**Most Common Running Injuries**

1. Achilles Tendonitis
2. Chondromalacia – Runner’s Knee
3. Iliotibial Band (ITB) syndrome
4. Plantar Fasciitis
5. Shin Splints

**Achilles Tendonitis** – inflammation of the Achilles tendon. When under too much stress, the tendon tightens and is forced to work too hard. As a result, the tendon becomes inflamed (tendonitis) and over time, can produce scar tissue. If continues to be stressed, it can be torn or ruptured.

**Symptoms:**
- dull or sharp pain along the back of the tendon usually close to the heel
- limited ankle flexibility
- redness or heat over the painful area
- a nodule of scar tissue that can be felt on the tendon
- a cracking sound (scar tissue rubbing against tendon) with ankle movement

**Causes:**
- tight or fatigued calf muscles
- poor stretching
- rapidly increasing running or walking distance
- over-training, excessive hill running or speed work
- inflexible shoes, over pronate

**Self-treatment:**
- stop running
- take a course (5-7 days) of non-steroidal anti-inflammatories after consulting with Primary Care Physician
- ice 10 min every 2 hours
- avoid weight bearing activities as much as possible, elevate foot
- self massage – arnica oil or anti-inflammatory gel
- gentle stretching
- no running until able to do calf raise and jumping exercises without pain
- gradual return to running
- full recovery 6 to 8 weeks

*No signs of improvement after 2 weeks of self treatment seek medical attention from Orthopaedic or Physical Therapist*
Alternative Exercises:
- swimming, pool running, cycling (low gear), non weight bearing exercises

Preventative Measures:
- stretching gastrocnemius (keep knee straight), hold stretch 30sec, repeat 2-3x/day
- stretching soleus (keep knee bent), hold stretch 30sec, repeat 2-3x/day
- stretch well before running
- strengthening of foot and calf muscles (e.g. heel raises)
- correct shoes; motion control, orthotics, etc.
- gradual progression of training program
- avoid hill training
- incorporate rest into training program

**Chondromalacia or Runner's Knee** – softening or wearing away and cracking of the cartilage under the knee cap (patella), results in pain and inflammation, patella not riding over the knee nicely

Symptoms:
- pain beneath or on the sides of the knee cap
- crepitus (grinding noise), as the rough cartilage rubs against the patella when the knee is bent
- pain is greater after hill running
- swelling of the knee

Causes:
- overpronation (feet rotate too far inward on impact)
- cause knee cap to twist sideways
- fatigue or weak quadriceps muscle
- tight hamstrings and iliotibial band (ITB)
- hill running (especially downhill) and running over uneven terrain
- incorrect or worn shoes
- over training

Self-treatment:
- stop running
- 5-7 days non-steroidal anti-inflammatory according to primary care physician
- Ice 10 minutes every 2 hours, decrease inflammation
- Avoid weight bearing activities, foot elevated
- Self massage – arnica oil or anti-inflammatory gel
- Stretch 2-3x/day
- Strengthen quadriceps pain free
- Strengthen gluteal musculature
No signs of improvement after 2 weeks seek medical treatment from Orthopaedic or Physical Therapist

Alternative – swimming, pool running, cycling (low gear)

Preventative:
- Stretch quadriceps, ITB, and piriformis
- Strengthen quadriceps, hamstrings, gluteals, and gastrocnemius

Iliotibial band (ITB) Syndrome - pain and inflammation on the outside of knee where the iliotibial band (muscle on the outside of the thigh) becomes tendinosis. Results in friction syndrome by rubbing against the femur as it runs along the knee joint

Symptoms:
- Initially: dull ache 1-2 miles into run, with pain remaining for the duration of the run
- Acute: disappears after stop running
- Sub-acute: disappears after activity has stopped for several hours
- Chronic: continues to ache after activity has stopped, there all the time, notice in sleep
- Severe sharp pain with running down hill or uneven terrain
- Pain with ascending or descending stairs
- Local tenderness and inflammation

Causes:
- Over pronation of the foot
- Tightness of TFL/ITB muscle, lack of stretching
- Incorrect shoes
- Excessive hill running (especially downhill)
- Over training

Self-Treatment:
- Stop running if pain is severe, mild pain decrease intensity and load, avoid downhill running
- 5-7 days non-steroidal anti-inflammatories according to your primary care physician
- Ice 10 minutes every 2 hours
- Self massage - arnica oil or anti-inflammatory gel
- TFL/ITB stretch, hold 30 sec repeat 2-3x/day
- Stretch before and especially after
- Return to running gradually
- Full recovery 3 to 6 weeks

No improvement after 2 weeks seek medical treatment from an Orthopaedic or Physical Therapist
Alternative Exercises – swimming, pool running, cycling (low gear), avoid stair climbing

Preventative:
- Stretch ITB, quadriceps, hamstrings, and piriformis
- Strengthen quadriceps, hamstrings, gastrocnemius
- Correct shoes
- Avoid downhill running
- Rest with training program

**Plantar Fasciitis** - inflammation of plantar fascia, a thick fibrous band of tissue on the bottom of the foot, from heel to base of toes. When under too much stress, plantar fascia stretches too far and tears, resulting in inflammation followed by scar tissue, which is less flexible than fascia and only aggravates the problem

Symptoms:
- Pain at the base of heel
- Pain more severe in the mornings, getting out of bed, at the beginning of the run
- Pain lessens with walking or change in running stride (only temporary relief)

Causes:
- Stress, tension and pulling of the plantar fascia because of tight gastrocnemius and soleus muscle that place more tension on Achilles tendon which then places more stress on the plantar fascia
- Over pronation
- High arch, rigid feet
- Incorrect shoes or worn shoes
- Over training

Self-treatment:
- Stop running if severe pain
- Mild pain decrease running speed and duration
- 5-7 days non-steroidal anti-inflammatory
- Ice 10 min every 2 hours, frozen water bottle; roll bottom of foot over it
- Self massage
- Stretching gastrocnemius and soleus
- Return to running, 6 to 8 weeks

No improvement in 2-3 weeks seek medical treatment from Orthopaedic or Physical Therapist

Alternative Exercise – swimming, pool running, cycling (low gear)
Preventative:
- Stretch gastrocnemius and soleus, hold 30 sec, repeat 2-3x/day
- Stretch plantar fascia; sit on floor w/ one knee bent and the ankle flexed towards you, pull the toes back towards the ankle, hold 30 sec, repeat 2-3x/day
- Strengthen; pick up marbles with toes, pull towel towards you w/ toes, golf ball under foot, roll foot over ball; start ball base of big toe and roll towards knee, enough pressure feel tenderness
- Correct shoes

Shin Splints – inflammation of the muscle attachments and interosseous membranes to the tibia (shin bone) on the inside of the front of the lower leg

Symptoms:
- Pain or tenderness along the inside of the shin, usually about halfway down the shin. Pain and tenderness may extend to the knee
- Pain on palpation of the shin
- Pain is most severe at the start of a run, but may disappear during a run, as the muscles loosen up. This is different to a stress fracture, where there is pain during weight bearing activities (walking, stair-climbing)

Causes:
- Inflexible gastrocnemius muscle, resulting tight Achilles tendon
- Overpronation
- Excessive running on hard surfaces, such as concrete pavements
- Incorrect or worn shoes
- Overtraining or rapid increase in duration and intensity of training
- Beginner runners

Self-treatment:
- Stop running if severe pain, mild reduce duration and intensity, avoid downhill running and running on uneven terrain
- 5-7 days non-steroidal anti-inflammatory according to your primary care physician
- Ice 10 minutes every 2 hours
- Self massage – arnica oil or anti-inflammatory gel
- Stretching of the gastrocnemius and soleus muscles, hold 30 sec, repeat 2-3x/day
- Stretch well before run and especially afterwards
- Recovery 2-4 weeks

No improvement after 2 weeks seek medical treatment from Orthopaedic or Physical Therapist

Alternative Exercises – swimming, pool running, cycling (low gear)
Preventative measures:
- Stretching of the gastrocnemius and soleus muscles, hold 30sec, repeat 2-3x/day
- Strengthening of foot and calf muscles
- Correct shoes, orthotic, etc.
- Run on soft surfaces
- Gradual progression of training programs, with rest incorporated
Stretch Gastroc uni standing
Perform 1 set of 3 Repetition, once a day.
Hold exercise for 30 Seconds.

Stretch Soleus stand
Perform 1 set of 3 Repetition, once a day.
Hold exercise for 30 Seconds.

Stretch Quads standing
Perform 1 set of 3 Repetition, once a day.
Perform 3 repetitions every 0 Seconds.

Stretch IT/TFL stand at wall
Perform 1 set, twice a day.
Hold exercise for 30 Seconds.
Perform 3 repetitions every 0 Seconds.

Stretch hamstring bil (stand 90)
Perform 1 set, twice a day.
Hold exercise for 30 Seconds.
Perform 3 repetitions every 0 Seconds.

Stretch hip/knee figure 4
Perform 1 set of 3 Repetitions, twice a day.
Hold exercise for 30 Seconds.

Stretch hip flexors supine 1
Perform 1 set of 3 Repetitions, twice a day.
Hold exercise for 30 Seconds.

These exercises are to be used only under the direction of a licensed, qualified professional.

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Resist ankle DF longsit w/elastic
Perform 2 sets of 10 Repetitions, once a day.
Use Elastic.

Resist ankle PF longsit w/elastic
Perform 2 sets of 10 Repetitions, once a day.
Use Elastic.

Resist knee sidestep w/elastic
Perform 2 sets of 10 Repetitions, once a day.
Use Elastic.

AROM knee step downs
Perform 2 sets of 10 Repetitions, once a day.

AROM toe flx grab w/towel
Perform 2 sets of 10 Repetitions, once a day.
Use Towel.

Resist ankle inv w/elastic
Perform 2 sets of 10 Repetitions, once a day.
Use Elastic.

Resist ankle ever uni sit w/elastic
Perform 2 sets of 10 Repetitions, once a day.
Use Elastic.

AROM hip ER/abd sidelying
Perform 2 sets of 10 Repetitions, once a day.

AROM lumbar leg abd prone on Ball
Perform 2 sets of 10 Repetitions, once a day.
Use Ball.

Exercise Program For:
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These exercises are to be used only under the direction of a licensed, qualified professional. Caution: User must wear suitable eye protection such as safety goggles during this exercise to protect against possibility of eye injury as a result of the band or tube snapping towards the face if grip is lost or if the band or tube breaks.

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