Medicine. Philadelphia: W. B. Saunders, 1957.
- Wilson, Nancy L.; Farber, Seymour M.; Kimbrough, L. Don; and Wilson, Roger H. L. "The Development and Perpetuation of Obesity: An Overview." Obesity. Wilson, Nancy L., ed. Philadelphia, F. A. Davis Company, 1969.

### Journals

- Althausen, T. L.; Doig, R. K.; Uyeyama, Kahn; and Weiden, S. "Digestion and Absorption after Massive Resection of the Small Intestine." Gastroenterology, XXVI (September, 1950), pp. 126-139.
- Bleicher, Jerome E.; Cegielski, Mieczyslaw; and Saporta, Jose A. "Intestinal Bypass Operation for Massive Obesity." Postgraduate Medicine, LV (April, 1974), pp. 65-70.
- Borgstrom, B.; Dahlovist, A.; Lundh, G.; and Sjoval, J. "Studies of Intestinal Digestion and Absorption in the Human." Journal of Clinical Investigation,

XXXVI (June, 1957), pp. 1521-1535.

Braasch, John W. "The Surgical Treatment of Obesity." Surgical Clinics of North America, LI (June, 1971), pp. 667-673.

Baunstein, Jonathan J. "Management of the Obese Patient." Medical Clinics of North America, LV (March, 1971) pp. 391-401.

Brightwell, Dennis R. "Treating Obesity with Behavioral Modification." Postgraduate Medicine, LV (April 1974), pp. 52-58.

Briscoe, Joan P. "I Chose Surgery to Lose Weight." Good Housekeeping, CLXXVI (May, 1973), pp. 50-58.

Bruch, Hilde. "Obesity and Sex." Medical Aspects of Human Sexuality, III (February, 1969) pp. 42-52.

Buchwald, Henry. "Vitamin B<sub>12</sub> Absorption Deficiency Following Bypass of the Ileum." American Journal of Digestive Diseases, IX (1964), pp. 755-759.

Buchwald, Henry, Varco, Richard L.; "Partial Ileal Bypass for Hypercholesterolemia and Atherosclerosis." Surgery, Gynecology and Obstetrics, CXXIV (June, 1967), pp. 1231-1238.

---

"Complications of Intestinal Bypass for Obesity." Journal of American Medical Association, CC (May 15, 1967) pp. 158.

Conrad, Stanley W.; "The Psychological Implications of Overeating." Psychiatric Quarterly, XXVIII (April-1954), pp. 211-224.

Craft, Carol A. "Body Image and Obesity." Nursing Clinics of North America, VII (December, 1972), pp. 677-685.

Duncan, Garfield G.; Jenson, William; Fraser, Robert; Cristofori. "Correction and Control of Intractable Obesity." Journal of American Medical Association, CLXXXI (July 28, 1962), pp. 99-102.

Flatter, Patricia. "Nursing Care of the Jejunoileal Bypass Patient." RN Magazine, XXXVII (March, 1974), pp. 56-58.

Fox, S. Ross. "The Surgical Treatment of Obesity."

- American Operating Room Nurse Journal, (July, 1972), pp. 56-58.
- Freidman, Joseph. "Weight Problems and Psychological Factors." Journal of Consulting Psychology, XXIII (March, 1959), pp. 524-527.
- Gordon, Edgar S.; Goldberg, Marshall; Chosy, Grace J. "A New Concept in the Treatment of Obesity." Journal of American Medical Association, CLXXXVI (October 5, 1963), pp. 156-166.
- Harmetz, Alijean. "Oh, How We're Punished for the Crime of Being Fat." Today's Health, LII (January, 1974), pp. 21-24.
- Holzbach, R. Thomas; Wieland, Ralph G.; Lieber, Charles S.; DeCarli, Leonore M.; Koepke, Keith P.; and Green, Sheldon G. "Hepatic Lipid in Morbid Obesity" New England Journal of Medicine, CCLXL (February 7, 1974), pp. 296-299.
- Jordan, Paul H. "Physiology of the Small Intestine." Surgery, Gynecology, and Obstetrics, (June, 1967) pp. 1331-1337.
- Kalisch, Beatrice J. "The Stigma of Obesity." American Journal of Nursing, LXXII (June, 1972), pp. 1125-1127.
- Kalser, M. H.; Roth, J. L. A.; Tumen, H., and Johnson, J. A. "Relation of Small Bowel Resection to Nutrition in Man." Gastroenterology, XXXVIII (April, 1960), pp. 605-615.
- Kornhaber, Arthur. "The Stuffing Syndrome." Psychosomatics, XI (November-December, 1970), pp. 580-584.
- Kremen, Arnold J.; Linner, John H.; and Nelson, Charles H. "An Experimental Evaluation of the Nutritional Importance of Proximal and Distal Small Intestine." Annals of Surgery, CXL (September, 1954), pp. 439-446.
- Lewis, Lena A.; Turnbull, Rupert B.; and Page, Irvine H. "Short-Circuiting of the Small Intestine." Journal of American Medical Associations, CLXXXI (October 6, 1962), pp. 77-79.

- Lewis, Lena; Turnbull, Rupert; and Page, Irvine H.  
"Effects of Jejuno-colic Shunt on Obesity, Serum Lipoproteins, Lipids, and Electrolytes."  
Archives of Internal Medicine, CXVII (January, 1966), pp. 4-15.
- Lindner, Daisy. "The Nurse's Role in a Bariatric Clinic."  
RN, XXXVII (February, 1974), pp. 28-33.
- MacBryde, Cyril M. "The Diagnosis of Obesity." Medical Clinics of North America, XLVIII (September, 1964), pp. 1307-1316.
- McClelland, Robert N.; DeShazo, Claude V.; Heimbach, David M.; Eigenbrodt, M. D.; and Dowdy, Albert B. C.  
"Prevention of Hepatic Injury after Jejuno-ileal Bypass by Supplemental Jejunostomy Feedings."  
Surgical Forum, XXI (1970), pp. 368-369.
- Maddox, George L.; Anderson, Carol F.; and Boddonoff, Morton D. "Overweight as a Problem of Medical Management in a Public Outpatient Clinic."  
American Journal of the Medical Sciences, CCLII (October, 1966), pp. 394-403.
- Maddox, George L.; Beck, K.; and Leiderman, Veronica.  
"Overweight as Social Deviance and Disability."  
Journal of Health and Social Behavior, IX (December, 1968), pp. 287-297.
- Maddox, George; and Leiderman, Veronica. "Overweight as a Social Disability with Medical Implications."  
Journal of Medical Education, XLIV (March, 1969), pp. 214-220.
- Mason, Edward E.; and Chikashi, Ito. "Gastric Bypass."  
Annals of Surgery, CLXX (September, 1969), pp. 329-337.
- Maxwell, J. G.; Richards, R. C.; and Albo, D. "Fatty Degeneration of the Liver after Intestinal Bypass for Obesity." American Journal of Surgery, CXVI (November, 1968), pp. 648-652.
- Mendelson, Myer. "Psychological Aspects of Obesity."  
Medical Clinics of North America, XLIV (September, 1964), pp. 1373-1386.
- Meyerowitz, Basil R.; Gruber, Ronald, P.; and Laub, Donald R. "From Massive Weight Loss to Abdominal Panniculectomy." RN, XXXVII (February, 1974), pp. )R1-4.

- Morgan, Alfred P.; and Moore, Francis D. "Jejunioileostomy for Extreme Obesity." Annals of Surgery, CLXVI (July, 1967), pp. 75-82.
- Payne, J. Howard; DeWind, Loren T.; and Commons, Robert R. "Metabolic Observations in Patients with Jejunocolic Shunts." American Journal of Surgery, CVI (August, 1963), pp. 273-287.
- Payne, J. Howard; and DeWind, Loren T. "Surgical Treatment of Obesity." American Journal of Surgery, CXVIII (August, 1969), pp. 141-147.
- Payne, J. Howard; DeWind, Loren; Schwab, Carl E.; and Kern, William H. "Surgical Treatment of Morbid Obesity." Archives of Surgery, CVI (April, 1973), pp. 432-437.
- Potter, H. P.; and Bassett, D. R. "Extensive Jejunio-Ileal Resection." Pennsylvania Medicine, LXIX (July, 1966), pp. 27-30.
- Rakoff, Vivian. "Metabolic Abnormalities." Modern Treatment, IV (November, 1967), pp. 1093-1120.
- Salmon, Peter. "The Results of Small Intestine Bypass Operation for the Treatment of Obesity." Surgery, Gynecology and Obstetrics, CXXXII (June, 1971), pp. 965-979.
- Scott, H. William; and Law, David H. "Clinical Appraisal of Jejunioileal Shunt in Patients with Morbid Obesity." American Journal of Surgery, CXVII (February, 1969), pp. 246-253.
- Scott, H. William; Law, David H.; Sandstead, Harold H.; Lanier, Verne Co; and Younger, Rachel K. "Jejunioileal Shunt in Surgical Treatment of Morbid Obesity." Annals of Surgery, CLXXI pp. 770-780.
- Scott, H. William; Law, David H.; Sandstead, Harold H.; Lanier Verne C.; and Younger, Rachel K. "Experience with a New Technic of Intestinal Bypass in the Treatment of Morbid Obesity." Annals of Surgery, CLXXIV (October, 1971), pp. 560-572.
- Scott, H. William; Dean, Richard D.; Younger, Rachel K.;

- and Butts, Wilson H. "Changes in Hyperlipidemia and Hyperlipoproteinemia in Morbidly Obese Patients Treated by Jejunoileal Bypass." Surgery, Gynecology and Obstetrics, CXXXVIII (March, 1974), pp. 353-357.
- Sherman, Charles D.; May, Allyn G.; and Waterhouse, Christine. "Clinical and Metabolic Studies Following Bowel By-passing for Obesity." Annals of the New York Academy of Science, CXXXI (January, 1965), pp. 614-622.
- Shibata, Henry R.; MacKenzie, James R.; Long, Robert C. "Metabolic Effects of Controlled Jejuncolic Bypass." Archives of Surgery XCV (May, 1967), pp. 413-428.
- Shibata, Henry R.; MacKenzie, James R.; and Huang, Skao-Nan. "Morphologic Changes of the Liver Following Small Intestine Bypass for Obesity." Archives of Surgery, CIII (August, 1971), pp. 229-237.
- Solow, Charles; Silberfarb, Peter M.; and Swift, Katherine. "Psychosocial Effects of Intestinal Bypass Surgery for Severe Obesity." New England Journal of Medicine, CCLXL (February, 1974), pp. 300-303.
- Starkloff, Gene B. "Surgical Treatment of the Morbidly Obese." RN Magazine XXXVII (March, 1974), pp. OR-1-6.
- Stunkard, Albert J. "Eating Patterns and Obesity." Psychiatric Quarterly, XXXII (March, 1959), pp. 284-288.
- Stunkard, Albert; and Mendelson. "Disturbances of Body Image of Some Obese Patients." Journal of American Dietetic Association, XXXVII (April, 1961), pp. 328-331.
- Thompson, Richard H.; and Meyerowitz, Basil R. "Liver Changes After Jejuno-Ileal Shunting for Massive Obesity." Surgical Forum, XXI (1970), pp. 366-367.

- Weinberg, Norris; Mendelson, Myer; and Stunkard, Albert. "A Failure to Find Distinctive Personality Features in a Group of Obese Men." American Journal of Psychiatry, CXVII (July, 1960), pp. 1035-1036.
- Weinstein, L. Donald, Shoemaker, Charles P.; Hersh, Theodore; Wright, Hastings K. "Enhanced Intestinal Absorption after Small Bowel Resection in Man." Archives of Surgery, XCIX (November, 1969), pp. 560-562.
- Wittkower, Eric D. "Jejunocolic Bypass in Obesity." Psychosomatics, XII (January-February, 1971), pp. 26-28.
- Wunderlich, Richard A.; Mattimore, Julianne; Sharp, Nancy; and Ball, Michael F. "The Ponderous Problems of Severely Obese Patients." Nursing 72, II (December, 1972), pp. 11-15.