

Everyone knows how important it is to use the right clothing and footwear during exercise, but at times finding suitable underwear can be overlooked. This is particularly pertinent for women, many of whom fail to find suitable bust support for when they are working out. According to the companies that make sports bras and garments with integrated bust support, getting this right is every bit as important as tracking down the right pair of running shoes.

Finding the right bust support

The breast comprises connective tissue (collagen and elastin), adipose tissue (fat), and Cooper's ligaments. If the breast is not supported during exercise, the suspensory Cooper's ligaments, which help maintain its structural integrity, can stretch beyond repair and lead to irreversible sagging. The breast can bounce up to 9cm (over 3½ in) if it is not properly supported during exercise. And wearing an ordinary bra is not enough. According to sports bra manufacturer Shock Absorber, breast movement is reduced by 38% when wearing a standard bra, but can be cut by as much as 74% when wearing the right sports bra.

On the run

One activity that requires a particularly high level of bust support is running. Vancouver-based sports apparel brand Sugoi has been developing bras that are designed to restrict vertical movement for some time. According to product manager, Sugoi performance apparel, Rob Blair, failing to get the right support can cause severe shoulder, neck pain and back pain. Other problems, usually caused by bras containing high stretch but low recovery, are bruising and a feeling of discomfort in the bust area. Added to this, moisture build-up and chafing can present real problems for women during exercise.

As a result, the company recently extended its bra fit and support system, and one of the latest additions to its sports bra range is the RSR Bra. The RSR features reflective accents for extra visibility, while Sugoi's zone construction technique provides mesh in carefully selected areas to offer better breathability and compression benefits. The Power Mesh is a new fabric used for the inner support system, offering better support and compression. It also



The new Sugoi RSR bra is made using two specially developed fabrics, Power Mesh and Ultra Aero.

 Sugoi

provides ventilation because of its open 'architecture', which increases moisture management for extra comfort.

The outer fabric, Ultra Aero, is a dimensionally-constructed knit with a dimpled surface that creates less friction and offers good aerodynamics while in motion. Its firm stretch and recovery provides a high-tenacity fit to keep muscles energised and working efficiently, even during extreme conditions.

All Sugoi sports bras are tested to ensure proficient inner support, while allowing the fabric to "give" in areas where stretch is necessary, in addition to providing maximum breathability. The inner mesh stabilises at 35% stretch where support is needed most, and all of Sugoi's bras and tanks feature a firm 1.5-inch elastic wicking band for added support. According to Mr Blair, rigorous beta trials are carried out to test the bras on numerous subjects, all with varying body types and bust sizes.

Failure to support the breast during exercise can damage the Cooper's ligaments, leading to irreversible sagging.

 Odlo



Under water

Japanese firm Teijin Fibers has been looking at ways of improving bust support for women while they are swimming or taking part in other water-based activities. Because women cannot wear a proper bra in the water, the company has been looking at ways of improving existing support mechanisms for female watersports enthusiasts.

The company recently launched the world's first polyester-based cushioning material for swimwear bra cups, made with V-Lap, a vertically lapped nonwoven fabric that the company introduced in 2007. Used mainly in bedding and as a sound-absorption material in automobiles until now, V-Lap is starting to find new applications as a cushioning material in place of urethane. Urethane has been virtually the only material used as cushioning for swimwear bra cups until recently, despite the fact that it is not particularly breathable and tends to yellow easily.

By contrast, Teijin claims V-Lap is highly breathable and is not prone to yellowing. Furthermore, it is easy to mould, making it an ideal material for this type of application. The company claims it has special moulding technology that can produce a bra cup capable of withstanding 50-plus washes, the general performance standard for swimwear. Swimwear incorporating the new bra cups went on sale on a trial basis this summer, with full-scale sales and marketing planned for next year.

The fabric can also be used alongside other materials, according to Teijin. "By combining with Teijin's Elk, a high-performance polyester cushioning material, the V-Lap non-woven fabric realises high rebounding and appropriate cushioning properties that prevents sagging, which is also ideal for swimwear bra cups," says a company spokesperson. "Compared to swimwear bra cups made from conventional urethane, the new cushioning is highly breathable and water permeability is also high, which could mean that it feels lighter and more comfortable wearing them in wet conditions."

She adds that, because V-Lap is made from polyester, it can be recycled. A scheme to recycle the used bra cups, which Teijin already has in place for other materials it uses, is currently being considered.

In the snow

Another important consideration when it comes to bust support, according to underwear company Aclima, is temperature. While many sports bras are geared towards high-impact sports in warm climates, Aclima produces undergarments that can be worn in colder environments. "As a Norwegian manufacturer we have had various reports from women in Scandinavia who wanted a warmer bra for



Teijin's water permeability experiment shows that its V-Lap-based cup (top) is much more effective than the urethane-based cup (bottom).

Teijin Fibers

wintertime," explains sales manager, Lars Johansen. As far as the company is aware, it is the only firm in the world that is producing bras made from wool.

Aclima's HotWool range, designed to be worn in extremely low temperatures, includes a women's sports top with in-built bust support and a sports bra. "The liner/inner fabric is made of a wool terry mixture whereas the loops next to your skin are soft merino wool," says Mr Johansen. "The wool gives warmth even when wet and has a natural odour control. The outer part is a solid woven material which gives the support." The sports bra offers the most support of the two and has adjustable straps to provide better fit. Both items can be machine washed at 60°C.

According to the company, wool is the perfect material for people engaging in outdoor activities, particularly in really cold areas. It claims the natural material stabilises body heat, releases perspiration and insulates the body even when it is wet. Although manmade fibres can transport moisture from the body, it says they do not insulate as well as wool in underwear. Furthermore, wool is naturally flame retardant, which is partly why the company's sports bras are now being used by the Norwegian and Swedish armed forces.

Aclima's HotWool sports bra is designed to offer support, warmth and odour control.

Aclima

