Re-examining the fat above her ankles, we found that it was unusually hard. We attributed this to the countless minor injuries inflicted by kneading. These injuries had healed but had left a tough network of connective scar-tissue in which the fat was imprisoned. Ready to try anything, she was put to bed for the remaining three weeks of her first course with her lower legs tightly strapped in unyielding bandages. Every day the pressure was increased. The combination of HCG, diet and strapping brought about a marked improvement in the shape of her ankles. At the end of her first course she returned to her home abroad. Three months later she came back for her second course. She had maintained both her weight and the improvement of her ankles. The same procedure was repeated, and after five weeks she left the hospital with a normal weight and legs that, if not exactly shapely, were at least unobtrusive. Where no such injuries of the tissues have been inflicted by inappropriate methods of treatment, these drastic measures are never necessary.

Blood Sugar

Towards the end of a course or when a patient has nearly reached his normal weight it occasionally happens that the blood sugar drops below normal, and we have even seen this in patients who had an abnormally high blood sugar before treatment. Such an attack of hypoglycemia is almost identical with the one seen in diabetics who have taken too much insulin. The attack comes on suddenly; there is the same feeling of light-headedness, weakness in the knees, trembling, and unmotivated sweating. But under HCG, hypoglycemia does not produce any feeling of hunger. All these symptoms are almost instantly relieved by taking two heaped teaspoons of sugar.

In the course of treatment the possibility of such an attack is explained to those patients who are in a phase in which a drop in blood sugar may occur. They are instructed to keep sugar or glucose sweets handy, particularly when driving a car. They are also told to watch the effect of taking sugar very carefully and report the following day. This is important, because anxious patients to whom such an attack has been explained are apt to take sugar unnecessarily, in which case it inevitably produces a gain in weight and does not dramatically relieve the symptoms for which it was taken, proving that these were not due to hypoglycemia. Some patients mistake the effects of emotional stress for hypoglycemia. When the symptoms are quickly relieved by sugar this is proof that they were indeed due to an abnormal lowering of the blood sugar, and in that case there is no increase in the weight on the following day. We always suggest that sugar be taken if the patient is in doubt.

Once such an attack has been relieved with sugar we have never seen it recur on the immediately subsequent days, and only very rarely does a patient have two such attacks separated by several days during a course of treatment. In patients who have not eaten sufficiently during the first two days of treatment we sometimes give sugar when the minor symptoms usually felt during the first there days of treatment continue beyond that time, and in some cases this has seemed to speed up the euphoria ordinarily associated with the HCG method.

The Ratio of Pounds to Inches

An interesting feature of the HCG method is that, regardless of how fat a patient is, the greatest circumference -- abdomen or hips as the case may be is reduced at a constant rate which is extraordinarily close to 1 cm. per kilogram of weight lost. At the beginning of treatment the change in measurements is somewhat greater than this, but at the end of a course it is almost invariably found that the girth is as many centimeters less as the number of kilograms by which the weight has been reduced. I have never seen this clear cut relationship in patients that try to reduce by dieting only.

Preparing the Solution

Human chorionic gonadotrophin comes on the market as a highly soluble powder which is the pure substance extracted from the urine of pregnant women. Such preparations are carefully standardized, and any brand made by a reliable pharmaceutical company is probably as good as any other. The substance should be extracted from the urine and not from the placenta, and it must of course be of human and not of animal origin. The powder is sealed in ampoules or in rubber-capped bottles in varying amounts which are stated in International Units. In this form HCG is stable; however, only such preparations should be used that have the date of manufacture and the date of expiry clearly stated on the label or package. A suitable solvent is always supplied in a separate ampoule in the same package.

Once HCG is in solution it is far less stable. It may be kept at room-temperature for two to three days, but if the solution must be kept longer it should always be refrigerated. When treating only one or two cases simultaneously, vials containing a small number of units say 1000 I.U. should be used. The 10 cc. of solvent which is supplied by the manufacturer is injected into the rubber- capped bottle containing the HCG, and the powder must dissolve instantly. Of this solution 1 .25 cc. are withdrawn for each injection. One such bottle of 1000 I.U. therefore furnishes 8 injections. When more than one patient is being treated, they should not each have their own bottle but rather all be injected from the same vial and a fresh solution made when this is empty.

As we are usually treating a fair number of patients at the same time, we prefer to use vials containing 5000 units. With these the manufactures also supply 10 cc. of solvent. Of such a solution 0.25 cc. contain the 125 I.U., which is the standard dose for all cases and which should never be exceeded. This small amount is awkward to handle accurately (it requires an insulin syringe) and is wasteful, because there is a loss of solution in the nozzle of the syringe and in the needle. We therefore prefer a higher dilution, which we prepare in the following way: The solvent supplied is injected into the rubbercapped bottle containing the 5000 I.U . As these bottles are too small to hold more solvent, we withdraw 5 cc., inject it into an empty rubber-capped bottle and add 5 cc. of normal saline to each bottle. This gives us 10 cc. of solution in each bottle, and of this solution 0.5 cc. contains 125 I.U. This amount is convenient to inject with an ordinary syringe.

Injecting

HCG produces little or no tissue-reaction, it is completely painless and in the many thousands of injections we have given we have never seen an inflammatory or suppurative reaction at the site of the injection.

One should avoid leaving a vacuum in the bottle after preparing the solution or after withdrawal of the amount required for the injections as otherwise alcohol used for sterilizing a frequently perforated rubber cap might be drawn into the solution. When sharp needles are used, it sometimes happens that a little bit of rubber is punched out of the rubber cap and can be seen as a small black speck floating in the solution. As these bits of rubber are heavier than the solution they rapidly settle out, and it is thus easy to avoid drawing them into the syringe.

We use very fine needles that are two inches long and inject deep intragluteally in the outer upper quadrant of the buttocks. The injection should if possible not be given into the superficial fat layers, which in very obese patients must be compressed so as to enable the needle to reach the muscle. It is also important that the daily injection should be given at intervals as close to 24 hours as possible. Any attempt to economize in time by giving larger doses at longer intervals is doomed to produce less satisfactory results.

There are hardly any contraindications to the HCG method. Treatment can be continued in the presence of abscesses, suppuration, large infected wounds and major fractures. Surgery and general anesthesia are no reason to stop and we have given treatment during a severe attack of malaria. Acne or boils are no contraindication, the former usually clears up, and furunculosis comes to an end. Thrombophlebitis is no contraindication, and we have treated several obese patients with HCG and the 500-calorie diet while suffering from this condition. Our impression has been that in obese patients the phlebitis does rather better and certainly no worse than under the usual treatment alone. This also applies to patients suffering from varicose ulcers which tend to heal rapidly.

Fibroids

While uterine fibroids seem to be in no way affected by HCG in the doses we use, we have found that very large, externally palpable uterine myomas are apt to give trouble. We are convinced that this is entirely due to the rather sudden disappearance of fat from the pelvic bed upon which they rest and that it is the weight of the tumor pressing on the underlying tissues which accounts for the discomfort or pain which may arise during treatment. While we disregard even fair-sized or multiple myomas, we insist that very large ones be operated before treatment. We have had patients present themselves for reducing fat from their abdomen who showed no signs of obesity, but had a large abdominal tumor.

Gallstones

Small stones in the gall bladder may in patients who have recently had typical colics cause more frequent colics under treatment with HCG. This may be due to the almost complete absence of fat from the diet, which prevents the normal emptying of the gall bladder. Before undertaking treatment we explain to such patients that there is a risk of more frequent and possibly severe symptoms and that it may become necessary to operate. If they are prepared to take this risk and provided they agree to undergo an operation if we consider this imperative, we proceed with treatment, as after weight reduction with HCG the operative risk is considerably reduced in an obese patient. In such cases we always give a drug which stimulates the flow of bile, and in the majority of cases nothing untoward happens. On the other hand, we have looked for and not found any evidence to suggest that the HCG treatment leads to the formation of gallstones as pregnancy sometimes does.

The Heart

Disorders of the heart are not as a rule contraindications. In fact, the removal of abnormal fat - particularly from the heart-muscle and from the surrounding of the coronary arteries - can only be beneficial in cases of myocardial weakness, and many such patients are referred to us by cardiologists. Within the first week of treatment all patients - not only heart cases - remark that they have lost much of their breathlessness.

Coronary Occlusion

In obese patients who have recently survived a coronary occlusion, we adopt the following procedure in collaboration with the cardiologist. We wait until no further electrocardiographic changes have occurred for a period of three months. Routine treatment is then started under careful control and it is usual to find a further electrocardiographic improvement of a condition which was previously stationary.

In the thousands of cases we have treated we have not once seen any sort of coronary incident occur during or shortly after treatment. The same applies to cerebral vascular accidents. Nor have we ever seen a case of thrombosis of any sort develop during treatment, even though a high blood pressure is rapidly lowered. In this respect, too, the HCG treatment resembles pregnancy.

Teeth and Vitamins

Patients whose teeth are in poor repair sometimes get more trouble under prolonged treatment, just as may occur in pregnancy. In such cases we do allow calcium and vitamin D, though not in an oily solution. The only other vitamin we permit is vitamin C, which we use in large doses combined with an antihistamine at the onset of a common cold. There is no objection to the use of an antibiotic if this is required, for instance by the dentist. In cases of broncial asthma and hay fever we have occasionally resorted to cortisone during treatment and find that triamcinolone is the least likely to interfere with the loss of weight, but many asthmatics improve with HCG alone.

Alcohol

Obese heavy drinkers, even those bordering on alcoholism, often do surprisingly well under HCG and it is exceptional for them to take a drink while under treatment. When they do, they find that a relatively small quantity of alcohol produces intoxication. Such patients say that they do not feel the need to drink This may in part be due to the euphoria which the treatment produces and in part to the complete absence of the need for quick sustenance from which most obese patients suffer.

Though we have had a few cases that have continued abstinence long after treatment, others relapse as soon as they are back on a normal diet. We have a few "regular customers" who, having once been reduced to their normal weight, start to drink again though watching their weight. Then after some months they purposely overeat in order to gain sufficient weight for another course of HCG which temporarily gets them out of their drinking routine. We do not particularly welcome such cases, but we see no reason for refusing their request.

Tuberculosis

It is interesting that obese patients suffering from inactive pulmonary tuberculosis can be safely treated. We have under very careful control treated patients as early as three months after they were pronounced inactive and have never seen a relapse occur during or shortly after treatment. In fact, we only have one case on our records in which active tuberculosis developed in a young man about one year after a treatment which had lasted three weeks. Earlier X-rays showed a calcified spot from a childhood infection which had not produced clinical symptoms. There was a family history of tuberculosis, and his illness started under adverse conditions which certainly had nothing to do with the treatment. Residual calcifications from an early infection are exceedingly common, and we never consider them a contraindication to treatment.

The Painful Heel

In obese patients who have been trying desperately to keep their weight down by severe dieting, a curious symptom sometimes occurs. They complain of an unbearable pain in their heels which they feel only while standing or walking. As soon as they take the weight off their heels the pain ceases. These cases are the bane of the rheumatologists and orthopedic surgeons who have treated them before they come to us. All the usual investigations are entirely negative, and there is not the slightest response to anti- rheumatic medication or physiotherapy. The pain may be so severe that the patients are obliged to give up their occupation, and they are not infrequently labeled as a case of hysteria. When their heels are carefully examined one finds that the sole is softer than normal and that the heel bone - the calcaneus - can be distinctly felt, which is not the case in a normal foot.

We interpret the condition as a lack of the hard fatty pad on which the calcaneus rests and which protects both the bone and the skin of the sole from pressure. This fat is like a springy cushion which carries the weight of the body. Standing on a heel in which this fat is missing or reduced must obviously be very painful. In their efforts to keep their weight down these patients have consumed this normal structural fat.

Those patients who have a normal or subnormal weight while showing the typically obese fat deposits are made to eat to capacity, often much against their will, for one week. They gain weight rapidly but there is no improvement in the painful heels. They are then started on the routine HCG treatment. Overweight patients are treated immediately. In both cases the pain completely disappears in 10-20 days of dieting, usually around the 15th day of treatment, and so far no case has had a relapse. We have been able to follow up such patients for years.

We are particularly interested in these cases, as they furnish further proof of the contention that HCG + 500 calories not only removes abnormal fat but actually permits normal fat to be replaced, in spite of the deficient food intake. It is certainly not so that the mere loss of weight reduces the pain, because it frequently disappears before the weight the patient had prior to the period of forced feeding is reached.

The Skeptical Patient

Any doctor who starts using the HCG method for the first time will have considerable difficulty, particularly if he himself is not fully convinced, in making patients believe that they will not feel hungry on 500 calories and that their face will not collapse. New patients always anticipate the phenomena they know so well from previous treatments and diets and are incredulous when told that these will not occur. We overcome all this by letting new patients spend a little time in the waiting room with older hands, who can always be relied upon to allay these fears with evangelistic zeal, often demonstrating the finer points on their own body.

A waiting-room filled with obese patients who congregate daily is a sort of group therapy. They compare notes and pop back into the waiting room after the consultation to announce the score of the last 24 hours to an enthralled audience. They cross-check on their diets and sometimes confess sins which they try to hide from us, usually with the result that the patient in whom they have confided palpitatingly tattles the whole disgraceful story to us with a "But don't let her know I told you."

Concluding a Course

When the three days of dieting after the last injection are over, the patients are told that they may now eat anything they please, except sugar and starch provided they faithfully observe one simple rule. This rule is that they must have their own portable bathroom-scale always at hand, particularly while traveling. They must

without fail weight themselves every morning as they get out of bed, having first emptied their bladder. If they are in the habit of having breakfast in bed, they must weigh before breakfast.

It takes about 3 weeks before the weight reached at the end of the treatment becomes stable, i.e. does not show violent fluctuations after an occasional excess. During this period patients must realize that the so-called carbohydrates, that is sugar, rice, bread, potatoes, pastries etc, are by far the most dangerous. If no carbohydrates whatsoever are eaten, fats can be indulged in somewhat more liberally and even small quantities of alcohol, such as a glass of wine with meals, does no harm, but as soon as fats and starch are combined things are very liable to get out of hand. This has to be observed very carefully during the first 3 weeks after the treatment is ended otherwise disappointments are almost sure to occur.

Skipping a Meal

As long as their weight stays within two pounds of the weight reached on the day of the last injection, patients should take no notice of any increase but the moment the scale goes beyond two pounds, even if this is only a few ounces, they must on that same day entirely skip breakfast and lunch but take plenty to drink. In the evening they must eat a huge steak with only an apple or a raw tomato. Of course this rule applies only to the morning weight. Ex-obese patients should never check their weight during the day, as there may be wide fluctuations and these are merely alarming and confusing.

It is of utmost importance that the meal is skipped on the same day as the scale registers an increase of more than two pounds and that missing the meals is not postponed until the following day. If a meal is skipped on the day in which a gain is registered in the morning this brings about an immediate drop of often over a pound. But if the skipping of the meal - and skipping means literally skipping, not just having a light meal - is postponed the phenomenon does not occur and several days of strict dieting may be necessary to correct the situation.

Most patients hardly ever need to skip a meal. If they have eaten a heavy lunch they feel no desire to eat their dinner, and in this case no increase takes place. If they keep their weight at the point reached at the end of the treatment, even a heavy dinner does not bring about an increase of two pounds on the next morning and does not therefore call for any special measures. Most patients are surprised how small their appetite has become and yet how much they can eat without gaining weight. They no longer suffer from an abnormal appetite and feel satisfied with much less food than before. In fact, they are usually disappointed that they cannot manage their first normal meal, which they have been planning for weeks.

Losing more Weight

An ex-patient should never gain more than two pounds without immediately correcting this, but it is equally undesirable that more than two lbs. be lost after treatment, because a greater loss is always achieved at the expense of normal fat. Any normal fat that is lost is invariably regained as soon as more food is taken, and it often happens that this rebound overshoots the upper two lbs. limit.

Trouble After Treatment

Two difficulties may be encountered in the immediate post-treatment period. When a patient has consumed all his abnormal fat or, when after a full course, the injection has temporarily lost its efficacy owing to the body having gradually evolved a counter regulation, the patient at once begins to feel much more hungry and even weak. In spite of repeated warnings, some over-enthusiastic patients do not report this. However, in about two days the fact that they are being undernourished becomes visible in their faces, and treatment is then stopped at once. In such cases - and only in such cases - we allow a very slight increase in the diet, such as an extra apple, 150 grams of meat or two or three extra breadsticks during the three days of dieting after the last injection.

When abnormal fat is no longer being put into circulation either because it has been consumed or because immunity has set in, this is always felt by the patient as sudden, intolerable and constant hunger. In this sense, the HCG method is completely self-limiting. With HCG it is impossible to reduce a patient, however enthusiastic, beyond his normal weight. As soon as no more abnormal fat is being issued, the body starts consuming normal fat, and this is always regained as soon as ordinary feeding is resumed. The patient then finds that the 2-3 lbs. he has lost during the last days of treatment are immediately regained. A meal is skipped and maybe a pound is lost. The next day this pound is regained, in spite of a careful watch over the food intake. In a few days a tearful patient is back in the consulting room, convinced that her case is a failure.

All that is happening is that the essential fat lost at the end of the treatment, owing to the patient's reluctance to report a much greater hunger, is being replaced. The weight at which such a patient must stabilize thus lies 2-3 lbs. higher than the weight reached at the end of the treatment. Once this higher basic level is established, further difficulties in controlling the weight at the new point of stabilization hardly arise.

Beware of Over-enthusiasm

The other trouble which is frequently encountered immediately after treatment is again due to over-enthusiasm. Some patients cannot believe that they can eat fairly normally without regaining weight. They disregard the advice to eat anything they please except sugar and starch and want to play safe. They try more or less to continue the 500-calorie diet on which they felt so well during treatment and make only minor variations, such as replacing the meat with an egg, cheese, or a glass of milk. To their horror they find that in spite of this bravura, their weight goes up. So, following instructions, they skip one meager lunch and at night eat only a little salad and drink a pot of unsweetened tea, becoming increasingly hungry and weak. The next morning they find that they have increased yet another

pound. They feel terrible, and even the dreaded swelling of their ankles is back. Normally we check our patients one week after they have been eating freely, but these cases return in a few days. Either their eyes are filled with tears or they angrily imply that when we told them to eat normally we were just fooling them.

Protein deficiency

Here too, the explanation is quite simple. During treatment the patient has been only just above the verge of protein deficiency and has had the advantage of protein being fed back into his system from the breakdown of fatty tissue. Once the treatment is over there is no more HCG in the body and this process no longer takes place. Unless an adequate amount of protein is eaten as soon as the treatment is over, protein deficiency is bound to develop, and this inevitably causes the marked retention of water known as hunger- edema.

The treatment is very simple. The patient is told to eat two eggs for breakfast and a huge steak for lunch and dinner followed by a large helping of cheese and to phone through the weight the next morning. When these instructions are followed a stunned voice is heard to report that two lbs. have vanished overnight, that the ankles are normal but that sleep was disturbed, owing to an extraordinary need to pass large quantities of water. The patient having learned this lesson usually has no further trouble.

Relapses

As a general rule one can say that 60%-70% of our cases experience little or no difficulty in holding their weight permanently. Relapses may be due to negligence in the basic rule of daily weighing. Many patients think that this is unnecessary and that they can judge any increase from the fit of their clothes. Some do not carry their scale with them on a journey as it is cumbersome and takes a big bite out of their luggage-allowance when flying. This is a disastrous mistake, because after a course of HCG as much as 10 lbs. can be regained without any noticeable change in the fit of the clothes. The reason for this is that after treatment newly acquired fat is at first evenly distributed and does not show the former preference for certain parts of the body.

Pregnancy or the menopause may annul the effect of a previous treatment. Women who take treatment during the one year after the last menstruation - that is at the onset of the menopause - do just as well as others, but among them the relapse rate is higher until the menopause is fully established. The period of one year after the last menstruation applies only to women who are not being treated with ovarian hormones. If these are taken, the premenopausal period may be indefinitely prolonged.

Late teenage girls who suffer from attacks of compulsive eating have by far the worst record of all as far as relapses are concerned.

Patients who have once taken the treatment never seem to hesitate to come back for another short course as soon as they notice that their weight is once again getting out of hand. They come quite cheerfully and hopefully, assured that they can be helped again. Repeat courses are often even more satisfactory than the first treatment and have the advantage, as do second courses, that the patient already, knows that he will feel comfortable throughout.

Plan of a Normal Course

125 I.U. of HCG daily (except during menstruation) ui injections have been given.

Until 3rd injection forced feeding.

After 3rd injection, 500 calorie diet to be continued until 72 hours after the last injection.

For the following 3 weeks, all foods allowed except starch and sugar in any form (careful with very sweet fruit).

After 3 weeks, very gradually add starch in small quantities, always controlled by morning weighing.

CONCLUSION

The HCG + diet method can bring relief to every case of obesity, but the method is not simple. It is very time consuming and requires perfect cooperation between physician and patient. Each case must be handled individually, and the physician must have time to answer questions, allay fears and remove misunderstandings. He must also check the patient daily. When something goes wrong he must at once investigate until he finds the reason for any gain that may have occurred. In most cases it is useless to hand the patient a diet-sheet and let the nurse give him a "shot."

The method involves a highly complex bodily mechanism, and the physician must make himself some sort of picture of what is actually happening; otherwise he will not be able to deal with such difficulties as may arise during treatment.

I must beg those trying the method for the first time to adhere very strictly to the technique and the interpretations here outlined and thus treat a few hundred cases before embarking on experiments of their own, and until then refrain from introducing innovations, however thrilling they may seem. In a new method,

innovations or departures from the original technique can only be usefully evaluated against a substantial background of experience with what is at the moment the orthodox procedure.

I have tried to cover all the problems that come to my mind. Yet a bewildering array of new questions keeps arising, and my interpretations are still fluid. In particular, I have never had an opportunity of conducting the laboratory investigations which are so necessary for a theoretical understanding of clinical observations, and I can only hope that those more fortunately placed will in time be able to fill this gap.

The problems of obesity are perhaps not so dramatic as the problems of cancer, but they often cause life long suffering. How many promising careers have been ruined by excessive fat; how many lives have been shortened. If some way -however cumbersome - can be found to cope effectively with this universal problem of modern civilized man, our world will be a happier place for countless fellow men and women.

The FDA has required labeling and advertising of HCG to state:

"HCG has not been demonstrated to be effective adjunctive therapy in the treatment of obesity. There is no substantial evidence that it increases weight loss beyond that resulting from caloric restriction, that it causes a more attractive or "normal" distribution of fat, or that it decreases the hunger and discomfort associated with calorie-restricted diets."