



Operaties tegen overgewicht - Engels

— Weight-loss surgeries

This leaflet contains information about weight-loss surgeries for severe obesity. This is called 'obesity surgery' or 'bariatric surgery'. This leaflet is intended for patients with severe obesity, as well as the GPs, friends and family members who counsel or assist them. The decision to undergo severe obesity surgery should be an informed one. Therefore, you should find out as much as possible about the procedure and what life will be like afterwards.

This leaflet is not exhaustive. A separate leaflet is available with important post-operative instructions. You'll find out more about the risks, side effects and possible complications of obesity surgery not only from your surgeon but also at an information session. Please visit our hospital website for additional information on the different surgeries.

Contents

1. Who are good candidates for severe obesity surgery?
2. Why undergo surgery for severe obesity?
3. What is severe obesity surgery?
4. Eating after surgery.
5. Miracle solution or tool?
6. Risks, side effects and complications.
7. Seven key tasks
8. Post-operative period
9. Pre-operative period
10. The surgeries explained

11. Questions and telephone numbers

1. Who are good candidates for severe obesity surgery?

- You're between the ages of 18 and 65.
- Your BMI* is 40 or higher, or
- Your BMI is 35 or higher and you have:
 - diabetes
 - high blood pressure
 - elevated cholesterol (increased fat levels in the blood)
 - sleep apnoea or OSAS (breathing disorder during sleep)
 - premature joint wear and tear (osteoarthritis)
- You've made a serious effort to lose your excess weight under supervision, by changing your diet with a dietitian and by increasing your physical activity. The weight-loss operation would be a last resort.
- You have sufficient insight into your eating-related issues. You know that your severe obesity is due to consuming excessive calories (food or drink).
- You understand how bariatric surgery will impact you. You're ready to change your life forever. You understand what you're taking on. You're confident in your decision.
- You realise that you'll need to see a doctor regularly for the rest of your life. You know that, post surgery, you might develop vitamin or nutritional deficiencies that could have serious consequences. You know that you might develop post-operative issues years after the surgery.

*What is BMI?

BMI stands for 'Body Mass Index'. It's a medical screening tool to estimate excess fat in the body and to define how overweight a person is. The BMI is calculated using the following formula: your body weight (in kilograms) divided by the square of your height (in metres). From the age of 18, a BMI between 18.5 and 25 is considered normal. Nevertheless, nearly half of the Dutch population has a BMI above 25 and is therefore overweight. Individuals who have a BMI over 30 are considered obese. From a BMI of 40, obesity poses a real threat to your health. This is referred to as 'severe obesity' or, in medical terms, 'morbid obesity'.

2. Why undergo surgery for severe obesity?

Severe obesity poses a threat to your health. Surgery can reduce your excess weight and, as a result, improve your health. In many cases, this health benefit outweighs the disadvantages of the surgery.

One disadvantage of surgery is that you may experience issues during or after the procedure. Another disadvantage is that you'll need to have check-ups for the rest of your life, and you may still have problems resulting from the procedure years later.

The advantages and disadvantages of obesity surgery are different for everyone. Therefore, everyone undergoes thorough examination by a surgeon, an internist, a dietitian and a psychologist.

Severe obesity surgery can have complications, including serious complications, which in rare cases can result in death. These are discussed later in this leaflet.

Being severely overweight comes with the risk of decreasing your life expectancy. You're also at higher risk of certain diseases or acute medical events, such as diabetes, heart attack,

stroke and cancer. Surgery for severe obesity may lower your risk of developing these conditions.

Surgery, of course, is not the only treatment for severe obesity. However, it's currently the only treatment that's likely to lead to sufficient and sustained weight loss.

You know better than anyone how difficult it is to lose weight. However, for many who are severely overweight, making a permanent lifestyle change by eating healthier and exercising more has proven to be successful. We can advise you on these changes. Your GP may also refer you for combined lifestyle counselling for your obesity.

Lifestyle counselling

Spaarne Gasthuis partners with Heliomare to provide lifestyle counselling for overweight or obese patients. Your specialist can refer you for this counselling both prior to and after obesity surgery. For more information, see Heliomare's leaflet 'Lifestyle coaching for overweight or obese people' or visit www.heliomare.nl/cool.

The goal of surgery is not only to achieve a healthier weight and better overall health, but also to lead a better lifestyle. We want to help you achieve this both before and after surgery. That's why we'll track your weight loss and your medications. We'll conduct regular blood tests and try to identify and treat any additional problems caused by obesity, such as illness, complaints, social isolation or psychological problems.

3. What is severe obesity surgery?

There are several types of surgery for severe obesity. They're not all equally effective and do not all have the same side effects. However, in principle, they're all laparoscopic surgeries. That is, performed using a keyhole surgical procedure. Keyhole surgery entails a few small incisions in the upper abdomen, so it leaves little scarring. Consequently, you're less likely to develop complications and will experience less pain.

With laparoscopic surgery, the surgeon inserts a small video camera into your abdomen. The procedure is performed with the aid of special clamps and instruments. The surgeon operating on you specialises in laparoscopic surgery for obesity. Very rarely, during keyhole surgery, a decision is made to proceed to open surgery. This decision will be made only if it would not be safe enough to continue with the keyhole surgery.

All surgeries are performed under anaesthetic. Therefore, you're 'sleeping' or 'out' during the procedure. Surgeries typically last no longer than an hour. Most patients are admitted on the day of surgery and can go home the very next day.

Admission to day treatment

Some patients do not need to stay overnight; they may go home on the same day. This is called 'day surgery', and you'll discuss your eligibility for same-day discharge with your bariatric surgeon. You'll receive an information leaflet from the Day Treatment Department. Please read through all of this information carefully.

Depending on your post-operative recovery, you may still be admitted to Nursing Unit E2 for a night if, for example, your blood counts are not good. The bariatric surgeon will tell you about your recovery status after the procedure.

Four types of surgery are possible:

- 1. Gastric band**
- 2. Stomach reduction** (or 'gastric sleeve')

3. **Gastric bypass:** Roux-en-Y gastric bypass (RYGB) and Omega Loop gastric bypass
4. **Intestinal bypass surgeries:** duodenal switch, distal gastric bypass, SADI-S

Gastric bypass and **stomach reduction (gastric sleeve)** are the most common procedures for weight-loss surgery. They provide reasonably good outcomes with few side effects.

Gastric band surgery used to be widely performed, but has been found to cause many side effects.

These surgeries will cause you to eat less. When you eat less, you consume fewer calories. As a result, you lose weight. However, you may also develop vitamin or nutritional deficiencies. Therefore, it's important to attend regular check-ups, take a daily multi-vitamin pill and adhere to dietary recommendations.

Gastric bypass, stomach reduction (gastric sleeve) and gastric band surgery do not work by themselves. After surgery, you'll only lose weight if you eat sensibly. You'll lose far less weight, despite having undergone surgery, if you eat too much or too often or consume excessive fat or sugar.

Intestinal bypasses are not commonly performed. They lead to greater weight loss, but they also have more side effects, such as diarrhoea and potentially severe vitamin and nutritional deficiencies. Therefore, if you have intestinal bypass surgery, you'll need to take supplementary vitamins and minerals every day for the rest of your life, because your intestines won't be able to absorb them properly. That's why, with intestinal bypass surgery, the accompanying doctor's check-ups, extra vitamins and supplements and dietary recommendations are all essential to your health.

Diabetes

All weight-loss surgeries for severe obesity have a beneficial effect on diabetes. If you have type 2 diabetes, there is a strong likelihood that you'll require less medication or insulin or none at all after surgery. If you have diabetes, it's important to monitor your blood sugar closely after surgery and have your medication or insulin adjusted, if necessary. This will prevent you from developing hypoglycaemia. We'll help you with this.

4. Eating after surgery

The idea is that the surgery will help you learn about normal nutrition and balanced eating. This means you should never diet again because dieting is not normal nutrition.

Be sure to drink water, tea or broth immediately after your surgery. The next day, you'll be given semi-liquid and pureed food. You must continue this liquid and soft foods diet at home for two weeks. After two weeks, you'll start eating solid foods again under our guidance. This is not easy at first. It usually takes three months before you're able to eat solid food normally again. After your surgery, you'll feel satiated (full) much faster when eating.

Ten rules for the best results after surgery:

1. Eat six times per day: Have six small meals, all the same size, no other snacks
2. Eat slowly. Take your time, sit down to eat, six times a day
3. Eat enough at each meal so that you don't get hungry, but stop when you feel full.
4. Eat the protein (meat, fish, chicken, egg or dairy) first at each meal, then the rest on the plate.
5. Do not drink beverages while eating. Always leave twenty minutes between eating and drinking.
6. It's best to stop drinking alcohol altogether. In any case, have no more than two units per week.

7. Do not eat too much sugar. Avoid eating biscuits, cake, ice cream, pastries, sweets, chocolate, juice and fizzy drinks.
8. Do not consume too much fat. Stop eating crisps, nuts, sauces and snacks. Get rid of the deep fryer.
9. Take an A to Z Complete Multi-vitamin pill every day.
10. Never go on a diet again. Eat a wide variety of normal, whole foods.

Eating six times per day

There are a number of things you can do wrong after the surgery that can prevent you from losing weight properly. If you eat less than six times a day, you may get your appetite back too quickly between meals. You'll lose less weight as a consequence. If you eat too little per meal, you'll also be hungry or hungry again too soon. As a result, you may find yourself grazing throughout the day, which means you'll still consume too many calories. Therefore, you should strictly adhere to having no more and no less than six meals a day, with no snacks in between.

Too much sugar and fat

Too much sugar and fat in your diet is not good, even after you have undergone surgery. Alcohol is also very high in calories.

To avoid eating too much sugar and fat, stay away from biscuits, sweets, juice, chocolate, fizzy drinks and fried foods. Drink as little alcohol as possible, and no more than two units of alcohol per week.

Your food choices will be discussed when you meet with your dietitian.

Dietitian assistance

Before deciding to undergo weight-loss surgery, you'll receive detailed information from the dietitian about how this will affect your diet. You'll see the dietitian again after your surgery. We recommend finding your own local dietitian to support you before and after your surgery.

The idea is that the surgery will help you develop normal eating habits, that is, a healthy and varied diet with not too much sugar or fat. And no more dieting ever again!

5. Miracle solution or tool?

The surgery will have an impact on the rest of your life, so think carefully before deciding. It's in your best interest to be completely open and honest about your problem with the health professionals. Inform yourself about the surgery and talk about it with people you know and trust. Do not make a hasty decision and only opt for surgery if you're ready to change your life. Above all, you shouldn't have false expectations because surgery is not a panacea. The fact is, the surgery is not effective on its own. The results depend very much on you. Handling the process sensibly will lead to better outcomes. We want to give you guidance with this after your surgery.

Your weight-loss results will also depend on your starting weight. If you weigh less than someone else prior to bariatric surgery, your post-operative results will be better than the other person's. Most patients lose a good amount of weight, but do not achieve their target weight. Prior to your operation, talk to your surgeon about your potential outcome.

Everyone loses weight for the first year or two after their surgery. After that, everyone will regain some weight. This is inevitable. Your surgeon can calculate for you how much weight you might regain. On average, five years after surgery, you could weigh a quarter less than you weigh now.

Surgery is not the solution to obesity. It's only a tool to help you lose the excess weight. You also have to make lifestyle changes to achieve the weight loss. You can make these changes by:

- exercising daily (walking, cycling, working out)
- eating normal, healthy foods and never dieting
- seeking out the support of your family members, friends, colleagues and peers
- having life-long check-ups

6. Risks, side effects and complications

Discuss the risks of surgery carefully before making your decision. You can do your part in reducing your risks.

All major and minor complications of surgery are more serious in overweight patients. For this reason, we'll pay extra attention to you before, during and after your surgery. Complications occur in 10% of cases, but only about 1% involve a serious complication. The surgery is performed in a hospital where generally any complication can be treated.

In less than 0.05% of cases, bariatric surgery or a complication results in death. Women, patients who are younger than 45 and those with a BMI below 50 are at a lower risk of dying. Patients with high blood pressure or who have an increased risk of thrombosis are at greater risk of dying. Your surgical risk is unique to you. Moreover, not every surgery carries the same risk. Your surgeon will discuss your personal surgical risk with you.

When to contact the hospital immediately

After obesity surgery, vomiting, fever, severe abdominal pain and fainting are real warning signs. Contact a doctor or the hospital immediately if you develop any of the above.

How you can reduce surgery risks and complications

You can reduce the risks of surgery by losing as much weight as possible before the procedure. The more weight you lose beforehand, the safer it will be to perform the surgery. We also strongly recommend that you stop smoking permanently before undergoing the surgery.

Issues that may arise from the surgery, or shortly thereafter

Thrombosis or pulmonary embolism

There's a risk of thrombosis and its potential complications with any surgery. This risk is greater in surgical patients who are overweight. With thrombosis, blood clots form in the deep veins of the legs (deep vein thrombosis). Those clots can be carried through the bloodstream to the lungs and cause a pulmonary embolism, which can be life-threatening.

To prevent thrombosis, you'll take blood thinners after surgery and we ask that you resume physical activity as soon as possible after the procedure. You may get off your hospital bed right away. Once you're at home, you should keep moving your legs.

Leakage of stomach or intestinal contents

Stomach or intestinal contents may leak during or after abdominal surgery. This can result in peritonitis, a serious medical condition.

Peritonitis (inflammation of the peritoneum) often requires a second operation. This is also usually performed via keyhole surgery.

Bleeding, including post-operative blood loss

Bleeding, including post-operative blood loss, may require a blood transfusion. You must be willing to accept a blood transfusion if it's necessary for any bleeding or post-operative blood loss.

Intestinal obstruction

You may develop an intestinal obstruction after surgery, which will make eating and drinking difficult at first. Often, we can wait and see if this resolves naturally, but a second operation may prove necessary.

Infections

Wound infections, pneumonia or urinary tract infections may also occur. The risk of respiratory problems after anaesthesia is higher in morbidly obese patients. For this reason, those patients' breathing is closely monitored after surgery.

Potential complications after surgery

Abdomen-related issues due to:

- abdominal adhesions (bands of scar tissue)
- scar-tissue rupture in the abdominal wall
- twisted intestines (intestines wind around themselves)
- internal bowel rupture (internal herniation)

Years after surgery, problems such as abdominal pain or even intestinal obstruction can arise. An internal bowel rupture, or internal herniation, occurs when the intestines have more space in the abdomen due to a reduction in fat tissue as a result of weight loss. In this case, another operation will be necessary.

Gastric outlet obstruction

After bariatric surgery, it can suddenly seem like food's not passing through your stomach at all. You might be vomiting everything you eat due to a stricture (narrowing) between the stomach and intestine (known as 'gastric outlet obstruction'). The stricture can, where appropriate, be stretched with a balloon, which is done using an endoscopy.

If you have a gastric band, the narrowing is usually caused by the stomach being shifted relative to the band. This is referred to as 'slippage'. Further keyhole surgery will be necessary to remove the gastric band.

Vitamin deficiency

Vitamin deficiencies typically manifest through vague symptoms, but they should be detected with regular blood tests. You'll need to take extra vitamins every day for the rest of your life and have annual blood tests.

Not drinking enough

To avoid dehydration, it's important to drink enough water or other fluids between meals. Insufficient fluid intake often manifests in constipation. If it's proving difficult to drink enough fluids, try having an ice lolly.

Insufficient protein

To prevent malnutrition, it's important that you consume enough protein. Protein is found in meat, fish, chicken, egg and dairy products like cheese, cottage cheese, yogurt, buttermilk and milk. These are the building blocks for our bodies. In the absence of enough protein, muscle tissue is broken down. This leads to complaints such as fatigue, reduced immunity

and/or diarrhoea. Severe protein deficiencies can cause liver damage. Usually, this deficiency can be resolved through dietary modifications.

Stomach ulcer

An ulcer can develop, accompanied by pain in the upper abdomen. We see this particularly in smokers. To prevent the formation of a stomach ulcer, we strongly advise you to stop smoking permanently prior to surgery. During the first months after surgery, you'll take medication to prevent heartburn (i.e. inhibitors).

Dumping syndrome

One side effect of gastric bypass is what is known as dumping. Dumping causes discomfort accompanied by nausea, sweating and dizziness if you eat or drink too much sugar or other calories too quickly or in excessive amounts.

Acid reflux

Another side effect of a gastric bypass (gastric sleeve) surgery is acid reflux. Acid reflux happens when the contents of your stomach rise into the oesophagus, which causes burping and heartburn. Anti-heartburn medications are recommended.

Diarrhoea

One side effect of intestinal bypass surgery is diarrhoea, which can result in haemorrhoids.

General side effects

Common side effects that may occur with all of these surgeries include:

- lactose intolerance (dairy products are poorly tolerated)
- anaemia
- changes in taste or body odour
- diarrhoea, constipation or chronic abdominal pain If you have bowel problems (e.g. irritable bowel syndrome) or suffer from chronic abdominal pain, your symptoms may increase after surgery for severe obesity.
- osteoporosis (bone decalcification)

Problems that may arise from losing weight

- Post-operative weight loss can lead to **kidney stones** or **gallstones**.
- In very rare cases, **pancreatic overactivity** can occur after a gastric bypass.
- Weight loss often has a rapid and beneficial effect on **diabetes** or **high blood pressure**. Therefore, your medication dose may need to be reduced to prevent low blood sugar or low blood pressure.
- In the first year after surgery, you'll experience symptoms of **fatigue**, **feeling cold** and **hair loss**. This is due to prolonged and rapid weight loss. These symptoms usually stop on their own after the first year. Exercising more and paying extra attention to dietary protein (meat, fish, chicken, egg, dairy and meat substitutes) can help with these symptoms.
- Weight loss can cause **psychological, emotional and social problems**. Therefore, this is monitored at every outpatient check-up. The multidisciplinary team has a psychologist who can help you with these issues, if necessary.
- If your **menstrual cycle** has stopped because you are overweight, it may come back after you lose weight. In that case, don't forget about contraception! Rapid weight loss in the first year and a half after surgery can be harmful to the unborn child during pregnancy. Therefore, we definitely advise against getting pregnant during that initial year and a half.

- Drastic weight loss can result in **excess skin** on arms, legs, breasts, neck, back and abdomen. Usually, this is unavoidable. If necessary, you may be referred to a plastic surgeon.

7. Seven important tasks for you

1. Condition

Make sure you are at your best before the procedure. Eat a healthy diet, drink plenty of water and relax as much as possible in the days before your hospital admission.

2. Physical activity

Get enough exercise before and after the surgery. In fact, as soon as you decide to have weight-loss surgery, you should do extra exercise every day. Even a daily walk is a good start. It's particularly important to stay active during the first two weeks after surgery.

3. Losing weight

Every kilogram you lose prior to your surgery will reduce your surgical risk. It's a good idea to think about the possible risks and complications of surgery. Be aware that you can influence these by losing weight before surgery: as much as you can and as much as you want. The surgeon will give you a weight-loss goal before the procedure and will not proceed if this has not been met. We recommend finding your own local dietitian, even before surgery, to assist you with your weight loss.

4. Stopping smoking

It's much easier to improve your health by stopping smoking than by undergoing surgery. In addition, some surgical complications are partly caused by smoking. Therefore, it's wise to stop smoking permanently before the surgery.

5. Liquid foods

Your stomach needs to heal for the first two weeks after surgery. To avoid dangerous bleeding or other complications, do not swallow solid foods for those first two weeks. You're only allowed to eat liquid and pureed foods.

6. Medications

After your surgery, you'll receive medication to prevent various complications. Your own medications may be adjusted. This will be discussed with you upon your hospital discharge. It's important that you strictly follow the doctors' instructions.

7. Appointments

After the surgery, appointments will be made for you to come back for check-ups. Even after losing weight, it's important to have an annual check-up for the rest of your life!

8. After surgery

You'll have lots of questions after undergoing surgery. Your daily life and eating habits will suddenly be very different from what you're used to, and you may still be experiencing complaints or pain. In the first few months, you'll visit the hospital several times to discuss how you're doing.

Losing weight

You'll notice beneficial results directly after your surgery. You'll lose weight, about half a kilogram to one-and-a-half kilograms per week. Don't get on your scales every day. This can be disappointing because there'll be days when you do not lose weight or even gain weight. That's a normal part of the process. It's better to track your weight over a longer duration. For instance, try not to weigh yourself more than once a month.

You may not be losing enough weight if you lose less than 20 kg within the first nine months. You may be losing too much weight if you lose more than 60 kg within the first nine months.

The first year

Fatigue, feeling cold and hair loss are common during this initial period. You'll soon understand that life after such surgery is not easy. You'll experience setbacks and disappointments. In the first six months, there will be much to learn. Don't compare yourself with other patients, because this period is different for everyone. Be patient and eat sensibly. Things you initially found intolerable will feel much easier after a few months.

Once a year has passed, you should have a good balance between the effort you put into changing your life and the positive results you're achieving in return. A new life with a new weight and fresh opportunities.

Appointments with the Baria Nederland team

You'll have regular contact with the support team at the outpatient clinic, especially in the first few months. If things are going well, we'll continue to see you once a year. If problems arise or if your results are disappointing, we'll provide more intensive guidance. We'll also offer regular information sessions and theme days for everyone for up to five years and even longer after surgery.

At each visit, we'll check in with you to see how you're doing. If you report your quality of life has improved, that's the best result. You'll also be weighed, but weight is not always an indication of how you feel. Sometimes, even minor weight loss can open up a host of new possibilities in your life. And sometimes, major weight loss can lead to new issues.

At each visit, we'll discuss what you typically eat. You should be taking vitamin supplements. We'll perform regular blood tests to check whether you're healthy. If necessary, we'll prescribe medications or give you additional dietary recommendations.

How does it go from there?

Some people feel completely at home in their new life, saying, 'I wish I'd done this ten years ago.' Most, however, will continue to struggle with food every day, even years later. In rare instances, the surgery does not work or doesn't work well enough. Most people succeed in achieving their most important goal: to be happier and healthier. Keep things under control, even when you feel good!

Maximum weight loss is usually achieved after one to two years. Rapid, positive results like this can be a great incentive for you to really change your life. The most effective thing you can do is make time for daily physical activity. Pick a sport, walk or cycle for an hour every day; give yourself a goal you can work toward with training.

9. Post-operative period

If you're eligible for obesity surgery, you'll have several meetings with different professionals from the multidisciplinary team to discuss the surgery. You'll also undergo various examinations and tests.

You'll be examined, weighed and measured. You'll have appointments with the bariatric surgeon and, usually, the bariatric surgery nurse specialist. However, you'll also meet the internist, psychologist, dietitian and anaesthetist. The anaesthetist is the medical specialist in charge of anaesthesia, pain management and care in the recovery room.

You'll also attend a group information session during this pre-operative period.

Blood tests

Blood tests are part of the pre-operative and the post-operative period as well as the annual check-up. You'll go for a blood test at the Spaarne Gasthuis blood collection department. You can also have blood samples taken at another Atalmedial location. For details of Atalmedia's blood collection locations, visit www.atalmedial.nl, see 'locations and opening hours'.

Time to prepare properly for surgery

Preparation for surgery usually takes several months. This is the time for you to gather all the information you need and carefully consider it.

It's wise during this period to start losing weight and begin exercising. Find a dietitian in your area who can help you prepare for eating after your surgery.

You'll work with the surgeon to determine which surgery is best for you.

The choice of surgery depends, among other things, on the following:

- your age
- your surgical risk
- your diet
- your excess weight
- any other diseases

After this decision is made, the operation will be explained and discussed step by step.

In a nutshell

The decision whether or not to opt for severe obesity surgery involves weighing risks. On the one hand, being severely overweight means that you're at risk of a shorter life expectancy. On the other hand, surgery for severe obesity comes with a risk of complications.

That said:

To date, weight-loss surgery is the only treatment for severe obesity that has a lasting, beneficial result. On the other hand, none of other weight-loss treatments (e.g. diet, exercise and combined lifestyle counselling) carries any risks.

The first decision you need to make is whether your severe obesity means you're ready to make profound changes to your life. That decision is entirely up to you.

The next decision to make is whether or not you want surgery to help you with your excess weight. We'd like to help you with that second decision by talking to you about it and providing as much advice and information as possible. If you opt for surgery at our hospital, a team of doctors and healthcare professionals will be available to assist you.

A great deal will be expected of you, though. You'll undergo a range of examinations and have several appointments with different doctors and healthcare providers. Use this time to:

- lose weight
- get lots of exercise
- reflect on and talk about your decision (with your GP, family, friends and peers).

Take your time and make sure you don't rush into a decision. The surgery is never urgent!

The subsequent check-ups will remain important for the rest of your life. Although the results after surgery are generally good, this also depends on you. Furthermore, after the first few years of losing weight, it's quite normal to gain a little weight. If you achieve the following three goals, you can consider the surgery a success.

- You should be healthier than prior to the surgery.
- You should have permanently changed your life so that you can manage nutrition, exercise and health more wisely.
- And you should be happier having made these changes.

10. The surgeries explained

This section explains exactly how gastric bypass, stomach reduction (gastric sleeve), gastric band and duodenal switch (intestinal bypass) surgeries are performed and how they work. Discuss any questions you have with the surgeon. Are you eligible for another operation? If so, the surgeon will discuss that operation with you in detail.

The normal situation

The digestive system is a long tube that runs from the mouth to the anus, through which food passes, is digested and is absorbed into the blood.

The digestive system consists of the oesophagus (about 45 cm), stomach (capacity of about 1.5 litres), the duodenum (about 30 cm), small intestine (about 6 m), large intestine (about 2 m) and the rectum (about 15 cm). Bile and digestive juices mix with the food in the duodenum. Food is digested in the small intestine.

With **gastric bypass**, **gastric sleeve** and **gastric band** surgeries, (almost) no portion of the small intestine is bypassed, so food digestion remains normal.

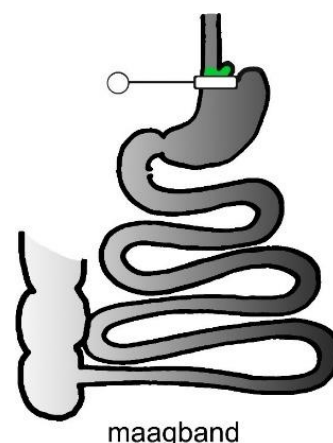
With **gastric bypass surgery**, a large part of the small intestine is bypassed, which means food is less easily digested.

The gastric band

A gastric band is a silicone ring that's placed around the upper portion of the stomach. The gastric band holds back the food, making it difficult for it to pass through. This means you can only eat a small amount at a time. The gastric band, however, can cause both vomiting and pain with swallowing.

The aperture of the band can be adjusted. Surgery involves implanting a small silicone access port under the skin which connects to the gastric band. Injecting saline fluid into the subcutaneous port reduces the size of the gastric band aperture.

The band then tightens around the stomach, which means you can eat even less and will lose more weight. The gastric band is not an effective tool against sweet or soft foods. As a result, many people fail to lose weight with the gastric band.



The gastric band can damage the stomach over time. This can lead to symptoms, abdominal scar tissue or even a hole in the stomach.

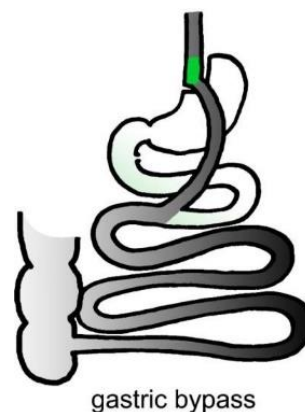
Gastric band surgery is reversible, i.e. the gastric band can be removed. In most cases, however, the excess weight will then quickly return. Gastric band removal and gastric bypass can usually be performed in the same operation.

The gastric bypass:

With a gastric bypass, a small part of the stomach, the size of a kiwi fruit, is separated from the rest of the stomach. However, no portion of the stomach is removed. The 'mini' stomach is connected to the small intestine. A little further on, a second connection is made to the intestine to allow the bile and digestive juices to reach the food. With a gastric bypass, everything you eat proceeds directly into the small intestine via the mini stomach. This allows the rest of the stomach to be bypassed. When eating, you quickly have the sensation of being full.

No synthetic material, such as a gastric band, is left in your body in a gastric bypass. In addition, nothing is removed from the organs.

The surgery is performed with special laparoscopic instruments that use staples. These instruments, as well as internal sutures, are used to divide the stomach and to make connections between the stomach and intestines.



It's a complex operation that should only be performed by surgeons who have extensive experience with these procedures. The surgery is generally reversible, i.e. the original situation can be restored if necessary, but that is not the intention. Gastric bypass is the most commonly performed stomach reduction surgery worldwide and has been performed for more than forty years.

Redo gastric bypass

Gastric bypass surgery is often a good alternative for patients who do not lose enough weight with a gastric band or who suffer too many complaints from the band. Gastric band removal and gastric bypass can be combined in a single operation. This is referred to as a redo gastric bypass.

Gastric bypass has a beneficial effect on type 2 diabetes. An important factor is that the food bypasses not just the rest of the stomach, but also the duodenum through the bypass.

Omega Loop gastric bypass (mini bypass)

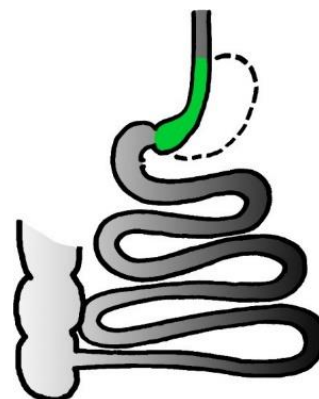
A special form of gastric bypass is the Omega Loop bypass (also called 'mini bypass'). The Omega Loop bypass involves bypassing not only the stomach, but also the beginning of the small intestine. As a result, surgery often works better against type 2 diabetes. However, Omega Loop bypass can have the annoying side effect of allowing bitter bile to enter the mini stomach or oesophagus.

Stomach reduction: gastric sleeve

With gastric sleeve surgery, a large portion of the stomach is removed from your body, making this operation irreversible.

The stomach, normally a large, sac-like organ, has the shape of a narrow tube after surgery. After the operation, it can store very little food. If you nonetheless eat too much or eat too quickly, food may rise into your oesophagus. This is called acid reflux and can be an annoying side effect.

No synthetic material, such as a gastric band, is left in your body in a gastric sleeve operation. Also, no connections need to be made between organs, as is the case with gastric bypass surgery. It's a relatively simple operation, but the risk of (post-operative) bleeding and leakage is no lower with a gastric sleeve than with a gastric bypass. The surgery is performed with special laparoscopic instruments that use staples.



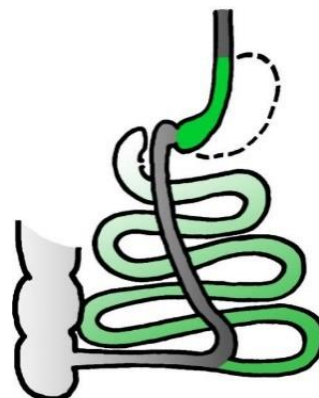
sleeve gastrectomie

The stomach plays an important role in the absorption of vitamin B12 from food. After gastric sleeve surgery, patients can develop a vitamin B12 deficiency. This can lead to anaemia.

Duodenal switch surgery

Duodenal switch surgery is intestinal bypass surgery. It is a combination of a gastric sleeve and a small intestine bypass. The gastric bypass causes the patient to eat less in a day, while the intestinal bypass also makes the food less digestible. The patient eats less and has diarrhoea.

The surgery is performed laparoscopically with special keyhole surgery instruments that use staples. These instruments, as well as internal sutures, are used to reduce the stomach and make connections between the duodenum and small intestine. A large portion of the stomach is removed. Nothing is removed from the intestines. The intestines are bypassed. The surgery can be performed in a single procedure. Often the surgery is divided into two different procedures, where the gastric sleeve procedure is performed first. If the patient has lost enough weight with the gastric sleeve surgery, the intestinal bypass can be performed in a second surgery.



duodenal switch

Duodenal switch surgery has significant side effects.

Firstly, the fat from the diet will be digested less and end up in the patient's stools. This causes the patient to have diarrhoea after eating fatty foods, often accompanied by a change in body odour. Secondly, important nutrients will not be absorbed as well. For this reason, after duodenal switch surgery, it is essential that you take nutritional supplements, every day, for the rest of your life. This involves protein-rich foods and supplementary vitamins and minerals, several pills a day. The surgery is very effective for obesity and diabetes, but due to its side effects, it's usually only advised in patients with a BMI higher than 55.

11. Questions and telephone numbers

It's important that you receive clear and accurate information. With this information, you and your doctor will decide whether to go ahead with the procedure. Feel free to ask the doctor treating you any questions you may still have.

If you have questions before or after treatment in hospital, or if problems arise at home, please contact the Obesity Surgery Outpatient Clinic. Write down your questions in advance so that you don't forget anything.

- Baria Nederland
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(+31 (0)23 224 0230
- Evenings, nights and weekends, call:
 - A&E, Spaarne Gasthuis Hoofddorp +31 (0)23 224 6880

You can ask non-urgent questions during your outpatient check-up or telephone appointment or via your MySpaarneGasthuis app.

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