

ON TRACK WITH BARIX

Support to Keep You On Track With a Healthful Lifestyle

Understanding Your **Lab Values**

Lab tests can tell us a lot about our health. That's why most physicals throughout our lives include at least a minimal screening of basic lab values. After gastric bypass or gastric sleeve surgery, lab tests are ordered every three months for the first year and then annually after that. Lab tests are not routinely ordered after adjustable gastric band surgery. The best way to understand your individual lab values is to bring a copy with you to your follow up visits and review the tests with your surgeon and nutritionist. A value out of the normal or acceptable range can mean different things. Often, a combination of tests provides a better picture than just a single test. A basic understanding of lab values that are outside of normal ranges can allow you to be a more active participant in your health. The surgeon will interpret your lab values, answer questions and provide recommendations. You may need to follow up with your primary care physician to insure that any out of normal range lab values are corrected.

Just as important as recent lab tests are trends in lab values. A nutritional deficiency may be prevented by taking a proactive approach. It is usually easier to prevent a deficiency than to correct one. You should keep a copy of your lab values in a folder along with other medical record information.

Bariatric surgery puts you at greater risk for nutritional deficiencies, but armed with proper knowledge, a commitment to supplementation, and monitoring through lab testing, you'll experience improved rather than hindered nutritional status and health.

The following description of lab values that are often tested after bariatric surgery is intended to enhance your basic understanding. Resist the temptation to self-diagnose. Doctors went through a lot of schooling to do what they do—let them do their jobs. Each lab may have a slightly different acceptable range for lab values and of course values differ from U.S. to Canadian labs. Use the ranges provided on the lab printout.

PROTEIN STATUS

Albumin and total protein are two lab tests that monitor protein status. Even with normal values for these lab tests, a low dietary intake of protein can result in muscle tissue loss. In addition to monitoring these tests, be sure to meet your protein goal daily.

VITAMIN STATUS

Vitamin B-12 has some very important roles in the body. The absorption of this vitamin in the small intestine



requires that it join with intrinsic factor first. Intrinsic factor is produced in the lower part of the stomach. Due to the anatomic changes made during

gastric bypass and gastric sleeve surgery, vitamin B-12 absorption is hindered. Sublingual (under the tongue) supplementation allows vitamin B-12 to be absorbed directly into the blood stream. A deficiency of this nutrient can result in anemia and nerve damage. A minimum lab value of 400 pg/ml is recommended.

Folic acid is a water soluble vitamin with many important roles. Unlike vitamin B-12, folic acid absorption is rarely hindered by bariatric surgery. Folic acid lab tests are often elevated (this is not harmful) for those routinely taking multi vitamin/mineral supplements as recommended.

Thiamin (Vitamin B-1) may be monitored. Your body can become thiamin deficient quickly in the rare case of severe vomiting and diarrhea in the period immediately following surgery. Typically a multi vitamin/mineral supplement provides adequate amounts of thiamin to prevent a deficiency.

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Vitamin D is found in fortified foods, especially dairy products, and activated through exposure to direct sunlight. Recent studies have found vitamin D deficiency in a large percentage of the population. Vitamin D deficiency can contribute to bone loss, depression, some forms of cancer, heart disease and other health problems. Daily supplementation of 2000 international units (IU) is recommended.

IRON STATUS

Iron has many important uses in the body, including oxygen transportation, immune system function and exercise performance. Hair loss and brittle nails are associated with iron deficiency. Iron deficiency can be common in those having gastric bypass, gastric sleeve and adjustable gastric band surgery. The best food sources of iron are red meats—often difficult to tolerate after surgery. The recommended dietary allowances for iron are 18 mg for women (up to age 50, then 8 mg) and 8 mg for men. Iron status is determined by several lab tests: hemoglobin, hematocrit, serum iron, serum ferritin, transferrin saturation, and total iron binding capacity (TIBC). A complete multi vitamin / mineral supplement provides adequate iron in most cases.

If your iron is low, an additional iron supplement will be necessary to bring your levels back to a normal range. Chewable, liquid or pill forms of supplements are available. Take iron on an empty stomach if tolerated. Do not take iron supplements with calcium or dairy products. Excessive supplementation can be toxic.

BLOOD SUGAR

Ideally, blood sugar levels are maintained within a relatively small range. Many people undergoing bariatric surgery have type 2 diabetes, characterized by higher levels of blood sugar. A fasting blood sugar level is

the level of sugar in your blood after 8 hours of fasting. A random blood sugar level can be taken at any time regardless of when you ate last. The range of blood sugar doesn't change much for people without diabetes. An A1C or glycated hemoglobin test gives a picture of your average blood sugar level over a 2-3 month period of time.



Knowledge is power.
Information is liberating.
Education is the premise
of progress, in every
society, in every family.

Kofi Annan

Bariatric surgery has a profound impact on elevated blood sugar levels. Those undergoing gastric sleeve and the adjustable gastric band procedures see a reduction in blood sugar levels due to weight loss and a decreased intake of carbohydrates and calories. Those having gastric bypass surgery typically see an even more dramatic reduction in blood sugar levels due to the anatomic change to the small intestine. The good news is that many people are able to reduce or eliminate the medications that control blood sugar. Closely monitoring blood sugar levels will allow your primary care physician or endocrinologist to adjust your medication level as your weight decreases.

DEHYDRATION

Electrolytes are minerals that help maintain acid/base balance and fluid levels within the body. Sodium, potassium and chloride levels may be abnormal in dehydration. Blood urea nitrogen (BUN) measures the amount of nitrogen (protein) in your blood; an elevated level may indicate dehydration.



LIVER FUNCTION

AST/SGOT are enzymes found in body tissues with high metabolic activity. Elevated levels may be of concern or simply a sign of resolving non alcoholic fatty liver disease. Discuss your results with your surgeon.

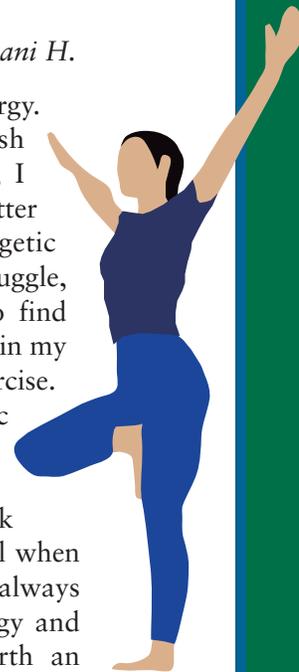
CARDIOVASCULAR RISK

Elevated low density lipoprotein (LDL) cholesterol levels increase the risk of heart disease as can depressed high density lipoprotein (HDL) cholesterol levels. Triglycerides are another form of fat that increase the risk of heart disease when elevated. Weight loss and healthful lifestyle habits can have a big impact on these cardiovascular disease risk factors.

IT WORKED FOR ME

Submitted by Dani H.

Exercise boosts energy. Every time I finish my exercise routine, I note how much better I feel—more energetic and...happier. I struggle, like most people, to find time and motivation in my day for regular exercise. I set aside a specific time and when my motivation begins to wane, I think about the way I feel when I am done. I can always use some extra energy and happiness—well worth an hour of my time.



CONSIDERING SURGERY

Having bariatric surgery is a major life-changing event. Thinking about the support that you will need and getting it lined up ahead of time will ease the transition after surgery. In addition to your family and friends, be sure to ask others at your support group, on the **Barix Clinics Store Message Board**, and through the Barix Buddy system what types of support were most helpful after surgery. There's nothing like the help of a friend who's been there.

Emotional Support. It is normal to experience a variety of feelings and emotions after surgery. While most patients feel hope, optimism and confidence about the active new life they will build, sometimes there can be feelings of anxiety or irritability. Support and encouragement from friends and family can make a world of difference. Those who really care about you will want you to be healthy and happy. They are usually willing to do whatever they can to help you reach your weight goal. However, they may not know how to best support your efforts. You will need to let them know how they can help.

Activity Support. Having an activity partner may be more motivational than going solo. Think about whom you can enlist and get started working out together before surgery if possible. Think about what type of activities you will do. Check out the local YMCA, health club, community education programs, or other fitness opportunities. If you plan to exercise at home, watch for sales on equipment, exercise videos or small hand weights.

Food Support. Start to read labels. Ask for the nutrition information at the fast food outlets that you visit and begin to make healthier choices.



Most of us,
swimming against the
tides of trouble the world
knows nothing about,
need only a bit of praise
or encouragement –
and we will make
the goal.

Jerome Fleishman

Get your family and friends on board by trying new sugar free, low calorie options. Clean out your kitchen, getting rid of sugar laden foods and drinks.

Workplace Support. Enlist the help of coworkers to have sugar free treats for workplace celebrations or to decorate workstations rather than celebrating with the traditional cake. Petition for healthier food options in the cafeteria and vending areas, or use refrigerators and microwaves for lunches from home.

Family Support. In many cases, you will educate your family and friends about bariatric surgery. They will need to know that the surgery is not magic; it is a valuable tool for successful weight loss and maintenance. They can help you to make healthful lifestyle changes. So many times the entire family improves their healthful habits when one person has bariatric surgery.

Your family can look forward to an increased level of energy and sense of confidence. Let your family know about the changes they can expect in your eating and exercise habits and how they can help.

WHAT'S NEW

The American Heart Association has made new recommendations regarding the intake of added sugar. Most Americans consume 22 teaspoons of added sugar daily.

In the past, the American Heart Association only recommended that people limit added sugars, without providing guidelines for specific amounts. Added sugar is not directly linked to heart disease, but it is linked to the heart disease risk factors of obesity, high blood pressure, elevated triglyceride levels and high levels of C-reactive protein.

The American Heart Association is recommending no more than 6 teaspoons (25 grams) of added sugar for women daily and no more than 9 teaspoons (37.5 grams) for men. The recommendations do not include sugars naturally occurring in fresh fruits, vegetables, and dairy products. These foods contain nutrients that contribute to overall health.

REWARD YOURSELF

This month, you could earn a **SPECIAL GIFT** for your "It Worked For Me" tips or recipes! Just submit as many recipes and "It Worked For Me" tips as you like. The most original and creative will be awarded a special gift from our online store. Include your name and contact info with your entry—make sure your recipes follow Barix nutritional guidelines. Tips must be submitted by September 30, 2009. Please send comments, ideas, recipes and "It Worked For Me" tips to Deb Hart, RD, LD at dhart@foresthealth.com.

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RECONSTRUCTIVE SURGERY

To receive a **FREE RECONSTRUCTIVE SURGERY** guide, call 800-282-0066 or send us an email at rc@barixclinics.com with your name and contact information. Our reconstructive surgery program is currently performed at our centers in Michigan, Ohio, and Pennsylvania. *Call us today for more information!*

OTHERS CARE PLEASE SHARE

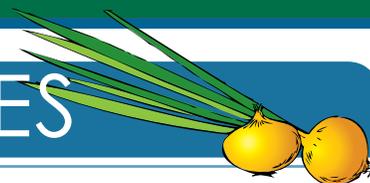
Please tell us about the lives that have changed because you shared your weight-loss story. Submit your story to http://www.barixclinicsstore.com/share_your_story.html. What you have to say may be printed in this publication or on our website and can serve as inspiration to all.

QUESTIONS ABOUT FINANCING YOUR SURGERY?

Call a Barix Patient Service Representative at 800-282-0066



RECIPES



LIGHT APPLE CRISP

4 cups apple slices
1 cup apple juice, 100%
1 Tbsp cinnamon, ground
1 cup Splenda®
2 cups oatmeal

Mix together apple juice, cinnamon, 1/2 cup Splenda®. Soak apple slices in this mixture for 20 minutes. Cook oatmeal as directed on package. Stir in 1/2 cup Splenda to cooked oatmeal and set aside. Place apple mixture in the bottom of a baking dish, top with oatmeal. Bake for 20 minutes at 350 degrees F or until oatmeal is crisp. Makes 12 servings.

NUTRITIONAL INFORMATION

PER SERVING: 83 calories, 2 grams protein, 1 gram fat, 20 grams carbohydrate.

COTTAGE CHEESE PANCAKES

1/2 cup fat free cottage cheese
4 egg whites
1/2 cup old fashioned oats
tsp vanilla extract or maple flavoring (optional)

Place all ingredients in blender and blend until smooth. Spray a non-stick cooking pan with cooking spray and preheat on a medium setting. Pour mixture onto heated pan to make desired sized pancakes. Cook until small bubbles form and then flip and continue cooking until browned. Serve with sugar free syrup. Makes 2 servings.

NUTRITIONAL INFORMATION PER

SERVING: 149 calories, 18 grams protein, 2 grams fat, 16 grams carbohydrate, 305 mg sodium.

SWEET AND CRUNCHY COTTAGE CHEESE SNACK

1/2 cup fat free cottage cheese
1/2 tsp ground cinnamon
1/2 tsp Splenda® (or more to taste)
1/8 cup almonds, chopped

Mix cottage cheese, Splenda and cinnamon. Top with almonds and enjoy. Makes 1 serving

NUTRITION INFORMATION PER SERVING: 144 calories, 15 grams protein, 6 grams fat, 8 grams carbohydrate, 423 mg sodium.

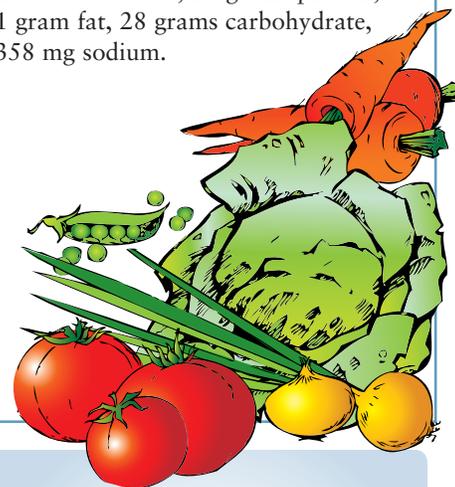
COTTAGE CHEESE DIP

2 cups fat free cottage cheese
1/2 cup salsa
10 oz. grape tomatoes, chopped
4 tbsp green onions, chopped
3 cups frozen sweet yellow corn, thawed

Mix all ingredients together and enjoy a bowl or use as a dip for fresh vegetables, baked chips or crackers. Makes 6 servings.

NUTRITION INFORMATION PER SERVING:

154 calories, 13 grams protein, 1 gram fat, 28 grams carbohydrate, 358 mg sodium.



REQUEST A FREE BROCHURE

for you or a friend at 800-282-0066, or www.barixinfo.com



What lies behind us and what lies before us are tiny matters compared to what lies within us.

Ralph Waldo Emerson