

## Introduction to Bariatric Surgery

Welcome! The fact that you're reading this handout means that you probably already know a lot about bariatric surgery. It might be tempting for you to skim through the handout, but we hope you will read it in detail because there is a lot of new information about how obesity disease happens and about how bariatric surgery works directly at the root of the problem to bring the Metabolic Obesity Disease under control.

### About Metabolic Obesity Disease

Of course, the main purpose of this handout is to give you information about bariatric surgery, but bariatric surgery will make more sense if we back up for a moment and share some of the surprising new information about this "Metabolic Obesity Disease." That phrase is kind of a mouthful, but it's worth using because it helps us understand these facts:

- Obesity is **not** just an inconvenience
- Obesity does **not** come from a life of "bad choices"
- Obesity is **not** caused by moral weakness, or failure of willpower
- Obese people are typically **not** at fault for their excess weight
- Obesity is **not** under conscious control
- Metabolic Obesity Disease often shows up in people who are winners in every other area of life

In the last several years, research has shown that Metabolic Obesity Disease is caused by an imbalance in the biologic control systems that control the amount of fat stored by the body. This new knowledge is coming from research into the hormone imbalances that show up in obesity and associated metabolic diseases, in an effort to understand the disease for improved treatment and maybe someday for prevention. Researchers have not learned enough to tell us why the body insists on an elevated/unhealthy level of fat storage, and it will probably turn out to have different causes in different people. Here are some of the most important new concepts about Metabolic Obesity Disease:

- Patients suffer from a **disease**, meaning that it has serious medical consequences if not treated.
- The disease is caused by an imbalance of biologic mechanisms that are unconscious and automatic; the idea of obesity control by willpower is similar to the idea of controlling high blood pressure or a heart rhythm problem by conscious thought.
- The hormonal imbalances that lead to obesity are tightly connected with other metabolic diseases such as diabetes, high blood pressure, and high cholesterol. Correcting the root imbalance leads to improvement in all of these.



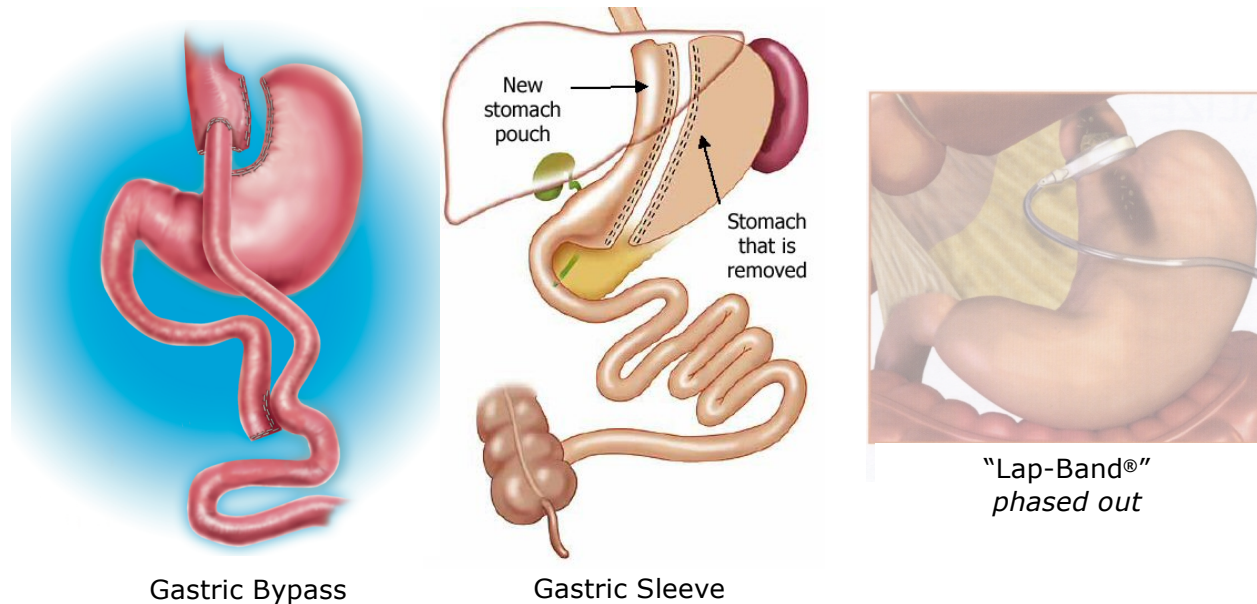
Research tells us that it's fair to imagine an internal "thermostat" that is set to control weight and metabolism at a certain level. Somehow, that thermostat gets stuck at a level that is too high for health. The body will actually fight to keep weight at the abnormal level set by the metabolic "thermostat."

## Treatment with Lifestyle Change and Medications

Once we understand that Metabolic Obesity Disease is a problem with the unconscious biologic control mechanisms, it makes sense that weight loss through diet and exercise is usually temporary. Most people can use willpower to overcome the automatic biologic control mechanisms for a while, but if something is not done to reset the weight “thermostat” then it is similar to holding your breath – you can do it for a while but soon the automatic biologic mechanisms are back in control. Medical research has shown that the success rate of substantial and sustained weight loss from lifestyle change (diet and exercise) is **only 2%**.

So far, we don’t have any medications that really get to the root of the obesity problem; there is no available medication that causes a substantial and lasting improvement in the abnormal target weight set by the body biologic control mechanisms. There is plenty of exciting research and improving understanding in obesity therapy, but at this time the only intervention that works for the long run is surgery.

## Bariatric Surgical Procedures



There are currently two safe and effective surgical options in San Antonio – the Gastric Bypass and the Gastric Sleeve. Both of these operations are performed laparoscopically (“minimally invasive”) and both have a direct positive impact on metabolism so that patients **feel natural** with a very small amount of food intake and maintain a normal high level of energy. Both operations have a much smaller stomach, but the main way they promote long term weight loss is not by blocking food, it is by readjusting the body’s “weight thermostat” so that the body “wants” to be at a lower healthy weight.

During the Gastric Bypass, your surgeon uses a surgical stapling device that cuts across the upper stomach and simultaneously seals the edges closed for healing. The new tiny stomach pouch is really small, only about the size of the thumb. After the new small pouch is created, your surgeon attaches a section of your small intestine (called “jejunum”) to accept food flowing out of the small pouch and then downstream. Your surgeon also makes a connection between the small intestinal sections downstream where digestive juices (bile and pancreas juice) mix with food to promote normal absorption. The larger part of the stomach that is bypassed keeps its normal blood supply; it remains healthy and remains in its normal position.

In the first couple of months, the new small stomach is naturally stiff and inflamed from the stress of surgery; during this time our patients experience a profound and pleasing freedom from hunger. As the tissues heal some hunger returns and the stomach regains some of its natural flexibility, so that in the long run patients feel satisfied with about the same amount of food as 2<sup>nd</sup> grade child. The intestine attached to the stomach pouch (called the "Roux limb") does not handle sugars well, so if a patient eats sugars or starches they will have an illness called Dumping Syndrome that can include symptoms like cramping abdominal pain, sweats, throwing up or diarrhea. In practical reality, most patients who have a gastric bypass experience Dumping Syndrome just once or twice; they try ice cream or M&M's to be sure the surgery works, then they've lost their taste for such things and they are "done."

The most important way that the Gastric Bypass works (and the Sleeve too) is to help the patient feel natural and satisfied as they change eating habits toward small amounts of healthy food. Neither one of the current operations causes a physical "block" to eating or leaves patients feeling deprived; older operations that try to work by physically constricting the stomach only work temporarily because they end up fighting against the body after a couple of years. Typical patients after Gastric Bypass or Sleeve enjoy a wide variety of healthy foods, eat small amounts of food, feel satisfied (not deprived), and have a very high level of energy as the body shakes off the burden of the excess weight.

During the Sleeve operation, your surgeon uses a surgical stapler to cut "lengthwise" near the lesser curve of the stomach. About 90% of the stomach is removed, and the remaining stomach is shaped into a slender tube of stomach as the cut edges are sealed together by the stapling device. The neat thing about the Sleeve is that some hunger hormones are made only in the part of the stomach that is removed; so one concept is that the Sleeve works by removing part of the hunger mechanism. The Sleeve does not cause Dumping Syndrome, though most patients who have a Sleeve notice a lack of desire for sugars and sweets. The Sleeve results in permanent changes in your stomach, since we are literally removing and discarding most of the stomach.

Another key feature of the Sleeve is that it is a relatively new operation, first performed in 2005. History matters because we have learned that the "whole story" on a medication or surgery can't be known until about 15 years have passed. We have been doing Sleeve operations since 2006; our results have been excellent and our Sleeve patients seem to be very happy with their operation so far.

Folks commonly ask about the staples that are used for the Gastric Bypass and for the Sleeve operations; usually people want to know if the staples will cause any reaction or any other type of problem in the long run. Here are a few facts about the staples that we use:

- The staples are made from titanium, which is totally non-reactive inside the body. These staples never degrade, rust, or cause any type of allergic reaction.
- The purpose of the tiny staples is to hold together the edges of the freshly cut tissue so that the edges can "knit" or "fuse" back together through normal healing. Most of this healing is complete in less than 2 weeks from surgery; at that time the staples are no longer needed but we don't go back to take them out because that would be like doing the operation over again from scratch.
- The total amount of titanium staples is so small that our patients do not set off airport metal detectors.☺ Also, titanium is non-magnetic so there is no problem with MRI scans after Gastric Bypass or Sleeve.

(What happened to the Band?)

Many folks like the Lap-Band® because it has been a popular surgical option and it appears simple to have a plastic belt installed on the stomach. This Band idea is understandable, because it looks like a good match for the “old school” understanding that obesity is caused mainly by eating too much food. There was a time when we agreed that the Band was one good option for folks who suffered from obesity, and as a practice we did more than 1,000 Band operations. However, we’ve come to see that the Band is not a lasting treatment for most patients because of the way it works. The Band works mainly by restricting the flow of food through the esophagus (swallowing tube) and upper stomach. This restriction to food passage causes two types of problem:

1. The Band does not rebalance or readjust the body control mechanisms to a lower/healthy weight. This means that the Band reduces the amount of food that a person can hold but does not improve satisfaction; patients are able to eat only a small amount of food and eventually feel deprived because their body still “wants” the same amount of food.
2. Over the years, the esophagus gets tired of pushing food down past the Band and it tends to weaken or to quit. Over time the esophagus tends to become dilated (stretched out) and may be permanently damaged in some cases.

Bottom line is that the Band seems to work fairly well for a few years, but then very often fails 4-7 years later. Since the Band can cause lasting damage, we no longer think it is OK to “take a shot” with the Band and then take it out in case it does not work. We believe it makes more sense to start off with a procedure such as the Gastric Bypass or Sleeve that is likely to work for the rest of your life.

## Choosing the Right Procedure for You

We believe it is important for you to have a strong voice in choosing which operation you will have done. After all, this is your personal “tool” that you will carry with you and put to work for decades to come; it will be the best tool for you if you have a positive “vibe” about how your surgery works inside you. For most people, this is a choice between two good options rather than a “right” vs. “wrong” choice.

	Gastric Bypass	Gastric Sleeve
<b>Laparoscopic? (minimal incisions)</b>	Yes	Yes
<b>Time in O.R.</b>	60-90 minutes	< 60 minutes
<b>Time in Hospital</b>	1-2 nights	1-2 nights
<b>Back to Normal Activity</b>	1-2 weeks	1-2 weeks
<b>Dumping Syndrome</b>	Yes	Not Really
<b>Diabetes Remission</b>	84%	40%
<b>GERD Resolution</b>	90%	N/A
<b>Average BMI decrease</b>	17 points down (62% of excess weight)	15 points down (57% of excess weight)  Trend: Sleeve seems less effective than GBP for women

Notice that both operations have a short hospital stay (usually just one night in hospital) and a fairly quick recovery. The differences between the operations are found in the bottom half of the comparison table:

- The Gastric Bypass does feature Dumping Syndrome, and the Sleeve does not. Since Dumping Syndrome is an adverse reaction that comes from eating starches or sweets, most patients appreciate the potential for Dumping to keep them away from those food types.
- “Diabetes remission” means that our patient achieves normal blood sugar levels and **no longer requires medication for blood sugar control**. This is a huge health benefit of bariatric surgery and both of the operations have a good chance of pushing diabetes into remission. There is a clear statistical advantage toward the Gastric Bypass in diabetes remission, so we want to be sure that our diabetic patients take a serious look at the gastric bypass. Furthermore, the positive metabolic impact on diabetes after Gastric Bypass usually takes only a few days; we commonly have patients come into surgery on 100-200 units per day of insulin, then go home after surgery on no meds for their diabetes, ever again.
- “GERD” stands for “Gastro-Esophageal Reflux Disease.” Most people have a touch of indigestion or heartburn from time to time, but if you have severe GERD then we may lean toward the Gastric Bypass. The reason the Gastric Bypass is better for reflux is that the acid-producing section of stomach (the middle and lower part) is physically separated from the esophagus where the acid causes damage. Patients who have a Gastric Bypass usually wake up without reflux anymore. On the other hand the Sleeve seems not to help or hurt reflux; if you have some heartburn before Sleeve then you will probably still have about the same reflux in the long run.
- In terms of weight loss there is a statistical advantage for the Gastric Bypass; each individual should decide how important this factor is for them.

## Health Outcomes From Surgery

Nearly everyone who has a Gastric Bypass or a Sleeve succeeds in losing a lot of weight. Weight loss comes from a “game-changing” reduction in appetite, combined with an excellent energy level that usually rises as the body sheds the stress of the weight. The amount of weight that folks lose depends a lot on where they begin (how heavy, how sick, how old, etc.) but there are several general facts about weight loss that should provide the right expectation:

1. Very few patients lose down to “Ideal Body Weight” which is a BMI of 22-25. In fact, we recommend against this extreme amount of weight loss because it would not be healthy, coming from the elevated weight that most have prior to surgery. Our experience is that if we can get the BMI down below 30, most folks are very pleased in terms of health as well as appearance.
2. Patients do not typically lose too much weight, even if they begin at a level only 50 pounds overweight. The thing to remember is that these operations work by metabolic correction and not by “blocking” eating. Since patients keep a healthy/appropriate appetite, they achieve a moderate/appropriate amount of weight loss with a dramatic improvement in other metabolic diseases such as diabetes or elevated cholesterol. For those of you starting with massive obesity, the same metabolic correction will help you lose a much larger amount of weight.
3. Surgery does not really count as a success unless you keep the weight off for many years. Usually our patients do achieve a lower weight for life, but since weight regain is a possibility we strongly encourage lifetime follow up and contact with our practice to keep the metabolic disease under control and avoid long term weight regain. National statistics indicate that, for the Gastric Bypass, there is an 85% success rate in keeping weight off more than 5 years after surgery.

Since the weight loss comes naturally from the correction of abnormal appetite and unbalanced metabolism, it is no surprise that many medical conditions improve substantially in the first few months after surgery. Patients typically experience significant improvement in conditions such as diabetes, high blood pressure, high cholesterol, GERD, sleep apnea, and joint pain. Patients commonly go from 10-15 prescription meds per day, down to 3-4 per day.

## The New Diet Plan After Surgery

For most people “diet” is a four-letter word. “Diet” usually means pain, deprivation, and often it means failure. Bariatric surgery is a game-changer, and after the operation we hope you will think of that word diet to mean “planned food choices” and “eating smart.” The cool thing is that the surgery should help you move from an unhealthy appetite (obesity disease) to a healthy/normal appetite that actually helps you achieve a lower weight in a comfortable way. There are three key diet rules for success after surgery:

- 1. Pay attention to the physical sensation of hunger, and eat just enough to take care of the hunger.** After surgery you should have a healthy and accurate sense of hunger. That means that if you don’t *feel* hungry, it is OK not to eat. If you do *feel* hungry, then it should be OK to eat. Learn to eat a small amount, just enough to take care of the sensation of hunger; in the first few weeks after surgery this may be something like 2 teaspoons of egg, later on it will probably be something similar to lunch for a 2<sup>nd</sup> grader.  
Slow down when eating, so that your body has a chance to let you know it has enough; this usually takes 20 minute or so.  
Don’t expand your meal by eating for a long time. Stop eating at 30 minutes and we promise you will have plenty of nutrition. Most people do well with 3 meals per day; eating more frequently can turn into “grazing” which can add up to a lot of calories.

**2. When hungry, eat healthy food.** In our book, healthy food means protein and green vegetables. Avoid sweets, and keep starches to a bare minimum; sweets and starches cause your blood sugar to fluctuate, leading to more hunger, leading to more eating. Healthy food = satisfaction and a good energy level.

On the other hand, eating the wrong foods such as sweets, starches, or snack foods leads back to metabolic imbalance → more hunger → more calories → weight regain.

**3. Stay hydrated.** Take sips of zero-calorie fluids very frequently, and drink enough to keep your urine clear in color. It is best not to drink liquids with food or within an hour after food, because the water turns your food into soup that goes down too easily and does not hang around in your small surgical stomach to give you lasting satisfaction.

We will also recommend vitamins, supplemental calcium, Iron, and B<sub>12</sub> to be taken daily after surgery. The supplements are necessary because both operations reduce your absorption of some vitamins and minerals. Supplements are also helpful because they will help your metabolism remain balanced and active.

Please don't worry if this handout seems light on teaching about how to eat after your surgery. As part of your preparation you will have extensive teaching from our excellent dietitians. By the time you have surgery you will know exactly how to eat and drink so that you get the most health benefit from your operation.

### Recovery and Physical Activity After Surgery

We know that exercise is another one of those "four letter words;" fact is that the obesity disease makes it physically painful to accomplish many physical activities. Most patients are surprised at how quickly this physical pain is reduced after surgery; some of this is probably due to lower physical load on the joints and some is probably improved by reduction in the "obesity inflammation" that comes along with excess weight. We encourage our patients to walk as much as they can prior to surgery, and to resume regular walking a few hours after surgery. We almost always release patients from surgical restrictions at their 2-week follow up visit, and we strongly encourage them to build up to a regular plan of physical activity from there.

Research shows that **regular physical activity is the number one factor in maintaining a lower healthy weight over many years.** It seems that strengthening activity (muscle building) is an especially important feature of the long-term program because muscle burns more calories; more muscle leads to a more active metabolism.

### Long Term Health and Follow up

Bariatric surgery is a powerful tool that helps bring metabolic obesity disease under control. This is not the same thing as saying that the obesity disease is cured, so folks should remain engaged in a lifetime plan of monitoring, coaching, and adjusting therapy. Our recommendation is that we see you several times a year during the first couple of years after surgery, then less frequently but still regularly for life. It's really important for you to understand that if you gain a bit of weight in the future this means that your obesity disease is getting out of control. Many people do gain a bit of weight at some point after surgery; please come see us as soon as you can. Don't stay away because you're ashamed; we know this is a lifetime disease so we're going to coach you and help you rather than be disappointed with you.

Lifetime follow up is also important so that we can monitor your lab work, with special attention to your nutrition levels and vitamin levels.

## Risks of Bariatric Surgery

First of all, please trust that we only recommend surgery for you once we have learned about your particular medical condition, and only if we believe there is an overwhelming likelihood of improving your health through surgery. We will share our opinion about risk/benefit of surgery in your personal case, and let you know if there are any special risk factors that apply to you. In this handout we will outline all the risks that apply to bariatric surgery; please ask us to discuss further if anything is not totally clear. We find it is useful to break the risks down into several sections.

Risks that go with any surgery – just going under anesthesia and having a surgeon work on inside parts has risk. This type of risk is present for any operation such as gallbladder removal, knee surgery, or cesarean section. Unfortunately, the risk of any surgery is higher in folks who have obesity, because obesity puts the body under strain, often makes surgery more difficult, and may interfere with healing. The good news is that we handle these special challenges every day, and so does our experienced team. Here are risks that go with any surgery, including bariatric surgery:

- Inability to complete the planned operation – this is really unusual during bariatric surgery, and mostly comes from liver enlargement. More on liver problems later...
- Injury to tissues in the area of surgery – this also very uncommon, except when our patient has had a lot of previous surgery in the area where we are working (prior surgery leaves behind scar tissue). If there is an organ injury during an operation, we do our best to identify it and repair it before surgery is complete.
- Pulmonary Embolus (PE) – this is a situation where the blood flow slows down under anesthesia, and may slow down enough to thicken and clot in the large veins of the lower legs. If a clot forms, then breaks off and floats up to the lungs, it can potentially block off enough blood flow to stop the heart. Pulmonary Embolus is a risk around any major surgery, but since obesity is a key risk factor we bariatric surgeons pay special attention to this risk. In the last decade, PE accounted for almost half of the patient deaths after bariatric surgery. We protect our patients from PE by using blood thinner, and leg compression devices, and by supporting patients to be up and walk ASAP after surgery. We find that walking is the most effective way of preventing PE, and our rate of PE is about 1/8 of the national standard.
- Bleeding – one of the last things that we do before completion of surgery is to look around and be sure there is no bleeding. Nevertheless, we typically give our patients blood thinners after surgery to protect against blood clots and once every 6 months or so we see bleeding from our patients after surgery.
- Infection – our infection rate is much less than 1%, even though about 40% of our patients have diabetes (diabetes increases infection risk).
- Vital organ stress or failure – surgery and anesthesia put an extra workload on all the vital organs such as the heart, lungs, and kidneys. This is usually not a problem unless our patient goes into surgery with pre-existing organ failure, or if there is a separate complication or other problem that increases the stress of surgery.



Risk of death from bariatric surgery – across the country, the published risk of mortality after bariatric surgery is 0.2% or 1/500. This comes from all types of surgery, all types of hospital facility, and all surgeons regardless of experience level. For our practice, the risk of death dating back to 2000 is 0.015%, less than a tenth of the national standard. We feel it's useful to put this into context with the mortality risk from some common surgical situations:

Hip replacement surgery: 0.24-0.85% mortality

Heart bypass surgery (CABG): 2-5% mortality

Appendicitis: 0.4-2.1% mortality

Risks particular to Gastric bypass – each of the operations has unique features and unique potential for post-operative problems.

- Risk of leak – for a moment, think of the gastric bypass as a plumbing project (rearranging pipes) that must leak not even a single drop. It is important to avoid any leakage because the fluid that is normally inside the stomach is caustic and infectious; if fluid leaks out and collects it will cause serious inflammation and eventually infection. We perform a high-pressure leak test at the end of surgery to be sure there is no leakage when we finish. It is still possible to have leakage after a normal leak test but it is extremely rare and we have not seen a leak in any of our patients for several years now. If a leak happens, it will take place in the first 48-72 hours after surgery, while our patient remains under close supervision.
- Ulcer, or stricture – if the stomach pouch or its attachment to the intestine does not heal perfectly, there may develop a raw area inside that causes nausea or pain. This type of problem shows up around 3% of the time, and it can be treated with medication or perhaps with endoscopy (a scope with a light).
- Bowel obstruction, internal hernia – because we reorganize the intestines during gastric bypass it is possible for those intestines to become folded or twisted or 'kinked' at some point after surgery. This is an uncommon situation, running 2-3% after surgery. If intestinal blockage occurs, it requires surgery to straighten out. This type of surgery can typically be completed laparoscopically and it is rare for obstruction to re-occur.

Risks particular to Sleeve

- Leak – it is possible for the Sleeve to leak anywhere along the new stomach tube. As with the gastric bypass, we do a high-pressure leak test at the end of surgery to minimize this risk. So far, we have not had any leaks in any of our Sleeve patients.
- Stomach tube folding, blockage, or poor sleeve emptying – we have read about these problems in published reports after the Sleeve, but we have not seen them yet in any of our patients. We think we understand how to prevent these problems for our patients going forward.
- Reflux – research data is still developing, but it seems that the Sleeve is related to long-term reflux symptoms. It is not clear if the Sleeve is failing to treat pre-existing reflux, or if sometimes reflux occurs as a new problem after Sleeve surgery.
- Stomach tube expansion with weight regain – we are watching this potential issue closely, and it seems not to be a problem. When we test our patients' Sleeve several years after surgery it seems to remain stable and their weight also seems to remain stable; this makes sense because the part of the stomach that we remove is the most "stretchy" and the part that we keep is the least "stretchy."

General risks and problems after Bariatric Surgery

- Nutritional problems – since absorption of most nutrients is normal after surgery, nutritional problems are uncommon. Such problems are basically seen only if there is some surgical problem that prevents normal progression of food intake, or more commonly if patients fall away from the recommended pattern of supplement intake or if they fail to keep follow up over an extended period of time. There are some vitamins and minerals that are not absorbed in a fully normal way after bariatric surgery, such as Iron, B<sub>12</sub>, and possibly Calcium. It is necessary to take daily supplements and to have levels of these nutrients monitored once or twice per year.

- Hernia – hernia is a weakness in the muscle of the abdomen, left over from the surgical incision. This used to be very common when we did “open” surgery through a large incision that was difficult to heal, but is extremely rare after our small laparoscopic incisions.
- Gallstones and gallbladder problems – weight gain and weight loss are hard on the gallbladder, so that (unless the gallbladder has been removed previously) the rapid weight loss after surgery creates the possibility of a gallbladder problem. We minimize this risk by prescribing ursodiol for the first 6 months after surgery; this medicine thins the bile and reduces the chance of forming gallstones.
- Failure to lose weight, or weight regain – when we understand that obesity is a metabolic disease, it makes sense that there is no perfect treatment. The practical reality is that all patients after Gastric Bypass or Sleeve do achieve substantial weight loss. Most patients maintain their lower healthy weight for life, but there is a risk of significant weight regain. We try to minimize this risk by staying involved with our patients, coaching and working to optimize metabolism.
- Need for future surgery – we hope that each patient does really well after a single operation. However, no bariatric program has achieved perfect surgery for all its patients, so we will work to be available for you in the long run in case anything needs “fixing.”
- Extended pain or nausea – sometimes patients have pain or nausea that takes us a while to resolve. It’s common to have a bit of pain or nausea, but every now and then the body does not react well to surgery and it takes a few weeks to get comfortable and recovery appropriately.
- Loose skin – when the fat “melts away,” the skin tends to shrink back in a little bit and to fall down a lot. This might or might not be a big problem, depending on how much weight you lose. Younger patients and those who never smoked tend to have more elastic left in their skin, so they have a better shape on average.
- Hair thinning – about half our patients notice “shedding” of hair at 3-5 months after surgery. We understand this to be a natural stress response to the surgery plus weight loss, and it probably does not indicate deficiency of protein or deficiency of any vitamin. No one has figured out how to reduce the chance of this shedding, but the good news is that the hair essentially always returns to its normal thickness and consistency after the temporary thinning.

Summary of risks – about 90% of the time everything goes according to plan. About 10% of the time there is a problem that comes up, we straighten it out in a short time, and our patient is back on track. Around 1% of the time our patient has pain or nausea that takes a while to resolve; we always work with our patients until they feel well.

### Medication Changes after Bariatric Surgery

As mentioned above, we are likely to eliminate many of your prescription meds because you don't need them anymore. For your current and potential future medication needs, we can reassure you that the vast majority of medications work in a completely normal way after Gastric Bypass and Sleeve. Having said that, there are two categories of meds that we will recommend for you to stop (forever) around the time of surgery:

1. NSAIDs – this is the medical name for the category of common pain meds that includes aspirin, Motrin, Advil, ibuprofen, naproxen, Meloxicam, Tolectin, Voltaren, etc. Meds in this group of meds are a bit hard on the stomach, and after we've done surgery on your stomach they are very likely to cause bleeding ulcers. This instruction sometimes causes our patients to be anxious; they worry how they will live or get around without their pain meds. We recognize these concerns, but we've always been able to help patients make a safe and successful transition to other medication plans. Tylenol is OK, and Celebrex is OK.
2. Diuretics (fluid pills) – most common diuretics (Lasix, furosemide, HCTZ, hydrochlorothiazide) cause loss of potassium as a side effect. People who eat normal food can replace this potassium, but folks who just had bariatric surgery will usually not eat enough food to match the potassium lost because of diuretics. The good news is that when a person is losing weight rapidly they also shed excess fluid so the diuretic becomes unnecessary.

### Pregnancy After Bariatric Surgery

It is REALLY important to avoid becoming pregnant during the weight loss phase after surgery, usually lasting about one year. During this time we can't be confident that Mom will supply all the proper nutrients for the growing baby, so even if you are a woman who has been told she is infertile, we STRONGLY recommend that you use reliable birth control until you are cleared by your surgeon and your obstetrician.

In the long run, pregnancy can work very well after bariatric surgery. Obesity is a major risk factor for both Mom and baby during pregnancy. Research has shown that Moms who once were overweight and high risk for pregnancy can have a normal-risk pregnancy after bariatric surgery. Research has also shown that children born to Mothers after bariatric surgery are more healthy than those born to obese Mothers.

### Preparation for Surgery

The guiding principle behind the preparation for surgery is to reduce each patient's risk as much as possible. We may recommend selective medical testing to optimize the performance of your heart, lungs, or other vital systems around surgery. We absolutely require that patients must not smoke at all during the time leading up to surgery, and hopefully not resume smoking after surgery. Smoking interferes with lung function, healing, and fighting infection. Smoking also leads to a much higher risk of blood clots (Pulmonary Embolus). Smoking is such a huge risk factor that we test every patient about one week before surgery and if there is evidence of smoking we must postpone surgery until the effects are cleared from the system.

The other big factor in risk reduction is some degree of weight loss. We try to be practical here; we know that the whole reason you are considering surgery is that you've failed to achieve sustained weight loss in the past. We're looking for a few weeks of low-calorie diet to make surgery easier, which also makes it safer.

The reason weight loss is important is that the liver is a fat-storage organ, and so everyone who has metabolic obesity disease also has a fatty enlarged liver. The other reason the liver is

important is that it normally rests on top of the stomach, and sometimes a liver is so enlarged with fat that we literally cannot get to the upper stomach to accomplish surgery.

The good news is that the liver will shrink a lot with a very reasonable amount of weight loss that we will determine when we see you in person and learn your body shape. Once we know your date of surgery, you will spend the last two weeks prior to surgery on what we call a "meal replacement plan;" this is basically a protein drink for breakfast, another for lunch, and a small serving of regular healthy food for dinner.

### Insurance and Financial Factors

The good news is that about 80% of insurance plans in the San Antonio area now cover bariatric surgery. The bad news is that most insurance plans make it rather difficult to meet their "criteria" to have surgery covered. Our staff will research the particulars of your insurance plan, and will let you know what we find out. We will also help you organize to meet the criteria set by your insurance company.

Insurance is usually the preparation step that takes longest from the time a patient decides they are ready for surgery. Insurance companies often require a 3-month or 6-month professionally monitored diet before they will cover bariatric surgery.

Some folks do not have coverage for bariatric surgery, so that their only option is to pay for the surgery out-of-pocket. The good news is that prices for bariatric surgery have actually fallen over the last several years, thanks to improvements in pain control that lead to quicker recovery and shorter hospital stay. The surgeon, the hospital, and anesthesia each have a fixed dollar amount for surgery, so that patients can have a solid idea about their cost for planning purposes. Costs change from time to time; please ask our staff if you are interested in self-pay rates. We do have a financing plan available for patients who plan to pay out-of-pocket.

### FAQ's

1. What happens to the staples? The staples are tiny, and they are made of titanium. They seal the edges of the stomach or intestine together so that the tissue can 'knit' or 'fuse' together in the healing process. Titanium is completely non-reactive inside the body, so there is no allergic reaction or other long-term problem. The amount of metal is very small, so the staples do not set off metal detectors at the airport. Titanium is not magnetic, so there is no problem with MRI scans even though they use powerful magnets.
2. Will I become too skinny after surgery? It is extremely unlikely. First and most important, these operations do not block normal healthy eating; they work as metabolic correction procedures that give patients a normal health appetite so that they stop losing weight before there is malnutrition. In addition, we monitor the weight loss 'trajectory' and we can tell at about 4 months post-op if an individual is on their way to getting too skinny. If we find that a patient is on track to lose too much weight it is simple to coach them on taking in additional protein and calories.
3. What about weight regain? We believe that Metabolic Obesity Disease is a lifelong problem once it sets in. We believe that surgery is a powerful tool to bring this disease under control, but it is not fair to say that obesity is cured by bariatric surgery. Thus, weight regain is always a risk. Our plan is to keep patients engaged with our practice over time; we hope that by coaching, educating, and by keep all nutrient/vitamin levels up to par we will be able to reduce the risk of recurrent obesity disease. We also encourage our patients that, if weight regain begins, they should come see us as soon as possible in order to get the situation under control.
4. What if I just eat less and imitate the diet after gastric bypass or sleeve, instead of actually having surgery? This has actually been done in experiments. Non-surgical patients

("imitators") do lose a lot of weight but they run into two problems. First, they find the surgical diet very hard to stick with because they are not feeling the profound physical suppression of appetite that comes with surgery. Second, as they lose weight their metabolism begins to sink because their body fights continued weight loss; even if they stay with the very low intake of surgical patients the weight slows after a few months. On the other hand, surgical patients continue to have a brisk/normal metabolism as they lose weight because their corrected metabolism 'wants' them to lose weight to a lower healthy level.

5. When can I go back to work after surgery? Most of the answer depends on when you *want* to go back. We recommend that you plan 2 weeks off work, though many people feel OK to go back at 10 days or so. If you have great benefits at work and you want to be off for a longer time, we are comfortable supporting you to be out for 4 weeks. People only need to be out of work for more than 4 weeks if there is some surgical problem.
6. How about loose skin? There is some skin shrinkage because everyone has a bit of elastic left in their skin, but unfortunately this is never enough to shrink all the way back to a normal shape. The more weight you lose, the more your skin will sag. Most folks who lose a lot of weight could benefit from plastic surgery to remove the excess skin, but this skin removal is rarely covered by insurance. The word we get from patients is that they'd MUCH rather have the loose skin than the debilitating weight.
7. I've heard that patients lose all their hair – how can this be prevented? About 50% of our patients have "shedding" of some hair at 3-6 months after surgery. This seems to be caused by a combination stress response and recovery step after surgery, rather than a deficiency of some vitamin or mineral. No one has learned of an intervention that reduces the chance of hair loss; however we are able to reassure that the hair shedding is temporary and that hair returns to its pre-surgical level.
8. What if I have a Hiatal Hernia, and what about other hernias? We encounter a Hiatal Hernia in about 25% of our patients at the time of surgery. A Hiatal Hernia does not interfere with safe completion of the bariatric operation; we do repair the Hiatal Hernia and this has little or no impact on recovery. Other hernias are usually called "ventral hernias" or "incisional hernias;" we are also very familiar with this type of hernia and we will take care of it at the time of the bariatric operation. Unfortunately a ventral hernia repair does cause pain and this may slow recovery.
9. What if I have had previous surgery? The most common surgical procedures such as C-section, gallbladder removal, and appendectomy do not interfere with the planned bariatric operation. If you've had more serious abdominal surgery such as a colon operation or a previous bariatric procedure, we'll need to discuss this in more detail.
10. This all makes sense to me, and I'm ready for surgery. How soon can we operate? Most of the time, insurance clearance takes longer than anything else. Physical and educational preparation usually takes a few weeks, and that should be taken care of by the time insurance processing is complete. Our surgery schedule is usually flexible, so that we can plan surgery to take place within a week or two of when a patient is ready or we can plan particular dates that fit with work/family needs.