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# Injury Prevention

*Presented by John Furey*

## **Injury Prevention**

1. Causes of injury
2. Warm-up and stretching & cool down
3. Cross-training
4. What pain is okay?
5. What to do when I became injured
6. Runners Knee
7. Plantar Fasciitis
8. IT Band Syndrome
9. Shin splints
10. Achilles Tendonitis
11. Blister care
12. Black toe nail

## **Causes of Injuries**

1. Overuse
  - A. Too much mileage increase > 10% runners > 30% walkers
  - B. Running too fast on daily runs. Talk Test 1-10, should be 6-7
  - C. Running too many consecutive days
2. Improper footwear or high mileage on sneakers.
3. Poor skeletal structure
4. Improper warm-up & lack of flexibility
5. Weak muscles
6. Not enough rest or easy days
7. Dramatic change in surface ie: all treadmill to all road
8. Previous injury history

## **Warm-up**

Any Cardio exercise should begin easy and gradually increase in intensity.  
3-5 minutes is ideal

Example: If you normally run 10 minute per mile pace, you may run 12-13 minute mile pace or briskly walk first.

## **Stretching**

Stretching a.k.a. flexibility exercises should be done at the conclusion of the run or walk  
Stretch to the point of tension and hold for 15-30 seconds, at least 1x per muscle group  
You can stretch everyday and even several times per day

Do not stretch first thing in the morning

If you have a particular tight spot, you may stretch it after the initial warm-up or even at every mile.

See diagram

## **Cool Down**

- At the end of the walk/run/cardio workout walk around for 3-5 minutes to prevent blood from pooling in legs.

## **Cross-Training**

Cross-Training is a method to get a cardiovascular workout that is as effective as running or walking without the impact.

Cross Training has several important benefits

1. It will allow you to train while injured.
2. It will allow you to exercise more days per week without further risk in injury level.
3. It will increase weekly calorie expenditure, decrease body fat, joint stress, and increase run/walk speed.
4. Provides variety in program.
5. Many options: Elliptical, cycle, rower, stair climber, spin clam, kick-boxing, swimming, in-line skating, cross-country skiing, you can pick one or vary them.

You could do the same amount of minutes for run/walks at a similar intensity.

## **What Pain is Okay?**

- Pain that is present during the beginning of the workout that lessens or goes away is ok.
- Pain that is present at the beginning and gradually worsens is a sign to discontinue workout and maybe cross-train.
- Pain that is evident the day after the workout, but then is gone, bears watching, but is manageable.
- Pain that lingers for more that 36 hours after a workout is a sign that something is wrong.
- Pain in the muscles V. joints is much better and more manageable.
- Pain that alters your stride means discontinue activity.

## **WHAT DO I DO IF I BECOME INJURED?**

1. Ice Area: 15-20 minutes several times per day (frozen peas work well)
2. ELEVATE injured part while icing
3. Rest, (at least initially)
4. Contact me A.S.A.P. to develop game plan
5. Analyze program for possible causes.
  - What did I do differently in training?
  - Big mileage jump?
  - significant pace increase?
  - shoes beaten up? Or change in shoe model?
  - change from all treadmill to roads?
6. Cross-Train on non-impact cardio
  - follow similar minutes that you were doing run/walk.
7. Determine plan to return to full program, return to running very slowly
8. Possible physical therapy/orthopedic/ may be needed

## ***'Injury: Runners knee (a.k.a. Patella femoral Pain syndrome)***

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***Area: Around or behind the kneecap. The cartilage becomes irritated***

### **Symptoms:**

- Dull, achy, pain, although it can be sharp at times - Pain while climbing stairs, particularly downstairs.
- Pain while running may initially bother you after run, then while running.
- Pain increases with downhill running
- Pain increases after long periods of sitting
- Minimal visible swelling, but knee feels stiff
- Deep squatting increase pain
- Kneecap may click or grind

### **Causes**

- Rapid mileage increase (greater than 10%)
- Increased hill training
- Weak thigh (particularly quadriceps muscle)
- Weak outer hip muscles (hip abductors)
- Deep range leg press, squat, lunge.
- Tight Hamstrings and tight IT band
- Excessive pronation (rolling in while landing)
- Poor knee alignment

### **Treatment:**

- Anti-inflammatory
- Rest initially (1-2 days)
- Ice 15-20 minutes several times per day for first 2 days and several times after exercise
- Cross-train until pain subsides (Elliptical is ideal)
- Neoprene sleeve with kneecap cut-out may help
- Strengthen Quads- wall sit, one leg at a time squat, lunge, leg press with minimal bend.
- Strengthen inner, outer thighs, and hamstrings.
- Gradual return to running, cut mileage by 50%, add 5-7% per week.

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## **Injury: Plantar Fasciitis**

**Area: Heel or Arch area**

### **Symptoms:**

- Pain that feels like a bruise under the heel
- Pain and stiffness first thing in the morning that diminishes during the day.
- Pain when pushing off

### **Causes:**

- Too rapid mileage increase
- Lack of calf flexibility
- Excessive hill training
- Poor footwear, poor arch support, shoes too small or too rigid.
- High arch or flat foot.

### **Treatment:**

- Rest, ice, and determine possible causes.
- Cross-train & Elliptical, cycle, flat-footed stair climber
- Stretch calf muscle
- Strengthen arch by trying to pick up towel or marble w/ bare feet
- Strengthen calf once area is calmed down by doing toe raises
- Check shoes
- Avoid hills
- Increase warm-up duration
- Add arch support & possible Velcro foot strap
- Break up scar tissue by rolling golf ball on foot
- Cut mileage, cross-train, and slowly add more walk/run as foot improves.
- See P.T. or Doc. If no relief in 2 weeks.

## **Injury: IT Band Tendonitis or IT Band friction syndrome** **(illotibial band)**

**Area:** *At hip or outside of knee, below the kneecap to the outside.*

### **Symptoms:**

- Pain, usually gradual onset, although sometimes quicker
- Maybe tight at hip area or painful at insertion point.
- Pain is more sharp than dull
- Made worse walking or running downhill

### **Causes:**

- Poor footwear
- Tight IT Band
- Weak hip Abductors, Gluts, and Quads
- Rapid mileage jump
- Hills
- Poor warm-up
- Q-angle (angle of hips to knees)
- Running on tilted surface (side of road)

### **Treatment:**

- Check shoes
- Rest, Ice, determine cause, anti inflammatory
- Stretch IT Band with wall stretch
- Break up scar tissue w/ foam roller
- Strengthen hip abductors: side lying hip raise, hip abduction standing or seated.
- Strengthen Quads.
- Cross-train on Elliptical or stairs
- Stretching every mile while walking or running
- increase warm-up time
- Do not push through this pain
- See P.T. or Doc. If no relief in 10-14 days.

## **Injury: Shin Splints**

**Area: Outer or inner section of shin**

Outer is called = Anterior Tibialis Tendonitis

Inner is called = Posterior Tibialis Tendonitis

### **Symptoms:**

- Pain & stiffness
- Onset is usually gradual
- May begin with slight pain
- Up and down hills may increase pain
- Harder surfaces may increase pain

### **Causes:**

- Mileage increase too rapidly
- Improper footwear-excessive pronation is a factor
- Tight calf and Achilles
- Hill running
- Weak shin muscles
- Change in running surface

### **Treatment:**

- Rest, ice, determine possible factors
- Check shoes for mileage and if they are right for your foot type
- Cross-train
- Run on soft, flat, surfaces if possible
- Stretch calf/Achilles area
- Strengthen shin muscles; walk on heel, toe raises for outside, tubing pulled to the inside for inner shin
- Gradually reintroduce running
- If pain is very specific in location or increases significantly during run, see doctor for possible stress fracture.

## **Injury: Achilles Tendonitis**

**Area: Back of lower leg (below calf muscle)**

### **Symptoms:**

- Pain and stiffness
- Onset is gradual may initially hurt only after the run
- Hills increases stress
- Area feels very tight
- Pushing off increases pain
- Most severe in the morning

### **Causes:**

- Tight calf muscles
- Poor footwear
- Hill training excessively
- Poor warm-up
- Weak Soleus muscle
- Rapid Mileage increase

### **Treatment:**

- Rest, ice, determine cause
- Stretch calf, but don't over stretch
- Cross-train: cycle, Elliptical, flat footed Stairmaster
- Avoid hills
- Increase warm-up time
- Place insert in each heel, (¼ inch)
- Strengthen Soleus muscle with seated heel raise
- Gradually rebuild mileage, don't run in pain
- See physical therapist if no relief in 7-10 days

# Black Toenails

## **Why are my toenails black?**

This is a result of a pooling of blood under the toenail, caused by the toe rubbing or hitting the top of your shoe. Often the toe will throb with the pressure of the blood.

## **Is there anything that I can do about these toenails?**

If there is pain from pressure underneath the surface of the toenail, then you can relieve that pain. Simply take a sterilized needle and puncture your toenail until the blood begins to drain out. Once you see the blood coming out, submerge your foot in a bucket of water until the remaining blood under the nail is removed.

If there is no pain from the pressure, simply give it time. Actually give it a lot of time. Black toenails can last from weeks until months in time. Keep the nail covered with a bandage and anti-bacterial cream. The sweaty conditions, plus blood under the nail are perfect conditions for infection. However, keep an eye on the nail. Eventually the nail will become loose and you will be able to pull it off. If you don't want to pull it off yourself, it will fall off naturally.

## **How can I prevent these from happening again?**

Check your shoes. Since these are caused by your feet either jamming into the front of your shoe or rubbing under the top of your shoe, make sure your wearing the right shoes. It is not only shoes that are too small that are the problem, but shoes that are too big can do the same thing. Big shoes allow the foot to slide forward into the front of your shoe with each stride you take.

Remember ladies you can always paint over the dead toenail. When the nail is black, paint the dead toenail red. When the nail falls off paint the skin under the toenail red. You'll never notice the difference?

# Blister Care

## **What are blisters?**

Blisters are simply pockets of fluid between two layers of skin. When friction develops between your foot and your shoe, the heat forces the layers of your skin to separate. The space formed by the separating layers of skin fill with fluid (if the blister is dark red, the fluid is blood, thus “blood blisters”).

## **What can I do about this blister?**

The best treatment for blisters is to let them heal themselves. You never want to “pop” a blister, because this will dry out the raw, lower layer of skin and dry that skin out, which will lead to longer recovery time. When “popping” a blister you also make the blister much more susceptible to infection. With the amount of heat and moisture in your shoes and socks, this can be a serious concern.

If the blister is too painful not to pop, try making a pad for the blister. Take a piece of foam padding and cut a hole (a little bigger than the blister) and place the pad around the blister. This type of padding (known as a donut pad) will keep the forces around the blister away, and keep you pain free.

Sometimes by the time you have noticed the blister, it has already popped. In this case simply clean the blister out with warm soap and water, rinse with an anti-bacterial spray/solution, cover with a band-aid and let heal.

If all else fails, and you have to relieve the tension of the blister, you may do so yourself. Remember opening the blister does increase recovery time and make it more susceptible to infection. To open up the blister yourself, take a sterilized needle and make a small puncture in the top of the blister. Then, using mild pressure, force the fluid inside out. Once the fluid is removed, apply an anti-bacterial spray/solution to the blister and cover immediately with a band-aid or gauze pad.

## **How can I prevent Blisters?**

There are many ways which you can prevent blisters. The two best ways are: wearing two pairs of socks or lubricating your socks with lotion, Vaseline or soap before running in them.

Most blisters occur when you are breaking in a new pair of shoes. You can break in shoes, and lessen the risk of developing blisters, by wearing them in the shower when you first get them.