**Megan R. Wolf, MD**
**Sports Medicine/Foot & Ankle**

Connecticut Orthopaedics

*rom: Kathy Coyner, MD*
*www.DrCoyner.com*

**Tibia Stress Fracture Protocol (Home workout)**

Progression from one step to the next depends solely on your pain symptoms. Attempt the first workout on day one of week one; if no pain is felt, proceed to the workout on the following day. *Do not progress farther than one workout per day*! If pain occurs, stop the activity and get in touch with your athletic trainer. **Do not take any pain medications during this time period!** Medications will mask your pain symptoms and will prevent you from properly and safely advancing your activity level.

*During your warm-up (5 minutes on a stationary bike) and cool-down, perform the stretching program included with this packet. All stretches, weights, therapeutic exercises and single leg exercises should be performed bilaterally.*

*When beginning the leg extensions, leg curls, the 4-way hip machine and squats, choose smaller weight amounts. Lifting too much weight too quickly may hinder your recovery. The weights should not be too heavy for you to perform the lift safely and properly. If you have no access to a 4-way hip machine, you can substitute ankle weights to perform abduction, adduction, flexion, and extension movements, or use the resistive band exercises.*

***Resistive Band Exercises #1(RBE#1):*** *Resisted hip ER stand/kneel w/elastic 3x8, Resist hip add uni stand w/elastic 3x8, Resisted hip abduction/ knee flexion w/ elastic (side lunges) 3x8, Resisted hip ext stand w/elastic 3x8, Resisted hip flex stand w/elastic 3x8.*

***Resistive Band Exercises #2 (RBE#2):*** *Resisted knee side to side step w/elastic 3x8, Resisted hip abd uni supine w/elastic 3x8, Resisted hip adduction uni stand w/elastic proximal 3x8, Resisted hip abduction bilateral supine legs straight w/elastic 3x8, Resisted hip IR w/elastic 3x8.*

***Resitive Band Exercises #3 (RBE#3):*** *Resisted hip ER w/elastic 3x8, Resisted knee crossover w/elastic 3x8, Resisted hip abduction w/elastic (seated) 3x8, Resisted hip IR stand w/elastic 3x8.*

***Aquatic Program:*** *The swimming program consists of either swimming with a buoy between the legs, running in a deep well pool, flutter kick swimming (as long as you are having no pain), or a combination of all three of these exercises. If swimming, DO NOT kick off the walls during turns.*

***Running Program:***
*The distances listed in this protocol have been designed for use on a football field. A football field is 100 yards long and is marked in 10 yard increments from goal line to goal line. Running during the following 5 weeks should be performed on grass, trails, asphalt, treadmill, or track. Avoid running on concrete of any kind (i.e., sidewalks). No stadium stair running. Try to avoid working on a track every day of the week.*

**Week 1**

**Days**

1. Walk 1 mile at a quick pace. Bike/Swim/Elliptical 20-30 minutes. Bodyweight squats 3x10, RBE#1
2. Walk 1 mile at a quick pace, RBE#2
3. Walk 300 yards, jog 100 yards, walk 300 yards, jog 100 yards, walk 300 yards, jog 100 yards, walk 300 yards, jog 100 yards, walk 100 yards. Bike/ Swim/ Elliptical 20-30 minutes. Bodyweight squats 3x10.
4. OFF
5. Walk 200 yards, jog 200 yards, walk 200 yards, jog 200 yards, walk 200 yards, jog 200 yards, walk 400 yards.
6. Walk 400 yards, jog 400 yards, walk 400 yards, jog 400 yards, walk 100 yards. Bike/ Swim/ Elliptical 20-30 minutes, RBE#3.
7. Walk 400 yards, jog 800 yards, walk 400 yards, Bodyweight squats 3x10.

**Week 2**

**Days**

1. Walk 200 yards, jog 1200 yards, walk 400 yards. Bike/Swim/Elliptical 25-35 minutes. Bodyweight squats 3x10. RBE#1
2. Walk 100 yards, jog 1 mile, walk 100 yards. Single leg extensions 3x8 ___lbs, 4-way hip machine 3x8 ___lbs (Abduction, Adduction), Single leg hamstring curls 3x8 ___lbs.
3. Jog 300 yards, run 100 yards, jog 300 yards, run 100 yards, jog 300 yards, run 100 yards, jog 300 yards, run 100 yards, jog 100 yards. Bike/Swim/Elliptical 25-35 minutes. Bodyweight squats 3x15, RBE #3.
4. OFF
5. Jog 200 yards, run 200 yards, jog 200 yards, run 200 yards, jog 200 yards, run 200 yards, jog 400 yards. Single leg extensions 3x8 ___lbs, 4-way hip machine 3x8 __lbs, Single leg hamstring curls 3x8 __lbs.
6. Jog 400 yards, run 400 yards, jog 400 yards, run 400 yards, jog 100 yards. Bike/Swim/Elliptical 25-35 minutes. Bodyweight squats 3x15.
7. Jog 400 yards, run 800 yards, jog 400 yards. RBE#2

**Week 3**

**Days**

1. Jog 600 yards, run1200 yards, walk 400 yards. Bike/Swim/Elliptical 30-40 minutes. Bodyweight squats 3x15. RBE#2.
2. Jog 400 yards, run 1 mile, jog 200 yards. Single leg extensions 3x8 __lbs, 4 way hip machine (adduction, abduction, flexion, extension) 3x8 __lbs, Single leg hamstring curls 3x8 __lbs.
3. Jog 400 yards, run 1 mile, jog 200 yards, walk 400 yards, Bodyweight squats 3x20. RBE#1.
4. Run 50 yards at 50% speed x2, then at 75% speed x2, and finally at 100 % speed x2, 1 minute rest between change in speeds. Run 100 yards x2 with 1 minute rest. Bike/Swim/Elliptical 30-40 minutes.
5. OFF
6. Run 100 yards x4 with a 45 second rest between 100 yard increments, jog 400 yards, walk 100 yards. Bodyweight squats 3x20. RBE#3.

7. Run 40 yards x10 with 2 minutes rest, jog 400 yards, walk 100 yards. Bike/Swim/Elliptical 30-40 minutes. Single leg extensions 3x8 __lbs, 4-way hip machine 3x8 __lbs, Single leg hamstring curls 3x8 __lbs.

**Week 4**

**Days**

1. Speed work: Run 50 yards x 12 (45 second rest after each 50 yards), Single leg extensions 3x8 ___lbs, 4-way hip machine 3x8 __ lbs, Single leg hamstring curls 3x8 ___lbs. Squats 3x8 (with dumbbells).
2. Grass or trail running: Run .5 of a mile, Walk 1 mile. Bike/Elliptical 30 minutes, RBE #3.
3. Grass or trail running: Run 1 mile, Walk .5 of a mile.
4. Speed work: Jog 20 yards, sprint 20 yards, jog 20 yard sprint 20 yards x15 with 30 seconds rest, RBE#2.
5. OFF
6. Grass or trail running: Run 1.5 miles, Walk 1 mile, Single leg extensions 3x8 30 lbs, 4-way hip machine 3x8 ___lbs, Single leg hamstring curls 3x8 ___lbs. Squats 3x8 (with dumbbells).
7. Grass or trail running: Run 1.5 miles, Walk .5 of a mile. Bike/Elliptical 30 minutes, RBE#1.

**Week 5 workout or Agility workout**

***The agility workout should be substituted for the week 5 workout for those athletes participating in a sport that requires speed and agility work rather than distance work. If you want a combination of agilities and distance work, you may substitute a couple of the agilities workouts for a couple of workouts during week 5. Single leg extensions, Squats with dumbbells, the 4-way hip machine work and single leg hamstring curls and speed work should be added to the agility workout.***

**Days**

1. Trail/grass running: Up to 2 miles.
2. Speed work: Sprint 75 yards x 15 (45 second rest after each 75 yards), Single leg extensions 3x10 __lbs, 4 way hip 3x10 __lbs, Single leg hamstring curls 3x10 __lbs. Squats 3x10 (with dumbbells).
3. Trail/grass running: Up to 2 miles.
4. Speed work: Jog 20 yards, sprint 20 yards, jog 20 yard sprint 20 yards x15 with 30 second rest. Single leg extensions 3x10 __lbs, 4 way hip machine 3x10 __lbs, Single leg hamstring curls 3x10 __lbs. Squats 3x10 (with dumbbells).
5. Trail/grass running: Up to 2.5 miles.
6. Off
7. Trail/grass running: Up to 3 miles.

*****Agility workout*****

**Days**

1. Carioca 15 yards x3 □ side shuffle 10 yards x3 □ backpedal 10 yards x3 □ line jumps-double leg, forward/backward 20 seconds x4 □ side/side 20 seconds x4 □ 5-10 yard straight sprints w/ no quick stop x5 □ cone chute 15-20 yards x5.
2. Carioca 15 yards x3 □side shuffle 10 yards x3 □ backpedal ladder drill x6 □ S-cone drill 25 yards x6.
3. Carioca triangle drill x6 □ backpedal/sprint drill x4 □ S-cone drill, 25 yards x6.
4. OFF

5. Shuffle v 8 drill x6 □box jumps (2 feet in height) x3 □line jumps, single leg forward/backward 20 seconds x3 □ side/side 20 seconds x3
6. 45 degree square drill w/shuffle x6 (both sides) □ plant and cut drill 30 yards x5 □ 5-10-15 yard ladders x4.
7. Plant and cut drill 30 yards x7 □ zig-zag backpedal x4 □ four corner shuffle drill x5.

Once you have progressed through all 5 weeks, contact your physician to discuss return to sport specific activity.