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Psychogenic aspects of obesity

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PSYCHOGENIC ASPECTS
OF
OBESITY

by
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William Rumbolz

PSYCHOGENIC ASPECTS

OF

OBESITY

Introduction - In recent years studies of obesity have been directed along new lines, and some rather new ideas have been brought out as a possible cause of obesity. Once the moderately obese person was looked on as a healthy, cheerful, strong individual, who was rather steady and unchangeable in his easy-going course through life. Now it is generally known that obesity is an underlying or precipitating factor in the cause of many disease conditions in the body, and insurance statistics show that it leads to an earlier grave, and is a rateable condition.

Since the recognition of obesity as a disease problem, many and various classifications and causes of the condition have been proposed. In the last few years the psychogenic and emotional factors have been proposed as an etiological agent of the condition.

It is the purpose of this paper to review the literature on the psychogenic aspect of obesity and to introduce a few cases of individual study in

an attempt to present the facts and leave the possibility that emotional and psychogenic factors may be instrumental in the cause of obesity.

Finally, the last portion of the paper will be confined to the treatment of obesity by the methods of yesterday and today.

PSYCHOGENIC ASPECTS

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I. A Review of Literature

Few conditions known to the medical profession are so simply treated and yet so consistently mistreated as is obesity. The reason for this mistreatment is easily explained, for it is merely a matter of a misconception, in the doctors' mind, about the underlying cause of the common condition. As an example of this mistreatment, I would like to present a recent case which entered the University Hospital.

Case # 1 - (63)

The patient is a twelve-year-old white school girl who entered the University Hospital for the first time on April 20, 1944, complaining of: Excessive growth and gain in weight in the past one and one-half years, having grown four inches in height in that period. In December 1942 the patient went to Denver to see a specialist who made the diagnosis of pituitary undersecretion and administered two hypodermic injections of "Antuitrines" weekly over a one year period without any effectiveness. These injections were discontinued in December 1943. During the same period, from January to December 1943, the patient's family doctor had the girl on oral doeses of Thyroid extract, giving as high as nine grains per day for several months. This medication was discontinued in December 1943 because of the development of symptoms of thyrotoxicosis; ie, palpitation, fast heart, excessive nervousness, and tremor. Upon entering the University Hospital, the patient showed signs of excessive thyroid substance even though this medication had been

discontinued for over four months. Weight gain was especially marked since December 1943, during which period she gained forty-five pounds. Studies carried out in the hospital showed the patient to have a Basal Metabolic Rate of plus thirty-two per cent by the Talbot Height Standards. X-ray studies of the long bones showed the patient to have a bone age between twelve and thirteen years, while x-rays of the skull showed the pituitary body to be of normal size with no signs of pathology. A study of her menstrual history showed an early puberty with the patient having regular and uncomplicated menstrual periods for the past three years, and normal development of both pubic and axillary hair. Finally, the patient was started on an 1100 calory diet while in the hospital, but she lost weight so rapidly (ten pounds in nine days) that it became necessary to raise her caloric intake to 1800 calories to stop this too rapid weight loss and make the patient more comfortable. The patient, showing a loss of thirteen pounds on no other therapy than a reduction diet, was dismissed after twelve days in the hospital. She was given a diet to follow at home and told not to take thyroid for fear of irreversible harm which might result.

This case presents a very real picture of how many overweight youngsters are being treated without results, because the underlying cause of their condition is not understood.

It has long been the desire of the laity and the medical profession alike to find some substance which would simply melt away the unsightly adipose tissue without any harmful effects on the individual and without forcing him to give up his ravenous appetite. It is said that the ancient Greeks claimed the Cretians

to have had such a drug, but never to have made this secret known. If such a drug existed, its secret was lost, and medical science is still searching for it.

Much has been written about obesity with many causes and cures suggested and varying reports accompanying each article. One of the earliest accurate reports written on obesity is the work of William Wadd (60) in his book, "Cursory Remarks on Corpulence", published in London in the year 1816. This book was written by Wadd, the doctor, to a lay friend, who desired some simple work that would explain the condition of corpulence or obesity, and suggest the best method of combating it. In his book, William Wadd reviews all of the known ideas on obesity and many of the better treatments known to that period. Wadd stresses that the chief cause of obesity is overeating, and that the only satisfactory method of treating the condition was by simply not eating so much. He said that corpulence may exist to a certain extent without being noticed, but, when it becomes burdensome, it is a disease problem and may lead to sudden death. It was realized that predisposition to obesity varied in different persons, but, besides heredity, one must also take into account the habits of

life. Discussing the causes of the condition, Wadd said, "Free indulgence of the table is the principle cause." Pointing out that the lower laboring classes are not bothered with such a disease, he states that it is only in those who have means of obtaining the comforts of life without labor that such a condition exists. He goes further to say, "Spare diet and labor will keep constitution, where the disposition is the strongest, from being fat." Wadd tells of other theories of his time for the cause of obesity, but passes them off with the statement that the founder of these theories was so fat himself that he resembled an overstuffed feather bed. The following statement by Wadd seems to sum up his idea of the cause of obesity, "In an army of forty-thousand foot soldiers you will find not one fat man, but give these soldiers a period of plenty and rest, and twenty of the forty will become fat." William Wadd's views of the treatment of corpulence will be discussed in connection with another portion of this paper.

In some communities obesity is looked upon as a desirable condition, and the obese are the most popular. As an example; Tusisian young ladies are fattened for their marriage, and in Gordii obesity was

so admired that the fattest person in the kingdom was made ruler. The emperor of Mogul is publicly weighed each year on his birthday, and if he has gained weight since the previous weighing, there is a public rejoicing. These strange beliefs can be best explained by understanding that obesity was most often associated with an environment of wealth and plenty; therefore, the most obese person was the most wealthy and the most desirable. With the progress of civilization and education, this idea was replaced by the idea that a moderate, normal build is more to be desired than the unsightly bulk of an obese person. When Rome was at her height, the mothers used to starve their daughters until they were quite thin, and thus make them more desirable wives. And so is the trend of present day civilization, the obese person being a subject of ridicule and torment and not as desirable as the individual of normal features.

It has been believed for many years that the fat person was always jovial and free from care, seeing the pleasant side of life, and not suffering from the pains of emotional stress or discomfort. This, however, is now known to be superstition, and fat individuals

actually have very violent tempers and suffer far more from emotional unrest, because of their condition, than do normal individuals. These findings are especially true in children.

It is now time to give a definition of obesity, that we might have the same understanding of the term. Obesity is a nutritional state in which the storage of fat exceeds the amount that is commonly considered adequate. As a means of differentiating between the heavy and the obese individual, a 20% weight excess over the normal is arbitrarily taken to be the dividing line. That is to say, that a person twenty per cent overweight is considered obese.

Von Noorden (45) was one of the earliest investigators to come out with a classification of obesity, dividing the condition into exogenous and endogenous obesity, and differentiating between them. In exogenous obesity the food intake, or energy expenditure, or both, are supposed to be markedly different than the normal person. While in endogenous obesity the actual economy of metabolic processes are supposedly disturbed. Because of its simplicity this classification was used for a whole generation, and is still used by many physicians in spite of the

increasing and well founded evidence against its correctness.

Investigators have laid far more stress on faults in energy expenditure and upon abnormal metabolic processes than on errors in food intake. Many authors put the problem of food intake secondary to endocrine disturbances or dysfunctions. This assumption, that obesity is usually an endocrine disorder, has led to many misconceived ideas as to treatment and indiscriminate and harmful use of endocrine products. Some authors even went so far as to report that poor eaters grew stout and remained so on inadequate and exceedingly low diets, leaving the impression that the "Law of Conservation of Energy" did not hold true. Which is to say that energy requirements and the oxidative processes of the obese person are different from those of the normal person.

Newburgh and Johnson (39, 40, 42, 43, & 44) have demonstrated numerous times that the energy exchange in an obese person is absolutely normal, and that undernourishment in an obese person results in loss of weight. Their investigations have led them to believe that there is no such thing as an endogenous

type of adiposity and that all obesity is "simple obesity", with excessive inflow of energy to the body being the immediate cause of every case. Lauter (31) even goes further to say that the caloric output of the obese patient is equal to, or even surpasses, that of a normal person, showing that the positive metabolic balance with an accumulation of fat must be the result of an intake of food in excess of the normal requirement. He also states that patients with so-called "Endocrine obesity" consume amazing quantities of food exactly as do obese persons without endocrine dysfunction.

In a thorough and complete study of forty-six cases picked from a series of two hundred cases of obesity, diagnosed as endocrine disorders, not one single case was found to have any endocrine abnormality by Bronstein and his associates (5 & 7). Various glandular extracts and other drugs were used, and, after studies lasting over two years, the best results were found to be obtained by diet restrictions alone. Excessive appetite was found to be the underlying pathology in nearly all instances. The authors state that oral administration of large doses of thyroid extract did not cause any loss of weight whatsoever. Bronstein (5) went on to say that his studies have led him to

believe that obesity, in mentally adequate children, will correct themselves spontaneously at or about the time of puberty. The reason probably not being the development of puberty, but rather the fact that the child becomes conscious of his handicap and is then willing to cooperate with an adequate dietary regime. As a rule most investigators refuse to consider overeating a cause of obesity, and those who do recognize it, usually imply that it plays a secondary role in the production of the condition.

Bruch, (12, 13, & 14) in reviewing a series of one hundred and forty-two cases with obesity a conspicuous clinical symptom, although not always the chief complaint, found that in relating food histories, there was a definite tendency of both children and parents to minimize the amount of their food intake. Most cases showed a great over intake of food after detailed questioning or after a visit to the family surroundings. In these studies a gain of more than ten pounds a year was considered abnormal, in spite of the difficulty in evaluating the weight curve of a child because of his rapid growth.

Most obese adults, after reaching a certain weight which is characteristic for them, keep their

weight as constant as normal persons. Since the basal energy requirements of obese adults are higher than normal, their food intake will be high, although not conspicuously so. When the condition is developing, the body accumulates progressive amounts of fat, and the energy inflow must be definitely above normal. This developmental phase of an obese condition is, as a rule, during childhood.

The quantity of food taken was described as large in over three-fourths of the cases studied, but commonly the patient's parents were unable to correctly describe the quantity of food and did not know the normal requirements of a growing child. The composition of the diet proved in a great many cases to be almost the same. Nearly all of the children overate of starchy foods, while little or no milk and vegetables were eaten. This dislike for milk was, in many cases, the reason for the increased intake of food, such as ice cream or cake to furnish the child milk in more attractive forms. Not one child in the entire group ate a mixed, well-balanced diet. Vegetables and salads were the most uniformly disliked, and meats and eggs brought little response from the children.

It is necessary, here, to undertake a short physiological discussion of appetite and hunger as

they are related to the development of obesity. First, hunger may be defined as the expression of physiological needs of the body for materials necessary to carry on its activities. The drive of hunger is a condition seldom experienced by man. Appetite is the conscious desire for food, which may be stimulated by the hunger mechanism, the result of habit, a means of entertainment, or, finally, as an outlet for nervous energy.

Indulgence in food, like that in alcohol, may be the result of emotional stress. Many obese individuals claim they do not eat much, and their meals do not seem to be large. However, when their habits are closely checked, it is found that they eat as much as the nervous man smokes. These persons admit they do not eat because they are hungry, but for some other reason. However, this is the type of person who is almost always compelled to do something, either to tap his foot, to play with his key chain, or, if food is near at hand, to eat. Women, while playing cards, will remark they mustn't eat any more candy, because it might make them sick, and while absorbed in a hand of cards will unconsciously reach for another piece.

The release of nervous energy through food intake soon develops the habit of overeating unless

controlled by judgment, and an outlet for this energy provided in some other way. It has been clearly proven that obesity is due to excessive intake of calories and emaciation due to an insufficient intake of calories, but both conditions depend upon appetite. A normal individual may maintain a standard weight over a period of years if his living conditions remain constant and his nervous system stable. A decrease in activity or an increase in emotional stress may cause a gain or loss of weight.

A fat person is popularly considered to be the happy, easy-going, phlegmatic type of individual, but clinical observation shows that he may be of a very emotional nature. Any worry or mental upset might produce the common and often repeated comment, "I get so nervous that I just have to eat". Food seems to be an outlet for some of this nervous energy, and a different channel must be opened to divert his interest from food, before weight reduction may be accomplished.

The idea of emotional stress playing a part in the production of obesity, which has just been mentioned, is rather a recent theory advanced by such investigators as Bruch (18), Bronstien (5), and others (44 & 47), who have carried out a great many

investigations on obese children. They found conditions of excessive emotional stress in a very large majority of the cases of obesity which had previously been diagnosed endocrine unbalance.

Probably the first mention of the emotional aspects of obesity does not exist in the writing of the present day investigators, but goes back to the work of the English playwright, William Shakespeare, in his play "King Henry IV" and his jovial rogue, "Falstaff". Shakespeare (50 & 51) not only describes the good nature of a fat man but also shows some of the emotional unrest which is now realized to accompany excessive obesity. Throughout his entire characterization it is possible to discern the underlying presence of inadequacy and inferiority which Falstaff feels. His whole idea of obesity is well summed up when Falstaff says, "As I grow great, I grow less", (50) which can probably be interpreted to mean that, with his increase in size from overeating, he grows less as a man whom other men look to with respect and becomes a butt of jokes and torment. Shakespeare (51) also said in a later part of his play, "I would my means were greater, and my waist slenderer". Falstaff expresses his wish

that he had not wasted as much of his time eating but spent more time developing his body and mind.

Obesity seems so obviously to be a somatic condition, that it may appear quite far fetched to approach the problem from a psychiatric angle. When one does think psychologically, he thinks first of the extreme difficulties associated with the ability of the obese child to make the necessary adjustment to face society because he is fat. Obese children suffer much and are the butt of a great deal of ridicule and humor. This rebuke by society makes the obese child so ashamed that he will refuse to take part in any activities which allow others to view his shapeless body. Thus, they shun healthy play and exercise and become inactive and sedentary. Obesity tends to set a child apart and interfere with his social life, not allowing this important feature of maturing to develop and tends to leave the child with an insecure feeling about his ability to face society.

Obese children are fundamentally unhappy and maladjusted, characteristically timid and retiring, clumsy and slow. These children have a shy, unaggressive, withdrawal behavior and are oversensitive to possible

insult and injury, lacking self-confidence and self-reliance. The lack of self-reliance and self-confidence can be explained as a response on the part of the child to repeated rebuffs which greet him day by day. Thus, obesity plays a determinant role in the development of personality.

Actually, however, this difficulty of personality development plays only a minor role in the psychologic aspects of obesity, being secondary to a more basic and involved environmental maladjustment which existed at sometime long before difficulties of adjustment were conspicuous, or before the children were handicapped by an ungainly bulk. This suggests that psychological and environmental factors play an important role in the production and development of obesity, as well as in the adjustment difficulties accompanying it.

Many investigators and clinicians have failed to recognize this psychological disturbance, or they refuse to connect it with the existing obesity, blaming the obese condition upon some other disorder, popularly a dysfunction of one of the endocrine glands.

Early work on this endocrine theory in the production of obesity dates back to the investigations

of Babinski (1) and Frohlich (10), in which they describe a condition of hypophysial tumor that presented a syndrome characterized by an onset with headache, and vomiting, followed by some disturbance of vision with expansion of the tumor to involve the optic chiasm. Accompanying these complaints, there was noticed adiposity and a feminine, infantile appearance of the patient. These last two conditions were merely secondary symptoms which were observed by these men, but had been overlooked by earlier men who had reported the same condition in older literature. This is the Frohlich syndrome as described by Frohlich and is of clinical merit in that he recognized for the first time the diagnostic significance of adiposity and other trophic changes, such as genital underdevelopment, for the localization of pathologic cerebral processes. From these disturbances it was possible to point to the hypophysis, or the area around it, as the origin of the neoplasm.

The region of the hypophysis seemed more nearly correct as the location of the tumor. This was pointed out by Erdheim (24) who agreed that adiposity was a frequently occurring symptom with a tumor of the

pituitary, but that it was doubtful that the hypophysis, in its role as an endocrine gland, was responsible for the condition. Erdheim based his arguments on autopsies which showed that only tumors which had grown beyond the hypophysis and the sella turcica were associated with obesity. However, he did admit that disturbances of growth and sexual development were related directly to lesions of the anterior lobe of the pituitary.

Other investigators as Bailey (2), Breuer (2), and Fulton (25) were of the belief that lesions of the hypothalamus resulted in the development of the obesity, and lesions of the pituitary resulted in genital dystrophy. Later Smith (52) proved without a doubt that a lesion of the hypophysis alone did not result in the development of obesity but did present a sexual underdevelopment, while a tumor or lesion of the hypothalamus alone did result in very exaggerated adiposity and did not show any evidence of sexual failure.

Of recent years the symptom complex of Frohlich's syndrome seems to have taken on a new meaning, no longer being associated with a tumor in the region of the hypophysis, but now applying solely to a condition of obesity with a dystrophy of the genital

organs, using only the minor symptoms of Frohlich's syndrome and disregarding the chief complaints of headache, vomiting, and eye changes which were once so characteristic for this condition, as Frohlich first described it. Often times the diagnosis of Frohlich's syndrome or Adiposogenital Dystrophy is made on obesity and underdeveloped genitals before the child has had an opportunity to pass through the age of puberty and his genitals a chance to develop normally.

The growth patterns of obese children and of normal children who mature early present fundamentally the same picture, thus suggesting that the laws regulating the growth of obese children and those of normal children are basically the same. Bruch (8 & 15) says that the gross size at a given age should be regarded as the momentary status in the growth pattern of numerous single elements which make up the organism as a whole, and which, because they have certain degrees of independence, may produce widely different types of body build. Studies have been made evaluating the growth trends of a group of homogeneous children from age to age from which one is able to predict the growth trends of an individual, such as an obese child, whose aspect

differs markedly from a normal child, and yet whose growth process may be governed by the laws that apply to the average child at a comparable stage of development.

Only a few factors seem to be of great importance in determining the growth of obese children. First it must be realized that there is an intrinsic quality present in each organism that governs the powers of growth and differentiation. Once it is realized that this growth follows a hereditary pattern which includes this specific intrinsic quality previously mentioned, it should be understood that these hereditary patterns may vary widely for different structures at different times and that the duration of the individual periods of growth vary accordingly. The second primary factor to consider is that growth is conditioned by internal and external influences. The endocrine system is an example of an internal influence and is recognized as a factor in the cause of obesity, but one must not make the mistake of overrating its influence. Nutrition is an example of an external influence and has been rather widely studied and obviously found to be of material significance

in the growth problem, especially as pertaining to obese children.

It is doubtful whether a dietary supplement can raise the intensity of growth above the rate of the inherited growth patterns, and similarly the hereditary growth patterns are determined by the specific intrinsic quality.

From the preceding material it therefore may be concluded that the growth of an obese child is governed by the same laws as is the growth of a normal child and that, while the body types differ widely between the obese and normal child, there is no marked difference in growth patterns.

Many investigators (33 & 49) consider obesity a condition of lowered metabolic rate, but in determining this, these investigators use the surface area standard which is used for adults and which does not hold for obese children. From a series of investigations carried out by a group of investigators (54 & 61), we are led to the conclusion that the basal metabolism, as ordinarily measured and reported, is a very untrustworthy guide to the possibility of any underlying endocrine disorder. Furthermore no relationship

can be proven in the pathogenesis of obesity. Talbot (58) explains that, to clarify the meaning of basal metabolic rates in children of abnormal body build, one must determine the rate of heat production of the active protoplasmic mass, pointing out that from the view of energy metabolism the body may be divided into two types of tissue, namely, the tissue that produces heat, or the active protoplasm, and the tissue which does not produce heat, or the passive protoplasm. Muscle tissue constitutes the major portion of the active protoplasmic mass of the body, while bone, fat, and water are examples of the inactive type. It is therefore important to determine the rate at which the active or heat producing tissue is metabolizing, before it is possible to determine the basal metabolic rate of an obese child. The active tissue is used for this determination because it is believed that this is the tissue which serves as the chief source of body heat. The active protoplasm can be measured by a determination of the creatinine output in the urine for twenty-four hours. The creatinine coefficient is then determined by dividing the output of creatinine in milligrams into the body weight in kilograms. In obese

children it has been found that this coefficient is forty per cent lower than in nonobese children, thus implying that the obese child has forty per cent less active or heat producing tissue for every kilogram of body weight than the non-obese child. Nevertheless, the obese child has about the normal amount of muscular tissue for his height as evidenced by a creatinine-height standard. It, therefore, seems that the chief difference between the obese and the normal child is that the obese child has an accumulation of an abnormal amount of inactive adipose tissue, which should be considered in every study of energy metabolism on the obese child. The regular basal metabolic rate surface area standard does not take into account this excess of inactive tissue, and therefore gives a reading which is inaccurate for the true basal metabolism of the obese child. Many clinicians are misled because of their failure to understand this fact, and thus cases of obesity are thyroid or pituitary disturbance on the basis of a lowered basal metabolic rate, when actually the basal metabolic rate is increased when corrected to the proper standard for an obese child. This standard is one in which the calculations are done in terms of

height rather than weight, the height standard being more nearly accurate than the weight standard because of the amount of inactive tissue which confuses the weight standard. By this same mistake much thyroid and other endocrine therapy is used in the treatment of these obesities and prove to be failures in correcting the condition and are often quite harmful to the child with an already markedly increased metabolism.

It may be concluded that the basal metabolic rate of a protoplasmic mass is moderately elevated in adipose children. This finding, supplemented by measurements of stature and skeletal maturation, signifies that fat boys and girls are of a constitutional type and not necessarily suffering from a deficiency of anterior pituitary or thyroid hormones.

It is stated above that stature and skeletal maturation of obese children is normal or above normal. This is evidenced by a series of hundreds of cases by such investigators as Bruch (8), Bronstein (4), Talbot (54), and others in which roentgenograms were taken of the skull and long bones to determine the bone age. In all of these cases it was found that the bone age was normal or above normal.

Finally, there is a popularly misconceived idea that obese children have an abnormally slow or

even absent sexual maturation. This idea relates back to the whole misconception of Frohlich's syndrome which originally was taken to show an absence of sexual maturation. Actually, in the syndrome described by Frohlich (10) in 1910, sexual immaturity was a secondary symptom. Usually obese children without a pituitary tumor develop normal sexually. Puberty represents that phase in maturation during which sex functions and characteristics make their appearance. Therefore, diagnosis of failure of sexual function can not be made before the age at which it is expected to occur. The time of occurrence of puberty is in relation to growth and development of the child throughout childhood. In more than two hundred cases reported by Bruch (15) in which obesity had developed before puberty, including both boys and girls in the cases, it was found that sexual development occurred in all cases, and in well over eighty per cent of these cases puberty occurred at the same age or at an earlier age than in the non-obese child. It is proper to believe that of the few cases who do not mature until late, the same number of similarly late maturity can be found in the non-obese children. After this study, Bruch was of the impression

that puberty takes place more rapidly in these patients if they lose their excessive fat. Yet obese boys and girls undergo spontaneous puberty even if they remain obese or continue to gain more weight. Whether or not puberty has a decisive influence on the weight of children can not be answered at present. At least it is known that an obese child will not develop into a slender child with the occurrence of puberty. However, it is a frequent occurrence that the child loses weight with the onset of puberty. This is usually because the child becomes more conscious of his handicap and is willing to cooperate with an adequate reducing diet, rather than the fact that puberty causes the child to lose weight.

In view of the preceding findings of increased growth, early puberty, and high basal metabolic rate, it is obvious that the abnormal size and peculiar behavior of the obese child can not have resulted from any hormonal deficiency. There is also a high degree of intellectual advancement in most obese children, having more than the average intelligence of a non-obese child of the same age, as proven by Stanford-Binet intelligence test. Actually, with the exception

of the abnormal body size, you will see only a marked retardation of social and emotional maturation which express themselves as an overdependence even at advanced ages, showing a lack of independence in every detail of life and life functions.

With some endocrine disturbance ruled out as a cause of excessive weight, it leaves the cause of obesity as an excessive intake of food and a decrease in energy expended. Now, we must go back to the cause of this increase in the intake of food. It was mentioned earlier in this paper that emotional factors play an important part in the development of obese children. Now, we must consider how emotional factors may act to increase the food intake and thus cause the laying down of excessive adipose tissue, and increase weight.

Increased appetite is considered an allied symptom of nervous tension and anxiety, but few authors probe into its origin. Obesity can be interpreted as a simple behavior problem related to emotional conflicts. Problems of maladjusted and anti-social children can be traced back to infantile fixations, sexual repressions, maternal rejections, insecure home life, and

sibling rivalry. The behavior of a human being is an expression of the resultant of the interaction between an individual and his environment, or, as Lurie (35) says, "Life is the adjustment of inner and outer relations". Therefore, to properly interpret an individual's behavior, the psychologist must know all about the individual and his environment.

Personality is often severely altered by physical defects. Organic effects may be classified as direct and indirect, the direct effect being the actual effect on the body, the indirect being on the child's attitude and behavior giving rise to inferiorities and so forth. The fat child's social adaptation to life is one of easy compliance and submissiveness. How this child reacts to the constant teasing and taunting which he must undergo depends upon his environment. The child may withdraw, becoming submissive and retiring, to some amusements which he is as able to enjoy as eating, or he may resort to bribery to get into the good graces of the gang and stop this teasing. Or finally, the child may develop a feeling of hostility and actually become anti-social avoiding all contact with individuals of his own age. The child resorts to eating

as a soother to his wounded pride or handicap in not being able to compete with his fellows.

To say that environmental factors conduce to the development of obesity is not to say that a certain environment in itself can produce obesity, but rather that certain preliminary requirements, both in the environment and the individual himself, have to be fulfilled before obesity becomes manifest. It seems that severe degrees of obesity were less common among the well-to-do economic group than in the marginal groups. The condition seemed to be more prominent in immigrant families than in those with an American background, with some preponderance in the Jewish children, but this is not as great as it was once believed to be. As a matter of fact, the most severe cases were found in the Irish and Italian children.

Although the parents were of the poorer classes, they lived in moderately nice homes. However, in most of these there was no space provided for the children to play or to express themselves. This one fact alone may in part explain the great lack of self-expression among the obese children. Expression was not only curtailed by the lack of space, but in many

instances it was lost because of the presence of relatives in the home which made free expression impossible. The presence of relatives also led to a large degree of tension and friction created by nagging, hushing, or spanking, resulting from controversies as to the rearing of the child. Often times it was found that space was sacrificed to allow the family to live in a better neighborhood and allow the child to go to a better school and meet the so-called better class of people. Far too often the home was given over to the protection and preservation of the furnishings and fixings of the home.

The marginal economic level of these families seemed to be a contributing factor in the over-feeding. The abundance of food represented the one contribution to luxury. Many of the parents had experienced poverty and cruel hunger in their childhood and were determined to keep their children from the same sufferings. When economic security was missing or lost, a larger food intake served the purpose of combating anxiety. In a number of cases the onset of obesity in the child could be dated back to a financial reversal of the parents. In most of the families the amount spent for

food was disproportionately large as compared to the money available for the other needs of the family. There were no complaints about the costs of food, but there were many complaints about the costs of oversized clothing, and complaints about the costs of food for a diet. All in all, food played a prominent part in the family life, and it would be difficult, if not impossible, to break down the ideas and emotional significance which the family has put upon food and food intake.

In this series of hundreds of cases reported by Hilde Bruch (11) in which she went at the emotional aspects of obesity from the background and beliefs of the parents, she found that social contacts and cultural interests of these families did not reach beyond the narrowest of family limits, and that the greatest number of parents were foreign-born and without education or social advantages. Many of the fathers felt defeated because of their past life and life situations. None actively entered into the struggle for success, all exhibiting a fundamentally passive attitude. Life had not granted them what they had hoped for, and because of this they would do nothing to gratify these hopes. The outstanding impression of the personality of the

mothers was an overt display of self-pity yet domination. They spoke of themselves as sick, unhappy, and misunderstood women, seeking an expression of sympathy for themselves and their misfortune. There was an inability to perceive life situations in a realistic view.

Most of the women had undergone a life of hardship, cruel poverty, and bitter disappointment. Many were foreign-born, some of them coming to this country alone to get away from the hardships of their homeland. They arrived expecting advantages for an education and freedom of personal development, but many suffered from homesickness and, due to lack of funds, drifted into sweat shops receiving little reward and even less opportunity. The excessive demands made upon these mothers and the need to contribute to their own and others' support had been forced on them at an early age before they had reached sufficient strength, inner security, and self-reliance. All of the women reacted to these demands with resentment and the feeling of having been exploited without reward and having been thwarted in their education and personal development. All were immature in their social contacts and limited

themselves to the narrowest circle of their family. The mothers' dissatisfaction and hostility manifested themselves in endless complaints, exacting impatience, and aggressive irritability.

Prolonged attachment to their parents appeared to be linked with the complaints of not having had a real childhood like they wanted, and they seemed still to be searching for some fantastic normal and carefree childhood. Because of this continued search, they are not capable of going forward toward emotional maturity and of accepting adult responsibilities without self-pity and complaints. In their impeded emotional development, their frustrated longing for a happier childhood for their children (actually for themselves) may be thought to serve as one source of their attitude and reaction toward their children.

The parental relationship in many of the families in which obese children are found is on a very insecure basis, with many of the cases coming from broken homes where the father has deserted the family or has died and the mother has had to be the bread winner as well as the love element of the family. As a rule the mother is found to be the dominating parent

in most of these families, with a predominating lack of understanding and absence of common interest plainly visible even though no open friction could be detected. Many of the fathers sought interests outside of the home in which the wife did not participate, many of these leading to a very insecure feeling which was easily detected. Far too many of the families were dominated by the mothers who were so preoccupied with their personal problems and unhappinesses that they could not give themselves fully to their families and could not provide a secure and harmonious family atmosphere.

The feeling of the parents toward the child is undoubtedly an important factor in the emotional development of the child. In many cases the child was not planned and was an unwanted member of the family; in a surprisingly large number of these cases the mother had considered a criminal abortion to rid herself of the unwanted child, but, because of religious or medical reasons, the act was not performed. In several cases the sex of the child was not what the mother had wanted, and she expresses resentment at having a boy when she wanted a girl, this resentment leading to a feeling of emotional insecurity in the child's life. As a general

rule, however, the mothers of girls did not show this sexual disappointment as frequently as did the mothers of boys. In a few instances the obesity of the child was in some way connected with the death of a brother or sister. Often the child was planned by the parents, but, because of some financial set-back, the child became a burden upon the family. In all of these cases there is a subconscious feeling of resentment, and most of these mothers failed to make a proper adjustment to the unwanted child, giving rise to a feeling of displeasure and animosity and causing a delay in the emotional maturity of the child due to lack of maternal adjustment. It is true that many non-obese children were also unwanted children, but, in a series of control cases studied, it was found that an early maternal adjustment was made to the child and none of this feeling of animosity was detectable.

The attitude of the parents toward the obese child was quite inconsistent, but usually an overt display of overprotection, especially on the part of the mother, was present in nearly all cases reported. The parents played at devotion and affection to cover up an underlying but evident insecurity in relation to their child.

In some instances flagrant rejections and hostilities expressed themselves in cruel beatings and inhumane threats which were used to discipline the children. A constant apprehension of injury or death to the child seemed to haunt many mothers, and this seemed to be relieved only when the child was in their presence. These fears also included physical dangers, the ordinary risks of childhood, and moral hazards to which the child might be exposed. This apprehension on the mothers' part led to major overprotective devices, such as limiting the children's play, accompanying them to school, and choosing their fellow companions, thus retarding the child's individual personality and social development and suppressing the emotional maturity.

Frequent punishments were inflicted by the mother as a relief for her own irritability and often bore no relations to the acts of the child. In a few instances beatings and threats were used to provoke marked emotional response on the part of the child. For example, threats of desertion by the mother and separation were frequently used to throw the dependent child into panic and cause him to hysterically cling to his mother and beg her not to leave. Such an act

as this was interpreted to be an expression of genuine affection for the mother by the child.

In none of the cases studied was the mothers' means of expressing or receiving affection what one could call mature. Never did it manifest itself as a free flowing warmth and tenderness of genuine love, but was more an affection by demand, returning the affection with gifts such as food rather than love and care. Most of the parents tried to get the affection from their child that they had missed in their own early life and which was not found, as they had hoped, in their marital relationship. Parents too often tried to give their children the things that they had missed in their own childhood and this led to an environment of primitive luxury, which in a good number of cases was centered around food.

Common to all cases was the high emotional value with which the offering and receiving of food was endowed. Children were condemned and punished for their shortcomings by the removal of food, such as not letting the child have supper because he did something wrong during the day. Or the child was praised and rewarded by the giving of food, as buying him an ice

cream cone because he was such a good child today. This practice cheats the child out of real love and affection and substitutes the receiving of gifts, so, when the child is under emotional stress, he does not turn to the love and affection which most children have, but rather he turns to the only love which he has known, namely, the intake of food. The fundamental need of each child of being loved and accepted as an individual in his own right and of growing up and developing at his own rate was not allowed, and this called for special devices on the part of the child; therefore, he eats.

Development of obesity is one form of the child's response to his environment. This connection can be clearly pointed out in those children who gain weight rapidly after some upsetting event in their family circle. Why the child eats as a result of the loss of someone dear to him who was a source of confidence can not be discussed, but forces influencing the development of this obesity can be easily recognized in his environment. Without any question of doubt, overeating and unactivity have a definite emotional meaning in the obese child's life and in that of his parents. It seems that food intake has an

alleviating effect on anxiety while activity, on the other hand, has the effect of increasing anxiety. Greediness and selfishness are expressions of dissatisfaction by the obese child, driven by inner tension and anxiety, while he uses excessive eating and withdrawal from threatening to alleviate his feeling of insecurity and insignificance. The whole problem might be explained in this way; in an attempt to realize his innermost striving for personal growth and independence, the exaggerated physical size gains great emotional significance. The increased body largeness gives the child a sense of power and strength which actual human relationship has denied him, thus, giving a creative striving in a rather distorted form.

The patient may come to accept his deficiency of drive with his total personality and make his whole adaption under its influence. When impeded and ridiculed because of his obesity and inability, the child's self-esteem will be shattered, and he will react with a feeling of inadequacy and give up all attempts to be other children's equal, becoming overdependent, shy, and anxious. He may even play with girls in preference to boys, thus obtaining new shelter and substitutive gratifications.

Other patients, after an initial period of overdependence, respond to the above factors with hostility and aggression. This overaggressive behavior is, however, limited to certain situations or persons, while many features of overdependence are maintained. The attack is usually toward those who actually injure the patient's self-esteem, or, in some instances, the patient may project this injury on persons in his environment and in that way blame them for his own somatic deficiency. This is a renewed attempt at mastering difficulties and offers substitutive gratification through pleasure in cruelty to sibling or playmates.

The patients react to motility and lack of drive in various ways. There seems to be discrepancies between their aims and their abilities to execute them, leading to an oversubmissive behavior. Predominance of oversubmissive or overaggressive reaction type in a given patient is correlated partly with the age at which the symptoms become a problem and partly with the child's relation to his parents and siblings. Motility disturbances or obesity before the age of five years tends to make the child overdependent; whereas, later appearance of obesity is prone to make the individual

overaggressive. It is quite hard to tell at what age the child becomes aware of his inadequacies. This time may be seen when the child shows symptoms of not urinating in front of the other boys, and not comparing his genitals, feeling inadequate, depressed, and hostile. This would tend to make the child overdependent especially if noticed early.

Often the effects of an excessive oral drive may be complex, arouse the opposition of parents, and lead to fears of punishment and loss of love. Still the patient can not suppress his desires. As a matter of fact, these fears cause still further emotional insecurity and further need for some substituting gratification derived from excessive food intake.

In summarizing what has been said, we find that obesity, especially in children, has been wrongly taken to be an endocrine problem, however, it is not possible that this condition could be endocrine in origin because complete studies show that obese children are actually overdeveloped in all features, sexual maturity, bone age, and intellectual progress, excepting emotional maturity. With these facts present, there can not be any existant glandular dysfunction. Accumulation of fat tissue is based on the law of preservation

of energy, and that increase in body substance occurs when food intake exceeds the energy output. Overeating and inactivity have a definite emotional meaning in the obese child's life. There are no accidental exogenous factors which make the child a passive victim of mechanically determined fat storage, but there are factors intricately interwoven with the family interrelationship, the child's personality development, and life experiences.

Studies of innerpersonal family relations show that the environment offers little emotional security for the obese child, denying him the basic right of being loved and accepted for himself. Instead, food is used as a sign of love for the child, but there is an underlying distaste for the fat child. These conflicts may go back to prenatal emotions of not wanting the child and even possibly the attempt at destroying it. Many of the mothers try to create a life of abundance and idleness which the parent (mother) feels that she missed as a child. Too often the family relations are wrong, undesirable, and inadequate. The overindulgence and possessive attitude of the mother creates a feeling of overdependence. The environment does not allow a feeling of self-expression and prevents a growth of self-reliance and independence. The child falls back on

only love he knows, that of the intake of food, when he is affronted with an emotional stress or strain; thus excessive intake of food. Overeating, inactivity, and exaggerated body size are outstanding symptoms of obesity.

II. Case Histories of Obese Children

In this section of the paper will be presented a series of interesting cases which are but a few of many that show up definite psychogenic, emotional, and environmental factors in the life of obese children and which can be directly related to the onset of obesity. These cases are drawn from a few personal observations, from the cases which entered the Pediatrics Department of the University Hospital in Omaha, Nebraska, and a selection of the more interesting cases of the studies of Bruch (18) and of Bronstein (7).

Case # 1 (63) - L.R. This is the case described on pages one and two of this paper.

This patient is a twelve-year-old girl who was very markedly obese, with a continued increase in weight especially great in the four months before entering the University Hospital. The child did not show signs of improvement on endocrine therapy which she received before entering the hospital. In the hospital the child underwent a series of laboratory tests all of which proved to be normal or above normal, including a basal metabolic rate which by Talbot Height Standards was a plus thirty-two per cent. The patient was put on a reducing diet of eleven hundred calories on which she lost ten pounds in nine days. This diet was raised to eighteen hundred calories, so that she didn't lose weight too rapidly. Even on this increase she continued to lose weight.

The patient was dismissed from the hospital with the diagnosis of obesity from overeating, and was sent home on a reduction diet.

This case is quite interesting from two standpoints. First, as was said, this case shows how many obese children are misdiagnosed and mistreated as endocrine diseases, and this misconception leads to faulty and even dangerous methods of treating these cases. Second, this case shows a definite emotional connection with the development of obesity. The patient came from a broken home where the mother and father were divorced some three years before the patient entered the hospital. The patient's obesity had developed over a three year period, during that time of the patient's life when she was the most unstable emotionally and the most insecure in her family life. It was during this period of greatest insecurity that the patient resorted to the intake of food as a substitute security for that which she had lost. This excessive intake of food had become a habit which is difficult for her to break, she now felt uncomfortable on a decreased food intake and eleven hundred calories was not sufficient to make her comfortable even though she did lose weight on it. This case shows a definite emotional relationship

to the cause of her obesity. It was not possible, however, to dig deeply enough into the patient's background, so emotional relationship can not be positively proved.

Case # 2 - D.G. (64)

The patient is a twelve-year-old white school girl who entered the University Hospital for the first time January 5, 1944, complaining of: Tiredness and rapid increase in weight. The patient weighed only three and one-half pounds at birth, and was normal at five years of age, weighing forty-nine pounds. At five years of age the patient had a tonsillectomy, following which, she seemed to gain weight rapidly until she weighed one hundred pounds at eight years. From this time she continued to gain at the rate of two to three pounds a month. On looking into the patient's history, it was found that the girl tired easily and couldn't keep up with the rest of the children her age when at play. Therefore, the child received little exercise and was quite inactive in her habits. The family history showed that the mother and father were married four years after the child was born and divorced two years later. This child was the only pregnancy of the mother. On physical examination it was found that the patient was an extremely tall and heavy girl that appeared older than her stated age. At twelve the patient was sixty-five inches tall and weighed two hundred and eleven pounds. Laboratory examinations showed the patient to have a bone age of seventeen years and her basal metabolic rate by the Talbot Height Standard was a plus twenty-one per cent. The patient showed an early sexual development with menarche appearing at ten years of age and occurring regularly every thirty days lasting four to seven days. In the hospital the girl was placed on a twenty hundred calorie diet and came down from two hundred and eleven pounds to one hundred and ninety-nine

pounds during a three week stay on the calorie diet with no other medication than decrease in food intake.

This case presents several interesting features. First, there is the obesity that often is wrongly called endocrine or endogenous, but the girl shows no backwardness in progress, being advanced in all phases of growth and development. This fact rules out any possibility of endocrine dysfunction. This girl is very definitely not a picture of thyroid or pituitary hypofunction. From the family history of this patient there is found a very marked emotional factor which could be the underlying cause for the obese condition. The mother had the child out of wedlock and the child was, without a doubt, a burden to the mother and not wanted by her. Four years after her birth the child's parents were married, but there was apparently a very insecure and unhappy family life for all, because the parents were divorced two years later. The patient did not show excessive weight gain until five years of age. Apparently the mother cared for the child, showing a great amount of love and affection until the mother married. The father was evidently dissatisfied with the marriage and blamed it all on the child, leaving the youngster with a very

insecure feeling toward her family life. The child resorted to eating in an attempt to overcome or at least to relieve this insecure feeling within her tiny mind. After the divorce the mother probably blamed the whole trouble upon the child and made no attempt to hide these feelings of resentment toward the child. This fact, as well as the underlying insecurity, caused the continued eating and continued weight gain. Finally, it is of interest to note that the child and the child's parents relate the onset of the patient's obesity to a tonsillectomy at the age of five years. Frequently there is an attempt to connect the onset of obesity with some operation or injury. However, it is seen that the operation or injury is merely a coincidence and the underlying, precipitating cause is the occurrence of some emotional shock at about the same time. The operation is merely the patient's attempt to explain her ungainly bulk upon some tangible or organic basis, thus relieving her from any responsibility and ruling out, in the patient's mind, the possibility of aid from dietary measures. This is a frequent finding and a very interesting side light to the question.

Case # 3 - (18)

This is the case of an eleven-year-old Irish-American boy who entered the clinic with great distress about his appearance, especially the accumulation of fat in the mammary region, which actually simulated a female breast. The boy and the parents were both afraid that the abnormal breasts were an index to the future sexual development. The patient was ashamed and bashful when subjected to the investigation of the clinic. He was sulky and unresponsive and always stubborn, bashful, and oversensitive with occasional outbursts of temper. On study of the boy's social life, it was found that he had no friends and did not enter into any athletic events, spending most of his time indoors listening to the radio and reading. He quarreled with his sister constantly. The boy's mother stated that he was always large but wasn't fat until nine years of age following an appendectomy. The boy went from ninety pounds to one hundred and twenty pounds in a few months. Again at eleven years of age a rapid gain of weight occurred when the patient went from one hundred and twenty pounds to one hundred and fifty pounds in a short period of summer vacation. A study of the family relationship revealed an overpowering aggressive mother who was convinced that there was no hope for her cry-baby son. The boy was always frightened of operations by his mother who said that, if he didn't quit eating wood, he would get sick and die, and they would find wood in his stomach. When it was necessary for the child to undergo an operation for an acute condition, the child was so frightened that he ate and gained weight, thus accounting for the first period of weight gain in the child. The mother further frightened the child by saying that if he didn't quit eating wood, they would have to operate again and he might die this time. This so frightened the patient that he quit eating wood, but to satisfy this desire to chew he ate other things, increasing his food intake enormously. At about this same period of time, the boy's father lost his job and had several financial setbacks, and the operation threw further financial burden

on the family. Shortly after this time, the mother had an attack of asthma, giving rise to a very definite insecurity in the family life. These factors precipitated the first rapid gain in weight, and after the patient became adjusted to these situations his weight settled down to a level figure for a period of two years. At the age of eleven he showed another very marked weight gain which is probably related to his being teased and tormented by older boys about his unusually large breast development and "so-called" retarded sexual development. It is interesting to note that the patient lost weight and eventually regained his normal weight once he was reassured about his sexual development being normal.

This case demonstrates very definitely that excessive eating and withdrawal behavior may be precipitated and determined by emotional factors. This case is taken from the study carried out by Bruch (18) and is reported by her as an example of conditions which she found in a large per cent of her cases. This is very interesting from the point of view that the patient also related the onset of the obesity with an operation which actually was only incidental with the onset of obesity. This case shows that when the emotional factors are removed and a more secure state is set up, the patient may stop gaining weight and run along on a steady keel or even lose weight, but should the environment again become insecure the child will go back to his old relief mechanism and again gain rapidly. Most children undergo these experiences

without any noticeable consequences or undue disturbances, while the obese child responds by over-eating. Probably the inner stability of the obese child is lowered before the immediate event occurs, and previous experiences and social activities have endowed eating with some special emotional significance, thus causing the child to resort to this act when times of emotional stress occur. This case also shows a condition of fear of the absence of normal sexual development even before the age in the child's life that sexual development should take place.

Case # 4 (5)

This is the case of a ten-year, ten-month old boy who entered the clinic because of excessive weight and a lack of strength. In going into the boy's past history it was found that he was actually thin until four years of age when he had a tonsillectomy. From this date he began to gain weight and never was able to keep on his diet for fear of losing strength along with the loss of weight. From the family history it was learned that this child was the youngest of four children, the next oldest being eight years older than this child and of the opposite sex. On examination the mother showed extreme anxiety over the patient and listened at the door the entire time that the patient was being examined and the tests were being given. The patient was very markedly overprotected and always had to keep his mother informed as to his whereabouts and his doings. The mother was convinced that her boy had gland trouble, and she could not be told otherwise. On interviewing her, it was found that the child has above average

intelligence and average masculinity. He had an emotionally stable personality with signs of introvertive tendencies and submissiveness. The patient spent much of his time reading, listening to the radio, and going to the movies. The patient was quite inactive and seemed to enjoy watching games of energy expenditure rather than participating in them. The reporter stated that the child behaved well and seemed to get along well with his three sisters, but he seemed to be very sensitive about his weight and responded to teasing by going home. The patient had a definite tendency to be a crowd follower, most of his friends being older than himself.

This case is one of the cases reviewed by Bronstein (5) and is reported in a somewhat different manner than those presented by Bruch. Here, the investigators worked more toward the personality development in contrast to the familial background which Bruch (11) seemed to stress. Bronstein (5) studied the personality development, also the degree of intelligence and sexual maturity. This patient shows the repeated finding of a history of obesity developing, following some operation. A new feature is found here, namely, that of the child being the youngest of a number of children with a great many years difference between the age of the obese child and the next oldest child in the family. Here also one sees the very marked overprotection exhibited by the mother and the subconscious rejection of an dietary regime that might

take this submissive child away from her control.

These findings are rather consistent with this type of obesity and are too often overlooked as a possible cause of the condition.

Case # 5 (5)

The patient is a thirteen-year, nine-months old girl who is very markedly obese. She left her mother's side only after much persuasion. The girl was quite sensitive about her weight and resented any comment about it. She did not mingle with other children, but spent her time, reading, listening to the radio, and going to movies. The patient had always been large for her age, but it was only in the last five years that she had become so noticeably obese. The girl was shy with strangers but once she was acquainted, she became talkative and overflippant. She was affectionate, obedient, and strong-minded. Her mother said that she was afraid of nothing, nevertheless, she was not allowed to go anywhere alone in fact she didn't even know how to use the street cars at thirteen years of age. In taking the family history, it was found that the girl was the youngest of two girls and she seemed to fight with her older sister continually. She angered easily but calmed down rather rapidly. The father died some twelve years ago, shortly after the patient was born, and the mother has worked since his death. During the last few years, she had been working nights. The tests on the child showed her to be of average or slightly above average intelligence. She had normal sexual development with a slight tendency toward masculinity. Her personality studies showed her to be emotionally unstable with extreme introvertive tendencies.

Here is another of the cases studied and reported by Bronstein (5) and his associates. The patient under consideration has several environmental

conditions which might lead to emotional strains. First, the child is the youngest of two children in the family which has caused a great deal of rivalry between her and her sister. This rivalry has been present since shortly after the birth of the child and serves as a source of insecurity for the patient. Even more important in the condition of a broken home where the father has been dead twelve years of the thirteen years of the child's life and the mother has had to work. The mother undoubtedly feels that the child was an extra burden to the family and probably resents her presence, but covers up this feeling with a display of extreme overprotection, not allowing the child to do anything by herself. This resentment on the part of the mother led the child to a definite insecure feeling. There is no way to know at what age this feeling developed in the child, but it is quite likely that the resentment of the mother for the child was realized at a very young age and may give an explanation of why the child had such an enormous appetite and always looked quite heavy even at an early age. There is no apparent reason for the child to become obese at the age of five other than the realization of this fact and the quarreling with her sister.

Case # 6

This is the case of an eighteen-year old girl who became quite obese at the age of ten years and continued to gain until the age of eighteen. The girl was the youngest of two children, the older being a boy, with five years difference in their ages. From the child's birth she was underweight but within normal limits. When she was ten years of age, her mother was taken to a mental hospital as a hopeless case of schizophrenic psychosis and has remained there ever since. After the mother went to the hospital, the patient became very markedly obese and continued to gain weight gradually, until at eighteen years of age she was about sixty per cent overweight. The father felt it a burden to raise the two children and subconsciously had a feeling of resentment toward them. There was a definite display of overprotection on his part, not allowing the child to do anything on her own. The patient was above average intelligence, and underwent sexual maturity at a normal age. She is quite shy and introvertive in her tendencies. She angers easily, but gets over it readily. For years the patient had an underlying fear that she would suffer the same consequences her mother had suffered, even though there were no evidences to substantiate such a fear. All of these features led to a very insecure homelife, and the child resorted to the only pleasure which she knew, that of eating. When placed on a reduction diet and her cooperation obtained, she lost twenty pounds in one month without any medication other than the dietary restriction.

This case is one of the more interesting cases of the writer's own personal observation and shows the typical conditions of most obese patients. That of a shy, introvertive individual which had some very shocking emotional situations in her early life

which left her with a very insecure feeling about her family stability. There has been a constant underlying fear on the part of the patient that she too might develop some psychosis and end with the same fate of her beloved mother. This has caused the patient very much anxiety. During her family life from the time that her mother went to the hospital, there was very little genuine love or affection, but more a display of love by granting of the girl's every desire, but most of them begin for food. When the child felt the need of love and affection, she turned to the only love which she knew that of food. She thus developed a very enormous appetite which became a habit with here and a habit which was quite difficult to break.

These cases have been presented to bear out the ideas which were presented in the first portion of the paper, first, that obesity is due to overeating or excessive intake of food and a decrease in the energy expenditure. There is no endocrine problem present in the usual case of obesity. It is conceivable that some rare endocrine dysfunction due to tumor formation or such as that could cause an excessive

laying down of adipose tissue, but even in these rare cases the individual could not become fat unless an excess of food was taken by him. The cases all show that too much food was taken, and that there was no existing endocrine disturbance, as evidenced by the fact that the development of the child was normal in every aspect -- growth, sexual development, and mental development.

Second, with endocrine function ruled out as a cause of obesity and food excesses and inactivity placed in the spotlight, there must be some reason for this excessive food intake. In studying the series of cases, it was found that there was a good deal of emotional insecurity in almost every case studied. There was a lack of love and affection which was substituted for by the giving of food. When emotional problems became so great that the child could no longer handle them himself, he turned not to the love of a mother or father as a well adjusted child would do, but rather to the only love he had known, that of food. There was an excessive intake of food which became a habit and made it impossible to satisfy the child with less food, therefore, a continued food excess and a gradually increasing obesity occurred.

All of the cases satisfy both of these situations: first, an absence of any demonstrable endocrine disorder, but an increased food intake and, second, the existence of some emotional condition in the child's environment which could cause an insecure feeling on the part of the child.

III. Treatment of Emotional Obesity

Little has been said about the treatment of obesity in order that the final portion of this paper might concern itself with only the treatment. Much has been written about the treatment of obesity ever since early times. It has ever been the desire of both the physician and his patient to find some magic drug that would simply take the unsightly fat away without causing any harm to the patient or without forcing the patient to give up his enormous appetite, but to date there has been no such drug discovered. Wadd (60) sums up the ideas of this desire by a little poem;

"How can a magic box of pills,
Syrup, or vegetable juice,
Eradicate at once those ills
Which years of luxury has produced."

William Wadd says that the treatment of obesity is divided into two parts. First, by taking of food that has little nutrition, and, second, by observing certain rules of exercise. In the dietary restriction he lists bread which has been made from bran, vegetables of all kinds, and fat-free animal food in small quantities. As to exercise he says that one should never sleep after

meals, but should exercise a great deal, mostly exercise consisting of such activities as horseback rides and brisk walks. Kirkland (60 from Wadd) said about the treatment of obesity, "More dependence is to be had upon diet than medicine, and that the whole constitution may be changed by proper choice of aliment." Every cure was accompanied by dietary enforcement. Even in ancient times the more prominent investigators believed the only cure for obesity to be a decrease in food intake.

Theoretically, treatment should be easy, simply by restriction of food intake and by the increase of muscular activity, thus resulting in a proportional loss of weight. The difficulty results in the unwillingness and inability of the patient and the parents of the patient to cooperate with such treatment. Bruch found that the best cooperation could be obtained in the adolescent age when the child could be weaned away from the close dependence of his home, but this generally caused alarm and bewilderment of the parents.

Obesity in childhood very rarely arouses the interest of the family, and few complaints were directly referable to the abundance of the child's weight.

Rather, the appearance of the child and his personality difficulties gained their importance only in the society outside of the home, as in the school, and the church. Sexual development was not a problem in obese girls, but it caused very much concern in the obese boys and caused many misconceptions among the family and the physicians alike. Actually not one child in all of Bruch's (15) cases showed signs of sexual maladjustment.

Parents readily accepted the diagnosis of endocrine disturbance and expected a few pills to correct the obese condition, but they refused to believe the possibility of some abnormal psychological emotional factor as a cause for the obesity. Cooperation is therefore very difficult to obtain from the parents. Restriction of food signifies the withholding of affection, and to gain cooperation it is necessary to show the mother an entirely new method of giving affection and emotional security. The best results were obtained when a psychotherapeutic approach was used in combination with a strict medical diet, giving a helpful and successful way of treatment.

The case of each individual should be taken separately and considered as an individual case. In

order that willingness and cooperation be realized and the necessity of changing the habits of eating and exercise be recognized. There should be an attempt to understand the underlying emotional problem and an attempt to correct it by associating the child with some organized play group, such as the Boy Scouts or the Y.M.C.A. This may cause the child to develop enough concern over his ungainly bulk to cooperate with an adequate diet and thus lose weight.

Therapeutic measures should avoid everything which may lead to further stimulation of an already active process of growth and maturation. This means that endocrine therapy may be harmful to the already overactive body metabolism. A careful therapist must direct his attention toward control of the diet; this constitutes at present the most accessible external factor which has the property of promoting growth in weight and which is clearly recognized.

Since the excessive weight of the obese patient has resulted from excessive intake of food, restriction of the caloric intake below the energy requirements will result in a reduction of weight. All reports demonstrate convincingly that undernutrition

results regularly in a predictable loss of weight. The success of the reducing regime depends largely on the cooperation of the patient, which may or may not be obtained due to reasons which have already been discussed. Unwillingness to break a habit and expectation that some drug will make the accumulation of fat disappear are the most frequent reasons. It should be emphasized that the relation between the patient and physician, and an understanding of the patient's problems are important in the successful management of weight reduction. The patient of a private practitioner will usually cooperate because he goes to the physician with the idea of losing weight. However, in the cases which come to a free clinic, cooperation is hard to obtain. The patient who attended the clinic regularly and showed an interest in losing weight did lose weight, while the patient that had to be forced to come to the clinic and to stay on a diet did not lose weight.

From this we conclude that there must be a desire on the part of the patient before his cooperation can be enlisted and he will lose weight. Many times in obese children there will be a great reduction

of weight when they become interested in something or someone other than themselves. This new interest takes the patient's mind off of himself and allows him to establish new habits and thus lose weight. For example in the case of the girl (Case 6) it was impossible to gain the patient's cooperation, and she could not lose weight. Finally, when she was eighteen years of age, she got a chance to take a trip to California if she were to lose weight. The patient went on a diet of her own free will and stuck to this diet until she lost some thirty pounds and later come down to her normal weight when removed from the influence of her overprotective home life.

Newburgh (43 & 44) has done much work on reduction diets, and in his studies he has found that reduction diets of quite low caloric intake work toward rapid weight reduction and are effective in maintaining the health of the individual. Newburgh and his associates found that a diet of four to six hundred calories was the most effective diet. He said that there should be no endocrine therapy given, and he advocates that all sorts of exercise should be given, both active and passive. He says that obesity is a preventable disease

and people should be taught to avoid it. Every mother should be taught the dietary needs of the child so that from birth she will be able to regulate the child's intake and see that his meals are adequate, without being excessive.

There have been numerous different medications prescribed for the treatment of obesity, many of them harmful and without the effect desired. In olden days soap was used because of its diuretic effect and often prescribed with a reduction diet to bring about weight loss, but any effect that was gained was gained by the diet rather than the soap which was taken. Thyroid extract has been given for many years and is hard to give up, even though it has been proved to be ineffective. These calorogenic drugs were recommended because of a misconception that obesity is accompanied by a lowered metabolic rate which is now known to be false.

A number of authors have made studies for some drug which would decrease the appetite and increase muscular activity. Some authors have reported favorable effects of benzedrine sulfate, which is supposed to have this pharmacological action. Bruch (16)

reports a series of cases in which the drug was used. To control its use, she divided the treatment into four week periods and required each patient to return to the clinic each week to receive the next week's supply of the drug. To be sure that the drug was effective and not just the idea that a pill is doing the work, she gave benzedrine sulfate for one four week period, and for the following period the patient would receive a placebo which looked and tasted nearly like benzedrine sulfate but had no pharmacological action. One group of the cases was started on benzedrine sulfate while another group was started on the placebo. In general it was found that the patients receiving the benzedrine sulfate lost more weight during the four week period when it was given than they did during the second four week period when the placebo was administered. The best loss of weight, in those cases receiving medication, was observed during the first four weeks that the drug was taken. This can not be explained by the action of the benzedrine, but probably as a nonspecific effect, depending on the patient's enthusiasm for a new type of therapy. However, the greatest loss of weight was seen in the control cases which showed good clinical

attendance without receiving any medication. In evaluating the effects of any medication on the appetite and weight of the obese patient, the influence of other factors, such as suggestions and better cooperation, has to be differentiated from the true pharmacological effect. Bruch stated that her study did not show any significant influence of ten milligrams of benzedrine sulfate upon weight loss. However, the finding encourage further observation of the effects of larger doses of the drug.

The best treatment of the obese patient at present is a reduction diet of low caloric value with adequate supplements of vitamin and protien materials. However, cooperation is essential between the patients, parents, and therapists. Psychotherapy consists of giving patients and parents a satisfactory explanation and understanding of possible special difficulties and should be carried out in the treatment of every obese patient. The emotional value of foods must be removed from the patient's and parents' ideas of affection and love, by substituting a satisfactory supplement. There is a possibility that some future may be seen in the use of drugs, such as benzedrine sulfate, to aid

in the loss of weight, but there must always be a reduction in the intake of food and an increase in the output of energy which will accompany the use of any drug. The whole problem of obesity can be summed up in the words of Walter de La Mare (30) in his works entitled, "Peacock Pie";

"It's a very odd thing-
As odd as can be-
That what ever Mrs. T eats
Turns into Mrs. T."

de La Mare might have gone further to say that, as odd as it is true, before Mrs. T. will be able to lose weight, she will have to give up much of what she eats.

IV. Summary and Conclusions.

This paper has reviewed some of the ancient beliefs on the subject of obesity, and an attempt has been made to show many of the misconceptions which have been built up concerning the cause and the treatment of obesity. It was shown that endocrine dysfunction is but rarely a cause of obesity. Also it was pointed out that the classic picture of obesity had none of the characteristic symptoms of endocrine disturbance, namely, deficiency of growth and development, decreased or lowered basal metabolic rate, delayed sexual maturity, and frequent deficient mental advancement.

Next it was shown that the immediate cause of most obesity was either the excessive intake of food, or the deficiency of energy expenditure, or, as is usually the case, both. With the facts established that endocrine disorders did not cause obesity and that the process depended on the energy balance within the body, emotional disturbances were advanced as a possible cause of the excessive intake of food and as the underlying condition behind most obesity.

It was shown by case histories and reports of many investigators how a very large per cent of obese

persons presented environmental backgrounds and family problems which gave rise to an emotional insecurity. Children, in families where one of the parents was missing or in homes where there was a feeling of resentment toward the child, resorted to food excesses to satisfy a craving for security which could not be realized in the child's environment.

It was found in nearly all cases that the child was shy and introverted in his tendencies and was extremely overdependent. The parents always placed a very high emotional value on the taking of food and often expressed their love and affection in relation to food. This fact alone often causes the child to eat excessively when true love and affection were missing from his surroundings.

It would be wrong to get the impression that all children become obese when confronted with threats of insecurity with which they are unable to cope, for this is not the case. Many children are able to make adequate adjustments to these conditions and thus, do not become obese. Still others are simply not of the proper body type which predisposes to obesity. So it might be said that the development of obesity depends upon two conditions,

one, the hereditary background or predisposition, and, two, the environmental surrounding of the person.

A series of case histories were presented which substantiated the findings of the investigators and showed rather conclusive evidence that emotional difficulties were generally precipitating factors of obesity. None of the cases presented any evidence of endocrine disorder and all showed normal development, but inadequate emotional maturity and thus inadequate adjustment caused the emotional difficulty in his or her environment. Many of the cases showed marked loss of weight when the emotional difficulty was corrected, the cooperation of the patient obtained, and an adequate reduction diet instituted.

Treatment should be a fairly easy matter in this type of obesity, but actually it proves to be quite difficult. Treatment would consist of a decrease in the food intake and an increase in the energy expenditure, but before this can be accomplished, absolute cooperation of the patient must be obtained. Once the cooperation is obtained the underlying cause of the obesity must be treated as well as the immediate cause. The psychological factors in the person's life must be

uncovered and corrected before it will be possible to decrease the food intake or increase the energy expenditure. Once the emotional factors are corrected, the patient will be able to divert his food excess to some other form of nervous release.

In closing we may conclude the following: First, that a very large percentage of all obesity is due to excessive intake of food and is usually not associated with any endocrine disorder. Second, it is quite common for emotional factors in the individual's life to be the stimuli of excessive intake of food. Third, this obesity can only be corrected by determining and rectifying the underlying emotional disturbance and decreasing the food intake. Emotional obesity develops only in those persons who are predisposed to obesity and fail to make the proper adjustment to some upsetting environmental condition. These conditions are more commonly found in childhood when the greatest number of difficult adjustments arise, but this does not mean that this type of obesity can not occur at any time in an individual's life.

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