



Department of Rehabilitation Services
Physical Therapy

Lower Extremity Functional Progression Following Stress Injury Protocol

The intent of these guidelines is to provide the athlete with a framework for return to sports activity following injury. These guidelines should not take the place of medical advice if attempting to return to sports following an injury. If an athlete requires assistance in the progression of a return to sport program they should consult with their primary care physician, surgeon, or physical therapist.

The progression is designed for a ¼ mile track (440 yards equals one lap, and four laps equals a mile).

STAGE I: WALK-JOG

1. Walk four laps (one mile).
2. Walk three-quarter lap (330yds); jog one-quarter lap (110yds). Repeat this pattern for 3 more times. Then walk one-quarter lap (110yds)
3. Walk half a lap (220yds), jog half a lap. Repeat this pattern two more times. Walk one lap (440 yds).
4. Walk one lap (440yds); jog one lap (440 yds). Repeat this pattern one more time. Walk 100yds.
5. Walk one lap; jog two laps (880 yds). Walk 440yds.
6. Walk half a lap (220yds); jog three laps (¾ a mile). Walk half a lap (220 yds).
7. Walk 100 yds, jog 4 laps (one mile), walk 100 yds.

STAGE II: JOG- RUN

1. Jog ¾ lap, run ¼ lap, repeat this pattern three times, then jog ¼ lap.
2. Jog half a lap, run half a lap, repeat this pattern three times, then jog one lap.
3. Jog one lap, run one lap. Repeat.
4. Jog one lap, run two laps, jog one lap.
5. Jog one lap, run three laps, jog half a lap.
6. Jog one lap, run four laps, jog half a lap.

STAGE III: SPRINTING

1. Run 50yds at 50% speed. Run 50yrd two times at 75% speed. Run 50yds two times at 100% speed. Take as much rest as needed between intervals.
2. Sprint 100 yds two times with 5 min rest.
3. Sprint 100 yds four times with 5 min rest.
4. Sprint 40 yds six times with 3 min rest.
5. Sprint 40 yds ten times with 2 min rest.

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Functional activity progression for patients with lower extremity stress fracture.

STAGE IV: AGILITY DRILLS

Agility drills are used for sports involving jumping and cutting. Complete a warm up of a one mile run then initiate agility exercises. Complete one cycle of each exercise at 50% effort, then progress to one cycle at 75% effort and then one cycle at 100% effort. Distance and sprint running are then completed.

- 1) **FIGURE OF EIGHT RUNNING:** Run a figure of eight pattern with two 10-foot diameter circles and then with two 5-foot diameter circles. Complete three cycles of each figure of eight at 50%, 75% and 100% effort.
- 2) **CARIOCA:** Run sideways crossing legs in front of and then behind the lead leg for 20 yards, rest 5 seconds, and repeat four times to complete one cycle. Complete three cycles of carioca at 50%, 75% and 100% effort.
- 3) **BACKWARD RUNNING:** Run for 20 yards, rest 5 seconds, and repeat four times for each cycle. Complete three cycles of backward running at 50%, 75% and 100% effort.
- 4) **BOX RUNNING:** Mark out a 5 yard square box. Initiate the run by running the box five times clockwise and then five times counterclockwise. Complete three cycles at 50%, 75%, and 100% effort.
- 5) **VERTICAL JUMPING:** Jump with 50% effort and mark the spot on the wall. Repeat jumping to that mark 10 times. Change the mark to the 75% effort jump and jump to that mark 10 times. Change the mark to the 100% effort jump and jump to that mark 10 times.

STAGE V: PROGRESSION TO PRACTICE AND GAMES

Practice sessions are not initiated until functional rehabilitation is successfully completed. All practice sessions are initiated with a warm-up that includes; 1) light running and stretching 2) gradual increase in speed to full speed running, 3) completion of agility activities with gradual increase in intensity and 4) gradual increase in speed and intensity of movements specific to sport. After practice, complete a cool down of running and stretching.

Based on:

Duke Sports Medicine Protocols, Duke University, Durham, North Carolina.

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