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Instructions for a Below Knee Prosthesis:

- The following is a basic guide from UNC Hospitals Department of Prosthetics & Orthotics to help you with your prosthesis. This is not a comprehensive guide and should not be used as a substitute for the instructions of your prosthetist or physician.
- A below knee prosthesis will allow you to get back on your feet, but requires determination and hard work. When you come in for an appointment, always have a pair of sturdy shoes (lace-up or Velcro closure are best) and shorts.
- A below knee prosthesis is most commonly held on (“suspended”) by a gel liner with shuttle lock or with a suspension sleeve.
- With a prosthesis held on with a gel liner with shuttle lock, there will be a metal or plastic plunger in the bottom of the gel liner that clicks into the lock in the bottom of the socket. Once you hear one click, it is safe for you to walk. Do not attempt to walk if the plunger has not engaged into the lock. As you walk and settle into the socket, you will hear a few more clicks. This is a one-way lock and will only release when the button on the side of the socket is pressed and held. If the socket is too loose when you put it on, you will hear several clicks in rapid succession. This means that you need to put on a sock. Socks are put on over the gel liner.
- You will probably get two gel liners. Both have plungers that have been loc-tited and tightened into the bottom of the liner. If these ever come loose, please don’t use the loose one until we can loc-tite and tighten it in again. This is rare, but a loose pin can cause the prosthesis to not be secure.
- A gel liner should be put on (“donned”) first thing in the morning when you put on your prosthesis. You should not wear the liner without the prosthesis, because if you were to fall on the pin it could hurt your limb. The liner is put on by turning it inside out, flattening the end and then rolling it up on your leg. There should be no wrinkles or air pockets between the liner and your skin. If you wear a liner-liner sock (a thin grey sock) it is worn between your leg and the liner. The gel liner should be cleaned every night by turning it inside out, putting it in the sink, and hand washing it with soap and water. Rinse it very well, turn it right side out and let it air dry overnight. A clean liner should be put on every day, or an itchy red rash may develop on your limb. If you have two gel liners, they should be alternated daily to make them last longer. Gel liners will need to be replaced when they wear out.
- With a prosthesis held on with a suspension sleeve, a gel or neoprene sleeve will attach to the top of the socket and to your thigh. The suspension sleeve needs to be tight enough to securely attach the prosthesis to your leg. There will often be a soft peach-colored removable lining to the socket called a pelite liner. To put on (don) your prosthesis, you should first put on a prosthetic sock (or socks) enough to make the socket snug. You should then put on the pelite liner over the sock(s). You should then put on a slick nylon stocking (nysert) over the pelite liner. You should then put the prosthesis over the nysert. The bottom half of the suspension sleeve will already be attached to the socket. Pull up the top half of the suspension sleeve onto your thigh. Be sure that the sleeve is securely attached to both your thigh and the prosthesis

before walking. As these sleeves wear out, they will become looser and will need to be replaced. This happens fairly often, especially for very active wearers.

- At first, socket fit should be snug. As you walk, the swelling and fluid in your limb will be pushed up and out of your limb and the socket will become looser. If it is too loose, your limb will “bottom out” and you will feel pain on the bottom of your limb and maybe over your knee cap. You should address this by adding a sock. Your limb should sit in the proper place in the socket and socks will keep your limb from falling down too deep in the socket. This is important because reliefs have been made in the socket for sensitive bones, and if your limb is not in the appropriate place in the socket, these bones will rub on the inside of the socket and cause pain and sores. Socks typically come in three thicknesses- 2 ply, 3 ply and 5 ply. These socks come with holes in the bottom for gel liners with a shuttle lock. Make sure all of the fabric is out of the way of the plunger so that material does not get stuck in the lock. Socks can be layered for desired thickness. Try to use the thickest sock available- for example, instead of using five 2-ply socks, use two 5-ply socks to get 10 ply of thickness. Your limb will shrink as you walk during the day, so you should keep a few socks in your pocket or purse to put on during the day as needed. If the prosthesis is too tight and won't go on in the morning, you can put on a shrinker for a couple hours to reduce swelling. You can also try carefully standing in the socket and rocking back and forth, which can push fluid up and out of your limb and allow your limb to settle into the prosthesis. Make sure the plunger is lined up correctly to go into the lock. If the plunger won't engage in the lock, and especially if you feel the pin pushing back at you, take off the gel liner and re-don it with the plunger pointed toward the lock. If you have a problem with edema (swelling) in general, you should wear a shrinker when not wearing your prosthesis.
- Your prosthesis may be worn during waking hours, and should be removed for sleeping.
- What if I can't get my prosthesis off? First, be sure that you are holding the release button down while you pull off your prosthesis. If the release button has fallen out and is lost, you can use an allen wrench or screwdriver to push where the button used to be and release the lock. Please come in to see us as soon as possible for replacement of the button. If you wear a gel liner and shuttle lock style prosthesis and you cannot release the plunger from the lock, this is often due to a piece of sock getting jammed into the lock. Sometimes you can fix this by having someone hold down the release button and firmly (but not to hurt you) tug on the prosthesis. If this does not work, you can try working soapy water in-between your leg and the gel liner so that you can slide your leg out of the liner. If this doesn't work, come in to see us. If this is not possible, you should go to the Emergency Department.
- A prosthesis with a gel liner is comfortable and works well, but can be hot in the summer. It is normal to sweat a lot for the first few weeks, but then your body should adjust and the sweating will be much less. One way to address this problem is to try a “liner liner,” which is a very thin grey sock worn between your leg and the gel liner. This cools the limb a bit. The liner-liner can be gently machine washed and dried. The liner-liner should never come higher than the gel liner, so that the liner can grip the skin and hold on well. Gel liners come very tall and should be cut to length. It should never be cut lower than the trimlines of the socket. They are typically cut straight across with a sharp pair of scissors.
- You will need to look for any redness or skin breakdown on your limb from walking in the prosthesis. If redness, blistering or a sore develops, call your prosthetist immediately and stop using your prosthesis until we can solve the problem. Common causes of sores are not using socks when needed or the limb changing shape and not fitting properly in the socket anymore. Please stop walking on the prosthesis and see your physician immediately if a wound has developed.

- Your limb will change shape over time. This is a normal process. You will probably notice that your limb is very round and swollen when you first start using a prosthesis. As you walk, the swelling is pushed up and out, and your limb will shrink. Also, the muscles below your knee will atrophy some over time. In time, your knee and shin bone will look more prominent and your limb will look more tapered. As this happens, new sockets will need to be made to provide a proper fit.
- You should wear sturdy lace-up or Velcro closure shoes with a standard heel height. If you wear shoes with a different heel height, it will throw you forwards or backwards and may cause you to fall.
- There are a lot of prosthetic feet to choose from. Your prosthetist will help choose the most appropriate foot for you based on your functional level, goals and needs. Be sure to have a good discussion with your prosthetist about your goals and needs.
- Prosthetic socks do not require a prescription. All other prosthetic supplies, including socket changes, shrinkers, suspension sleeves, gel liners, prosthetic feet, covers and skins require a prescription from a doctor. A prescription may be faxed to our office if that is more convenient. You should check with your insurance company to see the details or your prosthetic coverage so that you don't get any surprise bills.
- Most people with a new prosthesis benefit from physical therapy. The physical therapist will do "gait training" to help you learn how to walk well with your prosthesis. The P.T. appointment should ideally start right after you bring your new prosthesis home. You will need a prescription from your doctor for physical therapy. You can see a physical therapist locally or here at UNC Hospitals. Be sure that the therapist you are seeing has some experience with gait training with a prosthesis.
- When we deliver your prosthesis, we will have loc-tited and torqued the appropriate fittings. Please do not make your own adjustments, as the fittings may not be safely tightened afterward. Also, inappropriate alignment changes can make you fall or cause damaging forces on your knee. Please do not grind, cut or otherwise alter your socket. If you need an adjustment, let us do it for you.
- Typically, you will be given an appointment to come back for follow-up in about 2 weeks. At that point, we will make any necessary adjustments to the prosthesis. You should certainly come back sooner if any problems develop before then.
- A cosmetic/protective cover may be added when the initial adjustments are completed. Once the initial fitting is complete, we will want to see you for any adjustments or repairs, and at least every 6 months to a year.
- A prosthesis is made of mechanical parts. As with anything mechanical, it is possible for these parts to wear out or become loose and fail. If you notice that your prosthesis is making a funny noise or "walks" differently, please stop using it immediately and bring it in to be evaluated. You should never walk on a loose or broken prosthesis.

This information is not comprehensive, but intended to give you some basic instructions. If you have questions, please make an appointment to see us or call us.

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