PHYSICALLY SPEAKING
ESSENTIAL EQUIPMENT

OCTOBER 2008

When you are an athletic woman, the clothing you wear UNDER your tennis clothes is a very important part of your equipment. Did you know that:

- More than 70% of women are wearing the WRONG sized bra?
- Up to 70% of athletic women experience breast pain on high impact exercises, such as running or jumping, which both occur frequently in tennis?
- Bra sizing varies between countries, brands and even WITHIN brands!
- Incorrect bra fit contributes to neck, upper back and shoulder pain, musculoskeletal and nerve tissue injuries in both athletic and non-athletic women?

All Photos: Getty Images

Many tennis players select their bra style and size based on factors such as:

- Fashion choices and the "look", such as color, decorations and the latest styles
- The size bra a woman thinks she fits (usually incorrect)
- How much support she thinks she needs (often incorrect)
- What their sponsor provides

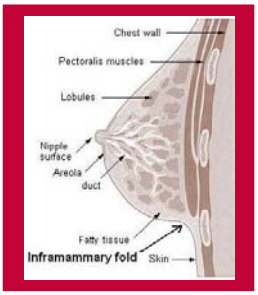
Proper fitting bras for everyday activities, and sports bras for tennis and fitness activities, are necessary. They:

- Protect sensitive breast tissue from damage
- ↓ breast movement, which may cause sagging

➔ A properly fitting sports bra is an essential piece of your tennis equipment.

➔ Make sure **you** wear one next time you play and train.

"They stay up when I wear a bra. But if people could see me when I come home and take off my bra, how could they think these are fake?" Tyra Banks, Model and Television Host



Some Facts About Breasts

Every woman's breasts are unique; however, they share common anatomy:

- Functional breast tissue
- Skin
- Adipose (fatty) tissue

The functional breast tissue (corpus mammae) consists of:

- The glandular tissues (nodes and lobules) of the breast.
- Lots of blood vessels, which makes the breast vulnerable to internal bleeding from impact injuries, like being hit in the chest by a tennis ball.

Breast Support

- There are NO muscles which directly support the breasts. A small amount of support is provided by the skin and the Cooper's ligaments (thin fibrous connective tissue sheets).
- This fibrous tissue and the skin is easily stretched during exercise when the breast is not well supported.
  - This can cause breast pain during exercise.
  - Over time, this stretching will cause the breasts to sag (droop).
- Breast tissue is affected by hormonal changes, such as menstrual periods, pregnancy, oral contraceptive pill and the menopause.
- These can cause changes in breast size, density and tenderness.
- As women age, the breast connective tissue and skin thins and stretches, support is lost and the glandular tissue shrinks around the time of menopause.

ONLY TENNIS BALLS SHOULD BOUNCE...

Breast Biomechanics

It is only in recent years that science began to investigate the effects of exercise on breast tissue and movement (called breast biomechanics). From this research, we now know that:

- Breasts MOVE in three dimensions when we exercise:
  - ➔ Vertically (up and down)
  - ➔ Sideways
  - ➔ In and out
- Unsupported breasts can bounce up to 21cm (9 ½ inches) during exercise!
- Size does NOT matter: Excess breast bounce can occur in large OR small breasted women.
- Speed of the exercise does NOT matter: Breast movement is similar whether slow jogging OR sprinting.
- Deceleration forces on the breast (the downward movement that causes the breast to "slap" against the chest wall when running) has been measured at **up to 2.9Gs** (that is equivalent to 2.9 X body weight) in women running with no bra.
- That means that a 65kg (143lb) tennis player will experience up to 189kg (415lb) of force through each breast EVERY time each breast bounces when she exercises without a bra! Imagine the damage that amount of force can do....

Did you Know? The first sports bra dates from 1977. Two women, Hinda Miller and Lisa Landahl, cut up a pair of jockstraps and sewed them together to make a bra!

If the Bra Fits...

What's Size am I?

Bras are sized according to 2 components: the BAND size, indicated by a number (e.g. 32, 24/85, 90), and the CUP size, indicated by a letter (e.g. A, B, C).

Band size is measured using the under-bust chest circumference, at the infra-mammary fold (where the breast and chest wall meet). A random number is then added to this measurement to determine the band size. Band width is not a standard length between bra styles.

Cup size is typically measured using the over-bust chest circumference at the level of the fullest part of the bust. This number is fairly accurate for women with pert breasts; but is much less accurate for women with broad or ptotic (droopy) breasts.

To improve accuracy when you measure: **1.** Wear a bra **2.** Measure at the end of a relaxed breath out

Bra straps provide only 20% of breast uplift. Most support is from the band and cups, so it is important they fit. If you tighten the straps to get more lift, you only create more strain on your back and shoulders.

To complicate things further, bra sizes vary internationally. To get the best fit, be measured by a professional bra fitter (in most good department stores) AND try on the bra before you buy.

...Wear It!

Correct Bra fit:

- Breast fits completely in cup
- Underwire sits under the breast
- Band level (or slightly lower) across back
- Straps should not dig in. Finger can slide comfortably under strap
- Straps in direct line with nipple
- Sports bra straps should be wider than fashion bras to allow the force to be dispersed across a larger area.

Booby Traps!

Common bra fit mistakes and how to correct them:

- Bulging over the top of the cup= Cup size is too small.
- Bra band rides up onto the breast = Band size is too small.
- Bra not level (back rides up, front droops and straps will dig in) = Band size too big to compensate for too small cup size

The Scoop on Sports Bras

Two varieties of "sports bras" are available:

- **Encapsulate** = support each breast in a separate cup
- **Crop Top styles** = compress breasts against chest wall

Scientific evidence shows that encapsulation bras are vastly superior to crop top styles to reduce breast movement during exercise. As large amounts of breast movement can affect women of ALL breast sizes, it is advisable for all female tennis players to wear properly fitted, encapsulation style sports bras for training and fitness activities and matches.

Bra fabric is also important for comfort. "Wicking" materials that draw sweat away from the skin are best. Seams should be flat or covered; underwire position should not rub over armpit lymph nodes and mesh inserts allow extra air circulation.

"Good friends are like bras, supportive, never leave you hanging, make you look good and are always close to your heart."