How to Donn a Below Knee Suction or Vacuum Prosthesis



Step 1 & 2 | Step 3 | Step 4 | Step 5 & 6 | Step 7

Sheaths

A silver nylon-like sock worn directly over your limb/skin and is advantageous in wicking away moisture from the skin and reducing friction between the skin and liner or skin and the prosthesis.

To help identify this vs the shrinker, the shrinker has a plastic ring on it. Wearing a sheath is optional so it is not included in the diagram above. Ask your prosthetist if they are right for you.



Sheath

Donning a Liner

Step 1: Roll the liner completely inside out.

Step 2: Place the inside surface of the liner flat against the end of your residual limb.

- There should be no space between the end of the limb and the inside of the liner.

Step 3: Roll the liner onto the residual limb.

- Check that there are no folds or air trapped between the liner and your skin.
- The manufacturer decal or writing is typically lined up in the front of your limb.
- Try to avoid pulling the liner. Tension on the liner next to the skin can result in irritation or blisters.



Liners

Donning the Sock(s)

Step 4: Add the necessary ply of socks over the liner for comfort and appropriate depth in the socket (please refer to troubleshooting for more information).

- Multiple thicknesses of socks will be provided *(Typically, 1 ply, 2 ply, 3 ply and 5 ply socks are provided)*
- Depending on how much your residual limb size fluctuates you may need to wear multiple layers of socks.
- Make sure there are no folds or wrinkles in your socks.



Socks

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Donning the Socket

Step 5: Push your residual limb into the socket or step into the prosthesis until you hear audible clicking of the locking mechanism engaging.

- If your socket feels too **loose, increase** sock ply.
- If your socket feels too **tight, reduce** sock ply.



Diagnostic Socket *Definitive Socket*

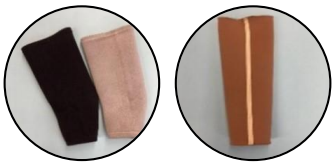
Step 6: Make sure your residual limb reaches the bottom of the socket.

- Reduce sock ply if your residual limb does not reach the bottom of the socket.
- Do not wear your prosthesis if your limb cannot reach the bottom of the socket. You will develop a water blister on the bottom of your limb.

Donning the Suspension Sleeve

Step 7: Roll the suspension sleeve, wrinkle free, up your thigh. The sleeve should already be half way on the prosthesis.

- The sleeve must make contact with the skin of your thigh at least 1.5 inches above your liner or sock all the way around to provide an appropriate suspension/suction seal.
- Keep your leg as straight as possible when rolling to avoid wrinkling behind the knee.
- Try to avoid pulling on the sleeve as tension may cause irritation or blisters.
- If you develop air bubbles or wrinkles in your sleeve upon standing, you will need to roll your sleeve down and back up while standing to release the air.
- If you notice a tear/hole in your sleeve, you will not have optimal suspension. Friction will occur and will likely cause a skin breakdown. Replace sleeves when this is noted. It is always a good idea to have a back-up suspension sleeve on hand.
- Kneeling on a suspension sleeve or bumping against hard surfaces are common causes of sleeve damage.



Sleeves

ONLY IF utilizing vacuum suspension

Step 8: Establish vacuum within the socket.

- For mechanical vacuum pumps - pump up the vacuum pump by stepping up and down on the prosthesis to expel air from your socket before ambulating.
- For foot pumps - push down on the heel several times to expel air from your socket before ambulating.
- For electric pumps - turn on electric vacuum to expel air from your socket before ambulating.

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Troubleshooting

- Check your skin regularly for signs of pressure points, skin irritation or unusual redness. It could be a sign of a serious problem. Contact your prosthetist as soon as possible to troubleshoot the problem however; you may be asked to schedule an appointment in order to evaluate and rectify the issue.
- If you develop a **water blister** on the bottom of your limb, first contact your prosthetist. You should **reduce sock ply** to ensure your limb is all the way down in the socket.
    - If you do not have any socks on, **add an end pad** to fill the void in the bottom of the socket. Contact your prosthetist if you do not have a distal end pad.
    - If you cannot get all the way down in the socket, your residual limb has most likely become swollen. Be sure you are **wearing your shrinker** at all times when you are not wearing your prosthesis to reduce or manage residual limb edema.
    - A poor diet or high salt intake may also cause residual limb edema.
- If you are not sure if you are all down in your socket you can use **Play-Doh** to determine contact on the bottom of your limb.
    - Roll up a ball of Play-Doh, place it in the bottom of the socket and see if your limb flattens the Play-Doh upon standing.
- If your socket was previously comfortable, but now you're experiencing **pain or pressure on the bottom and front of your shin bone,** you may be too far down in your socket. **Add a thicker sock** to lift your limb back up to an appropriate depth in the socket and reduce pressure in the area.
- If your socket was previously comfortable, but now you're experiencing **pain or pressure on the bottom of your knee cap**, you may be too far down in your socket. **Add a thicker sock** to lift your limb back up to an appropriate depth in the socket and reduce pressure in the area.
- You may apply unscented lotion on your thigh at the edge of the sleeve if irritation occurs.
- Unscented lotion (ask your prosthetist) may be used to reduce friction over bony areas.
- Be sure to clean all supplies that touch your skin regularly. A lack of regular supply cleaning can result in itchy skin or rash development.
- Wash any part of the prosthesis that makes contact with the skin (liners, socks, inside of the socket, etc.) every day with a mild soap and warm water and allow plenty of time to dry. Follow manufacturer's instructions for care. Unless specifically instructed, do not use talcum powder or products containing alcohol or unknown substances.
- If your socket is **too big or too small, see your prosthetist.** He or she can show you how to gauge when your socket fits correctly. Your goal is a comfortably snug fit so that may mean adding or taking away socks to achieve a proper fit.
- The fit of your prosthesis will fluctuate during the day and you may need to add or remove socks as needed.
- Make sure your **shoe height is correct** for your prosthesis. A misalignment can put a strain on your residual limb and surrounding joints. A shoe with a higher or lower heel height can change the alignment of the prosthesis. You should wear shoes with the same heel height your prosthesis was originally aligned with. Talk to your prosthetist should you wish to change shoes.
- Your prosthesis or liner should not be worn at night. It is recommended that you wear your shrinker when not wearing your prosthesis.
- Over the next several weeks, months and years, you will continue to see your prosthetist as they will now be a part of your care team for life. As you become more active and time passes, there will be continuous changes in your limb and adjustments will need to be made in order to maintain an appropriate fit. Eventually your limb will change so much, usually due to atrophy (your muscles are no longer active so they begin to shrink), you will need a replacement socket. There is no set time frame when this may occur as everyone changes at different rates. There are many reasons for the need for a replacement socket which is why it is imperative to be consistent in following up with your prosthetist.

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Prosthetic Device Wearing Schedule

Days	Number of Hours	Number of Times Per Day
1	1	3
2	1 1/2	3
3	2	3
4	2 1/2	3
5	3	3
6	3 1/2	3
7	4	3

Guidelines

- When receiving your first prosthesis, a slow and gradual increase of wear time is required until you are able to tolerate wearing the prosthesis for most of the day.
- The above chart is a guide to increasing the wear time of the prosthesis. If you need to slow down the progress and duplicate days until your limb can tolerate wearing the prosthesis, that is perfectly fine to do so.
- Do not increase the wear time too quickly and wear the prosthesis longer than recommended. This can have adverse effects such as skin irritation, blisters or increased redness or soreness.
- Follow this schedule as your limb adjusts to being confined inside the prosthesis, giving your limb and skin time to adapt.
- Taking your prosthesis off and checking your skin frequently is required in order to examine your limb for any increased redness, blisters or other irritations, in which your prosthetist should be informed of immediately.
- If there is deep redness that does not go away after 20 minutes, or if you have any other signs of irritation; discontinue use of the prosthesis and schedule an appointment with your prosthetist.
- Use the prosthetic socks provided to accommodate any changes in volume (size of your limb) throughout the day. The number of socks you put on in the morning may not be what you need by the afternoon. It is good practice to carry several socks with you in case of volume change throughout the day.

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Below Knee Prosthetic Shrinkers

Follow the washing instructions provided by the manufacturer. You can hand wash daily with warm water or machine wash using the lowest permanent-press setting. It is highly recommended to use a mild soap and not launder with fabric softener, bleach or other additives. It is also recommended to alternate between your shrinkers daily or every couple of days. Wash and proper care usually restores your shrinkers' shape as wearing a shrinker for long durations can stretch it out.



Shrinkers

Below Knee Prosthetic Socks and Sheaths

A sufficient supply of socks and sheaths should be maintained to allow clean socks and/or sheaths to be worn daily and to allow several days after washing and before wearing. Wear clean socks and/or sheaths every day. On hot and humid days, you may want to change your socks and/or sheaths throughout the day depending on how much you perspire. Do not wear socks and sheaths several days without washing them as it is not good for your skin or your prosthetic supplies..



Socks

Most socks and sheaths require a machine wash in warm water with mild soap and tumble dry low. Bleach only if needed and do not use fabric softener. Most can also be hand washed in the same manner. Some socks have specific care instructions so please follow the washing instructions provided by the manufacturer. Wearing a sock stretches it and perspiration can harden it. Washing and proper care restores the socks shape and softens it.

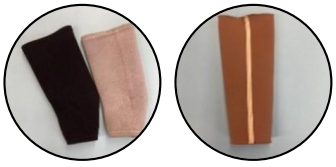


Sheaths

Below Knee Prosthetic Sleeves

Proper hygiene is extremely important when using a prosthetic sleeve. The sleeve should be cleaned at the end of each day.

- Roll the sleeve down your socket so it is inside out.
- Use a mild soap such as Dove or Dial and warm water to wipe down the sleeve by hand or with a lint free cloth.
- Take special care to rinse all soap residue from your sleeve.
- Do not store your prosthesis at night with the sleeve rolled down as debris may stick to the inside of your liner and negatively affect your suspension.



Sleeves

Below Knee Prosthetic Liners

Proper hygiene is extremely important when using a prosthetic liner. The liner should be cleaned at the end of each day. You will be provided two liners so one can be worn and one could be washed.

Daily Cleaning:

- Remove liner and turn inside out
- Use a mild soap such as Dove or Dial and warm water to wash the liner by hand or with a lint free cloth.
- Take special care to rinse all soap residue from your liner.



Liners

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Perspiration

It is not uncommon for new liner wearers to experience excessive perspiration for the first several weeks of use. Please follow the wear schedule provided to you by your prosthetist for both the liner as well as the prosthesis. This gradual increase in wear time for the device will also allow your skin to grow accustomed to the materials being worn. Perspiration will tend to resolve itself after several weeks of consistent wear. If sweating becomes an issue, discuss this with your prosthetist as there are options that might help in the reduction of perspiration such as antiperspirant.

If you find yourself sweating often, it is recommended to remove your liner and prosthesis and wipe down both the limb and the liner, then reapply. Excessive sweat or moisture between the liner and your limb can affect the suspension of your prosthesis.

Warranty

Typical warranty for manufacturers defects are:

- Liners - 6 months
- Shrinkers - 3 months
- For warranty on specific items, see your prosthetist

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Custom Fabricated Device Warranty

Your custom fabricated prosthetic/orthotic device has a warranty of 90 days from the date provided to ensure proper alignment, proper fit, and function; corresponding with your individual measurements and anatomical conditions at the time of measurement.

Custom Fit Prefabricated Device Warranty

Your custom fit prosthetic/orthotic device or item has a warranty of 60 days from the date provided to ensure appropriate size, fit and function after the time of delivery.

General Information Regarding Your Warranty

Once a device is delivered, it is not eligible for a money-back warranty due the health risks involved in the reuse of prosthetic and orthotic devices.

This warranty does not apply to items or parts that are not manufactured by Great Steps Orthotics & Prosthetics. Items and parts that are manufactured by outside companies or vendors are warranted for the length of the time determined by that manufacturer. These include, but are not limited to; components or parts not manufactured by Great Steps that are used in the assembly of a device custom made by Great Steps; items that are custom made by other companies but supplied to the patient by Great Steps, or items that are manufactured by other companies, but are fit or custom fit to the patient by Great Steps.

The warranty is immediately void if:

- The device has been adjusted, repaired or altered by anyone other than an active employee of Great Steps.
- The device or any of its parts have been subjected to misuse, negligence or accident.
- The patient fails to fulfill **“Patient Responsibilities”** as outlined below.

The warranty does not cover prosthetic skin coverings, adjustments needed due to anatomical or other medical changes, nor does it cover accessories, such as prosthetic socks, straps, etc.

Patient Responsibility

- Keep all scheduled appointments with your prosthetist when possible.

- Inform your prosthetist of any change in your overall health which may affect the wearing or functioning of the orthosis or prosthesis.

- Within thirty (30) days after the item is delivered, inform your prosthetist if any adjustments are needed. Failure to do so will constitute a waiver by the patient of any claim regarding said item.