



The Blight of Blisters

It's hard to believe that a blister can be the cause of so much grief. Friction blisters are one of the most common injuries treated on the ATP and WTA Tours. At tournaments worldwide, large and painful blisters have resulted in players either withdrawing or retiring from a match on many occasions.

Compensation patterns often result when playing with a sizeable blister. Those prone to recurrent blisters are at greater risk of sustaining lower extremity injuries such as ligament sprains, muscle strains, tendonitis or even stress fractures.

Foot blisters typically develop in areas with increased friction, such as the ball of the foot, under the big toe, heel or arch. Severity of blisters can range from a "hot spot" (red, irritated area of skin) to a large fluid or blood filled sac.

Common factors leading to friction blisters are:

- **Moist environment:** Damp skin is more susceptible to friction and develops blisters easier than dry skin.
- **Increased shearing forces:** Cotton socks often stretch and lose their shape when wet, leading to wrinkling and bunching. Abrasive seams on the inside of socks can also increase friction
- **Abnormal foot biomechanics:** Your foot type and biomechanics will dictate which areas of your feet have increased pressure, potentially leading to blisters.
- **Improper shoe fit:** Excessive foot movement in shoes will increase areas of friction.
- **Playing in new shoes:** It's critical to break-in your new tennis shoes for several days before a match, to allow your feet to accommodate to the new forces.
- **Hard courts and Rebound Ace surfaces:** Most common for blister



Top players like Andre Agassi are all too familiar with blister problems.

development, these surfaces retain heat in warm weather conditions more than clay and grass courts. As the surface heats up, so do your feet. Increased temperatures and these surfaces being harder on our feet, contribute to blisters.

Here are the best preventative measures that you can take to minimize the occurrence and severity of friction blisters:

- **Choose a synthetic sock:** Avoid cotton socks when at all possible. When purchasing an athletic sock, look for:
 - 1) Moisture management properties, such as CoolMax® fabric which allows moisture wicking to occur.
 - 2) Double layer socks are ideal for decreasing friction and increasing shock absorption by providing the right amount of padding.
 - 3) Proper sock fit- socks that are too tight will limit toe movement and too loose will bunch or sag at heel counter. Ensure socks have no seams or areas of friction (try wearing socks inside-out to eliminate rubbing).
 - 4) Appropriate cushioning under heel, ball of foot and heel counter.
- **Keep your feet dry:** Change your socks frequently during play and dry off your feet with a towel. Wear sandals whenever possible to increase air contact with your feet.
- **Proper tennis shoe fit:** Ensure your foot doesn't slide in the shoe and the heel fits snugly with walking, to decrease shearing forces.
- **Think about orthotics:** Do you frequently develop blisters in the same areas of your feet? It may be due to abnormal biomechanics of your feet, which can be helped with custom orthotics.

Healthcare Help

Q: What are the best types of athletic socks for preventing blisters?

A: In my experience, the best place to shop for athletic socks is a specialty running store. Running stores have the largest variety of moisture wicking and anti-blister socks available. Top picks are the Asics® Kayano socks, which are seamless, have excellent padding where it counts, and moisture wicking capabilities. Thorlos® Lite Running socks with CoolMax® are another excellent choice, as they also have extra

padding where needed without being too bulky. WrightSock® Double-Layer® socks with CoolMax® allow separate movement to occur between the two layers, thereby absorbing friction so your foot doesn't have to. Specialty tennis retailers will also have the top brands and helpful advice.

Send your health or fitness related questions to Health & Fitness, Australian Tennis Magazine, LPO Box 1206, Hawksburn, VIC, 3142 or email editor@tennismag.com.au

Managing Your Blisters

You've tried everything for prevention, but you still have a blister which is making your tennis life miserable. What can you do?

Mild blisters: "Hot spots", with no visible blister. Ice the area for 5-10 minutes to decrease irritation. To protect the area, try Band-Aid Blister Block®, Compeed® or Spenco Second Skin®, which help to minimize friction in the area and prevent the blister from becoming worse.

Moderate blisters: Intact blisters with small to moderate amounts of fluid present. These blisters will usually drain on their own. To protect the area, try the Donut Pad technique (see below).

Severe blisters: Blisters with a large amount of fluid or blood present, or with signs of active infection. Seek professional help from a health care professional to evaluate and drain the blister safely, rather than trying it at home on your own. This will decrease the risk of infection and of having the blister re-close after draining. Use the Donut Pad technique for taping (see below).

The DONUT PAD is the best method for padding friction blisters, as used by the WTA Tour Primary Health Care Providers. Supplies can be purchased at a medical supply store or chemist.

Supplies you will need:

- Scissors
- Adhesive Leukofoam
- Gauze padding (use sterile if blister is opened)
- Antibiotic cream
- Fixomull dressing

- Adhesive spray (use during activity or when moist to decrease donut slippage)
- Cotton tipped applicator

Creating the Donut Pad

1. Cut the Leukofoam into 0.5 cm wide and 7cm long strip. With scissors, cut small slits about 1/2 width of foam, to allow foam to form a bend into circle.
2. Spray adhesive spray onto cotton tipped applicator. With applicator, trace around outside border of blister (close to blister, but where skin is not painful to touch).
3. Place adhesive Leukofoam (with slits on outside of circle) where the spray was traced onto skin, allowing foam to stick (Figure 1).
4. Cut gauze square to fit the inside of the foam circle (where blister is located).
5. Place antibiotic cream onto gauze square and cover blister with cream facing blister (Figure 2).
6. Cut two wide strips of Fixomull to cover donut padding, ensuring the donut is entirely covered, overlap strips as shown. Minimize wrinkles in Fixomull to prevent future blisters from occurring (Figure 3).

Figure 1



Figure 2



Figure 3



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