

## SUSPENSION & TROUBLESHOOTING

One of the most important parts of staying active and avoiding falls with your prosthesis is to maintain good suspension (keeping the prosthesis attached securely to your limb). There are many different systems available depending on your individual needs, but here are some tricks for troubleshooting your problems for each type:

### PIN

If you use a pin system (gel liner with pin attached to the bottom), there are only a few things to check:

1 – Be sure your socks are pulled snug against the bottom (if you are wearing socks). Many times, if there is loose sock or nylon around the base of the pin, it can get jammed down into the lock mechanism and cause your pin to malfunction. This could result in your pin not engaging, or not releasing once you push the release button. If this happens – pouring some water between your skin and the liner can help you to wiggle your limb out of the prosthesis with the liner still connected. If all else fails, call the office and we can help!

2 – Check your release button and pin at least once per week to make sure they are not unscrewing. This should not happen regularly, but it can – so be sure to check your prosthesis and tighten them by hand if you notice the threads coming undone. Then call and let us know ASAP.

### LANYARD

Similar to the pin system, the lanyard uses a long strap instead of a metal pin in the gel liner. The same checks are true:

1 – Be sure your socks are pulled snug against the bottom (if you are wearing socks). Many times, if there is loose sock or nylon around the base of the lanyard, it can get jammed down into the lock mechanism and cause problems. Socks should not be over-stretched, but you should get all the wrinkles out.

2 – Check your lanyard at least once per week to make sure it is not unscrewing. This should not happen regularly, but it can – so be sure to check your prosthesis and tighten it by hand if you notice the threads coming undone. Then call and let us know ASAP.

### SUCTION

The suction system keeps you limb secure by creating an air-tight chamber between your limb and the socket. There is a valve in the bottom of the socket that lets air out, but not back in. Whether you use a sealing liner or a sleeve, the top is air-tight as well. If you notice pistoning or air expulsion noises while walking, check these simple things first:

1 – The most common cause of leaks in suction systems is getting holes in your sleeves. If your prosthesis uses a sleeve over the knee, take it off and check for small holes which are usually right around the trim lines of the socket. Even a pin-hole will cause things to go wrong... kind of like a flat tire – you can't keep driving on it or you will do damage!! Changing your sleeve to a backup is best if you suspect a leak.

2 – If you use sleeves over the knee, then make sure your socks or nylons aren't pulled up above your gel liner. In most systems, there should be at least 1" of gel exposed from your liner so that the gel of the sleeve marries against it and creates an air-tight seal. If your socks are pulled up

above your liner – they will create a wick and let air flow into the socket. Not all suction systems use this technique, so if you are unsure about yours... just ask!

3 – Sometimes the expulsion valve can get clogged, letting air into the socket. If you use a sealing liner with a ring on it, or skin suction fit as an AK, this is likely your fix. If possible, take the valve out and flush it with clean water or wipe it down with alcohol. If you can't remove your valve, call the office and schedule an appointment so we can fix it for you.

4 – Make sure your valve is tightened down all the way and it is not cross-threaded. Sometimes removing it and starting over fixes the issues.

### VACUUM

Vacuum can provide some of the most intimate fittings available, but when you lose vacuum it can be REALLY uncomfortable and sometimes it is not noticeable right away. When you notice something isn't quite right, check the following:

1 – Sleeves are usually the first to go. They are the weak point in the system because they have to stretch to allow so much movement. Check your sleeve for holes and try swapping to a new sleeve if possible.

2 – Check your hose and pump to make sure the connections are still solid. If the hose has come loose from the posts, you will not achieve vacuum.

3 – Make sure you have “gel touching gel” all the way around your thigh. Remember, the top is air-tight when the sleeve seals against the liner. If your socks or nylons are pulled up too high and you don't have at least 1” of gel exposed, then you are letting air wick through the leg. (seal-in liners may not use a sleeve)

4 – If your prosthetist gave you a vacuum gauge, connect it and verify that you are achieving full vacuum and it is holding as you walk/sit/stand. If you aren't familiar with this step, talk to your prosthetist to see if this is something you can check at home. Sometimes, we will need to have you come in so we can diagnose your leak anyway.

5 – Flush your system once per month with water unless you use an electronic pump. Soak a nylon or sock with fresh water before you put it on, then just go about your day. As you walk, the water will be pulled through the valves and flush away debris. Check with your prosthetist before doing this!

These are just some tricks to help save you a trip... but sometimes, it is best to let us check it out. If you have a suspicion that something isn't right, then make an appointment to come see us. We don't charge for office visits so it's better to be safe than sorry. Our top priority is getting you comfortable and back to normal so you don't have to think twice about your prosthesis. But it *IS* a machine... and does require some maintenance every once in a while. Keeping a regular 6-month follow-up (even when everything is working fine and feeling great) can help prevent a bigger problem down the road.