

Skin Care & Protection

 Shear Comfort®



An Introduction to Shear Comfort™



BES Healthcare Ltd is a provider of specialised skin protection products for the requirements of modern healthcare.

We have over two decades of experience in the healthcare arena. Because of this experience we understand three key things about modern healthcare: it can take time, it can cost money, and it can be complicated. But this need not be the case. We aim to address this with our range of products that not only improve the quality of life and assist in day-to-day living activities of the end user. We also offer the clinician, technician, or specialist an effective, affordable, and straightforward tool to achieve positive results time and time again. We do this through the Shear Comfort™ range, of which our sister company, Healthcare Innovations Australia Pty Ltd (HIA), are the sole producer.

The Shear Comfort™ Natural range of skin care and footwear is manufactured from medical grade natural sheepskin, meeting the Australian Standard for Textiles for Health Care Facilities and Institutions (AS4480.1) and that is processed through

- **Lanolin, which causes some people to be allergic to wool, is removed from Shear Comfort™ in the tanning process**
- **Wool can wick away moisture, re-distribute pressure, reduce shear & friction, and provide microclimate control**

an advanced, multi-stage tanning process. This ensures that not only do all Shear Comfort™ Natural products retain the proven efficacy of natural sheepskin (pressure redistribution, shear reduction, water vapour dissipation, and heat control), but can also go safely through standard thermal disinfection procedures. Thus Shear Comfort™ Natural products can withstand multiple washes up to 80°C, effectively killing any bacteria. A further benefit of the tanning process is that it makes the skins urea-resistant, meaning that the leather will not harden as a result of interaction with skin secretions.

Shear Comfort XD1900™

Along with the Shear Comfort™ range, we also manufacture an XD1900™ range of footwear and skin care products. These products are manufactured through our proprietary manufacturing techniques of taking natural wool and weaving it into a density of 1900 gsm, i.e. more fibres per square metre than is possible in a natural sheepskin. This is done by weaving natural wool fibres onto fabric backing, creating a product which is more effective at redistributing pressure, lighter to carry, and easier to wash. The Shear Comfort XD1900™ range can even be washed with normal detergent above 80°C.

All Shear Comfort™ Natural and XD1900™ Skin Care products are fire retardant and carry the medical Class I CE mark, meaning you can be assured of receiving the highest possible quality designed for specific medical benefits. See the following pages for the health benefits of wool, and pages 6-10 for Clinical benefits.



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Get in touch with us:

Telephone: +44 (0) 1179 666 761 Fax: +44 (0) 1179 637 373

General Enquiries: info@beshealthcare.net Orders: orders@beshealthcare.net

Web address: www.beshealthcare.net

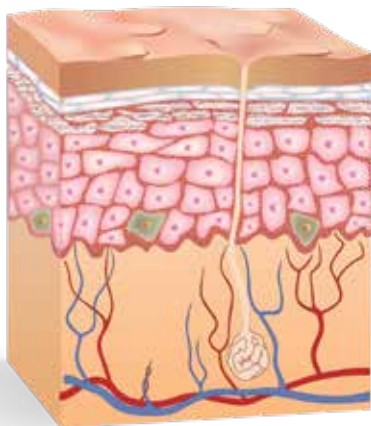
Looking After Our Skin

The skin is our largest organ and the barrier protecting the cells and mechanisms inside our bodies from the outside world. It is therefore important to be aware of the causes of harm that the skin encounters, and how we can protect against these harms as much as possible. In this brochure we look at the different potential physical and biomechanical

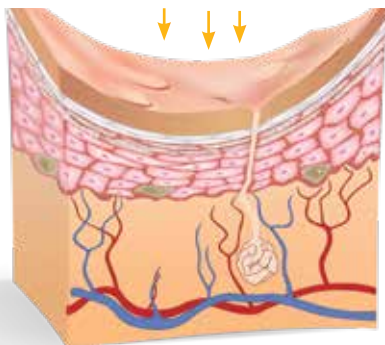
harms, and their consequences. We also look at how the materials that interface with the skin, on the one hand, can increase or, on the other, can ameliorate or lessen the threats to our tissue integrity. For many years, Pressure Ulcers (PU) (pressure sores or decubitus ulcers as they used to be known) have been associated with pressure build up on tissues.

These days, however, damage from pressure on its own is considered to be more harmful at greater tissue depths, nearer bones and deeper structures, whereas damage leading to Stage 1 and 2 ulcers at the surface (i.e. the majority of PU) are more often caused by other effects on the skin.

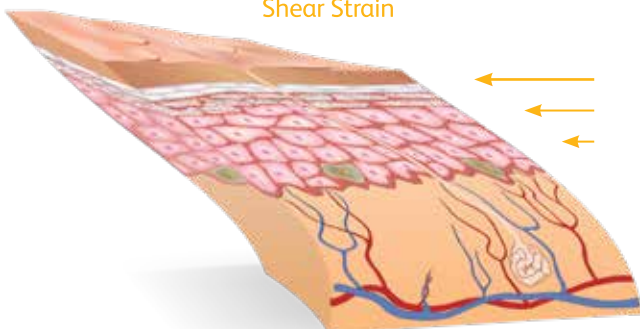
Unaffected Skin



Under Pressure



Shear Strain



Risk factors for skin health:

- 📦 **Friction** – caused by the skin being dragged across a surface.
- 📦 **Shear Forces** – causing distortion of the cells of the skin and thereby affecting the ability of the cells to function healthily (see opposite page).
- 📦 **Moisture** – in the same way that our skin becomes discoloured and distorted when we have been in the bath or shower for too long, perspiration build up can lead to maceration and excoriation of the skin, and consequently place it at more risk of damage.
- 📦 **Temperature** – placing the skin in a cold environment leads to capillary closure which will restrict the supply of nutrients to the cells of the skin. Conversely, raising the temperature of the skin leads to greater demands for nutrients and oxygen, and results in greater amounts of waste materials to be disposed of (1°C increase leads to 13% higher metabolic demand).
- 📦 **Air Flow** – the combination of air flow across the skin surface, and the insulating effects of air contained within clothing or support surfaces, have major impacts on the above two effects, moisture and temperature.

As discussed over pages 6 to 9, natural materials, such as wool, are some of the best solutions to help protect the skin from these potentially harmful effects, whereas most synthetic materials place the skin under greater risk.

Confirmation of the clinical benefits of Shear Comfort™ wool products are covered on pages 10 and 11.

Tissue Integrity

Pressure, Shear Forces, and Friction

The forces of Pressure, Shear, and Friction are individually and collectively potential causes of damage to skin, but are also important elements of keeping us in our seats! So what are the differences, what are their benefits, and what is the damage they can produce?

To get a better understanding of the differences between these elements, try the following exercise. Place your hands together as in a praying position:

Pressure

As you push one hand towards the other, the forces you feel are Pressure – at right angles to the surfaces (palms) of the hands.



Shear

While the hands are pushed together, try to slide one hand up and one hand down without either hand actually moving. The forces in those up and down directions being felt on the skin is known as Shear Stress (and will be at right angles to the Pressure forces). You will also be able to sense the skin under the surface being distorted by this action: this distortion is called Shear Strain.



Friction

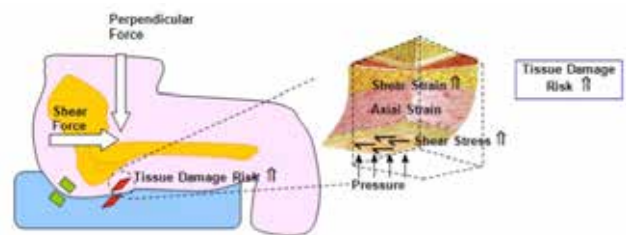
If the up and down forces are increased, eventually the two hands will slide apart. This movement provides Friction as the two skin surfaces resist moving over each other.

Pressure

Without gravity holding us down, and creating pressure, we would be floating around in space. Thus some pressure is a good thing. However, too much pressure for too long can be damaging, allowing blood vessels to be occluded, and vertical distortion of tissues alongside non-compressible items such as bone. The damaging effects are not immediate, and hence regular changes of position are advocated to stop localised pressure build-up for too long.

Shear Forces

Shear Forces, on the other hand, produce immediate and potentially more harmful Shear Strain distortions to both blood vessels and to cell tissues. If you take a garden hose (with the tap turned on), pinching the hose (applying pressure) will slow the water flow somewhat. However, kinking the hose (applying shear strain) will stop the flow completely. The Shear Strain that happens around our skin where it meets the support surface when we sit or lie down will not only affect the blood vessels in the same way as the hose is distorted (and thus have a more drastic affect than pressure on its own), it will also distort the cells of the skin. This latter distortion affects the cell's ability to control its contents: this 'reshaping' of the cell disrupts the active and passive transport of nutrients and waste products across the cell walls. The degree to which the support surface can absorb these distortions will reduce the distortions to the skin's cells.



Friction

When the Shear Forces reach the point where the Shear Stress between two surfaces cannot hold the two surfaces together any longer, the surfaces will move over each other, and result in Friction between the two surfaces. At this stage there will probably be less Shear Strain on the tissues under the skin, but the cells on the skin surface may get damaged, i.e. friction damage. The resistance to movement is important to keep us in position, but in doing so may increase the Shear Strain. Again, the materials of the support surface will have a major influence on the potential damage caused to the skin when movement occurs across the surface.

The Benefits of Wool

for Tissue Integrity

The studies referred to on page 10 give the research evidence that shows that high grade wool products are effective in reducing the incidence of pressure ulcers. But what are the unique properties of wool that make these products so effective?

Gefen (2011) showed that skin breakdown increases with increased skin temperature, increased ambient temperature, increased relative humidity, increased skin contact pressure, and decreased permeability of materials touching the skin. Wool-based products are the ideal basis for tissue integrity solutions to meet these challenges, in that they minimise the influence of these elements identified by Gefen.

Moisture Reduction

Moisture build up next to the skin can lead to maceration at the surface, affecting the properties of the skin. Wool is hydrophilic, meaning that it takes up or wicks away moisture from the skin. Wool

can hold up to a third of its weight of water vapour before 'feeling' wet, and therefore helps to protect against maceration, and leads to greater comfort.

Temperature Regulation

Temperature affects at the skin are important. Resting humans eliminate 25 % of their basal metabolic rate through the skin. Sitting on a cold surface results in capillary closure, which in turn results in reduced supply and exchange of nutrients to the cells of the skin. Conversely, increased temperature results in a higher metabolic rate: a five degree increase in temperature creates a 35-40 % increase in 'metabolic

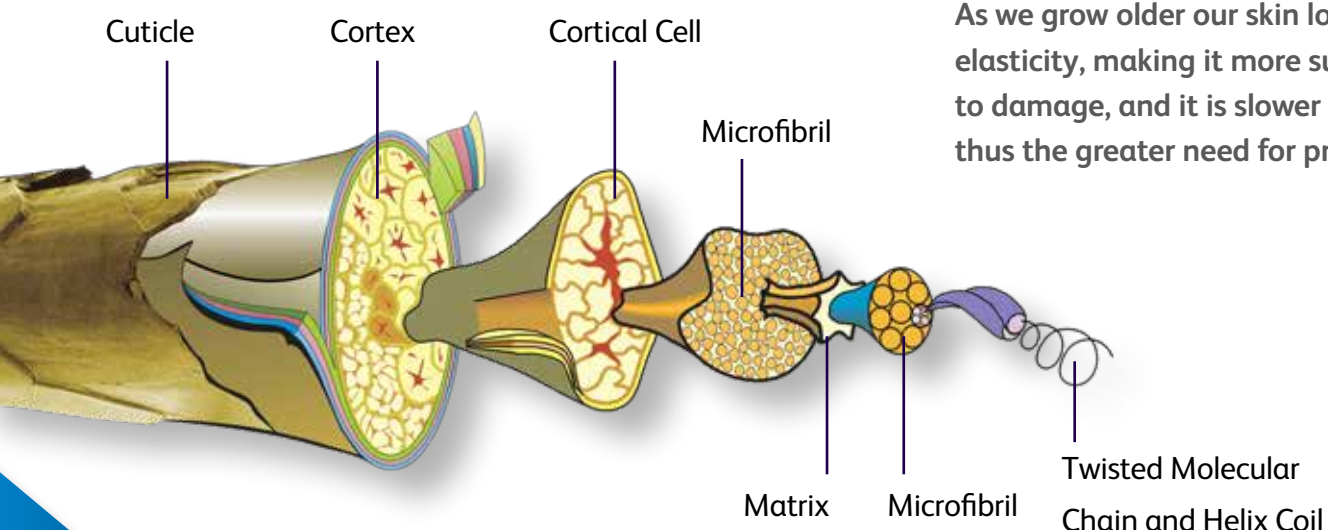
stress', meaning available nutrients are used up, and waste products build up more quickly.

Also, as body temperatures rise, sweating increases. The air zone encapsulated by the fibres in wool insulates against the cold, while allowing the air to circulate when it gets hot. Wool's ability to wick away moisture assists the body's natural cooling mechanism of sweating.

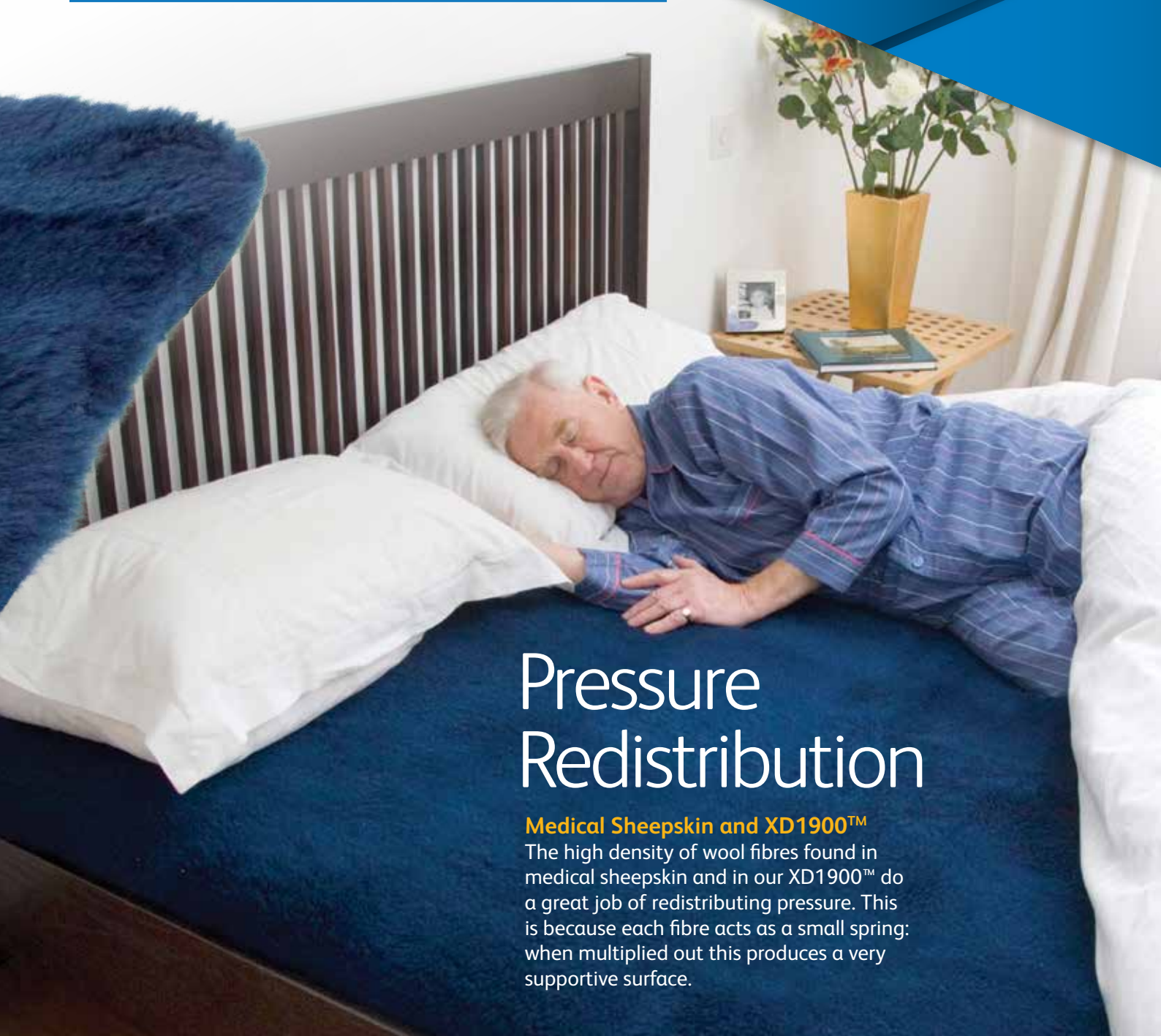
Gefen, A (2011) How do microclimate factors affect the risk for superficial pressure ulcers: A mathematical modeling study, *Journal Tissue Viability* 20, 81-88.

For centuries Bedouins in the heat of the Sahara desert have used merino wool clothing to keep cool! The fine fibres allow air to circulate and sweat to pass through and evaporate.

Wool Fibre Structure



As we grow older our skin loses its elasticity, making it more susceptible to damage, and it is slower to repair, thus the greater need for protection.

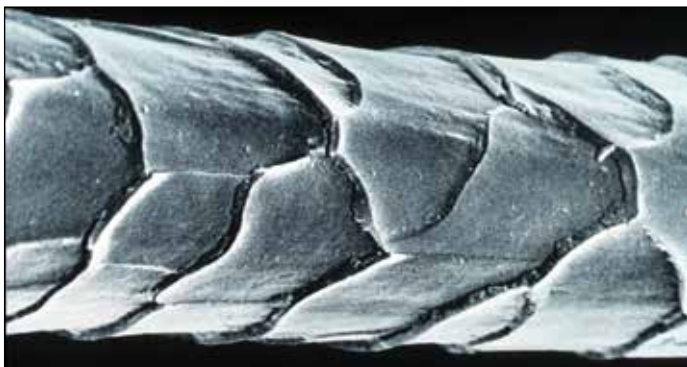


Pressure Redistribution

Medical Sheepskin and XD1900™

The high density of wool fibres found in medical sheepskin and in our XD1900™ do a great job of redistributing pressure. This is because each fibre acts as a small spring: when multiplied out this produces a very supportive surface.

Friction and Shear Reduction



Friction from movement across bed surfaces, and shear displacement of body soft tissues, can lead to long term tissue damage. The outer protein layer of the wool fibre is very smooth making the fibres slippery. This means one's skin can move across a wool surface with lessened resistance. This also allows the fibres to move past one another easily – the fibres move with the user's movements rather than pulling on the skin, thereby reducing frictional forces. The ability of the wool pile to collapse sideways under pressure reduces the shear forces – this varies according to the 'nap' of the wool in the support surface: there is less resistance in one direction than the other. This is similar to the pile of an animal's fur, which feels smooth when you stroke it in one direction, and rough when the direction is reversed.

XD1900™

Extra Density, Extra Benefits

Following years of research, our sister company in Australia, Healthcare Innovations Australia Pty Ltd (HIA), has brought XD1900™ to the market. XD1900™ is an extra high density woven wool material specially developed for skin and pressure care.



Medical grade sheepskin has been proven to reduce the occurrence of pressure ulcers (see p10), but HIA wanted to go one step further and improve upon what Nature could produce. Sheepskins are natural products, but Nature is variable. Natural sheepskin wool density varies from animal to animal, and can range from 800 to 1200 grams per square metre (gsm). Our proprietary manufacturing techniques are able to take natural wool, and weave it into a density of 1900 gsm. Thereby we boosted the already impressive capabilities of natural sheep skin, and are able to manufacture a product that is consistent from batch to batch, and across the whole surface area. We can manufacture overlays up to the width of a bed without the need to join sections together, with less wastage and therefore cost savings for our customers. An additional benefit is that because we no longer have a leather or skin backing, XD1900™ can be washed with standard detergents, for example in an institutional wash, at 80°C or over.

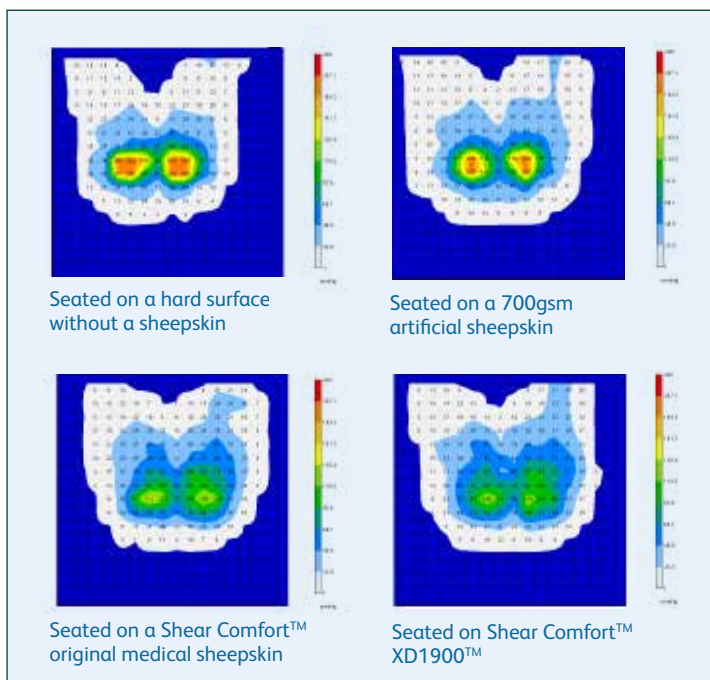
Synthetic VS Natural

XD1900™ uses natural wool and a manufacturing process to achieve the extra density. It is the natural properties of wool that provide the protective and therapeutic benefits of our overlays.

- Polyester and other artificial fibres were brought to the market because of their ease of washing at high temperatures, but they do not provide the resilience of wool fibres, and are easily compressed, thus having minimal pressure redistribution properties
- Synthetic fibres are also hydrophobic, so do not provide the moisture absorbing properties of wool



Extra Density Extra Benefits



Accepting that wool is a more beneficial material than synthetics (see below), the density of the wool fibres in an overlay is still very important to ensure the therapeutic properties of the sheepskin. Lower densities compress too easily, removing the pressure redistribution, shear reduction, and temperature/moisture regulation properties. Over the years, low density (under 700gsm), low cost sheepskins have tarnished the image of natural sheepskins. These low density products have very limited clinical application. Alongside you can see a pressure mapping comparison between the pressure distribution properties of a 'high end', but typically lower density, woven wool product (700gsm) vs XD1900™ (1900gsm).

- Synthetic fibres' compressibility squeezes out trapped air, losing the temperature regulatory properties of the natural materials
- Wool processing techniques have changed, meaning that many wool based products such as XD1900™ can be washed at 80°C or over

In summary, 'synthetic wool' products provide little of the benefits of natural wool products.



The Clinical Evidence of the benefits of wool-based products for tissue integrity

Unlike the large amount of anecdotal evidence around different means to reduce the incidence of pressure ulceration, there have been randomised clinical trials showing the benefits of medical sheepskin.

Three randomised clinical trials (RCTs) have been published recently which have demonstrated a positive impact on pressure ulcer (PU) rates comparing a significant number of patients using medical grade sheepskins vs those without:

- Mistiaen et al (2010) demonstrated a significant reduction of PU rates from 14.7 to 8.9 % in a RCT with 588 subjects
- Jolley et al (2004), in an open label randomized trial with 441

subjects, demonstrated a 16.6 % risk of PU without sheepskin vs 9.6 % with a medical sheepskin (CL 95 %)

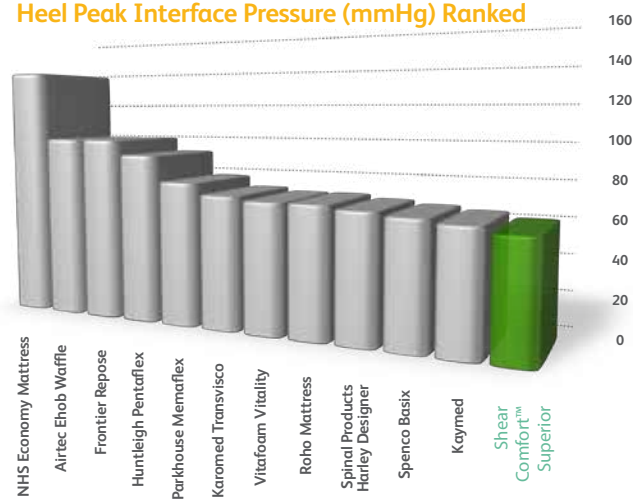
- McGowan et al (2000) showed in a trial with 297 subjects, a reduced PU rate of 9 % on medical sheepskin, as compared with 30 % for those without.

However, as Stacey (2004) proposed, no individual strategy or device will completely resolve PU incidence. It is therefore appropriate to consider the physical properties

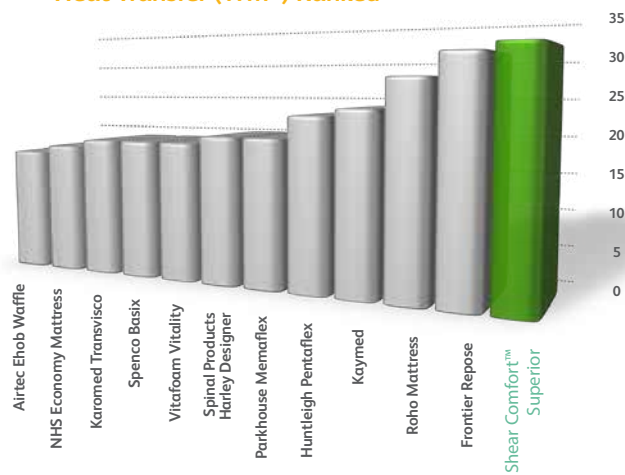
that contribute to the observed beneficial effects of sheepskin in PU prevention. Current views are that shear, heat, and water vapour are significant contributing factors, together with pressure, in causes of tissue breakdown (NPUAP and EPUAP, 2009). Bain et al (2004) showed that natural sheepskin was comparable with plastic air-filled products for pressure redistribution, but had much better characteristics in relation to heat and water vapour dissipation.

(Bar charts below: Bain, D et al (2004))

Heel Peak Interface Pressure (mmHg) Ranked

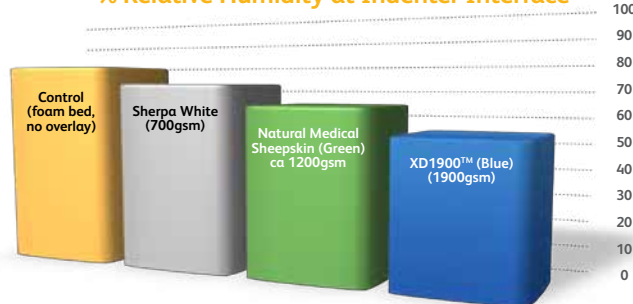


Heat Transfer (Wm⁻²) Ranked



Call et al (2010) confirmed these physical characteristics (which have a relevance for clinical benefits for tissue integrity) of natural sheepskins, but also the greater benefits of Shear Comfort™ XD1900™ material in, for example, reducing the relative humidity against the skin.

% Relative Humidity at Indenter Interface



Bain, D et al (2004) Pressure reducing overlays. *MHRA Evaluation Reports* MHRA 04101-0.

Call, E et al (2010) ISO 16840 testing for Shear Comfort XD1900™ skin care material *Proc EPUAP* Sept 2010.

Jolley, DJ et al (2004) Preventing pressure ulcers with the Australian Medical Sheepskin: an open-label randomised controlled trial. *Med J Aust* **180**,324-327.

McGowan, S et al (2000) The role of sheepskins in preventing pressure ulcers in elderly orthopaedic patients *Primary Intention* **8**, 127-134.

Mistiaen, P et al (2010) The effectiveness of the Australian Medical Sheepskin for the prevention of pressure ulcers in somatic nursing home patients: a prospective multicenter randomized-controlled trial *Wound Repair Regen* **8**, 572-9.

National Pressure Ulcer Advisory Panel and European Pressure Ulcer Advisory Panel (2009) Prevention and treatment of pressure ulcers: clinical practice guidelines *National Pressure Ulcer Advisory Panel*.

Stacey, MC (2004) Preventing pressure ulcers *Med J Austr* **180**, 316-318.

Pressure care management

An interview with Kerry Belshaw,

Tissue Viability Clinical Nurse Specialist,
Lincolnshire Community Health Services NHS Trust

Pressure ulcer management is a priority for all care providers. This has been given additional emphasis through the Harm Free Care campaign, which encourages healthcare professionals to reduce the four major harms (falls, pressure ulcers, VTE and urine infections). Providers can also receive incentive payments known as CQUINS (commissioning for quality and innovation), which are agreed on an annual basis. Commissioners are able to levy fines for non-achievement of quality standards through the Quality Schedule.

A range of pressure ulcer prevention tools from natural wool products to pressure mapping systems are available from BES. The Shear Comfort range of footwear, skincare, and targeted protectors are manufactured using medical grade wool to give them the optimum properties for pressure care and microclimate control. Apart from keeping the body comfortable and warm, medical sheep wool regulates temperature, wicks moisture, reduces shear and friction, and redistributes pressure.

A plug and play pressure mapping system from BES is used as a valuable assessment tool to prevent pressure ulcers, and analyse an individual's posture. The Tissue Viability Team from Lincolnshire Community Health Services NHS Trust has been working with BES to explore how the team can use pressure mapping to support patients with more complex needs in the community.

How did you find out about BES and their product ranges?

Kerry: "As a team, we hold monthly meetings and will invite representatives from different companies who have new innovation and technology to share which could improve evidence-based practice. Stephen Cavanagh from BES Healthcare Ltd attended one of these meetings and introduced us to the Boditrak pressure mapping system."

Contact for
Shear Comfort
info@beshealthcare.net
01179 666 761



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What are your views about BES and their products?

Kerry: "I was intrigued by the use of the pressure mapping system and how it could help to improve patient engagement and education around the use of equipment in pressure ulcer prevention and for tailoring patient care packages with the help of an occupational therapist. The Shear Comfort sheepskin products provided a niche provision of pressure relieving products which could be used in bespoke circumstances to prevent pressure ulcers and promote patient comfort and choice."

What cost benefits do you see from using Shear Comfort products?

Kerry: "The cost of a pressure ulcer to a patient is unquantifiable and to prevent avoidable harm is of paramount importance. To have Shear Comfort products incorporated into the repertoire of products available to us in pressure ulcer prevention ensures our patients have a wider choice, which in turn helps to improve their overall quality of care."

Could you give me examples of where you have used Shear Comfort products with patients?

Kerry: "We support patients with Lewy Body Dementia, who experience limb contractures. The use of palm protectors have helped to prevent ulceration to the hands. We have also used Shear Comfort products for MS patients experiencing limb spasms, as they can help prevent shearing injuries to the heel."

How has your service benefited from using the Shear Comfort range?

Kerry: "Providing a quality service which also offers patients as much choice as possible is very important to us. This range has enabled us to widen the choice available and use them innovatively in niche circumstances with excellent effect. Our patients have also given us good feedback about our approach. Being able to use the pressure mapping system promoted greater multidisciplinary working while we were developing patient care plans. Again, the results have been excellent and we are keen to use tools which support our patients to gain a better understanding and have greater engagement with preventing avoidable harm."



Overlays

We offer a range of different overlays from cot-sized to full bed-sized.

All of our overlays are available in our XD1900™ material making them very cost effective at reducing the risk of developing pressure ulcers: they can be washed at 80°C or over, for infection control purposes, using normal detergents. We also have some overlays available in medical sheepskin produced to AS4480.1 standards: these can also be washed at up to 80°C, but need a wool wash shampoo, to protect the suede material from damage.



Natural skin microclimate control

What your Shear Comfort™ overlay does is to provide the ideal microclimate for a good sleep, looking after temperature and perspiration regulation, with the excellent air redistribution properties of a wool product.

Turn a standard mattress into a high-end pressure care mattress

By simply adding one of our overlays you can turn a standard mattress into one that compares with far more expensive pressure care mattresses. Bear in mind that the best way to affect what you're doing at the skin is by what is happening next to it – the further away from the skin you get the deeper into the body you are acting – the structure of a mattress does more for the skeleton than for the skin, whereas the overlay looks after the skin.



Overlays for neonates

There has been a number of studies that illustrate the benefits for babies sleeping on wool. The rate of weight gain in underweight new-borns was 61 % higher when sleeping on a wool underlay compared with a cotton sheet (Scott & Richards (1979); Scott et al (1983)). Jaundiced new-borns sleeping on wool were more settled when sleeping, as compared with those on cotton. Only around 30 % of babies on wool cried compared with 67 % on cotton (Powley et al (1980)). Our smallest overlay is cot-sized (Neonatal Overlay: 30 x 50cm) and ideal for babies until they move onto the next size (Paediatric Overlay: 45 x 75cm).

Day Chair Overlay

The Day Chair Overlay is designed for those individuals who spend most of their day seated in an armchair, and who have skin that could be at risk of damage from heat or perspiration build-up, or from shear forces. The Day Chair Overlay is made from Shear Comfort™ extra density XD1900™ sheep's wool with benefits such as shear and friction reduction, microclimate control, and pressure redistribution. On a chilly day, the user is kept cosy, being insulated from draughts around the cushion and the back of the chair. The Day Chair Overlay is available in two versions, one with straps and one without. The straps can be used to fasten the overlay onto the chair to prevent it from slipping. These overlays can be washed at over 80°C, and are available in blue or white.

Order Codes

Silent pressure care

In a residential or medical care facility, Shear Comfort™ overlays are a lower cost pressure care solution, and remove the discomfort and noise experienced with plastic based options, such as plastic air filled overlays or alternating pressure mattresses.

Improved sleep quality

As far back as 1984, Dickson showed that a wool underlay decreased restlessness and improved sleep quality. Individuals with fibromyalgia, suffering from diffuse chronic pain and tender muscles, showed significant pain reduction and improved sleep quality when using wool overlays (Kiyak et al, 2009).

Overlays		
Order Code	Size (cm)	Description
002251	30 x 50	XD1900™ Neonatal Overlay - Blue
005221	30 x 50	XD1900™ Neonatal Overlay - White
002169	30 x 70	XD1900™ Pressure Care Assistant™ - Blue
002244	45 x 75	XD1900™ Paediatric Overlay - Blue
003135	45 x 75	XD1900™ Paediatric Overlay - White
003081	50 x 80	XD1900™ Baby Rug - White
002756	50 x 140	XD1900™ Day Chair Overlay - Blue
005207	50 x 140	XD1900™ Day Chair Overlay - White
005153	50 x 140	XD1900™ Day Chair Overlay - Blue with Straps
005177	50 x 140	XD1900™ Day Chair Overlay - White with Straps
010003	63 x 92	Shear Comfort™ Natural Overlay - Green
003098	65 x 100	XD1900™ Single Overlay - White
002701	65 x 100	XD1900™ Single Overlay - Blue
003111	75 x 125	XD1900™ Classic Overlay - White
003067	75 x 125	XD1900™ Classic Overlay - Blue
002015	75 x 125	Shear Comfort™ Classic Overlay - Green
002718	75 x 150	XD1900™ Superior Overlay - White
002633	75 x 150	XD1900™ Superior Overlay - Blue
002022	75 x 150	Shear Comfort™ Superior Overlay - Green
002640	75 x 180	XD1900™ Regal Overlay - White
002602	75 x 180	Shear Comfort™ Regal Overlay - Green
002190	92 x 187	XD1900™ Full Single Bed Overlay - White
002237	150 x 200	XD1900™ Queen Bed Overlay - White



Dickson, PR (1984) Effect of a fleecy wool underlay on sleep, Med J Aust 140, 87-89.
 Kiyak, E et al (2009) The evaluation of the impact of the use of wool in patients with fibromyalgia on life quality Aust J Adv Nurs 26, 47 -52.
 Powley, M. et al (1980) Nursing jaundiced babies on lambskin The Lancet 315, 979-980.
 Scott, S. et al (1983) Weight gain and movement patterns of very low birthweight babies nursed on lambswool The Lancet 322, 1014-1016.
 Scott, S. & Richards, M. (1979) Nursing low-birthweight babies on lambswool The Lancet. 313, 1028.

Seating and Wheelchair Protection

Those with limited mobility, or those who spend most of their time seated, such as in an office chair, can be at risk of discomfort, or of developing pressure ulcers.

For those individuals who cannot or do not move frequently enough to relieve pressure or to allow air exchange, our protectors are ideal for improving the well-being of these individuals. We also have 'protectors' for areas of the chair that can often cause abrasion or areas of higher pressure.



Cushion-It™

The **Cushion-It™** can be used for either or both the seat or back of a chair. Our **Cushion-It™** is a very successful product that can improve the comfort of any chair, whether it be an office chair, arm chair, a canvas wheelchair seat, or in combination with a pressure care cushion. The **Cushion-It™** features Velcro® fastening straps that can be fastened underneath existing seating materials if so-desired – others prefer to have their **Cushion-It™** loose so that they can transfer it easily between different chairs. The **Cushion-It™** provides an ideal seating environment, allowing air to circulate while dispersing pressure and shear forces.

Foot Plate and Calf Plate Protectors

These items fit easily over a wheelchair's foot or calf plates to bring comfort and protection to otherwise rather unforgiving parts of the wheelchair. Tears and bruising as a result of bumps and scratches caused by the foot supports and calf plates are not uncommon, and can easily be prevented with the simple addition of our quality wool-based protectors. The **Foot Plate Protectors** come in pairs for split foot supports, or as a **Single Foot Plate Protector** for single foot supports. The **Calf Plate Protectors** come in pairs to fit over individual calf plates.



Arm Support Protectors

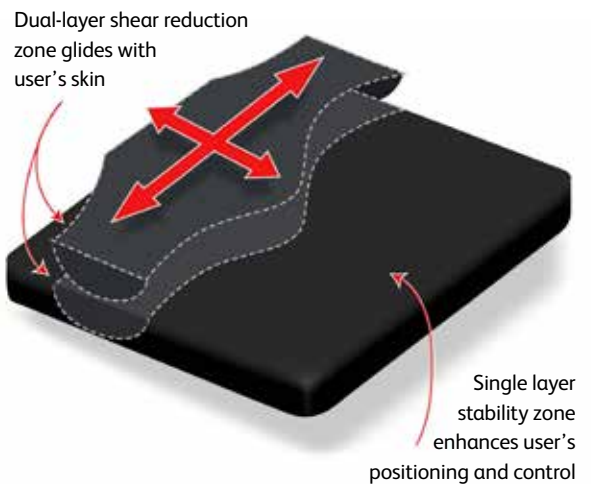
A well-positioned arm support can promote good posture and reduce pressure elsewhere on the body. Without sufficient padding, this can lead to discomfort or damage to the forearm. Our Arm Support Protectors offer a simple solution to this – they are easily slipped over the arm support of an office chair, wheelchair, etc.





GlideWear[®] by Tamarack Cushion Cover

“Reduce shear while maintaining posture and control”



Order Codes

Cushion-It [™]	
Order code	Description
002152	XD1900 [™] Cushion-It [™] (46 x 55 cm)
Arm Support Protectors	
Order code	Description
002145	XD1900 [™] Arm Support Protectors (Pair)
Foot and Calf Plate Protectors	
Order code	Description
002121	XD1900 [™] Foot Plate Protectors (Pair)
003326	XD1900 [™] Single Foot Plate Protector
001476	XD1900 [™] Calf Plate Protectors (Pair)

GlideWear[®] is a solution for wheelchair users who are at risk of tissue breakdown due to friction and shear. GlideWear[®] slips on over most wheelchair cushions. Its dual-layered Shear Reduction Zone[™] glides with the user's skin, while the single-layered stability zone enhances user positioning and control. The GlideWear[®] fabric is lightweight and breathable which helps reduce moisture build-up, thus maintaining skin integrity. Construction: 85 % Nylon, 15 % Spandex. 100 % Polyester Thread. Meets 16 CFR 1610 'Standard for the flammability of clothing textiles'.

GlideWear [®] Cushion Cover	
Name	Fits Cushions Sizes
GW-SIT-SML	14" x 14" to 16" x 16"
GW-SIT-MED	16" x 16" to 18" x 18"
GW-SIT-LRG	18" x 18" to 20" x 20"

Targetted Protectors



Certain areas of the body are at higher risk of developing pressure ulcers or skin breakages due to thin skin and/or bony protuberances, such as at the elbows, heels, ankles, sacrum, and under the buttocks. We have a range of specially designed products to target protection of these areas.



Neck Collar

Individuals with weak neck muscles, and asymmetric head positioning have a tendency for the head to fall forward or sideways, and are thus unable to keep their head in a neutral position. This not only affects functional activities such as eye contact, breathing, swallowing, etc., but can also lead to skin excoriation due

to sweat build-up around the neck. The Shear Comfort™ **Neck Collar** is a firm, but gentle support that helps keep the neck in a neutral position. The **Neck Collar** is comfortable and hypo-allergenic, even with prolonged skin contact. Available in green Shear Comfort™, or blue XD1900™

Palm Protectors

Our ambidextrous **Palm Protectors** are ideal for those who need to support their weight frequently with their hands, or those who have conditions such as Dupuytren's contractures. The **Palm Protectors** are put on over the thumb and secured with a Velcro® strap around the back of the hand.



Elbow Protectors

The **Elbow Protectors** are designed in a 'one size fits all' style with the seams facing outwards to ensure the greatest comfort and protection. Shear Comfort™ **Elbow Protectors** fit snugly around the elbows, creating a shielded area for healing and protection against knocks. **Elbow Protectors** can be used to warm aching elbow joints, protect the elbows from injury, or shelter them during healing.

Knee Protector

The Shear Comfort™ XD1900™ **Knee Protector** is designed for people in supine positions for extended periods, who are immobile and lack the ability to reposition themselves effectively, or those who lie on their side with their knees in close contact due to contractures. The **Knee Protector** places wool against the skin, and the material backing provides protection against abrasion with other tissues. The Velcro® straps allow for size adjustment. The **Knee Protector** can be used singly, or with one on each knee.



Heel Protectors

Shear Comfort™ **Heel Protectors** shield the skin on the heels and ankles in this at-risk area, and provide protection for existing damaged skin. The wool layer wraps around the heel and ankle, leaving the rest of the foot free to move. Seams are positioned on the exterior of the protector to relieve the skin from areas of high pressure. The Velcro® straps give plenty of room for adjustment. We offer **Heel Protectors** in pairs which are designed in a style with no seams facing anywhere near the bones or tendons of the ankle.

To provide comfort and protection to the individual foot, our Shear Comfort™ **Total Foot Protector™** is also available.



- Tea tree (present in Shear Comfort™ wool shampoo) kills dust mites - the source of allergy symptoms in many people.

Palm Protector (single)

Order Code	Description
003074	XD1900™ Palm Protector - Blue

Elbow Protectors (pair)

Order Code	Description
003302	XD1900™ Elbow Protectors - Blue

Heel Protectors (pair)

Order Code	Description
002268	XD1900™ Heel Protectors Small - Blue
002275	XD1900™ Heel Protectors Medium - Blue
002282	XD1900™ Heel Protectors Large - Blue

Total Foot Protector (single)

Order Code	Description
005252	Shear Comfort™ Total Foot Protector

Knee Protector (single)

Order Code	Description
005245	XD1900™ Knee Protector - Blue

Neck Collar (single)

Order Code	Description
005269	XD1900™ Neck Collar - Blue

Shampoo

Order Code	Description
002527	Wool Shampoo 250ml Bottle
000905	Wool Shampoo 1 Litre Bottle

Washing Infection Prevention

In any healthcare institution, infection prevention and cleanliness are of the utmost importance. Our natural sheepskin products have been manufactured to AS4480.1 which means they can be washed a minimum of 30 times at 80°C (the temperature required to kill off the majority of bacteria within a minute) with a wool wash shampoo.

We offer a suitable shampoo, with added tea tree oil, with its anti-dust mite properties. We have also thought about the needs of institutional laundries when developing XD1900™ as all our XD1900™ products can be washed at 80°C and over. Thanks to XD1900™ not having the leather backing of a natural sheepskin, normal detergents can be used.





FAQs

Can wool products be washed, and at high enough temperatures to kill bacteria?

Shear Comfort™ products can be washed at up to 80°C, or for XD1900™, over 80°C time and again – see ‘Washing – Infection Prevention’ section on p17.

Isn't wool an outdated form of tissue protection?

Sheepskins had been used for years before more recent plastic based products appeared, the latter being perceived as easier to disinfect. The new wool treatment standards have meant that the infection control concerns were able to be put to bed, so to speak. Recent research has emphasised that the relative importance of the microclimate at the skin is particularly important for skin integrity, and high density wool products give better protection than synthetic materials.

Isn't wool itchy?

This can be down to the wool fibre coarseness and to the presence of lanolin. We remove all lanolin from the wool and use a fibre size that is soft and relatively smooth to the touch.

I've seen guidelines against the use of sheepskin.

There have been guidelines deprecating the use of sheepskin. This recommendation related only to **synthetic** sheepskins, and rightly so in that their fibre density has not been sufficient to redistribute pressures, nor give the microclimate benefits. Our products meet and surpass the Australian Medical Sheepskin standard, AS4480.1.

Aren't some people allergic to wool?

People can sometimes have an allergic reaction to the lanolin in wool, but in all our products the lanolin is removed. There is little or no evidence to show that people are allergic to wool itself (Fischer (1973); Hatch & Maibach (1985); Moscato et al (2000)).

Fischer, AA (1973) Contact Dermatitis, 2nd Edition, Lea and Febiger, Philadelphia, 135.

Hatch, KL & Maibach HI.(1985), Textile Fibre Dermatitis, *Contact Dermatitis*, 12, 1-11.

Moscato, G, et al (2000) A respiratory and allergy survey in textile workers employed in early stages of wool processing, *G. Ita, Med Lav Ergon* 2293, 236-40.

Catalogue Range

Shear Comfort™ Footwear Range

The Shear Comfort™ footwear range is made from medical sheep's wool which has the properties of pressure redistribution, shear reduction, water vapour dissipation, and microclimate control as seen on p4 to p10 of this catalogue. What makes our footwear different is that all our footwear has been designed to offer the best protection possible, with all seams and attachments positioned so as not to interfere with the pressure care qualities. Air Tec™ gives a matrix of small holes across the leather surface to aid in air and water vapour exchange, thereby increasing the product's effectiveness in wound prevention, healing, and comfort. Much of our footwear is also available in the XD1900™, extra density range i.e. more wool fibres per square metre.

For individuals with diabetes, or those with fragile skin who are at high risk of developing pressure ulcers, the Shear Comfort™ Footwear and Skin Care range are great solutions, and are described in our footwear catalogue.

Contact BES Healthcare Ltd for further information on our Shear Comfort ranges, or scan this QR code.

What makes a 'good' cushion?

The three main management criteria that a cushion should meet are tissue integrity, posture, and functionality. For anyone who has to spend extended time on a cushion, it is important that the cushion caters to problems of tissue damage due to shear forces, friction, and microclimate. A cushion needs to prevent pressure ulcers caused by a badly positioned pelvis and pressure build-up on bony prominences. To maintain a good posture and to be able to achieve day to day activities it is important that a cushion is stable and supportive. A cushion needs primarily to give protection to the tissues and to provide for good long term posture, but also needs to be functional. It is important that a cushion is lightweight, comfortable, low maintenance, easy to clean, and durable to say the least. If you are considering a cushion make sure it meets the above criteria.

To help you select the right cushion, we have assessed our cushions on the basis of tissue integrity, posture, and functionality, and their related key factors in our Seating Catalogue.

To access a copy, scan the QR code on the right or visit the catalogues section on www.beshealthcare.net

BIES HEALTHCARE
Supporting your needs

Foot Care & Protection

Shear Comfort
Footwear, Seating, and Targetted Pressure Care

Supporting your needs

BIES REHAB
Supporting your needs

The Seating Catalogue from BES Rehab
A Better Way to Sit

VARIETTA raft

Supporting your needs



Dealer Stamp

HCAT103192



BES Healthcare Ltd 131 South Liberty Lane,
Ashton Vale, Bristol, BS3 2SZ. UK T: +44 (0) 1179 666 761
info@beshealthcare.net www.beshealthcare.net
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