

Original article: A case report

The innermost secrets of obesity treatment.

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Abstract

The essential point of obesity treatment lies in whether patients engage in it seriously or not. If they are not really serious about it, doctors should encourage them to become sufficiently motivated before starting the treatment. For this purpose, having a long talk with them is needed, in order to analyze the stage of the behavioral therapy (considering stage, preparatory stage, and action stage) patients are in. If they are in the considering stage or the preparatory stage, doctors should guide them to the action stage. The first point: when patients visit us for the first time, we give them advice based on success stories of weight loss which we think is relatable to them, and then instruct them on how to create diet and exercise schedules. The second point: it is necessary to remember that daily stress is apt to lead patients into overeating and overdrinking. For this reason, we think it is useful to introduce stress-management treatment where doctors check up on patients' stress levels and alleviate it at the time of consultation. The third point: dietitians who have attended the consultation can provide concrete food instructions, such as eating cabbage before meals to patients, while reinforcing what doctors advised to them. This process will be executed once every month. When patients do well in losing weight, they will be praised. If patients lose weight by five percent or more during the designated period of three months, they will be judged successful. In this way, 93% of obese patients have succeeded in losing weight.

KEY WORDS: motivation, stress management, eating cabbage before meals

Introduction:

Pathology and diagnosis of obesity

In Japan, obesity is defined as a state where patients' body mass index (BMI) is greater than 25. BMI can be calculated by a weight (kg) divided by height squared (m). According to the Japan Society for Study of Obesity, obese patients with combined symptoms of diabetes, high blood pressure, chronic joint disease and other conditions, is defined to be obesity, as a disease that requires treatment by doctors¹⁾. Furthermore, based on the newest study, it is clarified that fat cells are endocrine organs that secrete adipocytokine contributing to complications relating to diabetes or high blood pressure. By reducing weight by three to five percent, in many cases it is possible to lower the secretion to a normal level, resulting in a reduction of complications²⁾.

Policy of treatment

The medical purpose of reducing weight is to free patients from complications of obesity including diabetes, high blood pressure, chronic knee and hip joint diseases and other conditions. Especially, in the case of obese patients with diabetes, it is possible to improve blood glucose levels if they succeed in reducing weight by three to five percent^{2, 3)}. In some cases, it is not impossible to normalize type 2 diabetes if patients lose weight by more than 15%³⁾. However, as it is often the case that patients suffering from chronic joint diseases need to reduce weight to an average level, we should check the complications of patients and choose a treatment period and treatment policy suitable to their conditions prior to the starting the treatment²⁾.

There is no doubt that the key of obesity treatment lies in diet, exercise, and behavioral therapy. In 2016, the Japan Society for Study of Obesity showed The Clinical Guidelines

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for the Treatment of Obesity²⁾. However, there are still many patients who fail to succeed in reducing weight after receiving diet and exercise treatment instructions following the guideline provided.

The author discovered a method for how to improve patient's success rate in reducing weight following the guidelines based on treatment examples targeting more than 10,000 patients. The method provides them with sufficient behavioral therapy which makes them feel "motivated" and "free from stress-induced overeating"⁴⁻⁶⁾. In this article, how we practice the behavioral treatment in actual cases will be shown, and then diet and exercise instructions from the medical care team will be introduced.

A) Behavioral therapy that doctors should attempt before they instruct patients on executing diet and exercise treatment

1. To give patients clear and serious motivations to lose weight⁴⁻⁶⁾

I engage myself primarily in the treatment of obesity and diabetes. When someone asks me what is the most important in this treatment, I often answer "The point is whether patients are sufficiently motivated or not. If they are not serious about losing weight, doctors should lead them to become motivated and serious before they begin the treatment." This answer is based on my unsuccessful treatments in the past. One day in March 20 years ago, an 18 year-old male visited our obesity outpatient clinic with his mother. He was 168 cm tall and weighed 198 kg. He was suffering from severe obesity. His mother complained to me "He is always drowsy, and when he wakes up, he eats something. As he has just failed a school entrance

examination, I wonder if it is possible to hospitalize him to lose weight." Although the son said, "Why do I have to be hospitalized? I am fine", he was hospitalized, reluctantly. In the hospital, he was served meals with 1,500 kcal and was instructed to take a walk of 10,000 steps daily. Nevertheless, he did not lose weight at all in the hospital. No matter when I visited him, he showed me a pedometer and said "I walk 10,000 steps every day." When I was wondering why he could not lose weight, I happened to see him eating an ice cream in front of a stand. "Doctor, I am not eating an ice cream. I am just watching it." As he tried to fool me, I asked him to tell the truth. He admitted that he told a lie and that he had manipulated the pedometer to count more by shaking his hands. When I told his mother, she finally agreed to get him out of the hospital. At the end of December that year, I got a phone call from her saying that he had died of cardiac infarction. I was shocked to hear about it, and regretted that if only I had persuaded him to lose weight, the outcome could have been different. Since then, I have tried to check-in with my patients suffering from obesity through conversation, to recognize how seriously they are eager to lose weight, while analyzing their stage of behavioral therapy, shown in [Fig. 1](#), they are in (considering stage - should I try? : preparatory stage - Maybe I should do it. : Action stage - let's do it now.). If the patient is in considering stage or preparatory stage, it is necessary to persuade them to move into action stage. However, according to general behavioral therapy text books, doctors should wait for patients to get an idea of what he should do, through conversation, and then help them practice it by themselves. However, it is often the case that more than several months is needed before patients come to get an image and to practice by themselves. Therefore, such a slow process may not be adequate for the obese patients who suffer from multiple complications. From these reasons, we make it a rule to give patients advice based on our successful examples of weight



Fig. 1. Behavioral therapy,

loss treatment which we think is relatable to their situation, during the 30-minute first consultation (at the longest), before moving into the diet / exercise sessions. After that, in separate rooms, our registered dietitians who have attended the consultation will provide them with instructions of detailed diet schedules for 25 minutes, while reinforcing the doctor's advice. The cases will be shown below.

Case 1)

The case of a female who suffered from severe obesity (67 years old, 156 cm, and 98 kg): She visited our hospital following instructions of her orthopedist. She was instructed to lose 20 kg since she was scheduled to have a hip osteoarthritis operation three months later.

Patient: "I have come to see you because I heard that you are a master who makes obese people lose weight. What kind of thinning drugs do you recommend for me?"

Doctor: "I do not have anti-obesity drugs. But considering that you are supposed to start rehabilitation programs just after the operation day, you should now lose 20 kg. If you start rehabilitating just as you are now, it is like exercising carrying two 10 kg rice bags. If you do not lose weight, you may be bed-ridden due to your body weight, incapable of undergoing rehabilitation. How can you be so easygoing? You are going to have a serious operation from now. Unless you try to lose weight, the percentage of success of the operation will be at best 50%, with your doctor and you without effort. Why don't you try to lose weight by at least 10 kg? If you make 50% effort, the success rate will be as high as 75%. As it is a once in a life-time serious operation, you should put in work so you can lose weight." Persuaded by my words, she contemplated and then answered "I will try my best. Would you please give me instructions for losing weight?" I then judged that she entered the action stage, and I gave her instructions of a hard diet which consisted of three-months of limited 1,000 kcal menus where patients are allowed to eat carbohydrates only at breakfast. At the same time she was instructed to undergo upper limb movements and air swimming while sitting, which can be carried out after each meal. The dietitian gave her nutrition education every month together with consultations. When she did well in the diet, she was praised as such. As a result, she succeeded in losing 14 kg. She was very pleased as she was able to walk well through rehabilitation after the operation.

Case 2)

The case of a male who visited our hospital as he was suffering from severe obesity accompanied by diabetes (49 years old, 172 cm, and 115 kg: fasting blood sugar; FBS was 280 mg/dL, HbA1c 9.9%)

I said to him "You are suffering from diabetes with HOMA-R 5.1 ($\text{HOMA-R} = \text{fasting blood sugar level} \times \text{fasting insulin level} \div 405$). When HOMA-R is more than 1.6, insulin resistance is suspected. Due to the severe obesity, a hormone that blocks insulin is secreted from visceral fats excessively, which makes you diabetic. By losing 15% or more of your body weight, your disease might be improved. I recommend that you attempt it."

He answered "If there is any possibility that I get free from diabetes by losing weight, I will try my best. Would you instruct me how to start the diet?"

As I thought that I had persuaded him to step into the action stage, I gave him instructions for a diabetic diet of

1,500 kcal, as well as walking 5,000 steps after each meal. It was decided that he would have a consultation every month. When he did well in diet and exercises, he was praised a lot. In this way, he succeeded in reducing his weight to 88 kg with HbA1c lowered by 5.8%. When 75g-Oral glucose tolerance test (OGTT) was conducted on him, his blood glucose level after two hours showed 127 mg/dL, which showed his diabetes to be at a normal level.

2. *Stress management⁴⁻⁶⁾ is effective for obesity treatment*

Patients with obesity, in many cases, tend to overeat or drink too much alcohol in order to reduce daily stress⁴⁾. This is because daily stress reduces the volume of serotonin in their brain, and sweets and drinking alcohol recover its volume level and calm them down. However, eating sweets and drinking alcohol induce obesity. In our obese outpatients, doctors ask patients for their opinions about the causes of their stress during the meeting, based on the stress management treatment⁴⁻⁶⁾.

Case 3)

The case of a female who became obese eating a lot of Japanese yokan (a sweet jelly dessert) and sweets (46 years old, 158 cm, and 102 kg). She needed to reduce stress by overeating, because she had felt as if she were kept under surveillance by her mother-in-law who continued asking her "where are you going?", "when will you be back?", and "what will you do?" We gave her advice to find free time to be separate from her mother-in-law who made her feel as if she were monitored every time she tried to go out, saying as follows: "As I was told by my doctor to take a walk for 30 minutes after each meal so that I could get slim, I am going out". Now she is able to enjoy going out at her own will. As she felt free, she came to stop overeating. As a result, she was able to maintain the diet and exercise treatment. We encouraged her by praising her with such words as "You have gotten so slim. Now you look so beautiful". She succeeded in losing weight from 102 kg to 59 kg in eight months.

3. *Good ideas to be free from hunger*

There are many people who fail to lose weight because of their appetite. The author recommends the Cabbage Diet⁵⁻⁷⁾ which is a method enabling the patient to feel free from hunger. Before taking each meal, patients eat (chew) chopped cabbage (one sixth of a whole cabbage) for 10 minutes. As the chewing stimulates the satiety center of the brain, they are able to reduce the volume of staple foods. They may go out for a walk after the meal. Now, we have made patients eat raw vegetables such as lettuce, tomatoes, and cucumbers, together with cabbage with non-oil dressings until they feel full. Eating a lot of raw vegetables not only gives a feeling of fullness, but also reduces the absorption of the next dishes, resulting in the control of the rise of blood glucose. This is because vegetable fiber is considered to cover the mucous membrane of the stomach or small intestine. Furthermore, it is also expected that the vitamin C of raw vegetables may be effective to prevent wrinkles from forming and to improve bowel movements.

In addition, we explain to patients that they can also eat simmered konjak (also known as Konnyaku or Devil's

tongue; jelly made from konnyaku yam roots), Japanese radishes, carrots, Hiroshimanas (*Brassica pekinensis* BUPR. var. Hiroshimana MAKINO), and Chinese cabbage to their satisfaction.

B) Actual process of eating / exercise treatment

1. Food instructions

Based on our experience, we set the diet menus of 1,200 kcal for females, and 1,500 kcal for males, which are equivalent to their basal metabolic rates, while separating a period of treatment into three months per one session. The stricter the instruction, the more effectively the diet is completed⁵⁻⁷⁾. When one session is over, we talk with patients to decide whether we should continue our treatment or not. Regarding the 1,200 kcal diet menus for females, it is recommended that they should refrain from eating sweets, except for two fist-sized fruits. They should use non-calorie sweeteners, as well. During a diet session, patients are ordered to intake 70 g of proteins a day, including 200 mL milk, one egg, 80 g fish meat (five pieces of sashimi), 80 g meat ($8 \times 4 \times 0.8$ cm), and a half cake of tofu (Fig. 2) as side dishes. They can eat a bowl of rice only at breakfast and at lunch time, because to stop staple foods at dinner time is a big key to losing weight. Regarding 1,500 kcal diet menus for males, side dishes and fruits volume are the same as female menus. They are allowed to take three bowls of rice a day as well as small volumes of potatoes or pumpkins. It is also instructed that a bowl of rice (staple food) can be replaced with a slice of bread (five slices in a pack), a serving of udon noodle (Udon is thin and long noodles made

by kneading wheat flour and water), or potatoes, pumpkins, and corn the size of their fist.

Additionally, alcohols are categorized as additional food in the guidelines. There are many patients who insist that a restriction of alcohols gives them too severe stress to properly maintain a food diet. Considering this, we advise them that they can convert a 500 mL can of beer and 180cc of sake or shochu (a traditional Japanese distilled spirit) into a bowl of rice. It will be easy for them to get accustomed to the diet if they take enough time. The instructions to eat several units based on the food exchange table for diabetics proved ineffective for those who receive our obesity treatment, which are to be given only for three to 12 months. It is important that we give instructions that are easy to understand and easy to work on starting from the teaching day. In our hospital, doctors are supposed to talk with patients for 30 minutes on the first consultation, while assigning dietitians who will give them nutrition instructions. After listening to the talk between doctors and patients, these dietitians will give advice to the latter on how to tackle weight loss and how to reduce stress by reinforcing what doctors have said. At the follow-up consultation, re-teaching based on food records will be given to patients, if necessary. Nurses will measure patients' weight, body fat mass, and the sizes of waist and hips. When patients seem to be doing well, doctors, management dietitians, and nurses will make a team to praise them, in order to enhance the motivation of patients.

2. Exercise treatment

Patients are made to exercise 30 minutes after each meal with a pedometer. They walk 5,000 to 10,000 steps every day (225-450 kcal a day). For, in addition to cabbage eaten before meals, food fibers taken during the meal which stuck to the

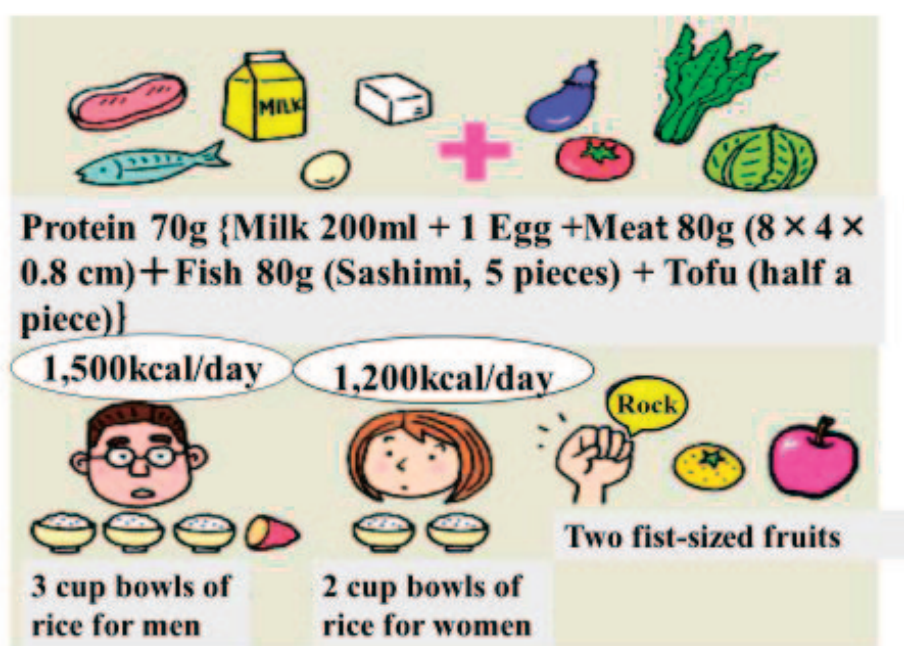


Fig. 2. Weight loss diet.

1,200 kcal diet for women and 1,500 kcal diet for men.

The Movement After 30 Minutes Began To Eat.



Fig. 3. Exercise after meal.

small intestine are supposed to move into the lower part of small intestine for absorption within 30 minutes. Those who suffer from knee pain or lumbar pain are made to do indoor-stepping for five minutes or upper limb movements and air swimming⁸⁾. Furthermore, they are instructed to grab and shake their bowel fat during bath time at night (**Fig. 3**). While grabbing and shaking their bowel fat they will reflect on their whole day- what I ate at breakfast? Did I chew well when eating cabbage? Did I take a walk after meals? What did I eat for lunch or dinner? If patients have eaten Japanese manju (a bun with a bean-jam filling) as a snack, they will say to themselves, “Tomorrow, I will eat an apple instead of manju.” During this reflection time, they are able to encourage themselves to continue losing weight.

In this way, we have succeeded to have good results with 93% of obese patients in losing more than 5% body weight. If you try our method, we would be very pleased.

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Conflict of Interest Statement

The authors claim no conflict of interest in this study.

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