



Compressive Stocking in Peripheral Artery Disease (PAD): A Comprehensive Guide.

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Introduction

Peripheral Artery Disease (PAD) is a common vascular condition that affects millions of people worldwide. It is characterized by the narrowing or blockage of the arteries in the extremities, typically the legs, due to the buildup of plaque and atherosclerosis. PAD can lead to a range of symptoms, from intermittent claudication (leg pain while walking) to critical limb ischemia (severe circulation problems). Managing PAD is crucial to prevent complications and improve the quality of life for affected individuals. Compressive stockings, also known as compression stockings or compression hosiery, are a valuable tool in the management of PAD. In this comprehensive guide, we will explore the role of compressive stockings in the treatment and prevention of PAD, their benefits, types, and how to use them effectively.

Understanding Peripheral Artery Disease (PAD)

Peripheral Artery Disease occurs when the arteries that supply blood to the limbs become narrowed or blocked, reducing blood flow to the affected areas. This reduced blood flow can result in a range of symptoms and complications, including:

- Intermittent Claudication:** The most common symptom of PAD is intermittent claudication, which is characterized by pain, cramping, or discomfort in the legs during physical activity. This pain typically subsides with rest.
- Pain at Rest:** In severe cases of PAD, individuals may experience pain even at rest, often in the toes or feet. This is a sign of critical limb ischemia, a serious condition that requires immediate medical attention.
- Non-Healing Wounds:** Poor blood circulation in the limbs can lead to slow wound healing. In extreme cases, this can result in the development of ulcers or gangrene.
- Cold and Pale Extremities:** Reduced blood flow can cause the affected limb to feel cold, appear pale, or even develop a bluish tint.
- Loss of Hair and Weak Pulse:** PAD can also lead to hair loss on the legs and a weakened or absent pulse in the affected area.

Risk Factors for PAD

Several risk factors increase the likelihood of developing PAD, including:

- Smoking:** Smoking is a major risk factor for PAD. It can accelerate the progression of the disease and increase the risk of complications.
- Diabetes:** People with diabetes are at a higher risk of developing PAD due to the damaging effects of high blood sugar on blood vessels.
- High Blood Pressure:** Hypertension can contribute to the development and worsening of PAD.
- High Cholesterol:** Elevated levels of cholesterol can lead to atherosclerosis, a key contributor to PAD.
- Age:** PAD is more common in older adults, with the risk increasing significantly after the age of 50.
- Family History:** A family history of PAD or cardiovascular disease can increase your risk.
- Obesity:** Excess body weight can strain the circulatory system and increase the risk of PAD.
- Physical Inactivity:** Lack of regular physical activity can contribute to the development of PAD.

Management of PAD

Effective management of PAD is essential to prevent complications and improve quality of life. Treatment strategies for PAD include:

1. **Lifestyle Modifications:** Lifestyle changes such as smoking cessation, regular exercise, and a heart-healthy diet can slow the progression of PAD.
2. **Medications:** Doctors may prescribe medications to manage risk factors, such as blood pressure and cholesterol-lowering drugs, as well as antiplatelet medications to reduce the risk of blood clots.
3. **Angioplasty and Stenting:** In more severe cases, procedures like angioplasty (a balloon-like device to open blocked arteries) and stent placement may be necessary.
4. **Bypass Surgery:** For severe blockages, bypass surgery may be recommended to reroute blood flow around the blocked artery.
5. **Compression Therapy:** Compression therapy, often in the form of compressive stockings, is an essential part of PAD management, and it plays a significant role in improving blood circulation in the affected limbs.

Understanding Compressive Stockings

Compressive stockings, also known as compression stockings, compression hosiery, or compression socks, are specially designed garments that apply pressure to the limbs, typically the legs, to improve blood circulation. They are made of elastic materials that exert graduated pressure, with the highest pressure at the ankle, gradually decreasing up the leg. This design helps to:

1. **Promote Blood Flow:** Compressive stockings aid in pushing blood from the legs back towards the heart, overcoming the resistance caused by narrowed arteries.
2. **Reduce Swelling:** They can effectively reduce edema (swelling) in the legs, a common symptom of PAD.
3. **Alleviate Pain:** Compressive stockings can alleviate the pain and discomfort associated with PAD, particularly during physical activity.
4. **Prevent Complications:** They can help prevent complications such as deep vein thrombosis (DVT) and venous ulcers, which are more likely to occur in individuals with PAD.

Types of Compressive Stockings

Compressive stockings come in various types and compression levels, which are measured in millimeters of mercury (mmHg). The choice of stocking depends on the severity of PAD and the recommendations of a healthcare professional. Common types of compressive stockings include:

1. **Gradient Compression Stockings:** These stockings are designed with the highest compression at the ankle, gradually decreasing as they move up the leg. They are effective for managing symptoms of PAD and edema.
2. **Anti-Embolism Stockings:** These stockings are used in hospital settings to prevent deep vein thrombosis (DVT) in patients who are immobile or undergoing surgery. They provide uniform compression to the entire leg.
3. **Prescription Medical Compression Stockings:** These stockings are prescribed by healthcare providers and are available in different compression levels, ranging from mild (15-20 mmHg) to extra firm (30-40 mmHg). They are used to manage various vascular conditions, including PAD.
4. **Over-the-Counter (OTC) Compression Stockings:** OTC compression stockings are available without a prescription and typically offer mild compression. They can be suitable for individuals with milder cases of PAD.

Using Compressive Stockings Effectively

To maximize the benefits of compressive stockings in the management of PAD, it's essential to use them correctly:

1. **Consult a Healthcare Provider:** Before using compressive stockings, consult with a healthcare provider to determine the appropriate compression level and type of stocking for your specific needs.
2. **Proper Sizing:** Ensure that your compressive stockings fit correctly. Measure your legs accurately to select the right size, and follow the manufacturer's sizing guidelines.
3. **Donning and Doffing:** Learn how to put on (don) and take off (doff) compressive stockings properly. This may involve using a donning aid or following specific techniques to prevent damaging the stockings or injuring yourself.

4. **Consistent Wear:** Compressive stockings are most effective when worn consistently. Follow your healthcare provider's recommendations regarding when and how long to wear them each day.
5. **Skin Care:** Keep your skin clean and moisturized when using compressive stockings. Check your skin regularly for any signs of irritation or sores and report them to your healthcare provider.
6. **Replace as Needed:** Compressive stockings have a limited lifespan. Over time, they may lose their elasticity and effectiveness. Replace them as recommended by your healthcare provider or when you notice signs of wear and tear.

Benefits of Compressive Stockings in PAD Management

Compressive stockings offer several benefits in the management of PAD:

1. **Improved Blood Circulation:** By exerting pressure on the limbs, compressive stockings help push blood back towards the heart, reducing pooling of blood in the legs and improving overall circulation.
2. **Reduced Pain and Discomfort:** Many individuals with PAD experience pain and discomfort while walking or during physical activity. Compressive stockings can alleviate these symptoms, allowing for improved mobility and quality of life.
3. **Edema Reduction:** Swelling in the legs is a common symptom of PAD. Compressive stockings effectively reduce edema, making it easier to move and decreasing the risk of skin complications.
4. **Prevention of Complications:** Compressive stockings can help prevent complications associated with PAD, such as venous ulcers and deep vein thrombosis (DVT).
5. **Enhanced Quality of Life:** By improving blood flow and reducing symptoms, compressive stockings can enhance the overall quality of life for individuals with PAD.

Conclusion

Peripheral Artery Disease (PAD) is a vascular condition that can significantly impact an individual's quality of life. Compressive stockings, with their ability to improve blood circulation, reduce pain and discomfort, and prevent complications, are a valuable tool in the management of PAD. When used correctly and under the guidance of a healthcare provider, compressive stockings can be an essential part of a comprehensive PAD treatment plan. If you or a loved one are living with PAD, consult with a healthcare professional to determine if compressive stockings are an appropriate addition to your management strategy. By taking proactive steps to manage PAD, individuals can lead healthier and more active lives, minimizing the impact of this condition on their well-being.

Reference

- 1) Rabe E, Pannier-Fischer F, Bromen K et al. Bonner Venenstudie der Deutschen Gesellschaft für Phlebologie. Epidemiologische Untersuchung zur Frage der Häufigkeit und Ausprägung von chronischen Venenkrankheiten in der städtischen und ländlichen Wohnbevölkerung. *Phlebologie* 2003; 32: 1–14.
- 2) Wienert V, Gerlach H, Gallenkemper G et al. Leitlinie Medizinischer Kompressionsstrumpf (MKS). *Phlebologie* 2006; 35(6): 315–20.
- 3) Mosti G, Iabichella ML, Partsch H. Compression therapy in mixed ulcers increases venous output and arterial perfusion. *J Vasc Surg* 2012; 55: 122–8.
- 4) Ladwig A, Haase H, Bichel J et al. Compression therapy of leg ulcers with PAOD. *Phlebology* 2014; 29(1 suppl): 7–12.
- 5) Reich-Schupke S, Stücker M (Hrsg.). *Moderne Kompressionstherapie – ein praktischer Leitfaden*. Köln: Viavital Verlag GmbH, 2013.
- 6) Mosti G, Partsch H. Is low compression pressure able to improve venous pumping function in patients with venous insufficiency? *Phlebology* 2010; 25(3): 145–50.
- 7) Stücker M, Rabe E. Evidenz der Kompressionstherapie unter besonderer Berücksichtigung der Kompressionsstrümpfe der Kompressionsklasse. I. *Vasomed* 2016; 1: 20–1
- 8) Paty J, Turner-Bowker DM, Elash CA et al. The VVSymQ® instrument: Use of a new patient-reported outcome measure for assessment of varicose vein symptoms. *Phlebology* 2016; 31(7): 481–8.
- 9) Settembre N, Kagayama T, Kauhanen P et al. The influence of heating on toe pressure in patients with peripheral arterial disease. *Scand J Surg* 2018; 107(1): 62–7.
- 10) Rabe E, Partsch H, Hafner J et al. Indications for medical compression stockings in venous and lymphatic disorders: An evidence-based consensus statement. *Phlebology* 2018; 33(3): 163–84.

- 11) Thomä HJ. Größensysteme: Serien- und Maßstrümpfe. In: S Reich-Schupke, M Stücker. *Moderne Kompressionstherapie – ein praktischer Leitfaden*. Köln: Viavital Verlag GmbH, 2013: 25–30.
- 12) Deutsche Gesellschaft für Phlebologie. S1-Leitlinie Intermittierende pneumatische Kompression (IPK, AIK) AWMF Registernummer 037-007 ICD 10. Stand Januar 2018. Available from https://www.awmf.org/uploads/tx_szleitlinien/037-0071_S1_Intermittierende-pneumatische-Kompression-IPK-AIK_2018-07.pdf [Last accessed November 8, 2019].
- 13) Alvarez OM, Wendelken ME, Markowitz L et al. Effect of high-pressure, intermittent pneumatic compression for the treatment of peripheral arterial disease and critical limb ischemia in patients without a surgical option. *Wounds* 2015; 27(11): 293–301.
- 14) Berni A, Tromba L, Falvo L et al. Randomized study on the effects of different strategies of intermittent pneumatic compression for lower limb claudication. *G Chir* 2009; 30(6–7): 269–73.
- 15) Chang ST, Hsu JT, Chu CM et al. Using intermittent pneumatic compression therapy to improve quality of life for symptomatic patients with infrapopliteal diffuse peripheral obstructive disease. *Circ J* 2012; 76(4): 971–6.