

## Why the jiggle factor is a pain for women



**Peta Bee**

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## So many runners' breasts hurt when they exercise that sports bra design is becoming a serious science, says Peta Bee

For years, feet have been the focus of scientific attention when it comes to sports clothing. Decades of research into how they respond during a workout means many of us will buy trainers only after in-store gait analysis has determined how we land and how efficiently we stride. Researchers have now shifted their focus upwards. The latest body parts to come under rigorous analysis are the breasts. How they jiggle and bounce are matters of such interest that university departments are dedicated to studying the link between fitness and the bosom.

To those who consider them simple anatomical structures, the field of "breast biomechanics" may seem an unnecessary academic development. But any woman bigger than a B-cup will tell you the trauma of taming an unwieldy cleavage to complete a workout is worthy of high-tech investigation. With no muscle and only the fragile outer skin and connective tissues called Cooper's ligaments providing support, breasts are a law unto themselves when it comes to movement, swaying and bobbing independently of the torso. A series of experiments by the University of Portsmouth's Breast Health research group headed by Dr Joanna Scurr chartered the trajectory of breasts using infra-red cameras and found they do not merely bounce up and down but move through a complicated figure-of-eight pattern when a woman runs or walks.

During activity on a treadmill, Dr Scurr and her team found that each breast can swing as much as 21cm in space and there is still considerable movement while wearing a standard sports bra. The more vigorous the workout, the more mobile the appendages become — therefore running causes more sway than walking. And since the average breast weighs 200g-300g, so the level of discomfort and the potential for embarrassment rise accordingly. Reducing speed from a sprint to a jog has little effect on lessening bounce.

Too much of which can cause irreversible sag as the delicate structure is strained to its limits. Quite how significantly this jiggle factor influences a woman's enjoyment of one activity — running — was the subject of a recent study, carried out in conjunction with a Portsmouth laboratory, published in the *British Journal of Sports Medicine*.

What Brown discovered was that, despite 90 per cent of the women always wearing a bra when they exercise, the running experience of one third of her subjects was soured by some level of pain. "We had women with bra sizes from a very small AA cup to those with a 40 HH cup," Brown says.

“Unsurprisingly, the women with larger breast sizes reported the most frequent pain, but the interesting thing was that about one quarter of those wearing an A cup also complained their breasts were sometimes sore when they exercised.” Around 25 per cent of the women said they cut their runs or workouts short, reduced the intensity by switching to walking instead of running or avoided exercising completely as a result of pain.

“It can have a huge impact on enjoyment and means women compromise on the quality or quantity of their exercise,” Brown says. “And it confirms the need for further studies so that breast-related exercise problems can be improved.”

Wearing the right bra, Dr Brown says, is likely to make a big difference.

“It can reduce discomfort and soreness in about 85 per cent of women.” But finding that elusive product is not easy. “Things have improved a lot but not every bra suits every person and people wear the wrong size or style, which reduces support,” she says.

In another study to be published, Brown asked the same marathon runners if the design of their sports bra — the positioning of straps, width of the chest band and other factors — impacted on their breast pain. “Around 50 per cent of subjects said it did,” she says. It supports findings from research carried out last year at the University of Wollongong, in Australia, which found that shoulder straps slipping or cutting into flesh were the two most disliked features of bras, with 23 per cent of women indicating that the straps were the first bra feature to fail. “It goes without saying that a bra needs to be comfortable as well as supportive to function well,” Brown says.

Manufacturers are revelling in the emergence of such findings. The market for the once humble sports bra is booming. Stella McCartney now designs a chic garment for adidas and a Lucas Hugh Liberty print sports bra sells for £105 on Net-a-Porter. Lululemon, the Canadian brand, has a range for every activity and body shape from “small-busted hot yoga enthusiasts” to the pace bra for speedy runners;

and a spokesperson for Sweaty Betty, which stocks around 10 different sports bras, says it is planning to “dramatically expand” its range over the next 12 months.

Selaine Saxby, the founder of LessBounce, the sports bra retailer, says “the availability and quality of products is much greater than it was ten years ago”, but “there is still a lot of misunderstanding as women wear bras so beyond their sell-by date they have little support left.” A rule of thumb, Saxby says, is to buy three new bras with each new pair of running shoes and to rotate them with each gym session or to replace bras after 30-40 washes when the fabric’s life is over.

Most sports bras fall into one of two categories: compression (that bandage boobs to flatten them against the chest) and encapsulation (that cradle each breast individually). When existing ranges were reviewed at the University of Wollongong, the scientists concluded that effective bras, particularly for women larger than a D-cup, probably do not exist. Most limit vertical bounce but not lateral movement. And the race is on to produce the ultimate bra that will prevent that sideways sway and complex arc of the breasts.

Tony Jarvis, the managing director of Berlei UK, says that it is one of the reasons sports bras are among the fastest growing sector of the lingerie market. His firm is working with the England hockey team and athletes at Loughborough University “to develop new technologies, fabrics, wires, straps and sweat-wicking materials that will provide extra support”.

The wait for busty women could soon be over. Wollongong breast scientists developed a prototype that compresses the bosom and elevates each breast with foam pads to raise the lowest “point of breast displacement” and thereby limit the extent of jiggling. The closest to being made commercially is the Lynx Sports bra launched in the UK this month in sizes up to 52K. It is designed by Cynthia Smith, an American scientist and marathon runner, who says she struggled for years to find a bra that offered comfort and a flattering look before “one day having my eureka moment, sourcing fabric from Manhattan and creating something that worked better than anything I’d ever worn”. What’s unique about her design, Smith says, is that the bra supports from the sides instead of the usual shoulder straps and band. In studies involving women size DD to G cup at Loughborough University, its “bounce factor” out-performed rival bras by providing a more comfortable workout.

Not that it’s likely to end there.

“There is scope for more improvement as manufacturers still don’t take into account things like individual breast shape and density in sports bras,” Saxby says. “That could make a real difference.” For the past few years, the Wollongong scientists have been trialling an intelligent sports bra with sensors to monitor and measure the smallest movement in the breast to better stop

There should be no gaping, no chaffing no Grand Canyon cleavage with a sports bra that fits well, she says. They should keep things in place in a test jump. And the holy grail of well-endowed women everywhere should be to find the one that leaves them jiggle-free.

## The best sports bras

### *Best for the gym*



adidas by Stella McCartney Women's Essentials Sports Bra (£55; [adidas.co.uk](https://www.adidas.co.uk)) Has cooling fabric that is compatible with the miCoach electronic training system.

### *Best for the buxom*



Lynx Sports Bra (from £39; [lessbounce.com](https://www.lessbounce.com)) Provides lateral and vertical support.

### *Best for running*



Shock Absorber Ultimate Run Bra (from £32; [lessbounce.com](https://www.lessbounce.com) or [boobydoo.co.uk](https://www.boobydoo.co.uk)) This was found to reduce bounce in joggers by 78 per cent compared to ordinary bras.

### *Best for triathlons*



Berlei Aqua Trek Triathlon Crop Top (£48; [berlei.com](https://www.berlei.com)) A front-fastening bra designed to give support in the water and on land.

### *Best for yoga*



Trikonasana Yoga Bra (£38; [sweatybetty.com](https://www.sweatybetty.com)) This is suitable for smaller-breasted women doing low impact yoga.