**Fit for Surgery or unplanned confinement**

Over 50 million Americans undergo surgery each year. Fifty percent of the outcome depends on the surgeon’s skills. The other 50 percent – you determine. Surgery pre-hab allows participants to prepare for elective surgery by increasing cardiovascular fitness and building muscle tone. The peri-operative period is care before, during and after surgery. The following steps are for all per-operative steps.

A patient’s commitment to recover, even before surgery takes place, is a large factor in a successful recovery. The healthier you are going into surgery, the quicker and easier your recovery will be. Don’t stress your body with an overzealous jump into a fitness routine. Follow some simple guidelines:

Bedridden patients are prone to dehydration, progressive cardiac de-conditioning and a drop in BP, slow blood flow and possible thrombosis. They show reduced lung function and increased susceptibility to respiratory tract infections.

- Begin pre-hab at least six weeks prior to your surgery.
- Consider joining a yoga class; this can help you prepare your mind and body for surgery, through relaxation techniques and soothing movements.
- Aquatic and land based strength and flexibility.
- Small steps can make a difference.

The benefits of exercise before surgery are very clear: The more you can do for yourself physically before surgery, the better off you will be. Have you heard that doctors want you to walk sometimes even hours after surgery? Increased strength and stamina will help your body immediately after surgery. This means you can go home sooner!

Often, there are requirements you need to accomplish before a hospital or surgical center will discharge you. These may include walking a certain length, ascending/descending two or more stairs, and independently using the bathroom. Those goals are more quickly reached by patients who participated in strengthening through a pre-hab program. This means shorter hospital stays.

Patients who pre-hab typically need less supervised physical therapy. This allows the option for out-patient, post-surgery rehab, rather than residence at an in-patient rehabilitation facility. They can follow up more on an as-needed basis. This independence is uplifting and promising for those in recovery, when a positive outlook is critical for healing. Several studies have reported that long periods of bedrest have negative psychological effects on individuals and their family members.
Here are several simple exercises.

- Standing heel raises
- Side leg raises
- Straight leg raises
- Standing hip extensions
- Hamstring stretches
- Shoulder blade squeezes
- Bridges
- Core strength is important for everything we do. Our core, or trunk, is the link between our upper and lower bodies. It encompasses our abdominal muscles as well as our backs. A strong core can improve our stability and functionality - our ability to do normal, everyday activities.
- Approach your surgery date in top condition through exercise, diet, and good sleeping habits.
- More studies are proving that food affects the body’s inflammation and pain levels. Eat ‘clean’. Unhealthy fats and refined sugars found in processed foods are known to increase inflammation and the pain it causes.
- Choose lean cuts of meat, and low-fat cheese and milk.
- Fruits and veggies are an essential part of a healthy diet. They provide vitamins, minerals, and antioxidants.
- Omega-3 essential fatty acids strike again! Add inflammation reduction to their list of beneficial properties. Snack on walnuts, flax seeds, and pumpkin seeds. Eat more cold-water oily fish. Cook with olive oil, rice bran oil, grape seed oil, and walnut oil.
- Protein builds healthy body tissue. Enjoy lean poultry, fish and seafood, nuts, legumes, and seeds. Soybeans and tofu are also good protein scores.
- Whole grains are an excellent source of fiber, which also reduces inflammation.
- Regularly eat dark green vegetables, brightly colored vegetables. Fiber will also help with bowel issues that commonly arise from anesthesia.

**Cardiac effects**

The cardiovascular system undergoes dramatic and extensive changes after long periods of immobility. Water loss and a phenomenon known as cardiac deconditioning are triggered by redistribution of fluids in a supine (laying down) person.

When a person is confined to bed, there is a gradual shift of fluids away from the legs towards the abdomen, thorax and head. Research has shown that bed rest of longer than 24 hours results in a shift of around 1L of fluid from the legs to the chest. The skeletal muscles of the legs, particularly the calf muscles, have an important role in compressing the major veins in the leg during exercise. This helps to force blood upwards against the natural pull of gravity, making sure enough blood returns to the heart. Prolonged bed rest rapidly leads to skeletal muscle atrophy throughout the body. Loss of muscle mass from the legs impairs the skeletal muscle pump, significantly reducing venous return.
Like skeletal muscle, the cardiac muscle fibers need the stress of physical work to stay healthy. The principle of ‘use it or lose it’ is key. It may be possible to reduce the effects of cardiac deconditioning by doing light exercises in bed.

**Respiratory Effects**

In a supine person, the weight of the body restricts the free movement of the rib cage, reducing air exchange. Less moisture coming into the lungs can create thick sticky mucus, airways can become obstructed. Stuck mucous can become contaminated. Breaths can become shorter and air left over might not be blown out which could cause a collapsed lung.

**Effects of Nutrition**

Malnutrition continues to be a significant problem in patients undergoing surgery. Nutrition peri-operative is very important. A diet rich in nutrients, especially protein, helps prepare your body for quick healing. It is essential that you do not restrict calories, or diet, prior to your surgery unless your surgeon specifically recommends that you do so.

If you are a smoker, now is the time to quit. Not only will you be healthier in the long run, but your surgical outcome will be improved. Smokers are at significantly higher risk for requiring the **ventilator** for longer periods of time and have been proven to heal more slowly with greater **scarring**.