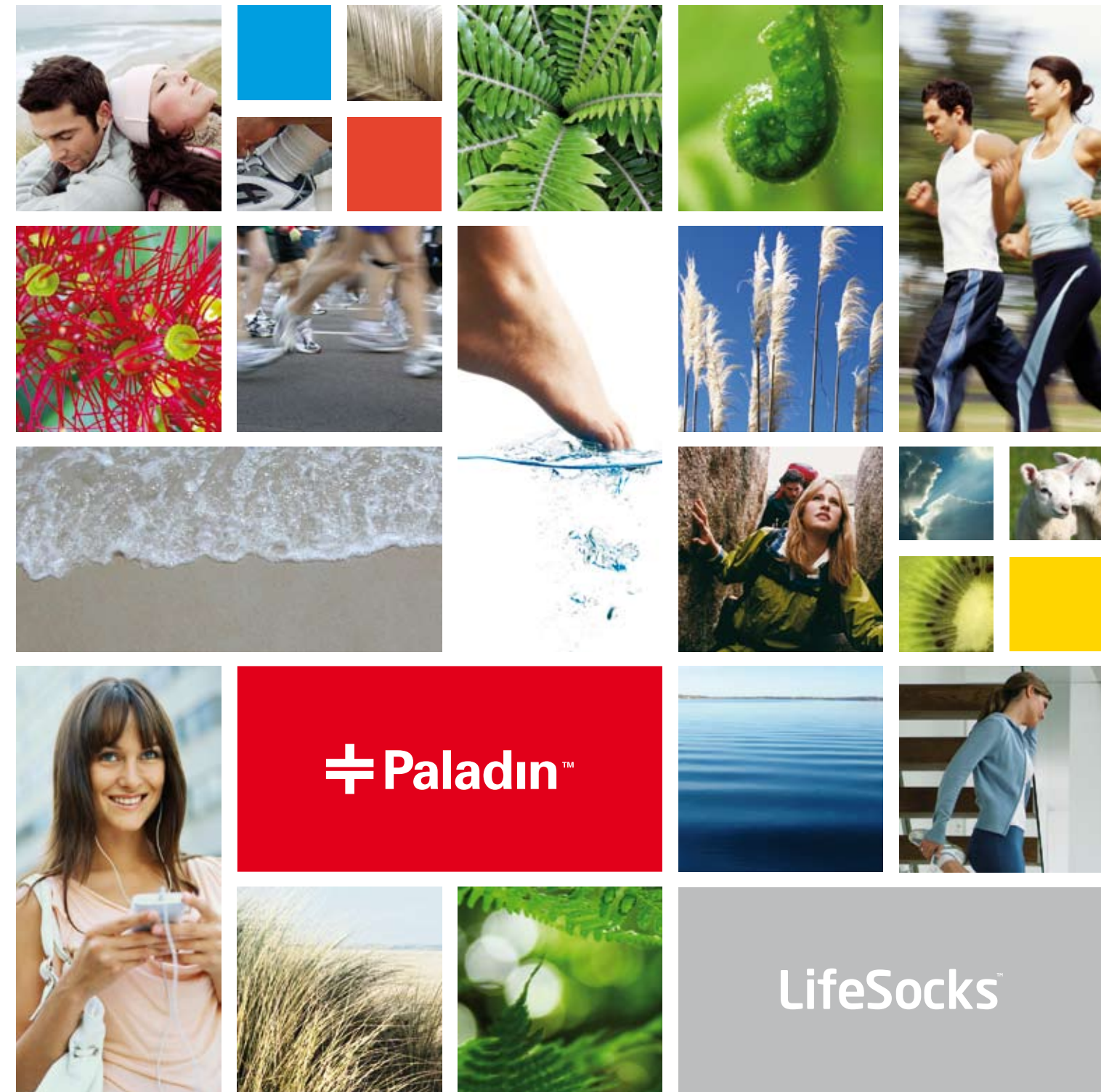




PaladinResearch™

Paladin Research, PO Box 179, Ashburton
New Zealand
www.paladinresearch.com



Paladin™

LifeSocks™

PaladinResearch™

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paladin research

 **PaladinResearch™**

Paladin Research Limited is proud to be a recently established New Zealand company dedicated to the design, development and marketing of innovative, high performance, high quality garments for both the medical and the health & wellbeing markets.

We do this by:

- **Identifying specific health conditions** which may be alleviated by the wearing of suitable items of clothing.
- **Finding solutions** by the design of protective and preventative products which also have high aesthetic appeal (i.e. they look good and feel good).
- **Translating these benefits** for the wider health & wellbeing sector by adapting our unique design features to create alternative lifestyle collections.

We believe in our products and we believe that everyone should have the opportunity to access these and enjoy the benefits.

We are committed to:

- Bringing both substance and integrity to our designs by employing the expert advice and knowledge of leading health professionals.
- Incorporating this expertise with the most advanced, cutting-edge technology available to us.

We gladly support environmentally sound practices and local and national industries by:

- Embracing natural over synthetic
- Sourcing the finest yarn from world leading, reputable companies
- Aligning with well-established N.Z. manufacturers to produce the exacting standards to satisfy our specifications.

Our potential to grow is vast. Our sights are definitely global.

With an increasing worldwide incidence in health-related issues, there is a corresponding advance in awareness by a well-informed, discerning sector of the population who are keen to take responsibility for their wellbeing by exploring preventative measures. We want to provide both markets with design-led, unique and distinctive solutions that refuse to compromise on quality.



⚔️ Paladin™

Paladin, pal'e-din, (hist.)

- n [latin palatinus, attached to the palace]
- i a knight of distinctive virtue; a knight-errant
- ii (myth.) a holy knight with the ability to heal by touch
- iii a champion: someone who fights for a cause

We wanted a name that reflected our ideals, a name that would conjure up a powerful visual reminder of what we are about.

We wanted a name we could aspire to, a name that encompassed our very reason for being.

As a figure of medieval literature, a Paladin was a knight of distinction, a champion who always sought a worthy cause to fight for to prove his honour and his virtue.

As a company in today's competitive markets, Paladin™ is a name that instantly identifies us as a socially responsive company, a company that sees a need and acts. This name embodies our commitment to provide distinctive, design-led solutions that will help create benefits for both the medical and the health & wellbeing sectors.



The Focus is on Feet.

Feet matter. They matter a lot. They deserve to be looked after.

Without sound, well-functioning feet, our lives would be very different.

We'd have far less freedom, far fewer choices.

The impact on our health and fitness could be immense.



The message to keep moving, to stop smoking, to keep walking, is everywhere.

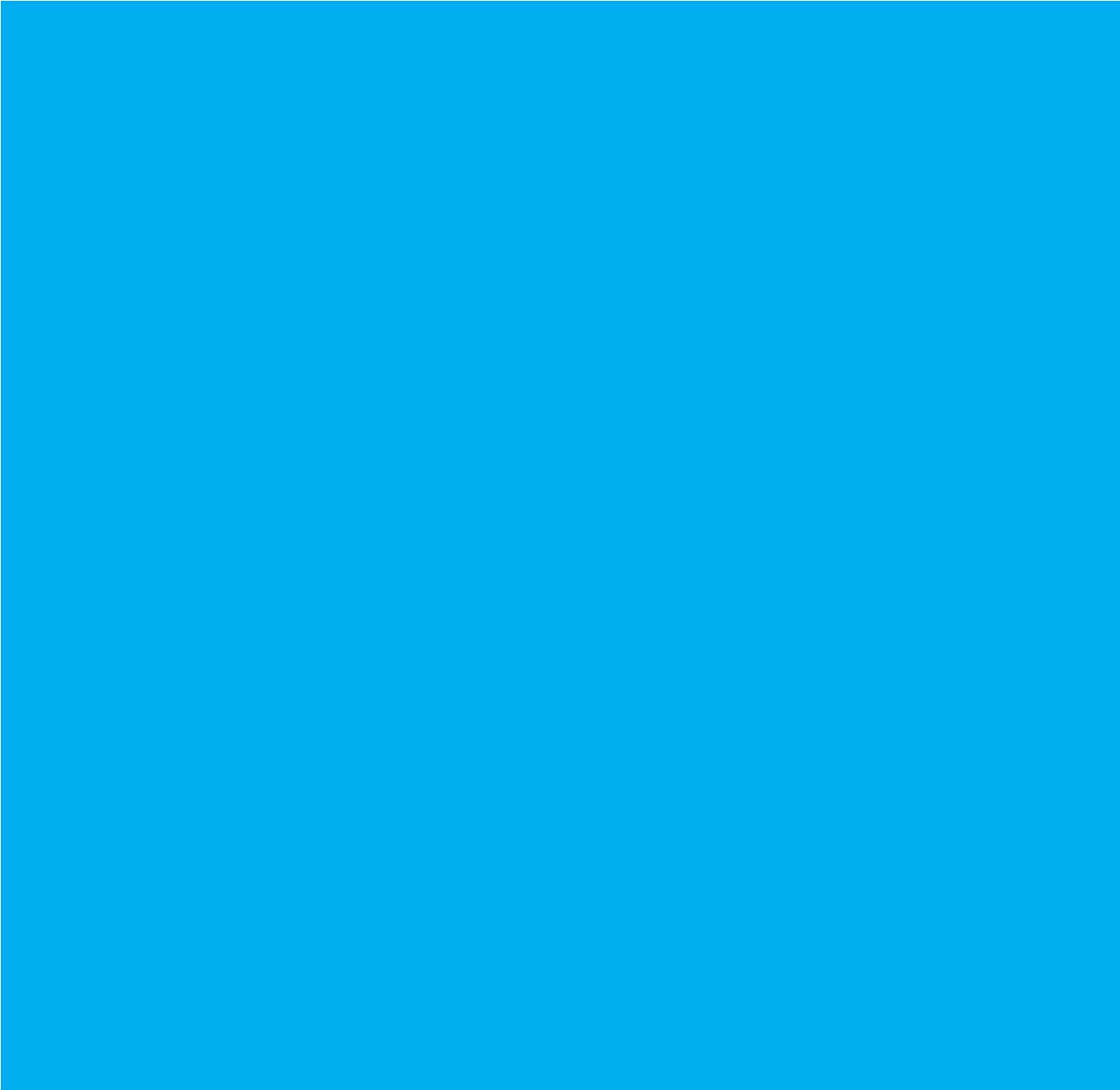
Our modern sedentary lifestyle is constantly under fire. Its contribution to our over-burdened health system is undeniable. Television and newspapers publicise a dramatic worldwide increase in the incidence of diseases such as diabetes, and display frightening statistics on the risks of incurring serious foot complications and amputations. Medical professionals and public health campaigns tirelessly promote the benefits of being active, while a flourishing wellbeing industry and the influential advertising media constantly reinforce an 'if you don't use it you'll lose it' philosophy.

Preventative health care is now in the spotlight and the humble foot, our fundamental and most reliable means of mobility, is currently receiving a lot of attention.

Discerning consumers are eager for solutions that will protect the foot and support its function. They want simple, safe and effective quality products that are natural and that deliver the best that technology can provide. They want products that feel good, that look good, and most importantly, that work. And this is where Paladin Research comes in.

In anticipation of and in response to these needs, and in consultation with expert clinical advisors, we have developed a range of innovative, high quality and high performance therapeutic socks designed to provide that vital, protective interface between the skin and the shoe.

Created specifically with the medical market in mind, and incorporating advanced design techniques with the benefits of a unique combination of natural fibres, Paladin sock solutions are a timely, convenient and pleasurable daily therapy treatment for all walks of life.



medical

Foot problems are a common complication in people with diabetes, due to the high risk of nerve damage, and to problems with the blood supply to the feet.

Injuries may go unnoticed because the nerve damage makes it difficult to feel pain, while a poor blood supply can interfere with the healing process for wounds. This may result in the formation of foot ulcers, which, if they become infected, may ultimately lead to amputation. Diabetes-related foot disease also significantly impacts on quality of life, causing pain and reduced mobility.¹

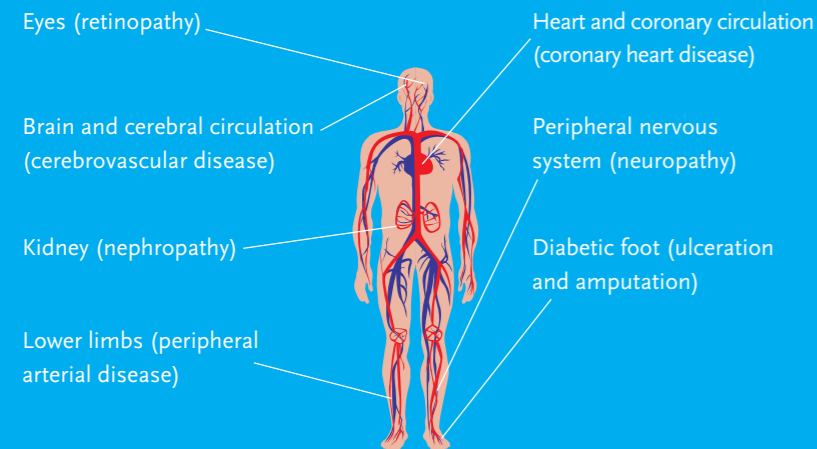
Maintaining intact skin is the best method of avoiding the negative consequences of diabetes-related foot disease. High-quality hosiery plays an essential role in this preventative strategy aiming to keep intact skin free from injury.²

The foot and diabetes

Emerging from the development of compression hosiery for flight travel, the market has now evolved and developed to encompass other products designed to address lower limb and foot problems which may result from medical conditions such as diabetes, arthritis and other circulatory and neurological disorders.

The complications of diabetes are strongly related to high blood sugar levels and are mostly correlated with the duration of diabetes. Long term complications may occur in type 1 and type 2 diabetes mellitus and can impact on the status and health of blood vessels to the heart and peripheries, the kidneys, eyes, feet and the nerves. Collectively, high sugar levels result in a slow progressive deterioration in individuals that cannot sustain high levels of sugar in the blood.

The major diabetic complications



Diabetes – related foot problems

Neuropathy (nerve damage) symptoms include:

- Loss of sensation in feet (numbness)
- Tingling or burning sensations
- Pins and needles sensation in feet
- Stabbing or sharp shooting pains in feet
- Inability to detect differences between hot and cold temperatures
- Inability to detect differences in surface textures when walking barefoot
- Inability to detect minor injuries to feet such as blisters or burns to skin
- Dry, cracked skin with loss of sweat gland function³

Peripheral arterial disease (circulation problems) signs & symptoms include:

- Poor blood flow, weak or absent pulses
- Skin appears pale, cold, dry, hairless
- Wounds sometimes painful and slow to heal
- Cramping calf pain, gradual and consistent, relieved by standing still and ceasing exercise
- Cramping calf pain usually affecting one leg only, triggered by exercise⁴



The statistics are alarming

About 15% of people with diabetes will have foot ulcers at some time in their life.⁵ People with diabetes are 25 times more likely to have a leg amputated than those without the disease.⁶ Somewhere in the world, a lower limb is lost to diabetes every 30 seconds.⁷

In 2000 there were approximately 171 million people worldwide with diabetes. This number is predicted to double over the next 25 years, to 366 million by 2030.⁷

Worldwide, up to 70% of all leg amputations happen to people with diabetes.⁷

85% of diabetes-related amputations are preceded by a foot ulcer.⁸

It takes on average 11 – 14 weeks for a diabetic foot ulcer to heal.⁹

Diabetes-related foot complications impose a large economic burden on society and on the individual.¹⁰



Why is it necessary for people with diabetes to have good quality socks and shoes?

New Zealand diabetes specialist podiatrists have worked closely with Paladin in the development of the Therapeutic Socks.

They understand the emphasis that needs to be placed on preventative strategies, such as offering optimal protection and prescribing high quality natural materials to improve the quality of life of their patients.

The good news is that a high percentage of all diabetes related amputations can be prevented once high-risk and at-risk people with diabetes receive appropriate preventative care.²

Attention to foot care, including the wearing of appropriate, protective footwear, is recognised as one of the most important preventative factors.

National and international evidence-based scientific literature and diabetes guidelines clearly comment on the essential requirement of protective footwear hosiery.⁹⁻¹² Appropriate, well-fitting shoes and socks play a significant role in the prevention of diabetes-related foot complications.

The safer the feet are inside protective, well fitting socks and shoes, the less likely they are to be injured. Complications such as slow-healing wounds and foot ulcers are then less likely to develop.²

The importance of wearing high-quality socks cannot be over-emphasised. Socks provide an important protective interface between the abrasive surfaces of the inside of the shoe and the skin. Socks are essential to protect the skin from the traumas of friction and shear stresses inside the shoe while walking, and to protect the skin from fluctuations in temperature that can cause chilling or thermal burns associated with friction.



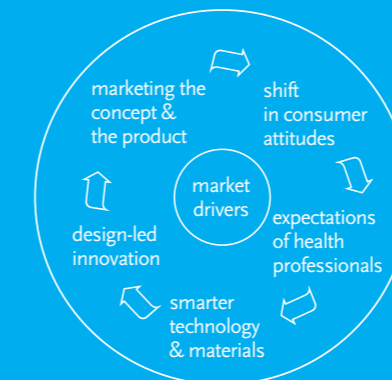


The sock is one of the last items of clothing to undergo a revolutionary change in design.

But today's smarter technology, new materials, a shift in consumer attitudes to their health issues, and the added expectations of health professionals for products that support the treatments, are driving the market opportunity for innovative, design-led solutions.

Sock design – current trends

- sophisticated, niche market products for specialist stores, exclusive retail outlets and web marketing
- natural yarns and innovations, including blended yarns for softness, moisture management and antibacterial assistance
- anatomical left and right foot design
- added comfort, supportive and protective features using strategic placement of cushioning and advanced elastic systems
- activity specific socks eg: trail running, mountain biking
- footwear specific socks eg: gumboots
- women specific socks in outdoor leisure market



The Paladin™ therapeutic sock

Created specifically for the medical market.
 Developed in consultation with expert clinical advisors.
 Produced with advanced, cutting-edge technology, and incorporating a unique combination of natural fibres.

Paladin's premium range of high-quality, high-performance socks deliver outstanding preventative & protective features.

These are designed to:

- reduce friction, shear and pressure
- provide effective temperature & moisture management
- offer resistance against compression
- assist in providing a bacteriostatic environment
- adapt to the individual shape of the foot
- offer safe, warm, non-constrictive hosiery
- provide an important protective interface between the skin and the shoe



CONSUMER PROBLEMS	PALADIN SOLUTION
Build up of odour, particularly with synthetics	Natural merino fibre combined with SeaCell active®, working together to inhibit the growth of bacteria and eliminate the presence of odour
Heat and moisture buildup	Natural merino fibre and SeaCell active® to effectively manage temperature and moisture Mesh panels and rib structures to aid air flow
Inadequate cushioning for protection	Anatomical cushioning strategically placed throughout for protection Dense cushion pad for added protection to bony prominences
Tight top cuff causing leg constriction	Double cuff, high-stretch top to ensure minimal compression
Irritating seams	Seamless toe closure for ridge-free comfort
Hard to pull on	High-stretch top with lateral stretch >320mm for easy slide-on
Poor shaping/poorly fitting	Trademarked Elastic Support System (ESS) for a snug, customised fit Y heel for an improved, wrinkle-free fit and pressure-point reduction Individual shaping for left and right foot
Bunching and ride-down	ESS locks the sock snugly onto the foot
Rubbing/friction	Merino wool and SeaCell active® knitted with ESS reduces friction

The wearer experience

- a softer feel
- superior comfort
- excellent support
- cushioning protection
- ideal warmth
- breathability
- less sweat/less odour
- minimal compression
- a snug, firm fit
- ease to slide on foot
- benefits of natural fibres
- healthier skin

the design

MEDICAL

The material components of the sock provide impact protection, injury avoidance, anti-frictional and anti-static properties, anti-bacterial and anti-mycotic properties. Resistance is provided against compressive and shearing forces to the heel, ankle, metatarsal regions and dorsal toe regions. The lateral and medial aspects of the foot are also protected from compression and frictional forces.

This sock is seamless, avoiding pressure from harsh ridging, skin irritation and abrasion, particularly over vulnerable pressure regions such as the top and tips of the toes. A red target symbol identifies the superficial positioning of the dorsalis pedis artery. Increased elasticity contoured into the plantar metatarsal arch region provides additional stretch capabilities in the arch.

The plantar metatarsal region has loop-pile cushioning anatomically designed to accommodate the metatarso-phalangeal joints, during the propulsive phase of gait. Loop-pile cushioning provides foot protection and comfort as well as leaving mesh spaces to reduce bulk inside footwear, enhancing air circulation and temperature regulation. The sock will stretch to accommodate wider ankles and calves, and will allow for a potential increase in mild ankle oedema.



*Patent applications pending:
PCT/NZ2006/000280
NZ 544020

The features

<p>Anatomy of foot.</p>	<p>Special alignment points are knitted into the sock; these allow the correct location of the Dorsal protection pad, giving protection from shoe and lace pressure.</p>	<p>The target symbol points to the superficial positioning of the dorsalis pedis artery.</p>

<p>Machine technology allows us to shape and place cushioning just where needed for foot protection and comfort.</p>	<p>Mesh and ribs are knitted into the sole of the sock for moisture management and temperature control.</p>	<p>The double cuff, high-stretch top ensures minimal compression.</p>



The Paladin Elastic Support System (ESS)

Our trademarked Elastic Support System (ESS) locks the sock onto the foot and the lower leg with minimal compression, providing support particularly under the plantar arch region.

By fitting snugly to the skin, this sock works to maintain regular skin temperature, thus avoiding fluctuations that may cause chilling or vasoconstriction.

Elastics: Elasticity is defined as the ability of a stretched fibre to return to its original size. In the Paladin therapeutic sock we employ the highest quality elastics available to provide stretch and recovery.

Elastic Support System ensures:

- a form-fitting system
- minimal compression
- a snug, customised fit
- no bunching or ride-down
- reduce friction & shear forces



The illustrated red areas indicate the strategic knitting of the ESS throughout the sock.



Pure. New Zealand Merino. Nature at its best

- a fine, natural, renewable fibre with outstanding insulating abilities
- designed by nature to protect the Merino sheep from the environmental extremes of New Zealand's Southern Alps
- works in harmony with the human body to buffer it from environmental change

Merino promises

- a natural, healthy alternative to synthetic fibres
- superior softness & comfort
- warmth without weight
- odour resistance
- an ability to breathe
- temperature & moisture management
- strength & durability
- extra resilience for impact protection

The New Zealand Merino difference

Our New Zealand Merino growers do things differently. The unique alpine environment in which New Zealand Merino thrive is renowned for producing exceptionally high quality Merino fibre, superior in its whiteness, softness, strength and durability.

Merino is a complex keratin protein-based fibre that shares a close compatibility with human skin, nails and hair. This makes Merino fibre a natural, harmonious choice when selecting hosiery to wear next to the skin and provide protection for the foot.

The wearer advantages:

The yarn selected for the Paladin sock is 100% pure New Zealand Merino, chosen for its remarkable natural ability to effectively manage both temperature and moisture.

Temperature is regulated by the natural crimp and resilience of Merino fibres which trap pockets of air, providing insulation and ensuring that the socks are comfortable to wear in all seasons. Put simply, your feet will feel warmer in colder climates and cooler in warmer conditions.

Moisture is managed by the way the fine, soft Merino fibres are able to repel liquid moisture and to absorb and transfer moisture vapour between the foot and the sock, preventing the feeling of dampness and discomfort. Your socks won't get smelly because odour-producing bacteria can not flourish easily in this environment. You are also less likely to experience the friction, rubbing and blistering that can occur if excessive fluid accumulates on the skin.

By retaining the moisture and naturally occurring oils that are produced when the skin sweats, the Merino fibres also assist in nourishing the skin, keeping it supple and flexible and helping to prevent cracking or splitting.

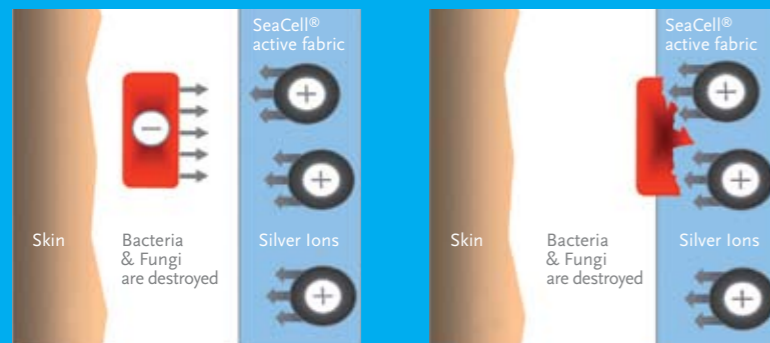




Cellulose + Seaweed + Silver = SeaCell active

Entwined within the thread of the New Zealand merino yarn is SeaCell active, an innovative, cellulose and seaweed-based fibre with extensive applications for medical textiles and situations where hygiene and cleanliness are important.

Developed in Germany as a natural alternative to conventional antibacterial fibres, the environmentally friendly SeaCell active is able to combine favourably with other textile fibres and natural substances. Because the foot is a region prone to increased sweating, this high-tech bioactive fibre has been selected by Paladin for inclusion in their medical sock material to address the problem of bacteria growth in an area where heat and humidity are frequently present.



The skin compatible SeaCell active fibres work by slowly releasing silver ions when coming into contact with moist, warm conditions. The non-toxic silver content acts by inhibiting the growth of bacteria and fungi, discouraging skin contamination and reducing the presence of odour.



While the merino fibres are working to insulate the foot, the soft and highly-absorbent SeaCell fibres also act to regulate moisture and hydrate the skin. Together these two complementary fibres provide an optimal local environment and maintain a delicate moisture balance far more effectively than that created by synthetic substitutes.

In the Paladin design, the durable SeaCell active fibres are strategically plaited into the inside of the sock during knitting to create maximum contact with the foot's surface.

SeaCell active benefits:

- skin compatible
- antimicrobial
- bacteriostatic
- anti-fungal
- anti-inflammatory
- hypo-allergenic
- odour inhibiting
- environmentally friendly
- safe, stable, and permanent in action, even after frequent washing



Treat your Feet

The Paladin medical range required a distinct packaging design to make the socks readily recognisable in the medical market. Identifying the style and function of the socks was a priority for the packaging face, whilst technical information on the reverse of the pack, allows the customer to understand the features and benefits of this unique brand.



Paladin Medical Range - Packaging

1. LifestyleMed
2. BaseMed.Women
3. BaseMed.Men
4. AirborneMed.Quarter
5. ProtectiveMed



*Patent applications pending:
PCT/NZ2006/000280
NZ 544020

Fabrication

Fibre Content

- 55% Merino Wool
- 29% Nylon
- 9% Elastic
- 4% SeaCell active
- 3% Lycra



LifestyleMed colourways



Paladin™ Medical RANGE

Treat your feet

BaseMed .Women Business & Casual Lightweight



Non-restrictive double cuff for easy slide-on, minimal compression and maximum stretch

Target system highlights Dorsalis Pedis Pulse

Anatomical cushioning strategically placed throughout for added protection and comfort

Unique*, double - density cushion padding to protect dorsal bony prominences from shoe pressure

Y heel for an improved, wrinkle-free fit and pressure-point reduction

Positioning points for correct alignment of sock

Mesh panels to aid airflow and to regulate moisture & temperature

Seamless toe closure for ridge-free comfort

Individual shaping for left and right foot



*Patent applications pending:
PCT/NZ2006/000280
NZ 544020

Fabrication

Fibre Content

- 60% Merino Wool
- 21% Nylon
- 9% Elastic
- 7% SeaCell active
- 3% Lycra



BaseMed .Women colourways



Paladin™ Medical RANGE

Treat your feet

BaseMed.Men Business & Casual Lightweight



*Patent applications pending:
PCT/NZ2006/000280
NZ 544020

Fabrication

Fibre Content

- 60% Merino Wool
- 21% Nylon
- 9% Elastic
- 7% SeaCell active
- 3% Lycra



BaseMed.Men colourways



Paladin™ Medical RANGE Treat your feet

AirborneMed.Quarter Sport & Play Midweight



Fabrication

Fibre Content

- 58% Merino Wool
- 25% Nylon
- 9% Elastic
- 5% SeaCell active
- 3% Lycra



AirborneMed.Quarter colourways



*Patent applications pending:
PCT/NZ2006/000280
NZ 544020

Paladin™ Medical RANGE

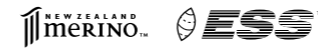
Treat your feet



*Patent applications pending:
PCT/NZ2006/000280
NZ 544020

Fabrication







Fibre Content
60% Merino Wool
30% Nylon
10% Elastic



ProtectiveMed colourways



Paladin™ Medical RANGE Treat your feet

					
	LifestyleMed	BaseMed . Women	BaseMed . Men	AirborneMed . Quarter	ProtectiveMed
Style	P008	P011	P012	P009	P010
Weight	midweight	lightweight	lightweight	midweight	heavyweight
Double Cuff	LONG	SHORT	SHORT	SHORT	LONG
Lateral Stretch	270mm	240mm	240mm	245mm	320mm
Y heel	●	●	●	●	
Elastic Support System	●	●	●	●	●
Unisex	●			●	●
Women's Only		●			
Men's Only			●		
Flexible Panel	●			●	
L & R Shaping	●	●	●	●	●
Mesh Pads	●	●	●	●	●
Protection U Pad	●	●	●	●	●
Seamless Toe Closure	●	●	●	●	●
SeaCell active	●	●	●	●	●
Composition	55% Merino 29% Nylon 9% Elastic 4% SeaCell 3% Lycra	60% Merino 21% Nylon 9% Elastic 7% SeaCell 3% Lycra	60% Merino 21% Nylon 9% Elastic 7% SeaCell 3% Lycra	58% Merino 25% Nylon 9% Elastic 5% SeaCell 3% Lycra	60% Merino 30% Nylon 10% Elastic
Sole Pad Thickness	4mm	4mm	4mm	4mm	6mm

Letters of introduction, assessment and feedback forms along with samples of the Paladin therapeutic socks were sent out to 33 podiatrists with at least 10 eligible patients each, from practices located throughout New Zealand. The purpose of the sample was to determine the demand and requirements for a therapeutic sock which offers consumers a naturally harmonious alternative material to the synthetic options currently available.

Information was given on the Paladin design philosophy and distinctive design features, introducing the product as a health sock that not only afforded superior protection to the feet from pressure, friction and shearing forces, but was also extremely comfortable to wear. Those requested to sample the Paladin sock and respond to the questionnaires included:

- a) podiatrists
- b) candidates (clients and patients) who were within the following eligibility criteria:
 - Diagnosed with type 1 or type 2 Diabetes mellitus, classified low risk, who had:
 - no impaired sensation in the feet
 - no previous history of ulceration
 - no significant clinical evidence of limb-threatening pedal complications of diabetes
 - The ideal candidates were newly diagnosed with no current risk of diabetes-related foot complications. They were to have palpable pedal pulses and no history of peripheral arterial disease.
- c) equal gender representation and a wide age group (teenage to 80 years) were also to be covered.

1. Each candidate was provided with two pairs of socks and asked to wear these as much as possible and in as many different sporting, leisure and formal activities as possible within the four week trial.
2. Suggested activities included walking, running, cycling, skiing, playing golf, exercising at the gym, working in the office, working in industrial areas wearing work boots, and working on the farm wearing gumboots.
3. The sample groups were further instructed to trial the socks while wearing as many different styles and types of footwear as possible.
4. One sample group was required to wear the socks for four consecutive days without washing the socks, and was instructed to air the socks each night and wash them on the fourth day.

Each patient was given an assessment form to fill out at the end of the trial period. The user-friendly, predominantly tick-box questionnaire included general questions about the individual's sock use and buying preferences, as well as his or her reaction to and experience and assessment of the Paladin therapeutic sock.

Podiatrists were also issued with a feedback form requesting their personal wearing experience and assessment of the sock, rating it for features such as: comfort, cushioning, warmth, fit, protection, style, airflow capacity, as well as temperature, moisture & odour control. They were also asked to comment on the value of the information provided, and asked if they would prescribe the product to their patients, confident that it would provide a safe and effective protective interface between the skin of the foot and the shoe.

The data received from the sample population can be broadly divided into two categories: responses with regard to the material of the sock, and responses relating to the specific design features, although it is often a combination of these factors that contributes to a particular result.

- a) The feedback was overwhelmingly positive about the use of New Zealand Merino wool in the Paladin sock, commenting favourably on the lack of odour produced and on its capacity to remain warm, soft and comfortable during exercise and afterwards. Many noted a sustained increase in warmth to the feet, suggesting that the ability of Merino fibres to manage moisture and resist the build-up of dampness and odour is why the candidates were able to tolerate long periods of wear in various active and leisure situations and still maintain a sensation of warmth and comfort.
- b) The supportive close-fitting design of the sock also drew many favourable responses, concluding that this too assisted in the retention of a warm environment, while at the same time contributing markedly to a reduction in skin friction and blister formation in the predisposed active population. The mesh panels were deduced to further facilitate this result, by increasing the airflow and avoiding the build-up of excess water against the skin.

Particular mention was given to the ease in which the sock was able to be put on and taken off, and positive feedback was unanimous with regard to the non-restrictive high-stretch cuff which allowed a relaxed and comfortable fit around the lower calf region without the tendency to fall down.

Podiatrists showed confidence in the opportunity the Paladin socks offer to their diabetic patients, namely that of acting as a protective buffer from frictional and shearing stresses that would otherwise impact on the skin of the foot, as well as effectively managing temperature and moisture to maintain softness and suppleness of the skin.

Paladin™

This compact stand, allows you the flexibility to display the Paladin Medical range in your clinic or centre without restricting floor space. Keeping the stand simple in design, allows your customers to be drawn to the unique packaging design and makes their style recognition and choice as simple as possible.



Paladin Medical Advertising

Moral Fibres.
Made with environmentally sustainable pure Merino wool and natural SeaCell fibres.

Experience a new level of comfort, ease and protection. Developed specifically for the medical market, Paladin Therapeutic Socks offer outstanding protective features designed to reduce friction, shear and pressure.

Paladin™
Paladin Research, PO Box 179
Ashburton, New Zealand
www.paladinresearch.com

MERINO
SEACELL
ELASTIC SUPPORT SYSTEM

Dorsal pedis pulse

Designer threads.
Medically designed for superior softness, warmth and breathability.

Experience a new level of comfort, ease and protection. Developed specifically for the medical market, Paladin Therapeutic Socks offer outstanding protective features designed to reduce friction, shear and pressure.

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MERINO
SEACELL
ELASTIC SUPPORT SYSTEM

Dorsal pedis pulse



	PARTNERS	CONSUMERS / PUBLIC
Public Relations	Leading Diabetes publications Health journals Podiatry association bulletins	
Education Clinics	Training DVD Product education booklet Technical worksheets	Product education booklet
Promotion	Sample kits	World Diabetes Week
Point of Sale (POS)	Posters Display systems	Quick reference POS selection chart
Advertising	Advert series to use in your local area	
On Line	Stockist finder referral Links Diabetes & Podiatry Website bulletin	
Events	Trade expo Conference support	
Sponsorship	Related research	Heart Foundation Diabetes societies Podiatry school student awards Health run/walk events Arthritis Society

Projected Channel Partners

PROFESSIONAL	MEDICAL	RETAIL
Clinical practitioners • Podiatrists • Physiotherapists Located within • Specialist clinics • Sportsmed centres • Diabetic clinics • Footcare clinics	Medical distributors supplying • Hospitals • Aged care • Orthotics	Pharmacies





health & wellbeing

The worldwide Health and Wellbeing industry is booming. Vast numbers of new products are entering the market each year as consumers are becoming increasingly aware about what may be best for their health and vitality.

The industry is based around the notion of wellness, which can be broadly defined as “the quality or state of being in good health, especially as an actively sought goal.”

Encompassing conventional approaches to health and the alternative, holistic therapies, the defining characteristic of these groups is that the individual voluntarily takes a proactive position and assumes responsibility for his or her future health by adopting a change in lifestyle. 'Choice' is the operative word here.

From within this strongly motivated industry, a new and highly influential consumer group known as LOHAS (Lifestyles of Health and Sustainability) is making itself heard in the global market place. Linked by common social, political and ethical principles, the defining characteristics of these consumers include:

- a strong focus on personal development, truth and integrity
- an active concern about human rights, fair trade and equal opportunity

- a deep concern about sustainable development and the future of the environment
- a desire to buy products and services from companies that hold similar values to their own
- a willingness to pay on average 20% more for these products

The products and services they are interested in currently represent \$540 billion in the worldwide market place.





At Paladin we believe that everyone should be able to enjoy the benefits of our high performance, high quality therapeutic socks. We know that the outstanding protective features together with our unique combination yarn (natural, renewable New Zealand Merino and skin-compatible SeaCell) create a highly desirable product for all those serious about their own wellbeing and that of the environment.

With this in mind, our premium range of LifeSocks has been developed to offer all the advantages of our medical design to anyone who wants to do what's best for his or her health. Our LifeSock styles feature the same extensive weight and occasion choice as available in the medical range, and includes an additional lightweight, active & leisure sock for those who want an invisible cuff, as well as a heavyweight, undyed outdoor and work sock for those who prefer the natural look.

LifeSocks look good, feel great, and promise the wearer:

- superior softness, comfort & support
- safe and effective cushioning protection
- breathable natural fibres for ideal temperature & moisture management
- an environment which discourages skin-contamination
- easy slide-on, well-fitting, non-constrictive hosiery



*Patent applications pending:
PCT/NZ2006/000280
NZ 544020





Treat your Feet

Our LifeSocks brand has strong diversity in the product range available for consumers. The packaging design has been specifically developed for easy recognition by the consumer of the attributes, function, and benefits of each style. Strong imagery and bold text creates a unique look for the brand in store, while extra information is easy accessible on the reverse of the packaging for consumer education.



LifeSocks Range - Packaging

1. LifestylePlus
2. BasePlus.Women
3. BasePlus.Men
4. AirbornePlus.Quarter
5. AirborneLite.Invisible
6. ProtectivePlus
7. OriginExtra

LifestylePlus Everyday Anywhere Midweight

D DRESS
C CASUAL
O OUTDOOR



UNISEX
LIGHT CUSHIONING
MID CALF

*Patent applications pending:
PCT/NZ2006/000280
NZ 544020

Fabrication

Fibre Content
55% Merino Wool
29% Nylon
9% Elastic
4% SeaCell active
3% Lycra



LifestylePlus colourways



LifeSocks RANGE

Treat your feet

BasePlus . Women Dress & Casual Lightweight

D
DRESS

C
CASUAL



FEMALE

LIGHT CUSHIONING

MID CALF

*Patent applications pending:
PCT/NZ2006/000280
NZ 544020

Fabrication

Fibre Content
60% Merino Wool
21% Nylon
9% Elastic
7% SeaCell active
3% Lycra



BasePlus.Women colourways



LifeSocks RANGE

Treat your feet

BasePlus.Men Business & Casual Lightweight

D
DRESS

C
CASUAL



MALE

LIGHT CUSHIONING

MID CALF

*Patent applications pending:
PCT/NZ2006/000280
NZ 544020

Fabrication

Fibre Content
60% Merino Wool
21% Nylon
9% Elastic
7% SeaCell active
3% Lycra



BasePlus.Men colourways



Black String Kalamata



Navy



LifeSocks RANGE

Treat your feet

AirbornePlus.Quarter Sport & Play Midweight



*Patent applications pending:
PCT/NZ2006/000280
NZ 544020

Fabrication

Fibre Content
58% Merino Wool
25% Nylon
9% Elastic
5% SeaCell active
3% Lycra



AirbornePlus.Quarter colourways



LifeSocks RANGE

Treat your feet

AirborneLite.Invisible

Active & Leisure Lightweight



*Patent applications pending:
PCT/NZ2006/000280
NZ 544020

Fabrication

Fibre Content

- 60% Merino Wool
- 24% Nylon
- 8% Elastic
- 5% SeaCell active
- 3% Lycra



AirborneLite.Invisible colourways



LifeSocks RANGE

Treat your feet

ProtectivePlus Adventure & Outdoor Heavyweight



*Patent applications pending:
PCT/NZ2006/000280
NZ 544020

Fabrication

Fibre Content
60% Merino Wool
30% Nylon
10% Elastic



ProtectivePlus colourways



LifeSocks RANGE

Treat your feet

OriginExtra Rural & Urban Heavyweight



*Patent applications pending:
PCT/NZ2006/000280
NZ 544020

Fabrication

Fibre Content
60% Merino Wool
30% Nylon
10% Elastic










OriginExtra colourways



LifeSocks RANGE

Treat your feet

LifeSocks [™] RANGE	 LifestylePlus	 BasePlus . Women	 BasePlus . Men	 Airborne Plus . Quarter	 Airborne Lite . Invisible	 ProtectivePlus	 OriginExtra
Style	Poo1	Poo2	Poo5	Poo3	Poo4	Poo6	Poo7
Weight	midweight	lightweight	lightweight	midweight	lightweight	heavyweight	heavyweight
Double cuff	LONG	SHORT	SHORT	SHORT		LONG	LONG
Lateral Stretch	270mm	240mm	240mm	245mm	180mm	320mm	320mm
Y heel	●	●	●	●	●		
Elastic Support System	●	●	●	●	●	●	●
Unisex	●			●	●	●	●
Women Only		●					
Men Only			●				
Flexible Panel	●			●	●		
L & R Shaping	●	●	●	●	●	●	●
Mesh Pads	●	●	●	●	●	●	
Protection U Pad	●	●	●	●	●	●	●
Seamless Toe Closure	●	●	●	●	●		
SeaCell active	●	●	●	●	●		
Composition	55% Merino 29%Nylon 9% Elastic 4% SeaCell 3% Lycra	60% Merino 21% Nylon 9% Elastic 7% SeaCell 3% Lycra	60% Merino 21% Nylon 9% Elastic 7% SeaCell 3% Lycra	58% Merino 25% Nylon 9% Elastic 5% SeaCell 3% Lycra	60% Merino 24% Nylon 8% Elastic 5% SeaCell 3% Lycra	60% Merino 30% Nylon 10% Elastic	60% Merino 30% Nylon 10% Elastic
Sole Pad Thickness	4mm	4mm	4mm	4mm	4mm	6mm	6mm



LifeSocks™

Taking up only 0.57m² of floor space, this revolving metal and wood combination freestanding display unit can be merchandised on all four sides with a stocking capacity of between 108 and 216 pairs of LifeSocks. Specially designed to display this unique brand, the packaging remains the focus, whilst being presented on a practical, visually appealing unit to enhance the appeal of the brand instore.



LifeSocks Advertising and Store Displays

Loves long walks and marathons.
LifeSocks for life

Therapeutic LifeSocks Treat your Feet

Airborne . Quarter
Sport & Play, also available in Airborne . Invisible

Experience a new level of comfort, ease and protection. Originally developed for the medical market, Paladin therapeutic LifeSocks are now available for YOU to enjoy.

Paladin Research, PO Box 119 Ashburton, New Zealand www.paladinresearch.com

Paladin

TOUGH,
with a warm, softer side.
LifeSocks for life

Therapeutic LifeSocks Treat your Feet

OriginExtra
Rural & Urban, for Men or Women

Experience a new level of comfort, ease and protection. Originally developed for the medical market, Paladin therapeutic LifeSocks are now available for YOU to enjoy.

Paladin Research, PO Box 119 Ashburton, New Zealand www.paladinresearch.com

Paladin

LifeSocks™

	PARTNERS	CONSUMERS / PUBLIC
Public Relations	Training by Paladin staff and Press Conference	Press Releases
Education Clinics	Training DVD Product education booklet	Product education booklet Consumer training by Paladin staff
Promotion	Sample kits	World Diabetes Week
Point of Sale (POS)	Posters Display systems	Quick reference POS selection chart
Advertising	Advert series to use in your local area	Medical journals, Lifestyle magazines, major daily papers
On Line	Stockist finder referral Link Website bulletin	Product & stockists information
Events	Trade expo Conference support	Participation at consumer events
Sponsorship	Related research Product availability	Consumer sponsorship

Projected Channel Partners			
SPECIALIST		SELECTED	
Sports stores	Footwear stores	Outdoor & Sports stores	Department stores





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.

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

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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