

BY SABRA BONELLI

Spotlight: How Fitness Professionals Can Help Gastric Bypass Patients Make the Transition to Healthier Lifestyles

The treatment of severe or morbid obesity should be of top concern to all fitness professionals as the obesity epidemic in our country continues to rage out of control. Current estimates indicate that approximately 60 million U.S. adults are overweight, and 25.4 percent of all adults are obese. One method of treatment becoming more prevalent each year is gastric bypass, a form of bariatric surgery (bariatric means pertaining to weight or weight reduction). As more morbidly obese people turn to this surgical method of weight reduction and seek out exercise for weight loss and maintenance, fitness professionals will see more clients that

are pre- and post-surgery. This article features an overview of the gastric bypass procedure, reviews the necessary lifestyle and nutrition changes for long-term success, and provides exercise guidelines for working with bariatric patients.

The first weight-loss surgeries performed in the 1950s were extremely drastic, dangerous and often deadly. In the mid-1960s, Dr. Edward Mason noted the weight-loss effects of a gastric-restrictive procedure used to treat ulcer disease. Considered one of the founders of bariatric surgery, Dr. Mason was the first to use the gastric bypass procedure primarily for obesity treatment.

STRENGTH TRAINING

is an excellent form of exercise for gastric bypass patients that are undergoing rapid weight loss. It preserves lean body mass, maintains or increases muscle strength and endurance, helps develop and maintain muscle tone, and promotes improved skin elasticity. Patients should not begin strength training until the fourth month post-op to ensure the body has healed from surgery, while specific abdominal and low-back exercises should not be performed during the first six months post-op. Heavy resistance and maximal lifting should be avoided during the first six to 12 months post-op. Also, care should be taken with exercises that require considerable balance and coordination, such as unsupported lunges or squats due to the rapidly changing body weight, which alters the center of balance. These exercises are not recommended during the first six months post-op.

There are many bariatric surgery procedures, including stomach stapling and intestinal (ileojejun) bypass. The two most common and NIH-endorsed procedures are the Vertical Banded Gastroplasty, which alters the size of the stomach and stomach opening, and the Roux-en-Y Divided Gastric Bypass, which is currently considered the gold standard in the surgical treatment of obesity. The Roux-en-Y Divided Gastric Bypass involves both stapling of the stomach (to decrease the capacity of the stomach to hold food, making the procedure “restrictive”), and intestinal bypass (to re-route the direction of the food leaving the stomach, making the procedure “malabsorptive”).

Candidates for surgical treatment of morbid obesity must meet certain requirements to qualify for the procedure. Specific approval requirements vary among medical insurance companies, but according to the American Society of Bariatric Surgeons the main eligibility criteria for patient selection is based on Body Mass Index (BMI). Patients with a BMI over 40 are surgery candidates, while those with a

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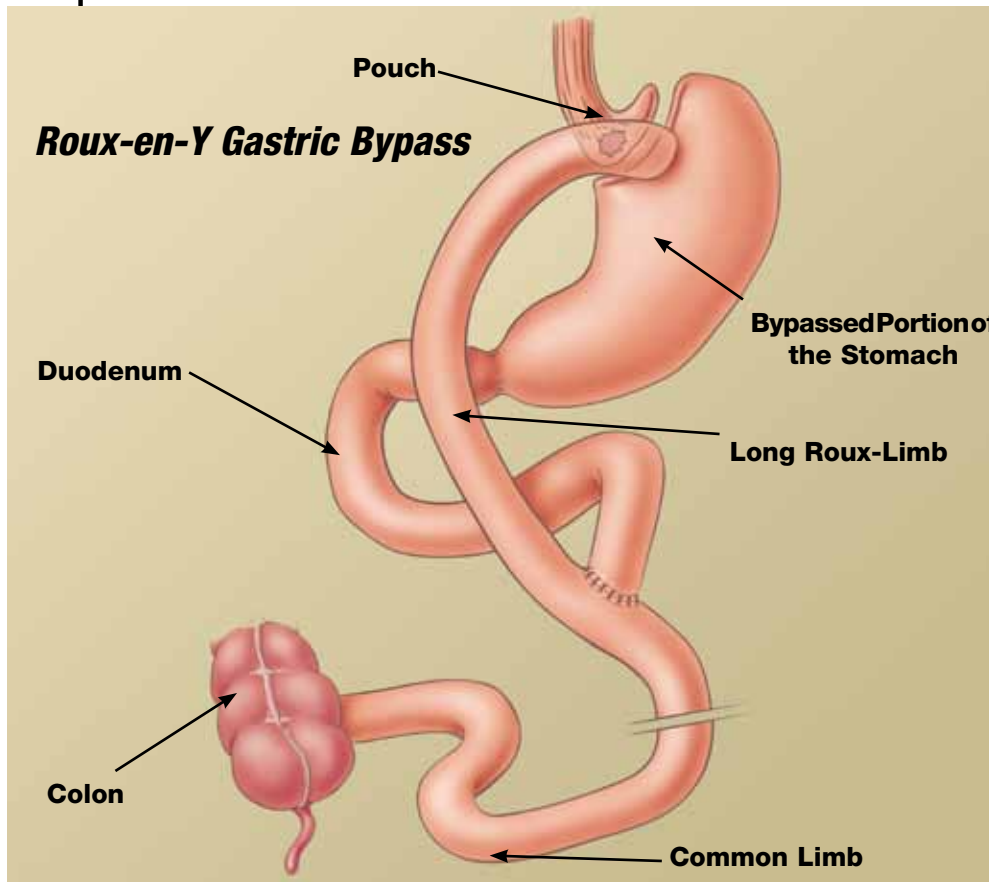


TABLE 1**Permanent Lifestyle Changes for Gastric Bypass Patients' Success**

Fluids	Drink a minimum of 64 ounces of water each day; avoid drinking fluid with meals as it speeds food through the stomach and allows for more food consumption.
Activity	Exercise 30 to 60 minutes per day.
Vitamins	Supplement daily with a multivitamin, additional calcium and iron; supplement weekly with sublingual B12 (some programs require additional vitamins such as daily B1 or E, as well as personal requirements as prescribed by each patient's doctor and/or nutritionist).
Medicines	Avoid NSAIDs* (e.g., Advil, Motrin, ibuprofen, Aleve), aspirin and cortisone preparations due to enhanced probability of forming stomach ulcers.
Beverages	Avoid caffeine due to potential dehydration and ulcer formation; avoid carbonation, due to potential ulcer formation and stomach distention that allows for more food consumption.
Food	Avoid sugar and fat in medium or large quantities (due to "dumping syndrome," the sickness that occurs when large amounts of sugar and/or fat are dumped from the stomach into the intestine).
Gum	Avoid chewing gum for life—it can lodge in the smaller opening between the stomach and intestines.
Diet	Eat a low-carbohydrate, low-fat diet that focuses first on protein.
Eating Habits	Avoid snacking and eat meals only in designated areas and not while doing any thing else (e.g., watching television or reading).

*NSAIDs = non-steroidal anti-inflammatory drugs

BMI between 35 and 40 with additional co-morbid conditions may qualify as well. Co-morbid conditions common to morbid obesity include diabetes, hypertension, heart disease, sleep apnea, and musculoskeletal and respiratory problems. In addition to the BMI guideline, morbid obesity is also defined as 100 pounds or more over ideal body weight.

It is critical that fitness professionals understand that gastric bypass surgery is not a cosmetic procedure. Although physical appearance is a key motivator for most obese people, surgical candidates are chosen because they are well-informed, motivated and have a severely impaired quality of life. The treatment goal for morbid obesity is improved health achieved by weight loss that reduces life-threatening risk factors while improving the ability to perform activities of daily living. Selection for surgery includes medical, surgical, psychiatric and nutritional evaluations, to ensure patients are ready and able to cope with the surgery and, more importantly, the necessary lifestyle adjustments after surgery. Throughout the evaluation process, which can take a few months or several years, patients are continually reminded of the serious nature of the surgery, the risks, benefits and potential complications, as well as the level of lifetime commitment required for long-term success.

As with any diet and exercise regi-

men undertaken for either weight loss or improved health, a gastric bypass patient's success is determined by his or her ability to maintain permanent lifestyle changes. While some things are specific to the gastric bypass procedure, such as avoiding aspirin, others are lifestyle changes that anyone seeking improved health and/or weight loss needs to make. Table 1 lists permanent lifestyle changes for gastric bypass patients. There are additional nutritional requirements during the immediate post-operative period and during the rapid weight-loss phase of the first year (see Table 2). Some of these are described later, but most are program-specific depending on the surgeon and/or medical group monitoring the patient.

The most critical issue for long-term success in gastric bypass patients is exercise. The only way to maintain weight loss is with the addition of regular physical activity. The benefits of exercise for gastric bypass patients are numerous. Physically, exercise enhances weight loss while mitigating the loss of muscle mass associated with low-calorie consumption during the initial post-operative rapid weight-loss phase. Exercise also assists in maintenance once weight stabilizes. As with all people, exercise promotes bone strength and joint stability, keeps muscles toned and flexible, boosts the immune system, aids in skin elasticity and keeps the body functional for activities

of daily living. Even more significant for gastric bypass patients, exercise is psychologically beneficial. Regular exercise elevates mood, enhances self-esteem and confidence, reduces stress and anxiety and provides a sense of overall health and well-being. Most importantly, exercise provides a constant reminder for the patient of how their body has changed since surgery, how much more functional and capable they are and how much better they feel.

All gastric bypass surgery programs review at length the importance of regular exercise with patients. Many morbidly obese people have never exercised regularly. The activity habit will be one of the most difficult for them to learn and maintain. Regardless of what stage pre- or post-operatively they come to you, it is critical that you complete a thorough assessment of their exercise history. It is also very helpful, as when working with any beginning exerciser, to discuss barriers to regular exercise, examine their thoughts and feelings about exercise, and find out why they are looking to start an exercise program. Doing so will help you determine their motivation and the likelihood of exercise adherence so you are aware of their needs and can best assist them in establishing a lifetime habit of physical activity.

TABLE 2**Eating Guidelines for Gastric Bypass Patients (6–9 Months Post-op)**

1. Drink a protein shake every day.
2. Eat slowly, taking small bites and chewing thoroughly; meals should take 30 to 45 minutes to finish.
3. Chew food well until it resembles a pureed consistency before swallowing.
4. Stop eating at the first sign of fullness.
5. Use smaller plates, bowls and silverware while eating to encourage smaller meal/bite size and slow down food consumption.
6. Do not lie down for at least one hour after eating to avoid reflux.
7. Avoid drinking anything 30 minutes prior to a meal, during the meal and for 45 to 60 minutes after eating.
8. If nausea and/or vomiting occur, stop eating solid food and return to clear liquids for 24 hours.

Pre-operative Patients

The goal with pre-operative clients is to prepare them for an easier recovery from surgery. Depending on their fitness level, set up a program of regular aerobic and strength conditioning that would be appropriate for any obese individual. If orthopedic issues do not impair functioning, weightbearing activities are preferred. Walking is an excellent choice as this will be important post-operatively, and is the first allowable form of activity. In terms of strength work, clients should be trained for activities of daily living. For example, moving post-operatively will be difficult at first, so work on leg strength to assist them in getting up from a chair or out of bed. And core work is essential regardless of whether the procedure is open or laparoscopic because the abdominal muscles will be cut to perform the bypass. Core strength helps clients move more easily immediately post-op.

During the pre-operative stage, encourage the development of lifestyle changes, such as regular exercise and drinking a minimum of 64 ounces of water a day, that will need to be permanent after surgery. Keep in mind that many obese people take medications regularly and should be asked to obtain physician approval before starting an exercise program. Take the time to educate clients about how medications can affect their ability to exercise and what precautions they need to take. For example, many obese people are insulin-dependent diabetics who require either oral medications or injections. Explain the need for proper monitoring, timing of injection/medication prior to exercise and eating appropriately before and after a workout.

Immediately Post-operative Clients (First Month Out)

During the first month after the gastric bypass procedure, patients will be extremely uncomfortable. Depending on the bariatric program, they may eat nothing this first month (aside from clear liquids such as chicken broth) or a diet of soft protein foods (such as eggs and cottage cheese). Calorie intake is at its lowest and energy level is very low. Swelling from surgery can make it difficult to drink fluids as well, and during this first month patients are monitored for complications such as staple/suture line leaks and infection. The first exercise prescription—walking—comes from the bariatric surgeon a few hours after surgery. Frequency is as much and as often as tolerated, because movement helps the recovery and healing process while decreasing the risk of pulmonary embolism. No other forms of activity should be undertaken until approved by the surgeon, regardless of the client's fitness level. During this time, medications are adjusted as well and, in some cases, discontinued within a few days of surgery (e.g., insulin). If you did not see the client pre-operatively, request a medical history to review which medications they were on and when they were discontinued.

Once physician approval to exercise has been obtained, clients are cleared for movement.

The bariatric surgeon will

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Why Exercise—and Knowledgeable Fitness Professionals—Are So Important

Bariatric surgery has become the most common and popular medical form of treatment for obesity. In the U.S., the number of bariatric surgeries performed each year has increased by a factor of five during the past seven years, to well over 100,000 procedures annually. For most obese people, surgery is a last resort resulting from years of failed diets. Ten percent to 15 percent of surgery patients fail to reach an acceptable weight loss of at least 40 percent of their excess body weight because they don't make the necessary lifestyle changes. Conversely, 85 percent to 90 percent of surgery patients lose at least 40 percent of their excess body weight, and many lose significantly more than that. And exercise is the most beneficial tool in helping patients maintain their weight loss.

TABLE 4
Strength Training for Intermediate Exercisers After Gastric Bypass

	EXERCISE	EQUIPMENT OPTIONS
UPPER BODY	Chest Press	Machine, Dumbbells, Tubing
	Chest Fly	Machine, Dumbbells, Tubing
	Low Row	Machine, Tubing
	Lat Pull-down	Machine, Tubing
	Shoulder Press	Dumbbells, Tubing
	Biceps Curl	Machine, Dumbbells, Tubing
	Biceps Hammer Curl	Dumbbells, Tubing
LOWER BODY	Triceps Kick-back	Dumbbells, Tubing
	Triceps Overhead Extension	Machine, Dumbbells, Tubing
	Leg Extension	Standing with Tubing or Cable
	Leg Curl	Machine, Standing with Tubing or Cable
	Leg Press	Machine
	Bridges	Stability Ball, Floor Lying Supine
	Wall Squats	Bodyweight, Stability Ball
TORSO (After Six Months Post-op)	Lunges	Bodyweight, Bodyweight with Dumbbells
	Calf Raise	Machine, Standing with Bodyweight
	Abdominal Crunch	Machine, Stability Ball
TORSO (After Six Months Post-op)	Abdominal Rotation	Machine, Stability Ball
	Low-back Extension	Machine, Bodyweight Lying Prone

TABLE 3
Strength Training for Beginning Exercisers After Gastric Bypass

	EXERCISE	EQUIPMENT OPTIONS
UPPER BODY	Chest Press	Machine, Dumbbells, Tubing
	Low Row	Machine, Tubing
	Lat Pull-down	Machine, Tubing
	Biceps Curl	Machine, Dumbbells, Tubing
	Triceps Kick-back	Dumbbells, Tubing
LOWER BODY	Leg Extension	Standing with Tubing or Cable
	Leg Curl	Machine, Standing with Tubing or Cable
	Leg Press	Machine
	Calf Raise	Machine, Standing with Bodyweight
	TORSO (After Six Months Post-op)	Abdominal Crunch
Low-back Extension		Machine, Bodyweight Lying Prone

usually prescribe the program here as well. Walking is the first form of exercise prescribed, and clients are urged to take walks three or more times per day for at least five to 10 minutes, increasing the length of each walk as tolerated. Strength training is contraindicated during this phase.

Short-term Post-operative Clients (Months 1–3)

Diets vary by program during this early phase, but in all cases will include the slow addition of new foods (seafood, cooked vegetables, unsweetened cereals and certain fruits). Calorie intake overall is still very minimal, ranging from 200 to 500 calories per day. The amount of food consumed varies greatly based on tolerance to different foods, as well as healing rate (decreased swelling and no surgical complications) and eating habits (chewing thoroughly, eating slowly, etc.). As expected, energy level during this time can be extremely low. Fluid consumption is the primary concern followed by protein intake, in shake form. By the end of this three-month period, energy starts to return, especially as activity level increases, which becomes increasingly easier as weight is reduced.

Depending on the fitness level of the patient, the bariatric surgeon will authorize physical activity beyond walking somewhere between three weeks and three months. Water exercise is most commonly prescribed, as the joint load is minimal and movement is easier for the obese in water. Water provides the physical benefits of buoyancy with the psychological and emotional comfort of submersion, making it the ideal modality for obese patients as they get started on an exercise program. As tolerated, additional forms of aerobic activity can be added, including recumbent cycling and beginner-level (light-intensity) low-impact aerobics.

Post-operative Clients (Months 4–6)

Calorie intake during the four to six months following surgery ranges from 400

TABLE 5

Strength Training for Established Exercisers After Gastric Bypass

EXERCISE	EQUIPMENT OPTIONS
Chest Press	Machine, Dumbbells, Tubing
Chest Fly	Machine, Dumbbells, Tubing
Push-ups	Wall, Floor, Stability Ball
Low Row	Machine, Tubing
Lat Pull-down	Machine, Tubing
Shoulder Press	Dumbbells, Tubing
Biceps Curl	Machine, Dumbbells, Tubing
Biceps Hammer Curl	Dumbbells, Tubing
Triceps Kickback	Dumbbells, Tubing
Triceps Overhead Extension	Machine, Dumbbells, Tubing
Triceps Push-down	Cable
Leg Extension	Standing with Tubing or Cable
Leg Curl	Machine, Standing with Tubing or Cable
Leg Press	Machine
Bridges	Stability Ball, Floor Lying Supine
Wall Squats	Bodyweight, Stability Ball, Either with Dumbbells
Hip Hinge	Bodyweight, Bodyweight with Dumbbells
Lunges	Bodyweight, Bodyweight with Dumbbells
Calf Raise	Machine, Standing with Bodyweight
Abdominal Crunch	Machine, Stability Ball
Abdominal Rotation	Machine, Stability Ball
Abdominal Reverse Curl	Lying Supine
Low-back Extension	Machine, Stability Ball, Bodyweight Lying Prone

to 800 calories per day. Foods are added to the diet as tolerated, including chicken and turkey, raw vegetables and pasta or rice. The maximal weight-loss period has passed, but this stage will continue to yield rapid weight loss for most patients, especially if they follow dietary guidelines and exercise consistently. This is the period when energy peaks and motivation is high, and physical hunger is almost nonexistent.

Choose moderate-intensity exercises for clients with prior strength-training experience. During this early stage, beginners should be set up on a program of strength training twice per week, performing one set of 10 to 15 reps of light resistance for eight to 10 exercises. Intermediate exercisers should strength train two to three times per

week and be assigned a program of one to two sets of eight to 12 reps of light resistance for eight to 12 exercises, progressing to moderate resistance around the sixth month. Established exercisers will be able to strength train three times per week and will do well with a program of two to three sets of eight to 12 reps of 10 to 12 exercises. Although they should start with light resistance, established exercisers will quickly progress to moderate resistance during this stage. See Tables 3, 4 and 5 for sample strength-training exercises for beginner, intermediate and established exercisers.

Post-operative Clients (Months 6–12)

During months six through 12 calorie intake increases to more than 1,000 calories per day and, depending on the individual (basal metabolic rate and activity level), will reach a stabilizing point between 1,100 and 2,000 calories per day after one year. Although it is possible to consume additional calories, by the end of the first year most patients have determined the amount of calories they need on a daily basis to maintain their body weight. Additional weight loss beyond the one-year mark becomes increasingly difficult and slow. Many say weight-loss efforts become “normal,” meaning patients need to do the same things as any other person seeking weight loss, because the advantages of the gastric bypass procedure no longer include reduced calorie intake. Diet progresses to include all types of foods, with the exception of snack foods, fats/oils, sugary foods, caffeine, carbonated beverages, alcohol and citrus-containing beverages.

Aerobically, patients are able to do an increased variety of activities during this post-operative phase. Depending on the amount of weight lost, mid-impact and potentially high-impact exercise, such as jogging/running, may be appropriate. Choices should be based solely on client preference, but clients do need to be encouraged to

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Gastric Bypass Patients Make the Transition to Healthier Lifestyles

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explore many options as they experience the freedom of movement that comes from their newly smaller bodies. You can assist clients in identifying aerobic activities, as well as in feeling confident in their abilities.

As their bodies continue to decrease in size, the strength-training options expand for gastric bypass patients. They become better able to perform weightbearing movements that involve balance and coordination, such as squats and lunges. Regardless of their fitness level, after six months all patients are able to strength train up to three times per week with moderate resistance. Intermediate and established exercisers will progress to heavy resistance during this stage. Depending on the individual, certain torso exercises may now be acceptable based on client interviews and physical assessments. Tables 3, 4 and 5 provide lists of appropriate strength-training options for beginner, intermediate and established exercisers, including the most appropriate torso exercises for each fitness level.

Somewhere around months six, seven or eight, patients begin to feel hungry for the first time since surgery. They must learn to recognize the difference between physical hunger and the desire to eat. Exercise is beneficial during this process because it may help suppress appetite and acts as reinforcement for healthy behaviors.

Long-term Post-operative Clients (1+ years)

Maximum weight loss occurs six to 18 months following bariatric surgery. Most patients reach a stable weight shortly before or after the one-year mark. At this point clients face the ongoing battle of weight maintenance—a totally new area for most patients. Eating patterns and diet adjustments must remain permanent and exercise habits have to be maintained. At this point, although patients cannot physically eat as much as they could before surgery, they can easily consume much more food than needed

for weight maintenance. Trainers can support their client's lifestyle habits in the same way they assist any other client in healthy eating and regular exercise. Although it is possible for patients to regain all their lost weight and more, with ongoing hard work and a supportive trainer it is also possible to maintain their new healthy weight for life. **A**

Sabra Bonelli, M.S., is the associate executive director for the Palomar Family YMCA in Escondido, Calif. Bonelli received her master's degree in exercise physiology from San Diego State University, and has been an ACE-certified Group Fitness Instructor since 1991. In addition to serving on the ACE Group Fitness Exam Development Committee, Bonelli is a member of the IDEA Program Director Committee and is the author of three of ACE's fitness guides: Aquatic Fitness, Stability Ball Training and Step Training.