

Series - Muscle: The Organ that Powers Vitality

In this series, discover how skeletal muscle, the body's largest organ, impacts health and longevity. From regulating hormones and blood sugar to boosting brain health, muscles are far more than just a source of strength.

By [Sheramy Tsai](#) (Epoch Health / The Epoch Times) September 4, 2024 Updated: September 4, 2024

Part 8

Building Muscle Before Surgery or Cancer Treatment Accelerates Healing

We often think healing begins after surgery, but preparing the body beforehand may speed up recovery.

Recovery from surgery or serious illness doesn't have to begin in the hospital—it can start beforehand in the gym.

Research shows that patients who build muscle before surgery, chemotherapy, or other medical procedures recover faster and face fewer complications. As modern medicine shifts toward proactive health, building muscle before treatment has emerged as a crucial strategy for achieving faster recovery and better outcomes.

A Secret Weapon for Recovery

Surgery places considerable stress on the body, triggering an immediate hormonal response that initiates muscle breakdown. The release of cortisol during surgery starts this process, Dr. Derek Papp, an orthopedic surgeon, told The Epoch Times. Post-surgery, immobility and reduced activity further accelerate muscle atrophy.

A 2021 [study](#) published in *Nutrients* found that muscle tissue begins breaking down within 48 hours of inactivity. [Research](#) in the *British Journal of Surgery* found that 39 percent of 173 patients experienced significant muscle loss after major abdominal surgery, increasing the risk of death within one year.

“Surgical stress causes a loss of muscle mass and strength,” Robert Wolfe, a professor of geriatrics and expert in muscle metabolism, told The Epoch Times. “This is particularly problematic for [the] elderly, as often they are close to a

functional threshold, and it is very difficult for an older person to regain lost muscle.”

During critical illness, advanced cancer, or severe injury, the body’s need for amino acids spikes, Wolfe said. These amino acids, drawn from muscle breakdown, play a crucial role in immune function, wound healing, and overall recovery. If the body doesn’t have enough muscle to supply these vital nutrients, recovery can be impaired.

Wolfe’s [research](#) shows that patients with low muscle mass face higher recovery risks, including lower survival rates after trauma or burn injuries, due to a lack of muscle protein. In cancer patients, muscle loss during treatment is associated with worse outcomes, including higher recurrence rates and reduced survival.

Building Strength for a Smoother Recovery

Preparing the body before surgery can impact the recovery process. Prehabilitation, often referred to as prehab, is the process of strengthening the body before surgery or treatment to improve recovery outcomes. It involves targeted exercises that build muscle and enhance physical resilience, helping patients better withstand the physical stress of medical procedures.

[Research](#) published in the Journal of Nepal Medical Association shows that structured prehabilitation exercises, particularly strength training, bolster the body’s resilience to surgical stress, resulting in better outcomes, shorter hospital stays, and fewer postoperative complications.

“Think of it as building a reserve,” Papp told The Epoch Times. “Stronger muscles before surgery better equip you to handle the physical demands of recovery. It’s like going into battle with armor.”

Whether it’s a knee replacement, heart surgery, or a routine procedure, muscle strength is crucial for a quick recovery. A 2021 [study](#) of 57 patients, published in the Annals of Surgery, found that a three-week prehabilitation program with aerobic and resistance training reduced postoperative complications by nearly 60 percent in high-risk colorectal surgery patients.

Beyond the physical benefits, prehabilitation also affects mental health. Strengthening the body before surgery boosts confidence and reduces anxiety, fostering a positive mindset that aids recovery.

Getting Stronger for Cancer Treatment

Prehabilitation isn't just for surgery—it's also crucial for patients undergoing chemotherapy and radiation.

Cancer treatments can cause significant weight loss, much of it involving the loss of skeletal muscle—a common condition known as cancer cachexia. It reduces strength and physical function, weakening the body's ability to withstand and recover from treatment.

Focusing on muscle strength helps patients better endure treatment, leading to faster recovery and improved outcomes, Scott Capozza, a physical therapist at Yale New Haven Health specializing in oncology, told The Epoch Times.

Research shows that patients who engage in prehabilitation before chemotherapy experience fewer side effects and quicker recovery between treatment cycles.

A [study](#) in Current Opinion in Supportive and Palliative Care found that preserving muscle mass during chemotherapy reduces toxic side effects and improves survival rates. Stronger patients fare better, while those with muscle loss face higher risks of severe complications.

“Prehabilitation empowers patients by giving them a sense of control at a time when so much feels uncertain,” Capozza said. “It helps them start on the right foot, knowing they are actively contributing to their strength and resilience as they face treatment.”

The results of a recent BMC Cancer [study](#) showed that cancer patients who exercised before surgery had less anxiety and more confidence that they could cope with treatment. The combination of physical training and support from exercise specialists helped patients focus, easing their fears and building mental resilience ahead of surgery.

“Every patient benefits from prehab,” Capozza added.

Building Muscle Strength When Limited by Injury or Illness

Building muscle can be especially challenging when dealing with illness or injury. During this time, maintaining or building muscle might require modified exercises and a more cautious approach to ensure patients are as strong as possible for

the treatment ahead. Capozza tailors strategies to help patients build strength even in these difficult circumstances.

Adjusting for Illness or Injury

If an injury limits one part of the body, focus on strengthening the areas that are still mobile.

For example, if leg mobility is restricted, prioritize upper-body exercises such as seated presses, rows, or arm curls. If the upper body is limited, concentrate on lower-body movements such as leg presses, gentle squats, or seated leg extensions. This approach strengthens what's possible without worsening existing conditions.

Use Resistance Bands for Gentle Strengthening

Resistance bands offer a flexible, low-impact way to build muscle without overstraining joints or injured areas. They are especially effective for targeting smaller muscle groups or providing a gentle workout. Start with light resistance, gradually increasing as strength improves.

Core Stability Is Key

Core strength is vital for overall stability and recovery. Exercises such as planks, bridges, or leg lifts, whether done seated or standing, stabilize the torso, improve posture, and reduce injury risk during recovery. "Core strength is essential for healing," Capozza said. "The core muscles, from the shoulders to the hips, support the entire body, especially during recovery."

Functional Strength Training

Strength training doesn't have to require a gym. There are home workouts that can be done using everyday items. These might include sit-to-stand exercises, step-ups, or reaching and lifting movements that mimic tasks required after surgery. Functional training prepares muscles for the specific challenges of recovery, enhancing both strength and coordination.

Emphasize Gradual Progression

Starting with lighter weights, fewer repetitions, or simpler movements is key to preventing injury and ensuring muscles adapt. Gradually increase intensity as strength improves. Consistency is more important than intensity. Regular, moderate exercise effectively builds strength. "Start where you are," Capozza said.

Adapt to Individual Needs

Exercises should be customized to each person's physical condition. For people with joint pain, low-impact movements are essential. For limited mobility, many exercises can be done seated or with support. "You don't have to complete the entire workout in one sitting," Capozza said. "Break it up as needed throughout the day." Always listen to your body and adjust your routine accordingly.

Prioritize Recovery

Recovery is as important as the workout itself. Rest allows muscles to repair and grow stronger, particularly when dealing with underlying health conditions or injuries. Proper recovery reduces the risk of overtraining and ensures muscles are ready for the next workout.

Optimize Nutrition

Nutrition is critical in building and maintaining muscle, especially before surgery or treatment. Protein-rich foods such as lean meats, fish, eggs, and plant-based options such as beans and tofu support muscle growth. "Essential amino acids are particularly helpful in building muscle," Wolfe said, adding that they can be obtained through diet or supplements. They can be especially beneficial for people with reduced appetite, helping to preserve muscle mass and enhance recovery.

Before beginning a strength training program, it's important to consult with a physical therapist or health care provider. They can customize exercises to fit your specific needs, helping you develop a safe and effective plan that prepares your body for surgery or treatment.

By including strength training in your pre-surgery or treatment plan, you will boost your physical resilience and actively participate in your recovery process.

"If your surgeon or medical provider doesn't mention prehab, it's your right to advocate for it," Capozza said.

By [Sheramy Tsai](#) (Epoch Health / The Epoch Times) September 4, 2024 Updated: September 4, 2024