



Return to Running Guidelines

This rehabilitation program is designed to return the individual to their activities as quickly and safely as possible. It is designed for rehabilitation following lower extremity injury for a patient returning to running. Modifications to this guideline may be necessary depending on physician-specific instruction, specific tissue healing timeline, chronicity of injury and other contributing impairments that need to be addressed. This evidence-based Interval Running Program is criterion-based. Time frames in each phase will vary depending on many factors including patient demographics, goals and individual progress. This guideline is designed to prepare the individual for running at a level allowing for gradual return to sport. The therapist may modify the program appropriately depending on the individual's goals for activity following Interval Running Program.

This guideline is intended to provide the treating clinician a frame of reference for progression. It is not intended to substitute clinical judgment regarding the patient's post-injury care, based on exam and treatment findings, individual progress and/or the presence of concomitant injuries or complications. If the clinician should have questions regarding progressions, they should contact the referring physician.

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Ready to Run Testing

- This test is designed to test physical capacity and tolerance for initiating a return to running program.
- If all tests are passed, follow appropriate Return to Running Program.
- If any below tests are not passed, address deficits in rehabilitation setting and retest prior to running.

Testing

1. Walk x 30 minutes (approximately 3.0–3.5 mph)
 - a. Pass = Complete maintaining form, pain-free
 - b. Fail = Unable, significant pain, cardiovascular limitation
2. Single leg heel raise x >25 repetitions at metronome 60 bpm
 - a. Pass = Full range of motion through all reps, keeping pace, pain-free
 - b. Fail = Pain, loses height or shows compensation, <25 repetitions
3. Step-ups x 60 seconds each (12-18-inch box at 180 bpm)
 - a. Pass = proper knee alignment, good SL stance control
 - b. Fail = pain, unable to maintain control, not through full depth, showing hip compensation, unable to maintain pace
4. Jumping: Double leg x 60 seconds at 180 bpm
 - a. Pass = Keeps tempo, pain-free
 - b. Fail = Pain, compensation
5. Hopping: Single leg x 60 seconds each at 180 bpm
 - a. Pass = Keeps tempo, pain-free
 - b. Fail = Pain, compensation
6. Single leg squat: x 60 seconds each to depth 0–45 degrees at metronome 80 bpm
 - a. Pass = Keeps tempo, proper knee alignment and angle
 - b. Fail = Pain, poor control

AlterG Return to Running Progression

- This program is intended to gradually increase the percentage of bodyweight-supported running to allow for a better transition to overground running. This can be used prior to other running programs listed above.
- Patient should not have any pain or swelling during or after the running session.
- 4-6-week program completed twice per week on nonconsecutive days
- Start at 55-60% bodyweight support and dependent on patients running goals, gradually increase the time spent running and percentage of body weight.
- The goal is to achieve 85% bodyweight support and continuous time spent running, then transition to overground running.

Example:

Week	<i>Session 1</i>	<i>Session 2</i>
1	<i>55-60% BW walk 3 min, Jog 30sec-1min x3</i>	<i>60-65% Walk 3 min, Jog 2min x3</i>
2	<i>65-70% walk 2min, Jog 2 min x4</i>	<i>65-70% Walk 2 min, Jog 3 min x3</i>
3	<i>70-75% Walk 2 min, Jog 4 min x2, Walk 2 min, Jog 2 min</i>	<i>70-75% Walk 2, Jog 4 x3</i>
4	<i>75-80% Walk 2 min, Jog 5 min x3</i>	<i>75-80% Walk 2 min, Jog 6 min x3</i>
5	<i>80-85% Walk 1 min, Jog 7 min x2</i>	<i>80-85% Walk 1 min, Jog 8 min x2</i>
6	<i>85-95% Walk 1 min, Jog 9 min x2</i>	<i>85-95% Walk 1 min, Jog 10 min or 1 mile x2</i>

Post-Surgical Return to Running Program

- Running Warmup: A dynamic warmup and 3-5-minute walk should precede each run
- Running Frequency:
 - o Every other day (increase rest days as needed)
 - o Each level should be completed 3 times without pain prior to moving on to next level; repeat sequence as needed.
- Running Intensity: Run at a conversation pace or 50-60% of your maximum heart rate.
- Pain/Soreness:
 - o If pain is not sharp, is present during warmup, but improves with running, or does not increase when running, the patient may continue to run but stay at that level until pain-free.
 - o If pain increases as you run, creates soreness that disrupts sleep or rest, causes joint effusion or alters mechanics, stop running and take additional days off until pain resolves.
- **Consult with your physical therapist throughout return to running process for individualized recommendations.**

Running program is completed in addition to rehab program and other cardiovascular exercise, continue to sprint progression or progression per treating therapist.

	Successful Times Completed	Run	Walk	Reps
Level 1	1. _____ 2. _____ 3. _____	<i>3 minutes</i>	<i>4 minutes</i>	<i>3x</i>
Level 2	1. _____ 2. _____ 3. _____	<i>4 minutes</i>	<i>3 minutes</i>	<i>3x</i>
Level 3	1. _____ 2. _____ 3. _____	<i>6 minutes</i>	<i>3 minutes</i>	<i>3x</i>
Level 4	1. _____ 2. _____ 3. _____	<i>8-10 minutes or 1 mile</i>	<i>2 minutes</i>	<i>2x</i>

Tendon & Soft Tissue Injury Return to Running Program

- This program is intended for soft tissue injuries such as tendinopathies and chronic strains. Acute sprains and strains may require a more gradual approach and may benefit from walk/run interval program at therapist discretion.
- Patients may be appropriate to begin further along the progression depending on whether they have continued running through injury versus complete rest from running.
- Consideration: Takes 72 hours after running for tendon collagen net synthesis, therefore recovery should ideally be 2-3 days between runs (see “non-running days”)
- Complete each level twice, abiding by pain guidelines before advancing to next level.
- Pace: Running intensity should be at an easy/conversational pace
- Pain guidelines:
 - o Continuation of running is generally encouraged if:
 - Normal gait is maintained with no compensations.
 - Pain 5/10 or less and improves during running.
 - Pain returns to baseline levels within 24 hours.
 - General trend of pain and stiffness does not increase from week to week

Sample progression:

***Recovery should ideally be 2-3 days between runs (see “non-running days”)*

	<i>Running Days</i> <i>(Plus rehab exercises, including plyometrics)</i>	<i>Non-Running Days</i>
Level 1	<i>Run 5 minutes continuous</i>	<i>Walk or cross train x 30-45 minutes</i>
Level 2	<i>Run 10 minutes continuous</i>	<i>Walk or cross train x 30-45 minutes</i>
Level 3	<i>Run 15 minutes continuous. Spend middle 5 minutes of run at moderately hard</i>	<i>Walk or cross train x 45-60 minutes</i>
Level 4	<i>Run 20 minutes continuous</i>	<i>Walk or cross train x 45-60 minutes</i>
Level 5	<i>Run 25 minutes continuous. Spend middle 10 minutes of run at moderately hard</i>	<i>Walk or cross train x 60+ minutes</i>
Level 6	<i>Run 30 minutes continuous</i>	<i>Walk or cross train x 60+ minutes</i>

Interval Return to Sprinting Program

- This program is intended to be used to progress into running at higher speeds and should be initiated after successful completion of tissue specific return to running program listed above.
- Sprint progression to be completed with no pain and or swelling.
- Each stage should be completed 3x successfully with at least one rest day in between sessions before advancing.
- Progression can start with long acceleration, followed by a short period of target speed in between, then a long deceleration.
 - Progression can continue with shortening acceleration and deceleration phases with longer target speed in the middle.

Stage I: Purpose: build up work capacity and improve technique (1:3 work:rest ratio at goal 50% pace compared to maximum speed, working up to 60% over three sprint sessions)

- Target sprint distance around 500 yards (example below)
 - Should be variable distances
- ___ 3 x 20 yds OR ___ 5 x 3/4 court
- ___ 3 x 50 yds OR ___ 4 x 2 full court
- ___ 2 x 40 yds OR ___ 5 x 1 1/2 court
- ___ 2 x 50 yds OR ___ 2 x full court
- ___ 1 x 100 yds OR ___ 1 x 3 courts
(Total 510 yd)

Stage II: Purpose: work on increased speed and build intensity (1:5 work:rest ratio at goal 70% pace compared to maximum speed, working up to 80% over three sprint sessions)

- Target sprint distance around 700 yards (example below)
 - Should be variable distances
- ___ 5 x 20 yds OR ___ 7 x 3/4 court
- ___ 4 x 50 yds OR ___ 5 x 2 full court
- ___ 5 x 40 yds OR ___ 5 x 1 1/2 court
- ___ 2 x 50 yds OR ___ 2 x full court
- ___ 1 x 100 yds OR ___ 1 x 3 courts
(Total 700 yd)

Stage III: Purpose is to build into max speed with bias towards sport and position-specific speed/distance and metabolic demands (Goal: 90-100% of maximum speed)

These sprint intervals are based on the needs of the individual patient and the demands of their sport(s). Number of repetitions determined by energy demands of specific sport and position.

Interval Return to Sprinting Program

Week ____	Distance	Time	Average HR or RPE	Running Activity Notes	Symptoms/pain Notes	Other Activity
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						

Week ____	Distance	Time	Average HR or RPE	Running Activity Notes	Symptoms/pain Notes	Other Activity
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						

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