



WLS General Information

What is obesity? How can weight loss surgery (WLS) help?

In recent years, we have slowly begun to understand obesity as a disease – a chronic disease that requires medical attention. We now believe that obesity is a complex condition with genetic, environmental, cultural, and psychological causes. It is a mistake to "blame" extreme obesity on a simple lack of willpower. In Canada alone, obesity affects one in four individuals in the general population. For many people with this devastating illness, diets alone rarely produce lasting results.

For people with the most extreme forms of obesity, WLS may offer hope of significant, lasting weight loss. The surgery provides the extra help that many people with extreme obesity need. It creates changes in the digestive system that help patients alter their eating habits. This becomes part of a comprehensive, life-long health plan that includes other components such as regular exercise, healthy food choices, and close, ongoing monitoring by members of a health care team.

Do I have severe obesity?

Surgical treatment for obesity is not for everyone who is overweight. It is usually reserved for people who have so-called "severe obesity."

We use a tool called body mass index (BMI) to measure the level of obesity. You can use the chart on the next page to find your BMI.

Find your height, in inches, in the left column. Move across and find a weight closest to your own. If your weight is lower than all of the values shown next to your height, your BMI is less than 35. If you find a weight close to yours in the row next to your height, the number at the top of that column is your BMI.

Examples:

- Someone who is 66 inches tall and weighs 309 pounds has a BMI of 50.
- Someone who is 72 inches tall and weighs 250 pounds has a BMI of less than 35.

BMI chart, for BMI 36-54

BMI	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
Height																				
(inches	Body Weight (pounds)																			
)																				
																			253	
																			262	
																			271	
																			280	
																			289	
63	197	203	208	214	220	225	231	237	242	248	254	259	265	270	278	282	287	293	299	304
64	204	209	215	221	227	232	238	244	250	256	262	267	273	279	285	291	296	302	308	314
																			318	
																			328	
																			338	
																			348	
																			358	
70	243	250	257	264	271	278	285	292	299	306	313	320	327	334	341	348	355	362	369	376
71	250	257	265	272	279	286	293	301	308	315	322	329	338	343	351	358	365	372	379	386
72	258	265	272	279	287	294	302	309	316	324	331	338	346	353	361	368	375	383	390	397
																			401	
74	272	280	287	295	303	311	319	326	334	342	350	358	365	373	381	389	396	404	412	420
75	279	287	295	303	311	319	327	335	343	351	359	367	375	383	391	399	407	415	423	431
76	287	295	304	312	320	328	336	344	353	361	369	377	385	394	402	410	418	426	435	443

What does the BMI number mean?

The BMI takes both height and weight into account, so it gives a more accurate picture of body size than weight alone. In general, we use the following categories of BMI when we talk about body weight:

- Underweight = <18.5
- Normal weight = 18.5-24.9
- Overweight = 25-29.9
- Obesity = BMI of 30 or greater
 - \circ Class I Obesity = 30-35
 - Class II Obesity = 35-40
 - Class III Obesity = >40

In our program, we use the BMI to help us decide if someone may benefit from WLS. The surgery is not usually performed on someone with a BMI of less than 40, though there are important exceptions. For example, if there are serious medical problems related to weight, the surgery may be considered in someone with a BMI between 35 and 40. *(The surgery is not done on anyone whose BMI is less than 35.)*

If you would like a more precise measure of your BMI, go to <u>www.nhlbisupport.com/bmi</u> and use the BMI calculator online. You can also use the following formula to calculate your own BMI:

BMI = weight in pounds x 705/height in inches squared

- 1. What is your weight in pounds? Write your answer _____
- 2. Multiply your answer in #1 by 705. Write your answer _____
- 3. What is your height in inches? Write your answer ____
- 4. Multiply the answer in #3 by itself. Write your answer _____
- 5. Divide the answer in #2 by the answer in #4. This is your BMI.

Unit Conversions

cm to m: ÷ by 100	inches to cm X by 2.54
cm to inches X 0.4	inches to feet ÷ by 12
lbs to kg: ÷ by 2.2	kg to lbs: X 2.2

Why is it so important to treat severe obesity?

Obesity is now the second leading cause of preventable death in Canada. The only preventable condition that kills more people than obesity is cigarette smoking. It is estimated that about 30,000 people a year die from obesity and obesity-related disease.

Extremely obese people have a shorter lifespan than non-obese people. Medical conditions associated with obesity include diabetes, high blood pressure, heart disease, sleep apnea, stroke, arthritis, and several types of cancer. Psychological effects can be equally devastating and include shame, guilt, and depression.

What is weight loss surgery?

Weight loss surgery changes the way your digestive system works by closing off parts of the stomach. Making the stomach smaller means that you feel full after eating a small amount of food. Operations that reduce stomach size are known as *restrictive operations* because they restrict the amount of food the stomach can hold.

Some operations combine restriction with a partial bypass of the small intestine (the intestines are where food and nutrients are absorbed into the body). By creating a detour around part of the intestine, less food is absorbed. Operations that use this mechanism to enhance weight loss are called *malabsorptive operations*.

There are a number of different restrictive and malabsorptive operations being done. Here at NSH, we are doing a restrictive procedure called the "sleeve gastrectomy", also called the gastric sleeve resection. Other types of weight loss surgeries are not done here. These include the laparoscopic adjustable gastric band procedure (LAGB) (stomach band, a restrictive

operation), the Roux-en Y gastric bypass, the biliopancreatic diversion (a malabsorptive operation), and the duodenal switch (a malabsorptive operation).

Laparoscopic procedure: When the laparoscopic technique is utilized, several small incisions are made in the abdomen. A laparoscope connected to a video camera is inserted through one of the incisions. The physician is then able to perform the procedure by viewing the internal organs on a television monitor.

Compared to the open procedure requiring a large surgical incision, when the laparoscopic approach is utilized, the post-operative recovery is shorter, and the patient is less likely to develop certain complications (e.g., hernia). However, laparoscopic surgery is technically more complex, and it is extremely important that a highly trained, qualified laparoscopic weight loss surgeon perform the procedure.

Gastric Sleeve procedure: The laparoscopic gastric sleeve resection is a technique which has been performed for the last decade. During this procedure, several small incisions are made in the patient's abdomen, and using a laparoscope for guidance, the surgeon resects a portion of the stomach. Weight loss occurs because the smaller stomach will only allow the patient to consume small amounts of food at a time. This procedure is *not reversible*.



Gastric sleeve resection has been shown to produce significant weight loss. This procedure is less invasive, fewer serious complications are seen, and patients experience an improvement in obesity related health issues. Complications, which may occur with sleeve surgery, include:

- Postoperative bleeding (1-5% of patients)
- Gastrointestinal leak (1-3% of patients)
- Deep vein thrombosis (1-2% of patients)
- Splenectomy (1% of patients)
- Pulmonary embolus (0.5% of patients)
- Death within 30 days (< 0.5% of patients)

Isn't that a drastic way to lose weight?

Weight loss surgery is a major decision. It is not a quick fix, and requires a lifelong commitment to diet, exercise, and medical follow-up. This surgery is a consideration only for patients who meet strict clinical criteria.

Obesity and obesity related illnesses such as hypertension, type 2 diabetes, stroke, cardiovascular disease, and several forms of cancer, are increasing at alarming rates. Following weight loss surgery, patients experience improvement in obesity related illnesses, and the risk of early death is diminished. For seriously obese patients who have been unsuccessful in nonsurgical weight loss methods such as diets, medications, behavior

modification, or exercise programs, weight loss surgery may be a life-saving intervention. In other words, for many patients, the potential risks from not having the surgery may be greater than the risks from possible complications of having the procedure.

How would weight loss surgery help me lose weight?

These operations help you lose weight in two main ways:

- Smaller stomach –You are given a new, small "pouch" that serves as your stomach. A
 much smaller stomach means that you feel full with a small amount of food. Secondly, this
 new stomach is less resistant to stretching.
- **Decreased appetite** The portion of the stomach removed is responsible for producing hunger hormones and thus after surgery you will experience decreased hunger.

These changes, in combination with an overall plan of diet and exercise, can increase your chances of losing weight.

How much weight will I lose if I have the operation?

The rate and amount of weight loss is different for everyone and depends in part on the type of surgery you have, your food choices following surgery, and how much exercise you can maintain. Patients usually lose approximately 50% to 70% of their <u>excess</u> body weight, in up to 5 years with the gastric sleeve procedure. This is approximately 1/3 (33%) of current weight. Weight loss occurs rapidly right after surgery – up to six pounds per week at first. A somewhat slower rate of loss continues for 12-24 months in most cases. Remember, no two patients are the same, and weight loss may be slower. The goal after the first few months following this surgery is to lose around 1 to 2 pounds a week. The rate of weight loss is not always steady, some months you will lose more weight than others.

No weight loss is guaranteed, and weight regain is possible, especially if a healthy lifestyle is not maintained. All patients need to follow a sensible diet and get regular exercise to maintain weight loss long term.

Remember, our goal in performing this surgery is to help you get rid of the excess body weight that puts you at risk for serious medical problems. The goal is not to make you thin. Some people believe that after weight loss surgery, they should be able to reach the extremely low (and sometimes unhealthy) body sizes that are emphasized in our society. Some patients do achieve a healthy BMI of 25 or less after this surgery; however, most patients will remain overweight after surgery by the BMI criteria. It's important that you do not have unrealistic expectations about what can be achieved through this surgery. We encourage our patients to focus primarily on how they feel and the steps they can take to improve their overall physical and emotional health, rather than focusing on body appearance. By paying careful attention to diet and exercise, and using vitamins and/or supplements as prescribed, most patients in our program are pleased with the weight loss they are able to achieve.

What happens to my skin once I lose so much weight?

There is often some degree of loose skin after weight loss, depending on age and amount of weight lost. Areas that might be affected are the abdomen, trunk, upper arms, breasts, and thighs. Plastic surgery can be considered after weight loss has been stable for approximately one year. It is important to understand that plastic surgery cannot reverse all the changes to skin caused by skin stretching. Plastic surgery is done for health reasons such as skin rashes, ulcers, and persistent infections, not for an improved appearance.

I have heard I can lose my hair after the surgery!?

Hair loss can be associated with any surgery, rapid weight loss, as well as emotional stress. It is more commonly noticed in women and is usually seen approximately 3 months after surgery and can last 3 to 6 months. Fortunately, post-op hair loss does not come out in clumps, it is more of a thinning, and it is usually temporary. Eating a healthy diet with plenty of protein (at least 60 to 80 grams of protein per day) and taking your multivitamin and mineral supplement will help.

What factors would be considered in deciding if weight loss surgery is right for me?

As noted above, most patients who enter our program have a BMI of 40 or greater. Other factors that suggest surgery may be a good option include:

- BMI greater than 35 and a serious medical condition related to weight, such as diabetes, sleep apnea or heart disease.
- BMI greater than 40 with or without a serious medical condition.
- Age between 19 and 65 years (with some exceptions)
- A long history of obesity, with many failed attempts at weight loss
- No current issues with drug or alcohol abuse or smoking. You must be a non-smoker for at least 6 months prior to surgery.
- No serious psychiatric illness, such as problems that would impair someone's ability to follow a program of lifetime diet management and follow-up.

Contraindications to surgery

There are some circumstances where the risk of the surgery may outweigh the potential benefits. For example, weight loss surgery may by contraindicated for patients with severe pulmonary disease, unstable coronary artery disease, and other conditions which may seriously compromise anesthesia, wound healing, and safe weight loss. Women who are pregnant, planning to become pregnant within two years or are currently breastfeeding would not be considered for WLS. Additionally, patients, who are unable to understand basic principles of the procedure or follow postoperative instructions, would not be considered as suitable candidates. You must quit smoking for at least 6 months prior to surgery to decrease your surgical and post-surgical risks. Here at NSH, we also require our patients to abstain from illegal substances for a minimum of six months prior to surgery.

What kind of diet do I have to follow after surgery?

It is important to understand that **all patients who have weight loss surgery must be committed to following a carefully prescribed program of healthy eating and exercise.** This is a <u>lifelong commitment</u> designed to help you achieve and maintain weight loss as safely as possible. Because the surgery reduces the size of your stomach, it is important to make sure you select the right foods and fluids in the appropriate amounts to ensure proper nutrition following the operation. There are also many eating techniques one must learn to aid in digestion (eating slowly and chewing thoroughly).

There are five diet stages after surgery. You will receive information on choosing low sugar, low fat, and high protein foods to optimize your weight loss and health.

A very brief description of the five diet stages is given here.

Stage 1 is sips of water only. You are on this stage for 1 day or less in hospital.

Stage 2 is clear fluids that are non-carbonated and decaffeinated. You are on this stage for 1 day or less in hospital.

Stage 3 consists of high protein and low-fat fluids. You are on this stage for 4 weeks.
Stage 4 consists of pureed, soft foods that are high in protein. Portion control and proper chewing of food are important parts of this phase. You are on this stage for 4 weeks.
Stage 5 – At 8 weeks after surgery, you begin Stage 5. This is the stage you will stay on for life with an emphasis on small balanced meals and snacks, adequate fluids and protein, along with a daily multivitamin and mineral supplement.

If you are going to have weight loss surgery, you will meet with the WLS team and dietitian before your operation and as scheduled throughout the recovery period. Follow-up is essential to achieving success. You will be provided with detailed nutrition information and guidance with your food choices. Some of the things you will learn about in detail include:

- Fluid More than half of a healthy body consists of fluid. After your surgery, with your new smaller stomach, it will be necessary for you to take in small sips and drink every hour you are awake. Your dietitian will talk about watching for signs of dehydration, including headache, dry mouth, low urine output, and constipation. Once you are on stages 4 and 5, you must drink fluids between meals, not with meals.
- **Protein** Your body needs protein to build and repair tissues, maintain healthy hair, skin and muscle, aid in digestion and in weight loss. Your dietitian will review how much and which types of protein (dairy, meat, fish, poultry, and soy) are the best choices for you after surgery.
- Carbohydrates Carbohydrates such as whole grains, vegetables, fruit & legumes are a good source of energy, fiber, vitamins, and minerals. Initially, some of these foods will be limited & modified in consistency (liquid, soft, cooked). As you progress in your diet plan, your dietitian will discuss the best sources of carbohydrates to include in your diet & the importance of controlling the portion.

- Fat Fat provides energy, helps to absorb, and transport vitamins A, D, K and E, plays a role in maintaining healthy nervous and immune systems, and helps you have healthy skin, hair, and nails. Not all fats are alike, and you will learn which types of healthy and essential fats to include in your diet.
- Vitamins and minerals After WLS you will need to take a multivitamin and mineral supplement for the rest of your life. Depending on your food intake & your blood work reports, you may also be advised to take other additional nutritional supplements.

Your WLS team will guide you throughout the entire process. By learning what to eat and drink, and in what amounts, you will be able to choose the right foods to help maintain a healthy weight. Your small stomach pouch affects the amount you can take in at one time and the types of food you can comfortably eat. For many people, this means the ability to eat large amounts of food is lost forever. Some people will not be able to tolerate certain raw vegetables, bread, pasta, rice or red meat after the surgery.

It is important to understand that in the months and years following surgery, overeating is still possible and can cause your small stomach pouch to stretch. <u>The surgery does not protect</u> you from gaining weight if you take in a large number of calories from unhealthy food choices, frequent snacking/grazing, and large meals or not being active on a regular basis. However, the surgery does help most patients to keep overall calorie intake in check, resulting in weight loss and the maintenance of a healthier body weight.

If I follow a healthy eating plan, is that all that is needed to lose weight?

We believe there are three factors related to long-term successful weight loss:

- Diet and Nutrition –Your weight loss and the maintenance of your weight loss are primarily the result of taking in fewer calories following the weight loss surgery. You must habitually choose healthier foods in smaller portions such as lean proteins, whole grains, fruits, and vegetables & low-fat dairy products. You will need to limit high fat and high sugar foods, processed foods and alcohol.
- 2. Exercise Regular exercise is extremely important for success. This means continuous activity for at least 30 60 minutes a day, 7 days a week. We suggest walking, either in a pool if you need the support, or on a soft surface such as a treadmill. In addition, resistance exercises such as light weights and resistance bands will help with weight loss and toning. Even if you haven't exercised in many years, some sort of safe plan will be important from the start.
- **3. Psychological Coping –** The weight loss surgery will have dramatic effects on many areas of your life. Your long-term success depends very much on how these changes impact you as a person. Dealing with a dramatic change in the shape of your body includes:
 - what it means to develop a new "body image"

- adjustments in lifestyle that are needed in order to follow nutrition and exercise routines
- discovering that people treat you differently as you approach a smaller weight
- the reactions of family and friends to the changes that take place after surgery

How will I feel after the surgery? How long will I be in the hospital?

In general, patients who have a gastric sleeve procedure stay in hospital only 2 to 3 days. Occasionally, patients may have to stay longer. Your recovery from this surgery is like that of any patient undergoing an abdominal operation. You will have some discomfort, but this is usually well controlled with medication. We try to make sure patients are up and about on the day of surgery, but most people do not return to their full schedules for about 4 weeks. If you decide to have the operation, you will receive more detailed information about what to expect.

What are the risks and complications of this surgery?

As with any surgery, there are risks associated with weight loss surgery. The overall risk of complications is about 10%. There is a small risk of death, which varies based on your general health. Nationally, the risk of death is about 1% or less. If you decide to proceed with surgery, your doctor will explain the general risks of abdominal surgery, as well as the specific risks associated with the procedure you will be having. Your individual risk depends on your age, gender, and your overall health.

Some of the risks that will be discussed include:

- **General Complications**: Weight loss surgery carries many of the same risks as any other abdominal operation. These risks include dehydration, wound problems, difficulty swallowing food, infections, nausea, blood clots, bleeding, and abdominal hernia.
- Gallstones During rapid weight loss, a person's risk of developing gallstones is increased. Gallstones can develop in more than ¼ of obese patients who have WLS. Gallstones are clumps of cholesterol and other matter that form in the gallbladder. Medications such as Ursodiol (Actigall), when taken for 6 months following surgery, can reduce the chance of gallstone formation.
- Vitamin/Mineral Deficiency All weight loss surgery patients require a multivitaminmineral supplement for life due to the significant reduction in food intake. Requirements for other supplements will depend on your food intake and your lab results; your dietitian will advise you on what supplements are best for you. Most vitamin and nutrition deficiencies can be avoided with regular monitoring of blood tests and the appropriate intake of these supplements.

As noted above, other complications or failure to achieve desired weight loss may occur. Ask your doctor to explain more about complications associated with your operation.

What kind of follow-up care will I need?

You will need to be committed to long term follow-up including having regular blood work and attending appointments. During the first year after surgery there will be a number of appointments for education and continued monitoring for safe weight loss. You will need to take a daily multivitamin and mineral supplement and possibly other supplements for the rest of your life. Blood tests are done one month after surgery, at least three times within the first year and annually after that to assess your health & nutritional status.

Does the surgery ever fail? Is there a chance I won't lose weight, or that I will gain my weight back?

Most patients lose weight following WLS. However, in the years following surgery, it is common to re-gain *some* lost weight. A few patients will re-gain it all. Your food choices, activity level, and lifestyle after surgery will have a great effect on how much weight you lose AND for how long you will be able to maintain your weight loss.

It is important to understand that there is no guarantee that your weight loss will be significant or permanent. For some people, unhealthy eating patterns during the years following surgery will stretch the pouch and they may gain back all of their weight. Although this is uncommon, it can happen.

A small stomach pouch cannot protect you from absorbing a large number of calories if you snack frequently between meals. Snacking or grazing on potato chips, crackers, pretzels, nuts, and cookies are the most common causes of weight re-gain after WLS.

Remember, WLS can increase your chance of losing weight by altering the way your body digests food. Making the correct food choices and getting the proper exercise will be as important as ever. You will need to establish healthy eating and lifestyle habits after surgery and sustain these changes for the rest of your life in order to ensure long-term success.

What are my responsibilities as a weight loss surgery patient?

- 1. Arrive on time for all scheduled appointments.
- 2. Have blood work done prior to your appointments.
- 3. Inform the WLS team of any health concerns & of your progress.
- 4. Stop smoking! Smoking increases your risk of serious or life-threatening complications with surgery, including leaks, ulcers, heart attack and DVT (blood clots). We will not operate on any patient using tobacco in any form. We ask that you quit for 6 months prior to your surgery and may require a urine or blood sample to test for the presence of nicotine in your system if we suspect that you are continuing to use tobacco.

- 5. Continue to try to lose weight! A weight loss of 10 to 20 pounds before surgery will make your surgery safer and your recovery easier. It makes a big difference, and failure to lose weight during the pre-operative period may actually exclude you from surgery.
- 6. Start to exercise. Anything you can do to increase your physical activity is important. Walking, swimming, dancing – find something that you can do every day for at least 30 – 60 minutes. If you have knee or back problems that make some exercises difficult, try water aerobics or just walking 10 minutes 3 times per day. Seated arm exercises can also help you burn calories and improve muscle tone. Exercise is a great way to burn some calories, get you better prepared for surgery, and help speed your post-op recovery.
- 7. Educate yourself. Weight loss surgery is a tremendous tool to help improve your health, but you need to know how to use this valuable tool. Study the information and understand how your life will change after surgery. Use the online resources and talk to post-op patients to find out as much as you can about life after surgery. Understand the risks and complications of surgery and think about questions you may have. Know what foods to eat after surgery and design your plan of action. Write down any questions you may have so you don't forget and ask a member of the team.
- 8. Establish your support network. You must have a support person to help you through this process. This is very important, and we want you to bring them to the information session with you.

If I am a woman of childbearing age, will I be able to have a baby after weight loss surgery?

In general, we recommend that you wait at least 2 years before attempting to become pregnant. Your body needs time to adjust to the changes in your digestion brought about by the surgery. Becoming pregnant before this adjustment is complete puts a strain on you and on a developing fetus.

Before becoming pregnant, make sure you have a complete physical exam with your primary care doctor or obstetrician, and discuss with him/her how you will ensure that you take in proper nutrition during pregnancy. We also recommend that you see our dietitian prior to pregnancy, if possible, for preconception nutrition planning. Once you become pregnant, nutritional follow-up continues to be essential to facilitate healthy weight management for you and growth and development for your baby. You will require the right amount of fluid, calories, protein and fat, and vitamins/supplements to ensure a safe and healthy pregnancy and birth.

I think I might be interested in this surgery. What happens next?

The first step is for your doctor to refer you for WLS. Once your referral has been received, you may not hear from the program for several months or longer. However, during this time you

should read about WLS, start making lifestyle & food habit changes, so that when you are contacted, you will be well on your way to being ready.

The first appointment will be a group of 50 patients. You will be asked to complete health information forms. The nurse practitioner, dietitian, psychologist, & surgeon will then speak about WLS. You will have opportunity to ask questions. If you feel that this surgery is appropriate for you, you will then be scheduled for an individual appointment with the nurse practitioner, dietitian & psychologist within the year. See *Frequently Asked Questions* and *Pre-Surgery Clinic Appointment* documents on this website. A second appointment will be with the surgeon.

Where can I find additional information about weight loss surgery?

We recommend that you find out as much as you can about this surgery before you proceed. The more questions you ask, the better informed and prepared you will be if you decide to proceed with surgery.

The Internet has a great deal of information available on weight loss surgery and other weight loss treatments for severe obesity. At some sites, you can "meet" and "talk" with patients who have already had one of these operations. This is a good opportunity to ask about things like diet changes, and overall success with weight loss. Ask recovering patients if they would make the same decision again. If so, why? If not, why not?

However, please be aware that, as with all health information on the Internet, not all of the information is accurate, and not all sites are sponsored by reliable sources. When evaluating a web site, make sure you get some background on the site you have found. For example, find out if the information was posted by a reputable organization and when it was last updated. These are two important steps you can take to help make sure you have found a reliable source of information.