frequently asked questions

Why is it important to be active?

Being physically active will improve your health and well-being. Keeping physically active can help with weight loss and reduces the risk of developing serious medical conditions such as diabetes and heart disease. Walking regularly helps to reduce high blood pressure levels and high cholesterol levels. Walking is easy and cheap and you are highly likely to enjoy the sights, sounds and the fresh air. The New Zealand Heart Foundation (2001) recommend, "Walking a 'K' a day" to keep physically active and improve fitness. "Every little bit of activity is good for your health and everything over 30 minutes is a bonus!"

I have diabetes. Are these socks appropriate for me to use?

The Paladin socks have been designed with you in mind! Frequently with diabetes, high blood sugar levels interfere with nerve function that can damage (sometimes permanently) the nerves, causing them to send odd signals or no signals at all. It is rather like having 'fire alarms' on your feet that cannot work properly. This is called Neuropathy and means that you may not be in a position to know if you are developing a blister, for example, or if you are walking on something inside the shoe or if the shoe is too tight or pinching the skin. In addition, blood vessels that provide arterial blood to the legs and feet may be affected, as a result of diabetes. The arteries can narrow, reducing the volume of blood flowing to the feet. This makes healing difficult, particularly if you smoke as well. These socks are designed to fit snugly, accommodate your individual foot shape and withstand significant forces applied over high impact areas. The natural wool has the capacity to keep you warm and the skin dry, helping to avoid blister formation and breaches in skin integrity. Seacell containing seaweed enriched with silver protects the skin and exhibits anti-inflammatory properties.

Why is cigarette smoking harmful to my feet and legs?

Cigarette smoking causes the blood to thicken and the arteries to deposit fibro fatty plaque, a thick lipid-substance that lines the insides of the arteries and results in constriction (narrowing) of the arteries, adding to the problem! Imagine thick, sticky blood trying to squeeze its way through narrowed, hardened 'pipes' (arteries), all the way down to your feet. As smoking continues, eventually the pipes close off and the flow of blood to the lower limbs and feet is minimal. If an injury is sustained, or an infection establishes, the blood vessels are unable to send down sufficient blood to heal the wounds or combat the infection and this places the foot or leg at high risk of developing serious limb-threatening complications.

What causes blisters?

Friction blisters usually form where there is a combination of factors. Friction blisters (as opposed to blisters that form as a result of a burn or serious cold injuries) form in areas of the skin where there is relatively tight, swollen skin that is not loose enough to shift and move with the forces that are being applied. When the skin is tough and tight, blisters form as the skin is rubbed back-and-forth in a twisting motion. A rupture occurs between the layers of the skin and this becomes filled with fluid and causes pain. The presence of moisture affects the skin's reaction to friction. Continued rubbing over "sticky" skin makes the skin and the rubbing surface adhere more closely and this increases the frictional force. In turn, this raises the skin temperature and causes the skin to increase sweat production and the repetitive cycle of injury and re-injury continues until activity ceases.

How can I avoid blistering?

Blister formation is less likely with appropriate moisture management. The Paladin sock is able to retain excessive moisture due to a naturally occurring advantage in the Merino wool fibre and this is further enhanced with the inclusion of SeaCell active fibres.

SeaCell active fibres are a combination of Seacell, a seaweed derivative and silver threaded into the woollen yarn. The Paladin sock has been designed to enhance airflow through its rib and mesh construction in certain key areas allowing the skin and sock to breathe, assisting in the prevention of excess body fluid accumulation.
A well fitting, snug sock assists in taking responsibility for the frictional forces, protecting the underlying skin in the process.

Why is it preferable to wear seamless socks?

As a result of your diabetes, you may have neuropathy and your toes might be slightly retracted. You may not notice the shoes squeezing, rubbing or pinching the tops or tips of your toes. Sometimes in hosiery the seam that runs across the tops of the toes causes undue pressure to the skin, in a region of the shoe (the toe box) that might not have much room to accommodate added bulk. It is the combination of pressure from the shoe, pressure from the seams of the socks and the neuropathy that can lead to skin breakdown and eventual ulceration. Therefore, a seamless sock provides less bulk in the toe box of the shoe and less pressure to the skin over the toes. The lack of a seam and the additional protective padding either side of the specially designed mesh provide additional protection to the toes.

I have oedema (swelling) at the ankles. Will these socks be safe for me? What should I do if they are too tight at the ankle?

There are several reasons why ankles can swell as a result of fluid accumulating around the base of the leg and onto the top of the foot. It is beyond the scope of this document to discuss these reasons, but it is important to be aware of the implications of tight, constrictive bands imbedding within the skin as a result of tight fitting socks. Socks that are too tight around the ankle will interfere with the return of blood and fluids back towards the heart for oxygen. Restrictive socks can force fluid further down the leg and onto the foot and will create additional fluid accumulation. In turn, this causes additional swelling to occur and results in an enlarged foot, at risk of becoming too swollen to fit safely inside the shoe. When the shoe no longer fits, the skin will be pressed against the inside lining of the shoe, the pressure increases and the risk for injury is increased. Additionally, excess fluid accumulating at the foot and ankle will be filled with blood deprived of fresh oxygen and will be sluggish. Sluggish blood flow and increased fluid accumulation become irritating to the skin and underlying tissues and can damage the skin, if this situation persists. If you notice that the socks are tight at the region of the ankle, or that there are indentations in your skin due to tightness around the ankle, then you must take the socks off. They are too tight for you and will need to be replaced with socks that do not constrict the ankle region.
The Paladin socks have been designed to expand, with a very wide point of entry, to allow the foot to enter the sock easily without rubbing the skin. The double cuff allows room for the feet and ankles to swell a little but if you notice indentations in the skin caused by the socks, it is important to remove the socks and wear a pair that are non-restrictive in that region. The knitting technique used by Paladin has made the top of the sock thicker, as a result, but this method allows for the highest stretch top available.
It is important to emphasise that some people have swelling at the ankles that is too great for the socks to cope with and, in this case, the socks will need to be removed.

Do I need to adjust the shoe size to accommodate these socks?

Paladin Research Ltd has designed a range of socks from heavy weight to lightweight to cater for all lifestyle activities and footwear. The shape and style of the socks aim for as snug a fit as possible. The additional left and right sock shape aims to improve the fit even more. The absence of any seams means less bulk inside the shoe and the mesh situated on the sides of the foot help to reduce the bulk of the sock in places where additional padding is not required. These modifications in design save room inside the shoe and have allowed us to provide unique U shaped protection padding to the top of the foot. There should be no need to adjust for shoe size but if you are uncertain, you should discuss this with your podiatrist, doctor or health care practitioner before you wear the socks. If you have neuropathy, it is advisable to check with your podiatrist or doctor first.

What is particularly special about New Zealand Merino wool socks?

Because of our New Zealand farming methods, our animals are internationally renowned for being generally very healthy. This has a positive impact on the quality of the wool fibre. The Merino wool fibres are strong, long in length and extremely durable, as a consequence.
New Zealand Merino wool is whiter; the yarn is softer and more resilient and therefore provides for longer wearing and durability. New Zealand Merino wool is a complex keratin protein-based natural fibre that shares a compatibility with human skin, nail and hair making Merino wool fibre a suitably harmonious natural choice to provide a protective interface between skin and abrasive footwear.

Paladin socks are made using New Zealand Merino wool which has the ability to retain more moisture than most other fibres, particularly man-made fibres, and this is good for two reasons. Firstly, the moisture retention helps keep the skin supple and flexible, acting as a reservoir to retain the moisture and naturally occurring oils that are produced when the skin sweats. This nourishes the skin and can assist in preventing skin cracking or splitting. Secondly, the retained moisture, held within the natural structures of the wool fibre, prevent excessive fluid accumulation on the skin that leads to increased friction, skin rubbing and eventual blistering. It is always important to avoid damaging the skin of the feet when you have diabetes. A skin break can be a portal for bacteria to invade the tissues and cause an infection.
New Zealand Merino wool offers natural odour resistance. The Merino fibre does not provide a favourable environment for bacteria to prosper due to its uneven, scaly, surface and its capacity to absorb moisture. Bacteria favour a smooth, moist surface in humid conditions in order to flourish. The physical structure of the wool fibre ensures a tortuous and difficult pathway for bacteria to flourish. Discouraging bacterial and fungal colonisation prevents the formation of malodorous by-products from a bacterial environment.

How does New Zealand Merino wool work to keep the temperature constant?

New Zealand Merino wool fibres have a complex structure with a water-holding (hydrophilic) interior, known as the cortex and the water-repelling (hydrophobic) exterior known as the cuticle. New Zealand Merino wool fibres will absorb moisture vapour from the high humidity microclimate between the skin and the sock, and release the moisture to an area of lower humidity. As a result, the wearer feels less damp and stays comfortable for a longer period of time. This is of particular relevance to people with diabetes, as they require a sock that can warm the foot and maintain a stable temperature for long periods of the day and retain moisture to keep the skin well hydrated.
The New Zealand Merino wool fibre ensures thermostatic regulation by absorption and re-absorption of moisture away from the skin, insulating and regulating the skin surface temperature better than any other fibre. This naturally occurring thermostatic activity retains its temperature to heat the skin in colder climates or cool the skin in warmer climatic conditions. Therefore, it is recommended that these socks be worn during the winter months and it is possible to wear the lighter styles in the summer months without becoming too hot.

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Are these socks good for people who suffer with hot feet or cold feet?
Because of the capabilities of Merino wool to control temperature regulation, the socks are an obvious choice for people who suffer with cold feet and for people who suffer from hot feet. Nerve damage (neuropathy) may be causing the nerves to send unusual signals and it may be that you experience sensations of very cold feet or burning feet, as a direct result of diabetes-related nerve damage. If you experience these symptoms, you should discuss this with your doctor, podiatrist or healthcare professional. Cold feet can be a sign of impoverished circulation. If you experience these symptoms, you should discuss this with your doctor, podiatrist or healthcare professional. Following on from a health professionals recommendation, Paladin socks are recommended for people with Neuropathy and for people who suffer from cold or 'burning' feet.

Why are the socks indicated "left" and "right"?
Paladin Research has designed their socks specifically to recognise the fact that each foot is individual and that the arch region needs to be shaped to enhance the fit of the sock snugly to the foot. In addition the uniquely shaped cushioning pad on top of the foot needs to be precisely in the correct positioning to effectively protect the boney prominences and Dorsalis Pedis artery from compressive forces. The arch region has the elastic knitted in such a way to provide extra spring to the arch during walking.

How should the socks be washed?
Washing instructions are included separately. Ideally, in order to keep the best appearance, wash the socks inside out in a normal cycle and line dry. As with other woollen garments, it is advisable to avoid tumble drying.

Why are the socks more expensive compared to some other socks?
These socks are made with the very best authentic New Zealand Merino yarns that are selected specifically to perform the functions we require. SeaCell active, a Cellulose fibre containing seaweed and silver in a blended yarn, is developed using highly advanced processing technology. In addition, unique Hi-Tec technology has been developed to knit the socks and these are the most expensive. They allow us to knit socks with selective cushioning, so foot protection is positioned exactly where it is needed.

Why is the top of the sock so thick?
The Paladin knitting technique allows for the highest stretch top available. This makes entry to the sock easy and the double thickness helps to keep the foot warm without compromising valuable space inside the shoe.

Does the sock come in a range of colours?
Yes. We have selected a range of colours to compliment current direction in apparel and footwear.

How does the sizing work?
We have used the international sizing model. Each sock has sizing in various measurements for ease of selection. The size span is more limited for each size to give a customised fit.

Sizing	Small	Medium
NZ/UK	3 - 5.5	5 - 7.5
US Women	4 - 6.5	7 - 9.5
US Men		6 - 8.5
EUR	E 36 - 39	E 38 - 41

Sizing	Large	XLarge
NZ/UK	8 - 10.5	11 - 13.5
US Women	10 - 12.5	
US Men	9 - 11.5	12 - 4.5
EUR	E 42 - 45	E 46 - 49

glossary of terms

Abrasion The process of wearing or rubbing away through friction.
Anti-Static A surface accumulation of electricity on textiles which can discard as a mild shock. Paladin Socks are anti-static.
Anti-bacterial Anything that destroys bacteria or suppresses their growth or their ability to reproduce.
Antimycotic Inhibiting the growth of fungi; Antifungal.
Anatomical Of, or relating to anatomy.
Bacterium (pl: Bacteria) Common name for any member of the diverse group of procaryotic organisms.
Bony Prominences A normal outgrowth, or bony landmark.
Compression The act of compressing or being compressed - pertains to body tissues response to external force applied.
Cushioned Knitting a sock with loops which to provide density to the fabric to protect the foot.
Deep Vein Thrombosis (DVT) A blood clot in a major vein, usually in the legs and/or pelvis.
Diabetes mellitus type 1: Previously known as IDDM – insulin-dependant diabetes mellitus. Caused by the destruction of insulin-producing cells, resulting in insulin deficiency. (1)
Diabetes mellitus type 2: Previously known as NIDDM – non-insulin dependant diabetes mellitus. Of unknown cause but associated with a combination of insulin resistance and a relative insulin deficit. (1)
Diabetes-related amputation: Is defined as an amputation as a direct result of diabetes.
Dorsum (anat) The back of the hand, or the upper surface of the foot.
Dorsal The posterior surface.
Dorsalis pedis pulse The pulse located on the top of the foot as supplied from the dorsalis pedis artery.
Elastic A rubber or spandex core covered with nylon to provide extreme stretch and recovery
Elasticity Ability of a stretched fibre to return to its original state.
Exercise A subset of physical activity that is more formal and exertional in nature. It is planned, structured and repetitive in nature.
Friction The rubbing of one surface against another. Resistance to relative motion between two bodies in contact.
Holistic The practice of trying to treat the whole person not just the symptoms.
Insulin A hormone made in the pancreas that regulates blood sugar levels.
Insulin resistance Resistance by body tissues to the action of insulin. (2)
Lateral Of, at, towards, or from the side or sides.
Hypoallergenic The characteristic of producing little or no allergic reaction.
Medial Situated in the middle, towards the midline of the body.
Merino A special fine grade of wool sourced from Merino sheep. Special for its luxurious softness.
Metatarsal One of the five bones of the foot that articulate with the tarsal bones proximally and the phalanges distally.
Metatarso-phalageal joint The synovial joint between the head of the metatarsal and the proximal phalanx in the foot.
Neuropathy An abnormal state of the nervous system or nerves.
Nylon A man made fibre. Synthetic Polymer spun in a way to provide stretch and durability.
Oedema A condition characterised by an excess of watery fluid collecting in the cavities or tissues of the body.
Peripheral arterial disease Clinically defined as a disease of the peripheral blood vessels, characterised by narrowing and hardening of the arteries that supply the legs and feet, with resulting decrease in blood flow.
Peripheral neuropathy Loss of function due to degeneration of the nerves to the hands and feet.
Plantar Of, or relating to the sole of the foot.
Pulse The rhythmical throbbing of arteries produced by the regular contractions of the heart, especially as palpated at the wrist or in the neck.
Propulsion, propulsive (adj) The act or an instance of driving or pushing forward.
Reinforced (Ankle , Heel or Toe) To strengthen a high-stress area of the sock with a durable yarn such as nylon.
Resilience Merino wool fibre is made up of millions of coiled springs which will spring back to its original shape after being compressed.
Retinopathy(in Diabetes mellitus) defined as the presence of typical retinal microvascular lesions in an individual with diabetes.
Reverse toeseam The toeseam lies on the outside of the sock leaving a "seamless " surface on the inside of the sock next to the foot .
Seamless A loop by loop toe closure that provides no seam.
Shear A force that causes two adjacent layers to slide on each other in a direction parallel to their plane of contact.
Slow-healing wound: Is a term relating to the chronic nature of skin healing which takes usually six weeks or more to heal.
Synthetic Textile materials which are man made.
Textures The feel or appearance of a surface or substance.
Thermal Heat is provided as moisture is absorbed by the fibres in the paladin socks.
Vascular Made up of, or containing vessels for conveying blood.
Ulcer An open sore on an external or internal surface of the body.
Y Heel A method of knitting an extended heel pocket to create an anatomically correct fit.

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