



*Circulating the Facts About
Peripheral Vascular Disease*

Lower Extremity Amputations

*Brought to you by the Education Committee
of the Society for Vascular Nursing*

SVN SOCIETY OF
VASCULAR
NURSING

Introduction

The purpose of this booklet is to help you and your family better understand lower extremity amputation. You are an important person in our “healthcare team” and we want and need your participation in your care and recovery. Your nurse will go over the information in this booklet with you. This booklet is yours to keep. Please write any questions you may have in the margins or use the note page at the end of the booklet to list your questions and comments.

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Emotional Adjustment

You may have already been through a lengthy period of hospitalization, or other efforts to correct the underlying condition, which has led to your loss. Your amputation may have come about suddenly following an accident or rapidly progressing condition. This experience involves you as a whole person—mind, body, and spirit. You will need to recover emotionally, as well as physically. In rehabilitation, all of your needs are important. You will be encouraged to address the emotional aspects of recovery, as well as the physical.

Your feelings may have a broad range, or it may seem that you have felt numb or empty inside. Depression, anger, fear, sadness, anxiety, hopelessness, overwhelming fatigue, confusion, powerlessness, and resentment are a few of the feelings people have dealt with following the loss of a limb. You may also experience a sense of relief, hope, or confidence that you are succeeding in dealing with a difficult situation. You may also have a series of mood swings from high to low, which may leave you with the feeling that you are on an emotional roller coaster. Your family and close friends may also experience many of the same feelings. As you go through this recovery together, you may feel closer to them or you may find that there is more stress between you and those close to you. Take one day at a time and you will make it through.

Take time to examine what you have been through. This has been a very emotional event. Much has changed in your life in a short period of time. You may be dealing with pain you may have had or continue to have, fear of the unknown, questions, guilt or blame. These take up time and energy.

There are ways to help deal with the tough times you may face.

- **ATTITUDE.** Believe in yourself and trust in the belief that others have in you. Develop a sense that there is always something for you to gain in a situation, exercise, or challenge.
- **TAKE ONE DAY AT A TIME.** Thinking of having a great deal of pain, or being limited for the rest of your life can be very overwhelming. Break it down to small manageable segments a few minutes, an hour, a day and you find anything easier to handle.
- **TAKE ADVANTAGE OF RESOURCES.** Many are available to you through family, friends, staff, and support groups. Talk to someone who has been through similar experiences. Another person who has been there can offer ways to cope. Your nurses or social workers will be able to help you find these people.
- **TALK ABOUT IT.** Discussing your feelings doesn't change the situation, but it will help to lighten your burden. Talking things out with someone who cares makes it much easier to keep going.
- **BE GOOD TO YOURSELF.** Do something good for yourself each day. For example, take a long relaxing shower at the end of the day, spend time reading, listen to music, or watch an enjoyable TV show. Also, make sure you rest at night and eat a healthy diet.
- **EASY DOES IT.** Set goals so that they can be achieved in the time you have. Don't expect too much of yourself in your first week. Your team members can help you to set realistic, achievable goals.
- **DEVELOP A SENSE OF HUMOR.** Everyone has a sense of humor, but when we are under stress, we sometimes forget to take advantage of one of our greatest and most healing powers.
- **PRACTICE.** With time and practice, your new skills will become more natural. Your confidence will increase. You will begin to feel more like yourself again. Give it some time and do your prescribed treatments and pretty soon you will see results.

Discomfort of the Residual Limb

After you have your amputation, you may experience two types of pain. The first type of pain may feel dull, throbbing or aching. This is normal pain from any type of surgery. The second type of pain may feel sharp, shooting, tingling or burning. This type of pain is coming from the nerves in your leg that have been cut. Pain medication may be given to you for each type of pain. Pain may be controlled by you on a special pump that will give you pain medication when you press a button. When you first start feeling the pain, ask your nurse for pain medication. The pain should resolve as you heal. It is important for you to control the pain so you can participate in therapy. If you continue having pain that is not controlled by your medication, talk with your doctor.

You can condition your residual limb after surgery by rubbing or tapping over the dressing. Another method may be to gently press your residual limb into the pillow. This is called desensitizing your residual limb. Ask your therapist what is the best way for you to condition or desensitize your limb. As your residual limb becomes less sensitive, you may tap or rub harder.

Swelling after surgery can cause more pain to occur. The team will try to control the swelling by placing some type of dressing that will help. The dressing may be in the form of an elastic wrap or a rigid type of dressing. After surgery is complete, a dressing will be placed over the incision line and then the elastic wrap over the dressing. When you are getting up, do not sit with your residual limb hanging down. This only aggravates the swelling of your residual limb. Swelling in your residual limb may take months to go down. After your initial dressing is taken down, at some time you will be fitted with a residual limb shrinker. A residual limb shrinker is tubular or conical in shape. Ask your doctor when he will fit you with a shrinker. The shrinker will need to be worn at all times. It can be removed 2-3 times a day for 10-15 minutes. The shrinker will be maintained for several months after surgery in order to help shape your limb for your prosthesis. Your prosthetist may need to change the size of your shrinker as the size of your limb changes.

The discomfort you are feeling may be increased by the emotional stress and fatigue caused by the decision process and actual surgery. Other treatments to help discomfort are relaxation exercises. You can use imagery, soothing music, or distraction techniques. Ask your therapist or nurse about relaxation.

You may find that residual limb discomfort returns years after the amputation because the skin thins out and the underlying padding tissue decreases with age. Let your doctor or healthcare provider know.

Phantom Limb Sensations

Phantom limb sensations are when you still feel your leg is there, even though you know that it is not. These sensations are strongest after surgery, but may occur even years later. **Be careful not to try to stand on the missing part of your leg. Move slowly and cautiously.** Always get someone to assist you immediately after your surgery when you feel like you need to get up. Your therapists will teach you how to safely perform your every day activities. At night, you may want to place a chair by your bed so that you will not get up thinking that both your legs are there and try to walk. This could result in a fall. Falling on your incision line may cause you to reopen the incision and cause a lot of damage to the tissue that is trying to heal. If you feel like you are at risk of falling, talk with your doctor, nurse or therapist.

Skin Care

A bulky soft dressing or rigid cast will be in place after surgery. The nurses will take care of the dressing on your residual limb during the 5-7 days it is normally in place. Your doctor will change the rigid cast as necessary.

If you have a rigid cast with a temporary foot, you will need to limit weight bearing as instructed by your doctor, therapist, or prosthetist. This will help keep the incision from breaking apart. It will also help prevent decreased blood flow to the leg and skin breakdown. All of these can delay wound healing.

When the soft dressing or rigid cast is removed, you will see sutures or staples in your residual limb incision line. These may be covered with a non-stick dressing when the soft bulky dressing or rigid cast is no longer needed. This will prevent the sutures or staples from “catching” on your clothes. Your surgeon will decide when to remove the sutures or staples (usually two to four weeks.)

When the soft dressing or rigid cast is removed, the nurses will teach you how to observe your residual limb daily for signs of irritation or infection. **Signs and symptoms of** infection include: redness, swelling, warmth, foul-smelling drainage or drainage of pus, increased pain and /or fever. While you are in the hospital, the nurses will notify your doctor if you have signs of an infection. After you go home from the hospital, you will need to notify your own doctor if you suspect your residual limb has become infected.

After you start rehabilitation, the skin on your residual limb may become irritated by your prosthesis. Observe your skin when you remove the prosthesis for areas of rash that might indicate an allergy to the prosthetic material. Reddened or blistered areas may indicate pressure sores or abrasions that may mean the prosthesis needs adjustment. While in the hospital, let someone on our healthcare team know of any of these problems so that your prosthetist can be notified. After you leave the hospital you will need to notify your prosthetist so that necessary adjustments may be made to your artificial leg.

When your incision has healed, it is recommended that you bathe your residual limb every evening so that it is completely dry before you put your prosthesis on in the morning. This is also a good time to gently massage your residual limb to desensitize (reduce painful sensations) it and prevent the suture line from sticking to underlying bone. You should not massage your residual limb while the sutures or staples are still in place or if there are any signs of infection or irritation.

Avoid shaving the residual limb since shaving increases the chance of skin irritation. Avoid using lotions, oils and creams on your residual limb, unless ordered by your doctor. Lotions with fragrances can irritate the skin when the residual limb is inside the prosthesis. Lotions can be applied in moderation at bedtime to be absorbed overnight.

Take good care of your remaining foot and protect it from injury. Wear a shoe that fits well and provides support during weight bearing. Non-skid soles are the safest. Inspect your remaining foot daily for signs of poor circulation, such as cool temperature, decreased sensation (numbness, tingling), pale color or areas of change in color (redness, mottling or blotching), or increased pain. Protect it from temperature changes (heaters, cold weather, too hot water). Your remaining foot is at higher risk for skin breakdown since it has to work harder.

Positioning

After surgery, your residual limb may be elevated on a pillow for the first 24-48 hours to decrease swelling. The foot of your bed may be elevated, but the knee should not be bent. **Do not elevate the residual limb on pillows or keep the foot of your bed up after the first 48 hours postoperatively, unless specifically requested by your doctor.** A device to keep your knee straight may be applied after surgery if you have a below the knee amputation. This helps the muscles not to contract and stay in a bent position.

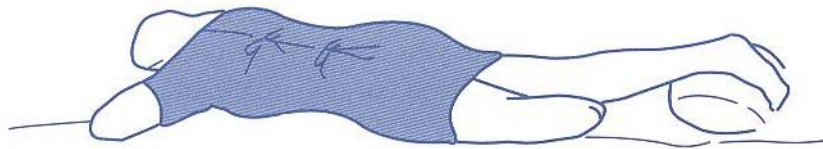
Avoid spending long periods of time in any one position. This will prevent your joints from getting stiff, swelling, or pressure sores from forming. A joint may permanently lose motion if it remains in the same position. Immediately after surgery your nurses will help you change your position frequently. Once you are allowed out of bed, if sitting for more than one hour, do a push-up by chair armrests and extend your residual limb a few times.

On approximately the second day after surgery, the nurses will begin to encourage you to lie “prone” (face down) flat in bed. You should use this position twice a day for up to twenty minutes, or as individually instructed by your physical therapist and nurse. Pillows should NOT be placed under your stomach or your residual limb when in this position. This will help you maintain the normal hip motion required for walking with your artificial leg. At home you should continue to spend time in the prone position until you are walking more than you are sitting.

Keep your residual limb in a level, straight position. It should be neither rotated inwardly nor outwardly when lying in bed or sitting in a chair. A towel or blanket roll may be used for proper positioning of your residual limb. When you are sitting in a chair not wearing your prosthesis and your amputation is below the knee, a board or other device may also be used to keep you residual limb straight. If your residual limb is long, do not cross your legs since this will interfere with circulation.

After your surgery you should begin general conditioning exercises. You will probably meet your physical therapist and/or occupational therapist the day after surgery. The physical therapist will begin working on conditioning exercises and how you will be able to get from place to place without your leg. The occupational therapist will help you be able to do your normal routine daily activities now that a change has occurred. Upper extremity strengthening will be important. Together with your therapists, you will develop your plan.

You will need to continue an exercise program when you go home from the hospital. The following pages will be reviewed with you by your physical therapist and individualized for you.



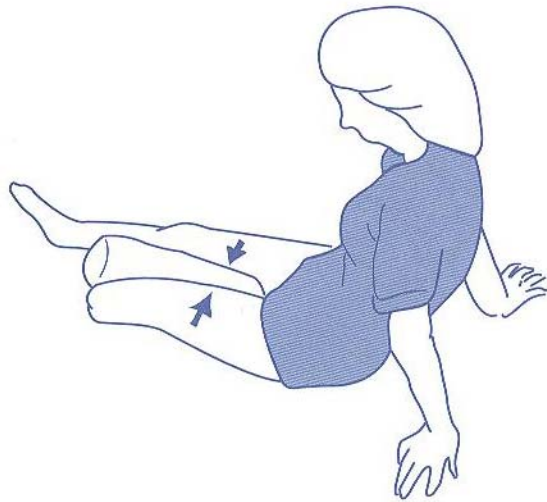
Home Exercises

Hip Adduction (BKA & AKA)

1. Sit on the floor with your hands behind you for support.
2. Keep both legs straight.
3. Place a rolled towel between your legs.
4. Squeeze the towel between your legs for five seconds.

Repeat _____ times.

Special instructions:

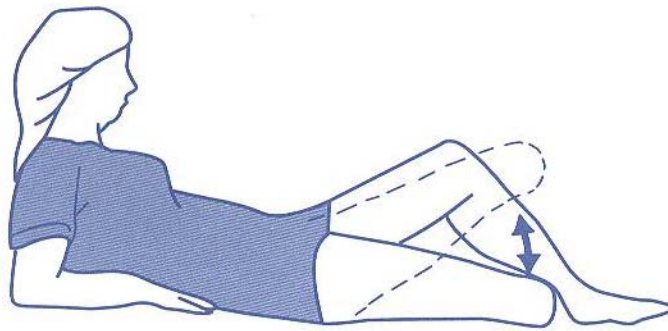


Straight Leg Raise (BKA & AKA)

1. Recline on your back, propping yourself up on your elbows.
2. Keep your residual limb straight and bend the other leg. Keep your legs close together.
3. Straighten your residual limb as much as possible, tightening the muscles on top of the thigh.
4. Raise your residual limb off the floor approximately four inches and hold for five seconds.
5. Slowly return to the starting position and relax.

Repeat _____ times.

Special instructions:

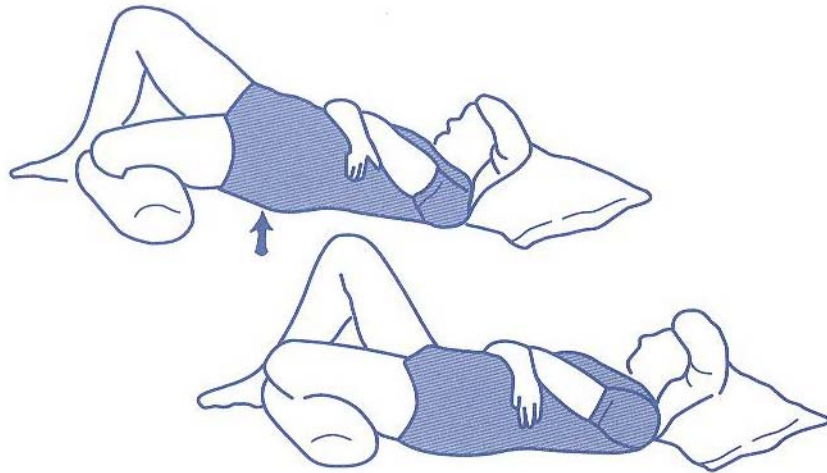


Bridging (BKA & AKA)

1. Lie on your back with your head on a pillow and your arms folded across your chest.
2. Place a rolled towel under your residual limb.
3. Keep your residual limb straight and bend your other leg.
4. Push your residual limb down in to the towel as you squeeze your buttocks together and lift them up of the floor.
5. Hold for five seconds, then relax.

Repeat _____ times.

Special instructions:

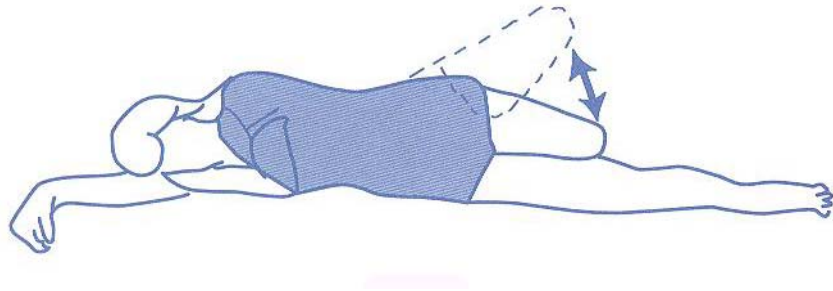


Hip Abduction, Side Lying (BKA & AKA)

1. Lie flat on your side, residual limb up.
2. Bend your bottom leg backward for support.
3. Slowly lift your residual limb upward, taking care not to roll your body forward.
4. Slowly return to the starting position and relax.

Repeat _____ times.

Special instructions:

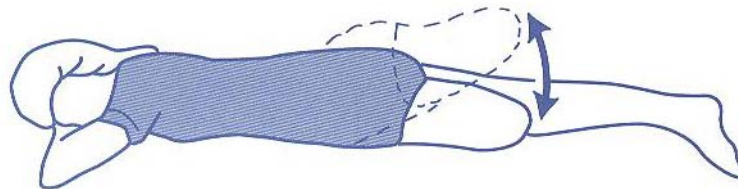


Hip Extension, Lying (BKA & AKA)

1. Lie flat on your stomach with your arms folded under your head.
2. Keep both legs straight and close together.
3. Lift your residual limb off the floor just enough to clear the other thigh. Be sure to keep your stomach flat on the floor
4. Return to the starting position and relax.

Repeat _____ times.

Special instructions:

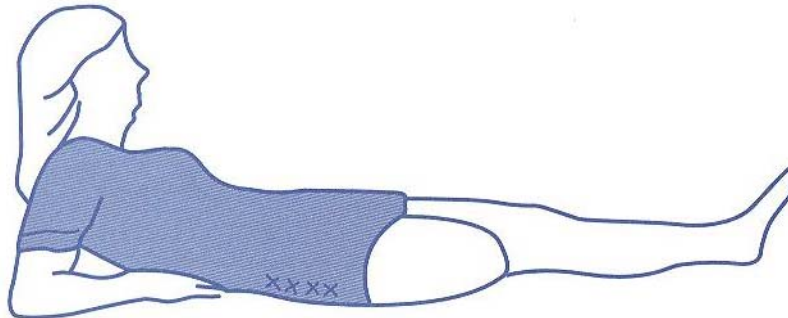


Gluteal Sets (BKA & AKA)

1. Recline on your back, propping yourself up on your elbows.
2. Keep both legs straight and close together.
3. Squeeze your buttocks together as tightly as possible.
4. Hold for five seconds, then relax.

Repeat _____ times.

Special instructions:

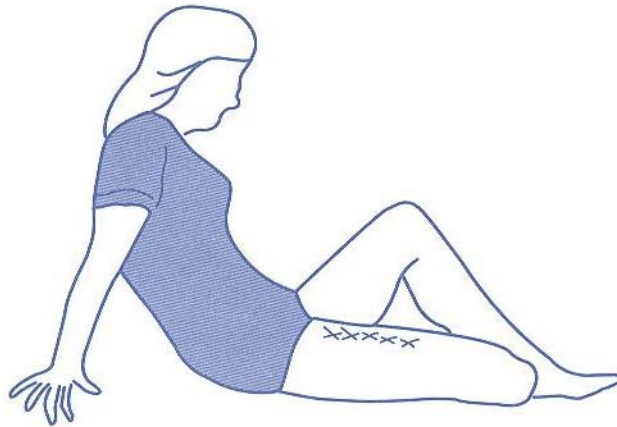


Quadriceps Set (BKA & AKA)

1. Sit on the floor.
2. Put your hands on the floor behind you for support.
3. Keeping your residual limb straight, bend your other leg. Keep your legs close together.
4. Straighten the knee on your residual limb as much as possible, tightening the muscles on top of the thigh.
5. Hold for five seconds and relax.

Repeat _____ times.

Special instructions:

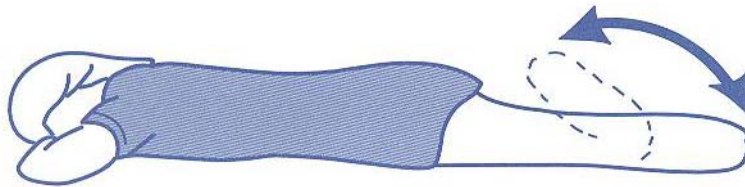


Hamstring Curls (BKA & AKA)

1. Lie flat on your stomach with your arms folded under you head.
2. Keep your legs straight and close together.
3. Bend the knee of your residual limb, slowly bringing it back towards your buttocks.
4. Hold for five seconds and relax.

Repeat _____ times.

Special instructions:



Knee Extension (BKA & AKA)

1. Sit up straight in a firm chair.
2. Grip the sides of the chair for support.
3. Straighten the knee of your residual limb completely, bringing it out straight.
4. Return to the starting position and relax.

Repeat _____ times.

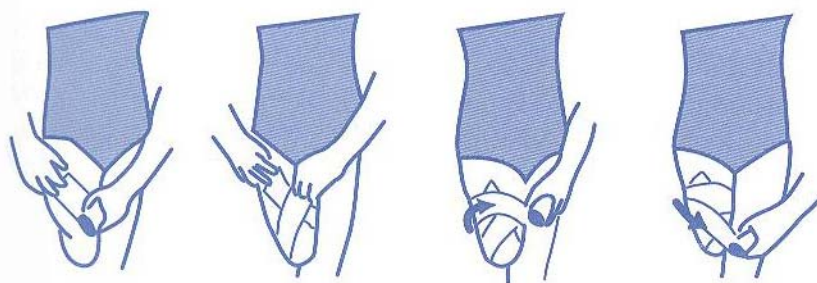
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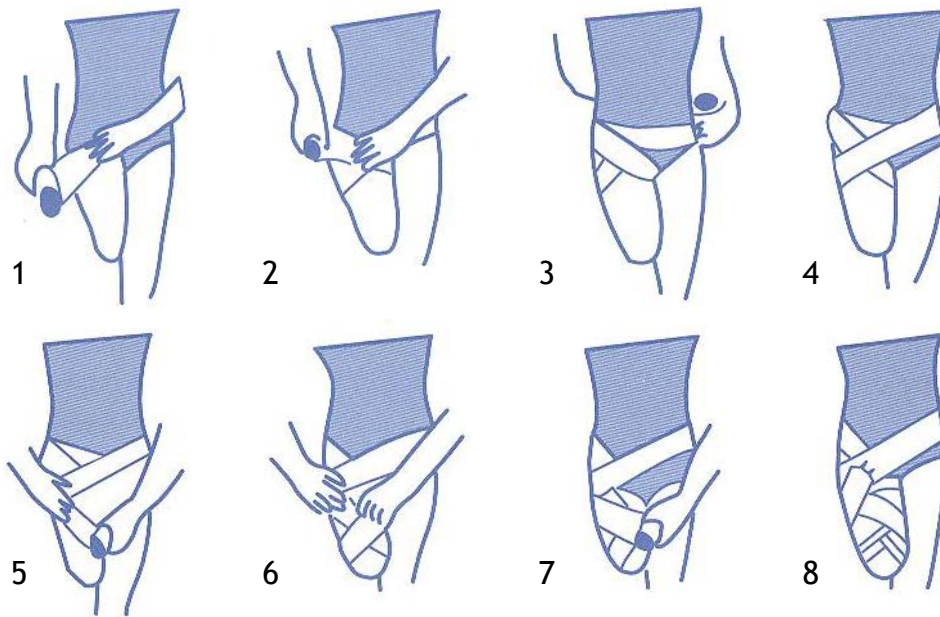
Care of Prosthesis and Residual Limb Socks/Shrinkers

Once you begin wearing a shrinker, it should be washed daily by hand with mild (non-detergent) soap and warm water. Gently squeeze out excess water. Avoid twisting or wringing, which can stretch the shrinker and cause it to lose its shape. To dry, roll it in a towel to get rid of excess water and lay flat. Do not expose the shrinker or your residual limb socks to direct sunlight or to direct heat (radiator, dryer, etc.) as it can shrink them. For proper sock care read the instructions on the package. Do not wash in a washing machine unless it has a short, delicate fabric cycle.

Proper application of an elastic bandage for below-the-knee amputation (BKA): Use a four-inch wide elastic bandage. Maintain slight tension as you wrap, more tension at the end of the residual limb and less tension closer to the hip. If your residual limb becomes uncomfortable or starts to throb, rewrap the elastic bandage with less tension. If the elastic bandage bunches up or slips, rewrap it using the figure eight pattern shown:



Proper application of an elastic bandage for an above-knee amputation (AKA): Use two six-inch wide elastic bandages. Maintain slight tension as you wrap, more tension at the end of the residual limb and less tension closer to the hip. If your residual limb becomes uncomfortable or starts to throb, rewrap the elastic bandage with less tension. If the elastic bandage bunches up or slips, rewrap it using the figure eight pattern shown:



Your artificial leg should be put on as you are getting out of bed in the morning. This will prevent the residual limb from swelling and causing problems fitting into your artificial leg. If you have a prosthesis that requires residual limb socks and belt, follow these steps:

1. It is easiest to dress the prosthesis and then put it on while sitting. Pull on the appropriate number and size of residual limb socks firmly and evenly, avoiding wrinkles in the socks. Adjust socks so that the seam is on the outside and not laying along your incision line or over a bony area.
2. Slowly push your residual limb into the socket of the prosthesis. If your amputation was below the knee, bend your knee slightly. Make sure to keep your residual limb straight and not turned as it goes into your prosthesis.
3. Attach the suspension device properly, then dress your other leg.
4. Your prosthesis should feel snug, but not uncomfortable.

If the prosthesis is uncomfortable, the prosthetist may adjust it. If it causes any skin breakdown (such as redness, blistering, abrasions, or rashes), do not wear it. While you are in the hospital, notify a member of your healthcare team of any problems. After you are discharged from the hospital, notify your prosthetist.

You may find it easier to use looser fitting clothing when you dress your legs. If you wear long underpants, you may want to cut off the leg on the amputated side. If you are using a suction socket, beware you don't pull a piece of clothing into the socket with your residual limb.

If your residual limb size varies during the day related to hot weather or fluid build up, you may need to adjust the number and size of residual limb socks for proper prosthetic fit to prevent skin breakdown. Prosthetic socks come in 1, 3, 5 and 6 plies.

It is important that you maintain your normal body weight when you have a prosthesis. A weight gain or loss of ten or more pounds will change your leg size and require adjustment of the prosthetic socket. If your weight has changed by ten or more pounds, have your prosthetist evaluate the fit of your prosthesis.

Initially, your activities with the prosthesis (amount of weight-bearing, walking, and wearing time) will be restricted so that your skin may be evaluated. You will begin by wearing your prosthesis for 1 to 2 hours at a time. Then carefully check the skin on your residual limb for any color or temperature changes, blisters, or abrasions, and especially check your incision for signs of separation. You may need a mirror to check thoroughly. If your skin tolerates the prosthesis, it may be worn for greater lengths of time, but you must continue to remove it and check your skin at regular intervals. You will increase your activities according to your tolerance and your physician's orders. The right amount of activity will ensure proper healing.

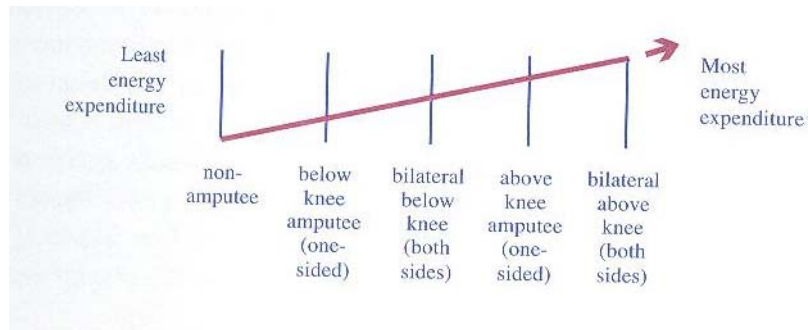
It is recommended that you clean inside your prosthesis with mild soap and warm water after you remove it for the day so it will be dry when you put it on in the morning. If you have an insert for your prosthesis, wipe it out with a dry cloth every day.

Your initial temporary prosthesis lasts about six weeks. Your first permanent prosthesis usually lasts about six months to two years. During this time you can expect the residual limb to shrink in size, necessitating prosthetic adjustment.

A prosthesis should not be worn without shoes. When shoes are changed, the heel height should be the same as the previous one. Prosthetic alignment is based on heel height, so to avoid problems, have your prosthesis checked with different shoe heights.

Energy Conservation

The amount of energy required of an individual with lower extremity amputation(s) is diagrammed below.



Because of the energy required, it is important that you practice saving energy. This is to allow you to use your time and energy better when performing daily tasks. Five basic principles that may help are listed below:

1. Do as much planning ahead as possible. Daily, make a list of things you need to do and spread the activities throughout the day with rest periods in between. Spread heavy and light tasks throughout the week.
2. Break down your activities into steps and figure out the best way to get the task done.
3. Organize your work area having the most frequently used items easily accessible to avoid unnecessary bending, reaching, and stretching.
4. Sit on a chair or stool with back support while performing all activities and keep your feet flat on the floor or on a footrest for support.
5. Adopt a moderate pace of working and allow enough time to do things, so that you don't have to rush at the last minute.

Sexuality

Now that you have been thinking about adjustment, you may be wondering about your sexuality. This begins with your image of yourself. You may question your attractiveness or your family or partner's reactions. You are still a complete person! You and your family/partner should discuss the change. Practice returning to social and public situations to build your confidence.

Sexual activities may usually be resumed when your residual limb has healed. An amputation won't affect your reproductive abilities. It may affect your sexuality since this is a physical as well as mental and emotional, response. Various preexisting diseases, such as diabetes or pain, may interfere with sexual functioning. There are also many types of medicines that might interfere with sexual function or drive. Ask your doctor or nurse any questions you have about your medicines. Depression, anxiety, fear of injury to limb during sex, or fear of poor performance, are some types of mental concerns that might interfere with your ability to feel sexually satisfied. Sexuality is expressed in many different forms.

Some things to remember:

1. Some individuals may use slightly more energy than previously experienced during the sexual act. This may make you tired, but rarely interferes with sexual function.
2. The loss of part of a leg may mean less control during sex. You may want your partner to take a more active role, or you may want to use pillows or cushions for positioning.
3. If you are experiencing pain and take medicine to control this, you can time it around sexual activity.
4. Don't isolate yourself. Communicate with your significant other. Share your feelings.
5. Your social worker and other trained members of your rehabilitation team are resources to discuss adjustment with you and your partner.

Rehabilitation Services

Rehabilitation services may be available to you in an inpatient or outpatient setting. Depending on your specific needs, your healthcare providers may suggest that you attend a rehabilitation program. These intensive programs may help amputee patients recover quicker. If you have questions about a rehabilitation program, speak with your healthcare provider.

Community Services

While you are in the hospital, your social worker, physical therapist, or community health nurse will help you arrange for the equipment you will need at home. There are several local places that specialize in prosthetic fitting. Check the Yellow Pages of the telephone book under Orthopedic Appliances.

If you wish to receive more information or participate in a support group, you may contact the following:

Amputation Glossary

<http://www.americanamputee.org/library/files/glossary.pdf>

Medline Plus

<http://www.nlm.nih.gov/medlineplus/amputees.html>

If you wish to receive more information or participate in a support group, you may contact the following:

American Amputee Foundation

P. O. Box 94227
North Little Rock, AR 72190
(501) 835-9290
<http://www.americanamputee.org>

National Amputation Foundation

40 Church Street
Malverne, NY 11565
(516) 887-3600
www.nationalamputation.org

Amputee Coalition of America

900 East Hill Avenue Suite 205
Knoxville, TN 37915-2566
(888) 267-5669
www.amputee-coalition.org

Amputee Resource Foundation of America

2324 Wildwood Trail
Minnetonka, MN 55305
Resource Links:
<http://www.amputeeresource.org/Resource%20Links.htm>
www.amputeeresource.org

When To Call Your Doctor

1. Fever – oral temperature of 100 degrees F or greater
2. Redness, swelling, or tenderness along the incision
3. Increased pain in the leg
4. Drainage
5. A change in the color or temperature of the residual limb

Conclusion...

Although the postoperative amputation course is a difficult time for adjustment to a new way of life, with help from dedicated professionals, it can be positive experience. A firm commitment to keeping regular follow-up appointments with your doctor and to changing your lifestyle to reduce risk factors will help to control further disease.



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