

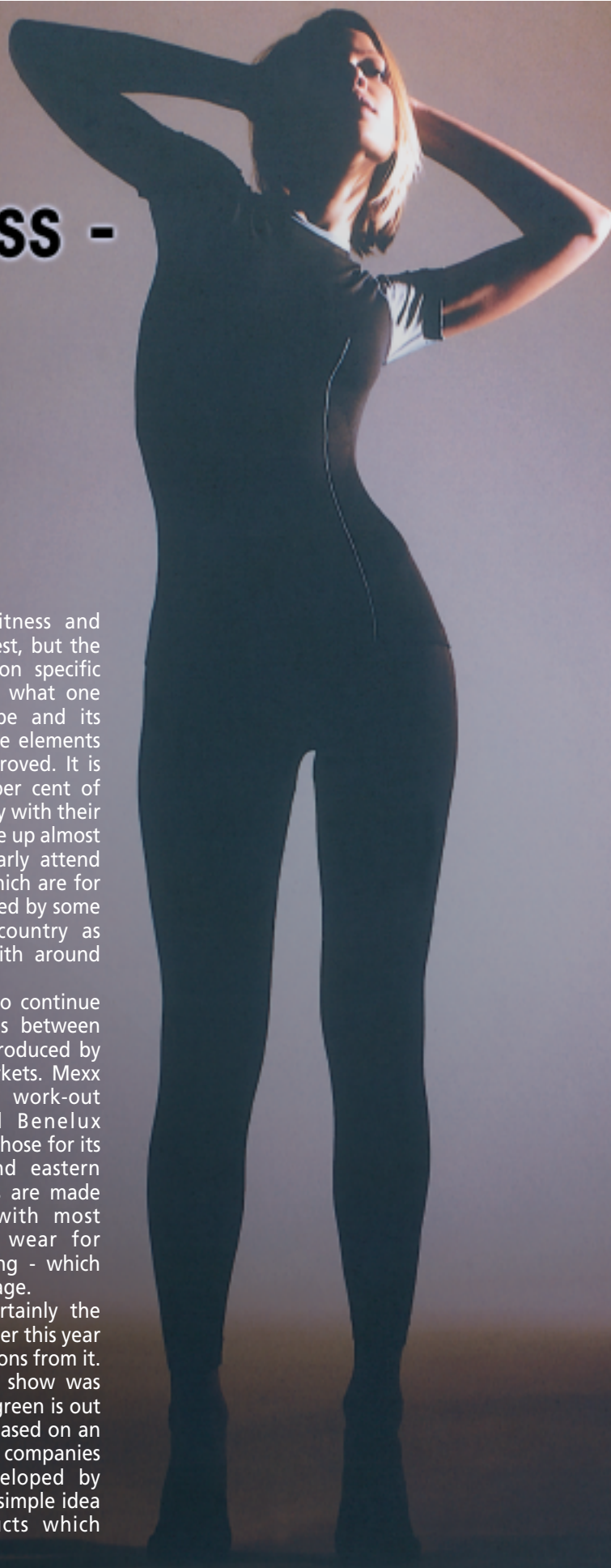


# Focus on fitness - with a silver lining

**T**he borders between fitness and wellness are vague at best, but the latest ideas are based on specific evaluation of the body: what one wants from it, its shape and its condition, and how these elements can be corrected or improved. It is reported that over 80 per cent of women in Germany are not happy with their shape - and it is women who make up almost 60 percent of those who regularly attend fitness centres, ten percent of which are for 'women.only'. This data is reflected by some 6,500 fitness studios in that country as opposed to Italy and France with around 2,500 each.

These numbers are expected to continue to grow with subtle differences between fashion, materials and colours produced by manufacturers for their key markets. Mexx Sports, for instance, produces work-out garments for Germany and Benelux countries in different stylings to those for its other markets in northern and eastern Europe and Canada. Differences are made for shape rather than age with most companies producing fitness wear for women from 20 to 40-something - which includes many well beyond that age.

Growth in the sector was certainly the message received at the ispo earlier this year and if one is to draw any conclusions from it. Mind you, another message on show was that, environmentally speaking, green is out and has been replaced by blue. Based on an idea initiated in 1997 by leading companies in the textile sector and developed by scientific whiz kids, bluesign is a simple idea accorded to high-tech products which





*TransFashion sports underwear by Vaude*

guarantee the lowest possible concentration of harmful substances and whose components can be totally recycled without difficulty, both biologically and/or technically.

Demonstrating its concept and its bluesign at ispo was Swiss company *bluesign technologies ag*. Its aim is to eliminate materials, which may be harmful at the product design stage, and to increase consumer environmental awareness by tagging those brands whose products conform to their standards. In turn, the wearer feels that the garment can have no negative effects on their physical well-being or on the environment. This idea has been well accepted by the industry, and Vaude - to name just one company - has already been awarded the use of the tag for its TransFashion sports underwear, which comes in both winter and summer qualities with the accent on seamless garments.

(The colour blue boded well for ispo - the skies were blue and it was so warm that some of the 53,000 trade visitors from 98 countries who attended must have thought they had hibernated through winter and come to a summer ispo instead. So much for the environment and concerns about global warming.)

Models and designs projected the feeling of wellness and fitness, and fun and fashion for winter 2002/03. Of the fourteen specialist trade fairs that make up the new ispo concept, the segment which is tipped for the biggest growth in the coming twelve months is the wellness/fitness sector, in textiles, shoes and equipment.

Black appears by far the most popular colour for fitness apparel, mainly as it disguises the

figure well, and is often used to offset livelier shades. Looking at collections from the Mediterranean countries one notices a greater tendency towards brighter sunny colours, but greys, especially silver and anthracite, are making a comeback.

Taking all these considerations into account is sportswear designer Nicola Trigg, graduate of the MA degree course in performance sportswear design at the University of Derby. Her Benefit Range is built around five basic shapes of women's bodies: hourglass, triangle, inverted triangle, square and diamond shape. These were decided on after Trigg circulated a questionnaire which also wanted to find out just what women expect from their fitness wear. In turn, this gave Trigg the information she needed to produce a stunning range of outfits which make use of such features as a scoop neckline to decrease the look of the bust, shorter length to accentuate the waist, a triangular shape to minimise hips, etc., and all these ideas are underlined with supporting seams and compression panels. Trigg has brought her collection from the drawing board to the fitness studio where it has been wearer-trialled for fit, sit and comfort during workout.

Germany remains the most important market for fitness products in Europe, and customers are generally well-informed when it comes to choosing outfits. They will choose those pieces which make them look good as well as making their workout more efficient.

This is the policy of the at.one company, which produces a composite range of fitness/athletic wear for just this sector - those who want to workout without being professionally engaged in sport. Its styles come in long, regular and loose and alongside black, blue is top favourite with white. At.one has added the latest Supplex ware with a soft touch to its function fabrics - pique Meryl and Lycra Power.

The ever increasing importance of seamless technology (see WSA winter 2001) for active fitness and sportswear is reflected in Trevira's cationic yarn developments. These yarns are entirely suitable for seamless fabrics giving perfect colour and fastness even when combined with elastomers or other fibres and dyed at low temperatures. They remain soft to the touch, are smooth and breathable. These have been successfully used in a trial collection produced on Santoni seamless knitting machines.

Tessile Fiorentina, noted for its innovative sportswear fabrics, is using Trevira Xpand in a combination of antibacterial properties and permanent stretch for functional underwear. And well-being begins here - with the innermost layer of garments which, even on the stickiest day or after active sport, should not end up as soggy rags leaving perspiration on the body. When transpiration does not occur the body cools down too quickly, chills easily and becomes more accident prone.

Combating these effects has been the major aim of fibre and fabric manufacturers for many



years. But just replacing cotton with synthetics is not nearly good enough. Today's fabrics have to do much more than just breathe, they have to earn their 'function' label, they have to transport perspiration away from the body spreading it through the fabric so that it can be dispersed quickly while the body remains warm and dry. Fabrics have to be able to regulate the body climate and remain soft, lightweight and comfortable to wear.

Outer garments have to allow a comfortable inner climate to be maintained while protecting the body from wind and weather penetration. All this is rather a tall order for the textile and chemical industries which are constantly on the look out for new ideas, new technologies which fit the bill without transgressing a host of restrictions imposed by governments to protect our well-being.

Although there are many man-made fibres doing exceptionally well in the sportswear fabric arena, ipo highlighted a break-through into sportswear with the latest contender in the next-to-skin sports fabric generation is pure silver. Several fibre and fabric manufacturers are well into production and sports underwear producers are leading the field here. The use of silver is not new: it latches on to a long tradition - the Romans were aware of the healing powers of silver when placed on wounds - and Noble Fibre Technologies has permanently bonded a layer of pure silver to the surface of a textile fibre and market it under the X-Static label. This permits the retention of natural textile characteristics so that it can be used in knits, wovens or non-wovens as a filament or a spun yarn.

Praising silver for its lack of chemicals and its antimicrobial, anti-static and therapeutic properties, Italian fabric producer Calamai Figli is making a single jersey incorporating 7 percent silver and a doubleface with 5 percent. The thermo regulatory properties of the silver fibre fabrics, which must be worn with the silver next to the skin for it to function efficiently, has endless possibilities in sportswear. Bernardo Calamai told *WSA* that his company has already incorporated this in underwear for Medic, Fila and Prada, and it has been used in socks for a bikewear company. He has great hopes for its future and is working on the possibilities of using it in both street and sportswear apparel.

X-Static aids the normal flow of moisture through hydrophobic materials in a natural evaporation process. Placed alongside such a material, X-Static increases the rate of evaporation. As silver loses heat slowly, any heat not reflected back to the body will be stored in the fibre. This is particularly useful for cold weather



garments. In warm weather apparel, the silver element works quickly to spread heat evenly and quickly throughout the product. When coupled with the appropriate fabric design - convection is the keyword here - X-Static accelerates the conduction of heat from the skin through the fabric to the air, thereby cooling the body.

The antibacterial properties of X-Static make it an extremely useful product for those areas where bacteria can thrive. Sportswear, socks and underwear are the obvious garments and manufacturers are well on the way to bringing these benefits to the public. Penn Nyla is just such a company producing fabrics in an X-Static/Lycra and X-Static/Coolmax which have been snapped up by Berlei for use in its latest sport shock absorber bras. Other fabrics using X-Static from this company are coupled with warp knitted meshes and circular knits.

Outdoor manufacturer Kurt Jaeger of Big Pack is quite X-Static about his company's newest thermal underwear with a 5 percent silver content in a fleece material. Jaeger feels the potential here, although slightly more expensive than their other underwear lines, is enormous. Certain situations require additional warmth and the use of silver in sleeping bags, another traditional product from Big Pack, is definitely a possibility for the future.

Mico Sport SpA is already producing socks and underwear using the power of silver to keep feet and body warm in cold weather and cool in hot weather and, by not providing a climate in which bacteria can multiply, these remain sweet to the nose. Mico X-Static - a nylon yarn bonded with a layer of pure silver - uses the silver's conductive properties to interact with the body's magnetic fields. Among the benefits are the rapid absorption of oedema, the prevention of swelling and the feeling of heaviness in the legs.

*Odlo Running - Magic*



Its Total Silver - a full-length sock with silver throughout, and not just in the foot, is particularly beneficial in this respect.

Noted for its protective yarns and fabrics for the well-being feeling is the Italian company Indas. It has also introduced a fabric containing pure silver, cotton and polyamide: Nostatex pure silver is beneficial in socks and underwear and the company has high expectations in this direction. Its other well-being fabrics include t.p.f. - a triple protection range - one of the forerunners in UV protection which is also antibacterial and anti-static, and its sunstroke-fabrics with solar protection made from a ceramic and polyester mix which prevents the absorption of UV rays and blocks heat.

Chr. Eschler AG of Switzerland is using X-Static in its Argent-X cycling pads for bikers. The silver fibres are incorporated into these pads because of their hygienic, and therapeutic properties. Washing and hardware are essential in this section of biker's pants, but comfort remains paramount. The ten years of research which has gone into X-Static's performance makes its use in such hygienic areas indispensable.

Producing yet another idea in the silver stakes is fibre manufacturer Nylstar. Well-known for its Meryl fabrics, Nylstar has successfully campaigned among its fibre users to produce materials which are bacteriostatic rather than bactericide. This means providing a climate which sustains the natural and healthy growth of bacteria on the skin while preventing its increase, rather than killing all bacteria - even the safe ones.

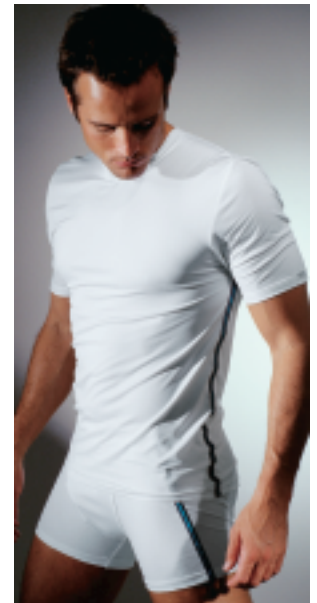
Pure silver is used to this effect mantled inside micro capsules which provide a slow release of silver ions, giving permanent protection while maintaining the soft microfibre feel of the fabrics. This is being marketed under the Skinlife label and, following the proved usefulness of

silver in industrial and medical uses, is now being pinpointed for particular application in sportswear. On top of its antimicrobial and anti-static properties, silver fibre fabric is machine-washable at 40° and 60° and Nylstar has put fabrics using its encapsulated silver process through rigorous tests to prove that these properties last the life of the garment. Some previous antibacterial treatments were washed away after some thirty washes.

International standards by which such claims can be measured vary but Nylstar used the Hohenstein Institute for its product testing which included dermatological, environmental and consumer evaluation tests along with a patch - worn for 48 hours - and sniff tests. Nylstar will certify a fabric which incorporates 50 percent Skinlife - 30 percent inside 20 percent outside - only after the finished fabric has been submitted for retesting.

Using this effect in a fabric for its latest sports underwear range is Swiss manufacturer Odlo 'effect' is also the name of the fibre being used for garments from this company worn directly on the skin. The bodywear fabric uses silver ions mounted on microscopic ceramic carriers to damage the cell's metabolism which, in turn, prevents the development of the natural bacterial excretions responsible for body odour. These silver particles are integrated inside the fibre and Odlo chose this product as it helps create a healthy body climate for each and every sportsperson regardless of the degree of perspiration. Both light and warm qualities for summer and winter are already in production.

Placing its stress on fabrics which induce well-being, health and comfort at Pitti Immagine Filati recently, was the Italian Grinasco Group. It presented a new line of knitwear yarns with the application X-Static silver fibre under the Silverline label in a ratio of 96 percent cotton/4



*Odlo Termic - Trendline  
Jet Stripes*

Falke



percent silver. More fabrics containing silver are in the promotional phase with manufacturers and are expected to be incorporated in sportswear and other apparel from 2003 onwards. Other fabrics from Grinasco incorporate Meryl's Skinlife advanced technology for body care and health.

Introducing its ergonomic sport system fitness and underwear lines this spring is the German company Falke. After a development period of five years, which included the analysis of the anatomy in both active and passive situations, and the demands made on both fabrics and styling, it presents a range of bodywear for summer and winter that is both dynamic and functional as well as being attractive in styling and colour. To do this the company developed a knitted polyester in a honeycomb construction, using different densities and polyamide fibres in those sections which need to cope with additional perspiration, and polypropylene for those areas which lose heat quickly, such as coccyx, kidneys, shoulder, upper arms and outer thighs. A special pique structure polypropylene is used for insulation in sports underwear down to -5°C. It also includes elastane for stretch.

For hotter days and indoor activities Falke has included special climate zones in the more intimate areas as well as the hollows of knee and elbow. The guaranteed perfect fit of all garments is achieved through the seamless construction with ribbed and honeycomb weaves drawing the fabric in where necessary and allowing stretch for action, maintaining a comfortable body climate at all times.

Its ergonomic line of special bras and tops earns its support label through the use of a specially developed silicone laminating process and its seamless X-ray cut. A bra part-support for smaller bust sizes and full-support for larger sizes, anatomically shaped straps which do not

chafe and can be worn cross-over or straight. A generally soft feel to the garments is complemented by matching support briefs and strings which are not only aesthetically designed but also good to look at in shades of burgundy or ink singularly, or teamed with wild rose and sky in duo effect. Fabrics here are 72 percent polyamide and 28 percent elastane.

Manufacturers of fabrics for active sportswear differ in their approach to the problems of bacteria production and body odour. With this in mind, Penn Nyla has introduced a range of fabrics which release aromas and fragrances and others with aroma therapy, aloe vera and insect repellent finishes, all of which have implications in sportswear apparel. UK retail giant Marks and Spencer has been the first to take up its well-being products for yoga and fitness wear as well as using aloe vera in a range of nightwear.

In a similar vein, Ploucquet has introduced its latest functional fabrics for both inner and outer wear under the INTac label. Freshtac is a new outer fabric which holds unpleasant smells for a much shorter time than previous fabrics, while remaining breathable, water repellent and washable. This is made possible by the thin, porous film which is used to cover the surface of the fabric and prevents odour-bearing molecules settling in the material. Molecules stored in the film serve to neutralise smelly substances from the environment such as grease and smoke. Other new fabrics in this sphere are Lighttac, Hydrotac Aerotac and Oxytac, but perhaps the most ingenious is Welltac: a new capsule technology by which a fresh and natural aroma, such as sandalwood, lavender or orange, is released by the natural movement of the body when the garment is worn, increasing one's sense of well-being.

In a more traditional vein, but incorporating all the desirable characteristics for sports underwear,

Götzburg has introduced its power concept base layer garments. Divided into three sections: basic, professional and Thermo Bi - the idea was to create sports underwear at all levels for sportsmen and women. Fabrics are mixtures of Tactel and Proviscose from Lenzing for the basic section, Coolmax and cotton Micromodal for the professional system and DuPont's Thermolite polyester and Angora for the Thermo Bi system. In a further attempt at more comfort, Götzburg has done away with sewn-in labels which often cause skin irritation. Relevant information on sizing, fabric and washing is printed onto the garment.

A new departure for Sympatex Technologies, known for its high-tech breathable membrane, is its partnership with Maier Sports to produce a new range of functional underwear. Under the name Sympatex New Dimension, the range is in 100 percent antibacterial polyester. Sympatex added its name to this concept because of the consistently high quality of the product, which is extremely skin friendly - as independent tests have proved - and as part of the company policy to broaden its market competence in this segment of the sportswear industry.

For all the ingeniousness of fibre and fabric manufacturers there still remains a strong tendency to natural fabrics or, at least, the feel of natural fabrics for sportswear. Silk is the recommended product by UK company Thaw Ltd. for its sports underwear which warms like nothing else. As well as insulating the body, silk wicks away excess moisture, according to the manufacturer - and is as strong as a steel filament, making it entirely suitable for comfort and hard wear as for socks, underwear, inner gloves and balaclavas helmets. New this year is its use of 20 percent merino wool/80 percent silk mixture fabric for wearing next to the skin.

Silk is incorporated in a functional sock range from Thorlo for winter hiking and snowshoe trekking for both men and women. Its hardwearing and soft characteristics are particularly appreciated in its new Lady Thorlo lines which, as well as including silk/wool mixtures, boast more sizings and better fitting around the toes and come in both short and long shafts. Knitted-in pads protect the Achilles tendon while strengthening and protection against pressure from fastenings, etc., are achieved through the use of acrylic yarns.

Wool too has its champions: Vaude Sport used wool with Tactel or Polycolon for two unisex wool sweaters in a knit look as an alternative to fleece. In eight different striped and jacquard designs they are cuddly and soft rather than scratchy - seen as a breakthrough in wool usage. Tactel's breathable properties make the garments suitable for both sports and streetwear.



*Functional underwear under the name New Dimension from SympaTex Technologies*

Total easy care is one of Grignasco's newest innovations which allows wool and wool-blended knitwear to be washed and tumble-dried, a project which again has implications for sportswear.

Eider International, known for its use of pure down products for extreme cold weather conditions, presents the revival of wool in its Sportwool concept for autumn/winter 2002/03. Due to the technical improvements which make it possible to combine the heat regulation qualities of wool with body climate management, the company introduced its Sportwool underwear range in a mixture of wool and synthetic fibres in a 2-way stretch fabric at ispo. Also new in the way of natural products is its French goose down which is thin, light and very soft and consists of 100 percent grey goose down. Arranged with a larger intersection between each pocket of down, more air can circulate and provide even better insulation without extra weight and the garment can be more easily compressed.

Nike puts its money on air - another natural product - with Nike Sphere a new temperature regulating fabric which does not sit directly on the skin due to its waffle weave. This special weaving construction allows air to circulate between the waffle pattern acting as a barrier to the cold. It comes in three variations for different uses: Sphere Dry is a flat waffle weave suitable for tennis and running apparel that prevents direct contact with the skin. Sphere Thermal, a thicker weave for second layer garments, regulates the heat due to the arrangement of the waffles and air pockets, and Sphere Pro, consists of two different layers with the inner layer in a waffle material and the shell is a water repellent,



breathable material to protect the athlete from the weather.

Also using air as an innovative adjustable insulation control system is W L Gore. To be worn either as a vest or as a zipped in or permanently attached inner lining to jackets, the Airvantage is a system of air chambers arranged between two layers of air-tight laminate. A tube for topping up air or expelling it is placed within easy reach of the mouth so that before one launches oneself off into the icy blasts of the mountains one can inflate the garment giving extra warmth - and when one steps into a heated room or ski cabin it only takes a second or two to deflate. Tests proved that it only takes a couple of puffs to inflate the garment and that the temperature inside the blown up jacket rapidly reaches a comfortable body heat. A valve prevents the garment bursting should it be struck forcefully. The idea has found favour with outdoor jacket manufacturers Ciesse, Fila, Marmot, Tsunami, Peak Performance, Schoeffel, Rossignol, Eider and F2 among others.

Following hot on the heels of Gore's introduction of its Airvantage insulation control system, comes Sympatex with its variable warmth insulation. Developed in conjunction with Empa in St. Gallen, Switzerland, and presented first of all in January 2002 in Zurich where it won the innovation prize in the 'Technology Location Switzerland' against 40 contenders, the initial impetus was given by copying insulating methods used by birds. These puff up their feathers when it is cold to keep warm inserting a layer of air between body and outside temperatures. This innovative idea is used in a new type of outdoor jacket: "vAIRis"- which comprises three air chambers of Sympatex fabric filled with down, which can be inflated or deflated as the wearer requires. An electronic pump, weighing only 125 grams, makes manual operation - as in the Gore Airvantage jackets - unnecessary.

Another new product from Gore is XCR stretch laminate. A fabric available in two different laminates, each in a 2 or 3 layer construction as a woven or a knit fabric. These

offer a better fit to outdoor sportswear particularly useful where the normal water-tight properties of Gore-Tex garments are sustained but stretch required. The stretched fabrics were severely tested in an extended form using the Suter-Test, and no water penetrated. Breathability was also increased by up to 25 percent than normal Gore-Tex fabric.

No matter where you train, climb, run, ski, dance or work-out - there is a product out there to suit you which will not give you the blues, which keeps you from getting blue with cold, but could certainly make others green with envy. 🐢

*Kay Turtle*

