

KEYS TO SUCCESS

Long term weight loss and maintenance after Gastric Bypass

Thanks go to Latham Flanagan, MD. Many of the concepts and many of the terms used in this outline have been learned from him. Dr. Flanagan practiced bariatric surgery in Eugene, OR, and retired in early 2005.

The first year after gastric bypass is usually very rewarding in terms of weight loss and an improved sense of well being. However, this time can also be confusing, frustrating and frightening due to the many changes the body undergoes. The function of the stomach pouch "tool" changes almost continuously over the first six months, and continues to change periodically over the next year or so. Just when the patient feels they have begun to understand the stomach pouch/tool and how to use it, things change all over again. These first few months are "honeymoon period" after gastric bypass – the patient can lose weight with little effort, and for the first time every she (or he) feels like the Queen of Weight Loss. This can't last, because if it did then a significant percentage of WLS patients would waste away into nothing. The stomach and intestine will compensate for the surgical changes and work better, so that.....

There is an especially frightening change that takes place around 6-9 months after the surgery. The stomach pouch softens and expands slightly so that a patient regains a regular appetite and can "suddenly" tolerate a significantly larger amount of food. Patients frequently worry that something has pulled apart or broken on the inside, though this is rarely the case. This **increased interest in food and increased capacity for food is a very natural and appropriate part of the recovery process after gastric bypass surgery**. The reason it frightens patients so much is that they had previously felt they had control of their weight for the first time in their lives, and the renewed appetite threatens that they are losing control once again. This handout is about how to gain control of your weight using the stomach pouch "tool" and to **keep control of the weight for life**.

The first thing to realize is that for the first six months or so after gastric bypass you did NOT have control of your weight. The pounds were going to come off almost no matter what you did. The stomach pouch **could not** handle enough calories to maintain weight for the first few months – we call this the "honeymoon" period after gastric bypass. The return of appetite and the increase in food capacity signal an end to the honeymoon period and a transition to the rest of life. In the rest of life, **you are going to be the one controlling (or not controlling) your weight**.

Your surgeon has created a stomach pouch that will be your tool to use to control your weight for life. We prefer to describe the stomach pouch as a tool so that patients understand the need to learn how to use it, and stick with the "rules of the tool" over time. **Patients who are aiming for the best long term success begin using these concepts and rules immediately after their WLS procedure**.

The time to really choose your new habits is during the early recovery after surgery – this is when your motivation is highest, and the other parts of your life have been thrown out of kilter by the surgery anyway. Use this early recovery period to **choose your new exercise and diet habits**. Even though patients lose weight "no matter what" for the first few months, use of the concepts outlined below will also maximize the weight loss during the honeymoon period – take

advantage of this time so that when appetite and capacity return there is not so much further to go in achieving a weight goal.

The “Rules of the Tool”

OK, here are the magic "rules of the tool" (are you ready?): **Diet and Exercise.**

We strongly believe that the top three factors for lifetime weight control are (in order):

- 1. Regular exercise**
- 2. Avoid drinking liquids with meals**
- 3. Minimize carbohydrates or other easy calories**

There are several important things to note about this short list of Keys:

- Exercise is most important
- Surgical factors are not listed. These rules refer to patient habits. We will show you the path – each patient needs to take the steps along the way.

The good news is that diet and exercise, supported by your pouch/tool, can help you achieve your goal weight with excellent energy and without uncomfortable hunger. Here is a more complete description of the guidelines and the ideas behind them.

EXERCISE KEYS

Regular exercise is the most important factor in long term weight control. In this context, regular exercise means some kind of vigorous aerobic activity, at least 45 minutes in duration, at least 5 days per week. Patients who achieve this goal can reliably expect to have improved energy and improved weight loss.

Hibernation mode and Hunting mode

It is easiest to understand the benefits of exercise by thinking back to the evolution of our ancestors. Back in "cave man days" starvation was a constant threat, and our bodies were evolved to store any extra calories in preparation for the lean times. During lean times, the body is programmed to do everything possible to hold onto the calorie stores. So the first response of the body when faced with starvation (during a famine for our ancestors, or after gastric bypass surgery for us) is to conserve all possible energy by turning down the "metabolic thermostat." This means that fewer calories are burned and the person feels like sleeping and being away from activity – they are easily fatigued. Some call this the "hibernation mode," and it is as if the long winter has come and the best adaptation is to go way back into the cave and wait until the weather (and the hunting) improve. (Note that the hibernation response can also lead to depression and difficulty interacting with others.)

The role of exercise in this situation can be thought of as “retraining” the body into a different mode called “hunting mode.” If the body is treated to regular vigorous physical activity during starvation, its interpretation may be that the person is foraging or hunting. The body (from an evolutionary standpoint) would be in favor of hunting because it could lead to more calorie intake, so it provides more energy to facilitate the acquisition of food – it turns up the “metabolic thermostat”. This upregulation means that more calories are burned throughout the 24 hour period (besides the extra calories burned during the exercise) and the person has a **significantly increased feeling of energy.**

Note that this discussion about hibernation mode and hunting mode is written as a way of understanding the observed effects of exercise after gastric bypass - these are not scientifically established physiologic events.

The best time to begin your exercise program is before the gastric bypass. Again we're serious. Success in gastric bypass is all about choosing the right habits, with the support of the surgery to improve your success. If you exercise and diet before the surgery, you will have a strong impact on reducing your surgical risk. You will also benefit from having your exercise plan in place, so you don't have to figure it out during the confused recovery phase after surgery. If exercise is not begun before surgery, then it should be started as soon as possible after surgery. Discuss details with your surgeon, but generally we advise patients to maximize their physical activity from the outset. This starts with walking on the same day as surgery, and should progress to more vigorous activity as the months go by.

People who put off regular exercise until they feel "all recovered" or who try to start exercising when they realize they are not on course to reach their goal weight generally do not achieve or keep the new habit. Patients who work hard on exercise early after the surgery find it **very rewarding**. As the weight falls off, the capacity for exercise improves dramatically, with significant improvements on a week-by-week basis.

Two objections to the exercise program that we frequently hear are that the patient is too heavy, or too fatigued. The first of these is unfortunately valid in many of our patients who are extremely heavy – people with a BMI of 70+ frequently cannot engage in routine exercise. The good news is that people with extreme weights burn a large number of calories by simply walking. The amount of physical work done (which translates into calories burned) comes from how much mass is moved and how far it goes. The message here is that the benefits of exercise can be achieved in many ways – just *work as hard as you can* and do it frequently.

Fatigue is the second objection. Patients sometimes tell us that they can't even imagine walking to the door and back, especially in the first few months after surgery. Our answer is to do your best to exercise anyway. This complaint is likely to be a manifestation of hibernation syndrome, which can be shaken off by exercise. If you are experiencing significant fatigue, this is definitely something to discuss with your surgeon – depending on your exact situation it may be appropriate to arrange labs or discuss diet modification.

DIET KEYS

The goals of the long term gastric bypass diet are:

- consume minimal calories (promote weight loss)
- consume adequate nutrition (achieve excellent long term health)
- achieve both of these goals without undue hunger or cravings

These goals can all be achieved by using the pouch/tool with the right kinds of food, at the right intervals, and with appropriate management of fluids. The first thing to understand is that when the pouch is filled with food it sends signals to the brain that say that hunger is satisfied – no additional food is needed. This feeling is called "satiety." Any time a mature pouch is stretched by stuff inside it, the pouch will send a satiety signal to the brain, and (here's the cool part) the satiety signal will continue as long as the stuff is still in the pouch!

Therefore, keeping in mind the goals above, a patient should do the following:

- Eat no more than three meals per day, with NO nibbling between meals. This will limit the volume of food and naturally limit the number of calories. One of these meals should definitely include breakfast – it has been shown that absence of nutrient intake causes the appetite center to “gear up” or become more sensitive, resulting in greater overall calorie intake through the day. This may work by means of an “ileal satiety feedback receptor” which (when exposed to nutrients several hours after they are taken in) may help suppress appetite.
- Use solid protein (chicken, fish, etc) as the basis for each meal. It is OK to use some vegetables for variety. The solid protein will meet your nutritional needs, and it is the best food to "hang around" in the pouch to give a longer feeling of satiety. Many patients learn early on that they cannot hold nearly as much chicken as they can mashed potatoes - this is a GOOD effect. The effect exists because solid proteins do not pass out of the pouch too easily, resulting in less volume consumed.

Simple carbohydrates (potatoes, pasta, rice, bread) should also be minimized because of their effect on blood sugar. Simple carbohydrates are close relatives of sugar, so that the calories in these foods are rather easily absorbed and they tend to “rush” into the system and drive the blood sugar up quickly. Because the amount of carbohydrate consumed was not very large the blood sugar soon begins to fall, but by this time the pancreas is pumping out large amounts of insulin (a hormone which pushes blood sugar down) and this combination causes the blood sugar to drop too low. At this point the patient is experiencing hypoglycemia, and the deep urge to consume food – if they consume a simple carbohydrate (such as juice, or a bit of potato) they will be back on the blood sugar roller coaster. A cycle of blood sugar highs and lows such as this leads to consumption of way too many calories, and the calories have no nutritional benefit. On the other hand, proteins take a while to digest, and so they are absorbed slowly. This provides a longer term steadier energy source for your body, avoiding the high/crash cycle.

- Don't drink liquids with meals, and don't drink for at least two hours after your meal. Liquids taken after a meal will wash the food out of the pouch, releasing the tension on the walls of the pouch, and losing the feeling of satiety. In other words, consumption of liquids (with a mature pouch/tool) may be followed by a feeling of emptiness or hunger. Note that soup is a particularly poor food choice, because it is just like drinking with your meal. The liquefied food will pass quickly through the pouch, which allows more calories to be consumed and leaves the pouch empty. Note also that this part of the plan is not appropriate

to begin practicing in the first three months or so after gastric bypass - in the early period after surgery it is enough of a struggle to get in adequate liquid (and hunger is not a huge challenge) that it is appropriate to begin drinking liquids about 30 minutes after you eat.

- Pre-load with water. Just as you can avoid severe hunger with proper use of the pouch/tool, it is also manageable to avoid thirst and remain adequately hydrated. Beginning about 2 hours after a given meal, you should begin to drink (zero calorie) liquids aggressively. This brisk liquid consumption should finish with a "water load" about 15 minutes before you are to eat again. "Water load" means that you quickly drink as much liquid as you can hold, intentionally stretching your pouch. This maneuver serves to top off your hydration and to send satiety signals to your brain before you eat - this should moderate the pace and amount of your eating. Some allowance in this system must be made for the time of day. It is a good idea to get fluid in before breakfast, including the water load. It is also OK to wait longer after dinner (three or four hours) before drinking fluids.

It's a good idea to re-read this set of instructions each month until you've really "got it." It takes a lot of effort, determination, and practice to use your pouch/tool in the best way – the good news is that the results are worth it!