



## Back Pain

Back pain can occur for a number of reasons – injury, improper posture, or weakness of certain muscles. It can occur suddenly due to some unusual stress or injury, or it can be cumulative, resulting from small stresses over a long period of time.

Amputees (both upper and lower limb) are more prone to back pain than the general population. Leg amputees have extra stresses and strains placed on their residual limbs, and the rest of their body, often from adjusting their body's natural gait (walking) patterns to compensate for the missing limb and using an artificial limb. Amputees with higher level leg amputations usually have more dramatic gait deviations (e.g. limping) that can place additional stress on the back. Arm amputees have less weight on the amputated side of the body (especially high level amputees who do not wear an artificial limb) which can cause problems with the body's overall alignment. In addition, the wear and tear of living with an amputation for a long time can exacerbate existing back problems or bring on new ones.

Back pain may not be an indication of a problem with your prosthetic fitting but may be due to the amount of walking you do on a daily basis, e.g. a student who has to walk around a large university campus while carrying a heavy load of textbooks. The overall lifestyle of an amputee does indeed come into play, and back pain may be caused by a tremendous amount of walking, combined with gait issues.

So what are some possible solutions to help counteract these problems? Talking with your prosthetist who can pay close attention to the factors that can be easily dealt with such as component selection, alignment, suspension and socket fit is a great place to start, but amputees must also do their part to alleviate the stresses that cause back pain.



Lifestyle changes such as looking at ways to reduce the overall amount of walking can help – if you regularly walk the same route you may be able to find ways to shorten it or take an elevator instead of stairs, these are just a couple of examples. If you usually carry a backpack it might be a good idea to purchase one with a waist strap to spread the stresses placed on your back. If you are a student you could consider having two complete sets of books – one that can be left in each relevant classroom at the school and a complete set that can be left at home for study and

homework. Another solution would be a backpack on wheels with an extendable handle which you can pull behind you instead of carrying on your back.

A simple exercise routine to strengthen back muscles, geared to match your specific abilities can make a tremendous difference. Appropriate exercises will strengthen back muscles, and strong back muscles will help leg and arm amputees support and operate an artificial limb. As well, amputees use more oxygen, and thus more energy, to function than someone without an amputation. Exercise can help provide that needed energy. Regular exercise will have two positive outcomes for amputees – overall health improvement and better prosthetic function.

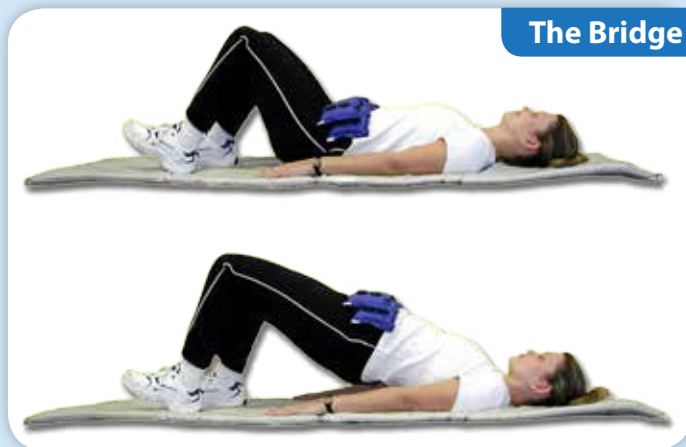
You should also discuss any back problems with your doctor, therapist or clinic team to devise a “custom” exercise regimen. Amputees can benefit from consulting with professionals about appropriate exercises. One above knee amputee reported that she started including leg lift exercises to strengthen her back and the muscles in her stump to make it easier to use her prosthesis. She would lie on her side and lift her prosthesis up and down, and then would lie on her stomach on the floor and lift her prosthesis up off the floor a few inches. Not long after, she discussed the exercises with her prosthetist and he pointed out that the exercises were great for strengthening the muscles at her hip and the back of her stump but she was doing no exercises to strengthen the muscles at the front of her stump, thereby creating an imbalance of strength. She added a new exercise to her routine by lying on her back and lifting her artificial leg straight up in the air (with the knee locked).

You may want to consult with a personal trainer who can share techniques that you can continue later on your own. Some personal training companies also have experience in working with people with disabilities. Rehabilitation centres may also offer full fitness programs with advanced gait training.

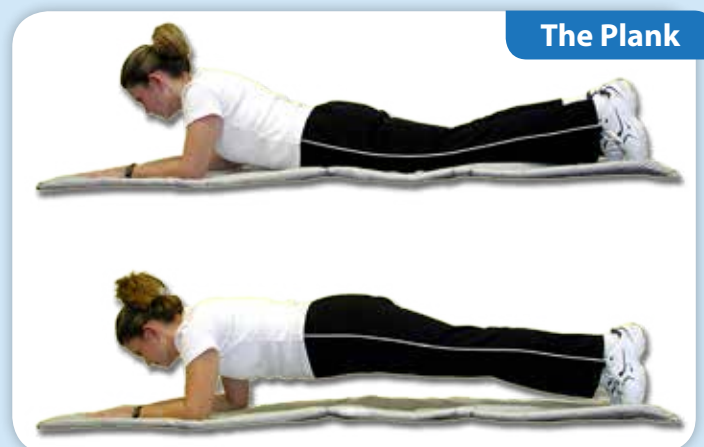
Your fitness regimen may work best for you in the gym setting where a variety of equipment is available. However, many simple exercises can be done at home at little or no cost.

The route you take is one of personal preference but consulting your clinic team is always a good place to start.

## Simple exercises for back strengthening



Laying flat on your back with your knees raised, lift up your pelvis and lower back and hold for a few seconds. This amputee places weights (10 lbs) on her stomach, giving her back muscles a harder workout. Adding weights is optional once you have been doing the exercise for some time and are ready to challenge your muscles even further!



Laying flat on your stomach, raise up on your forearms and the tips of your toes and hold your body straight for as long as your can. Start out with three of these in a workout.