RECLAIMING YOUR INDEPENDENCE THROUGH PHYSICAL THERAPY AND OCCUPATIONAL THERAPY

RIGHT AFTER AN AMPUTATION, MOST PEOPLE AREN’T DREAMING ABOUT BREAKING WORLD RECORDS OR ACCOMPLISHING GREAT FEATS. THEY PROBABLY WILL, HOWEVER, AT SOME POINT, GET TIRED OF “BEING TAKEN CARE OF” AND WANT TO RECLAIM THEIR INDEPENDENCE. THIS IS WHERE PHYSICAL THERAPY AND OCCUPATIONAL THERAPY COME IN.

Physical Therapy
You have probably just had an amputation or learned that you will require one. This can be a very difficult time for you and your family, and your mind is undoubtedly filled with a thousand different thoughts:

• “Can I continue to serve in the military?”
• “What benefits will I be entitled to?”
• “Will I be able to return to the activities that I love?”
• “How long will I be in the hospital?”
• “What will my rehabilitation be like?”

While these are all important questions that will be addressed over time, now is a good time to discuss the rehabilitation process. First, it is important to remember that every individual is different and will progress through the phases of rehabilitation at different rates depending on his or her severity of injury, prior functional level, and compliance with the treatment program. It is a long, hard road, but with desire, commitment, and the proper treatment, you will be able to return to the highest level of function possible.

There are four phases you will progress through during rehabilitation, but some may overlap.

Phase 1
Immediately following surgery, your physical therapist will help you concentrate on

• Decreasing pain
• Facilitating wound healing
• Preventing contractures (tight joints)
• Mobility training (how best to move around your environment while protecting your limb)
• Light exercise
• Education.

Initially, you will be on IV (intravenous) pain medication that you will be able to personally control with a button. You may have a nerve block to control postsurgical pain. Soon the IV will be removed, and you will be put on oral pain medication.

Your wound will be monitored and cleaned, and the dressing will be changed daily to prevent infection and promote healing.

During this early phase, it is important that you do not spend excessive time with your hips and/or knees in a bent position or contractures may form. A contracture occurs when the soft tissue around a joint shortens and hinders that joint’s range of motion. To prevent this problem, it is important to alter your position unless otherwise instructed by your doctor.

Your physical therapist will instruct you in the
correct way to move in bed and to transfer out of your bed using proper body mechanics while protecting the surgical site from injury.

The next step is to begin improving your strength and endurance. By this time, you have probably lost a considerable amount of muscle mass. Do not be alarmed because this is normal. At this point, you may or may not be able to tolerate a great deal of exercise, but rest assured that your therapist will tailor an exercise program for you that will provide the most benefit with the least amount of discomfort.

During the education process, we will answer all of your questions about the rehabilitation process, including prosthetic devices and maximizing your function. A wise man once said, “The only stupid question is the one that was never asked.” Always keep this in mind throughout your rehabilitation. Remember that there are many dedicated professionals involved in your care to ensure that you receive the best treatment possible and to see that all of your questions are answered.

Phase 2
In the preprosthetic phase, we focus on all of the things that need to happen before you can be fitted for your new prosthetic limb. These include:

- Edema (swelling) control
- Residual-limb shaping
- Improved cardiovascular conditioning
- Strengthening
- Preprosthetic gait training.

When edema forms in the residual limb, it puts pressure on the tissue and nerves and can cause a great deal of pain. Severe edema can even result in tissue death. If left untreated, the tissue will stretch to accommodate the increase in volume, and you will be left with excess tissue, which will cause your prosthesis (artificial limb) to fit poorly.

To shape the residual limb, your therapist will instruct you in the proper application and wearing of compressive garments, such as elastic bandages and shrinker socks. These should be worn at all times unless you are otherwise directed by your physician.

Next, we will work on improving your cardiovascular conditioning, especially your upper-extremity endurance. If you have a lower-extremity amputation, you’re probably thinking, “I lost a leg. Why do I need to work this hard on my arms?” That’s a good question. Remember, you’re going to have to use some form of assistive device until you become proficient with your prosthesis, and it takes a lot of energy to propel a wheelchair and walk with a walker and/or crutches. Your strengthening program will progress as you can tolerate it to include total body conditioning. The focus will be on specific exercises developed to prepare your residual limb to be able to support your body weight while wearing your prosthesis. Once your residual limb is fully healed and well-shaped, you will be fit for your initial prosthesis.

Phases 3 and 4
The final two phases of rehabilitation tend to overlap quite a bit and may be discussed together. They are the prosthetic training phase (phase 3) and the return to advanced sport/duty-specific training phase. (phase 4)

The prosthetic training phase is generally considered the most exciting. During this phase, you will receive your initial prosthesis, and your therapy will focus on

- Gait training
- Progressive strengthening
- Balance
- Prosthetic management.

It is tremendously important in this phase that you listen to your therapist and do not try to progress too quickly. Doing too much too soon may lead to skin breakdown or the development of abnormal gait patterns. This can be frustrating at first, but your therapist will push you as hard as you can safely tolerate.

Once you have mastered the basics of your prosthetic training, you will progress to more advanced exercises designed to return you to the highest functional level that your injury will allow. Feel free to push yourself. Never let anyone tell you, “It can not be done.” It may not be easy, but you’ve made it this far, and the only thing that can stop you is your imagination.

Occupational Therapy
You will also be participating in
occupational therapy as part of your comprehensive rehabilitation program, especially if you have lost an arm. The ultimate goal of any therapy is your independence. As in physical therapy, there are four phases to occupational therapy.

**Phase 1: The Healing Phase**

Because your limb is tender, swollen, sensitive and weak, this phase will focus on

- Controlling your pain and swelling
- Improving your tolerance to sensations
- Increasing your range of motion (ROM).

Your limb will be wrapped snugly in an elastic bandage or a “shrinker,” which will help with your pain and swelling. You will likely experience “phantom” sensation, which means that you will still feel like your missing limb is there. These sensations may also be uncomfortable. Don’t worry; this is a normal experience. Your therapist will massage your limb and teach you techniques to decrease your phantom sensations and the sensitivity to touch of your residual limb. As you engage in ROM exercises, you will not only be actively decreasing swelling, you will begin to prepare for using the muscles that will operate your prosthesis.

**Phase 2: Preprosthetic Training**

If you have lost your dominant arm, you will begin to learn how to change your hand dominance. This may be a frustrating process for you, and that is to be expected. As you are learning to accomplish tasks with one hand, you will begin a rigorous strengthening program. Learning to complete your daily activities with one hand can be difficult. We understand that and will help you problem-solve through difficulties. You will work with your therapist on a computer to train your remaining muscles to operate a myo-electric prosthesis. Electrodes will be placed on your skin over your muscles, and you will quickly become aware of how those muscles work to operate a myo-electric prosthesis. Your therapist will work closely with you until you are proficient in activating your muscles. This makes the next phase of your therapy much easier to complete.

**Phase 3: Basic Prosthetic Training Phase**

During this phase, you will receive an initial prosthesis and begin learning how to use it. Throughout this phase, the prosthetist may change the socket size as your residual limb changes in shape and volume. If you have an upper-extremity amputation, you will likely receive three different types of prostheses:

- An electric-operated (myoelectric) prosthesis
- A body-powered, cable-controlled prosthesis
- A passive, or primarily cosmetic, prosthesis.

It is difficult to predict which of these you will find most beneficial.

The myoelectric prosthesis puts the least amount of pressure on the end of your limb, so if your limb is still tender, this may be the best initial choice. Batteries operate the motor of the electric prosthesis, and electrodes placed over your muscles send signals...
that operate your prosthetic wrist and terminal device (a hand, hook or prehensor). By prehensor, we mean a device that consists of a thumb-like component and a finger component and resembles lobster claws or pliers.

To operate your body-powered prosthesis, you use your shoulder muscles to put tension on a cable that will open and close your prosthetic terminal device.

The passive prosthesis, sometimes called a semi-prehensile prosthesis, is lightweight and cosmetically pleasing. Though it can be used to assist in a variety of tasks, the terminal device does not open or close.

You will quickly learn to operate your prosthesis and then learn to use it for all of your daily activities, such as brushing your teeth, clipping your nails, dressing and eating. The therapist and prosthelist will help you accomplish your goals every step of the way to help you become independent.

**Phase 4: Advanced Functional Training Phase**

During this phase, you will learn to use your prosthesis for activities that are important to you. These activities may range from household maintenance chores and responsibilities, such as lawn care and home repairs, to job-specific tasks and recreational activities. If there is something that you want to accomplish, we will work with you to train you. Also, if you return home and find that you want to participate in other activities, you can call the therapist or prosthelist for suggestions and assistance. Your ability to use your prosthesis efficiently to achieve your independence is our ultimate goal.

**Stay Focused**

None of this is easy, and you may be tempted at times to give up. Don't! It will be a challenge, but the results can be amazing.

Our service members live by the Warrior Ethos and never surrender. Even as important as never quitting is the mentality to never leave a fallen warrior behind. Through peer visitation for goal setting and a little friendly competition, our service members look out for each other and lift others up when they are down. Patients use teamwork principles to carry each other through the good times and the bad.