



# University Hospitals Sports Medicine

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## RUNNING INJURIES

**One of the most common causes for running injuries is training errors, which can include the following:**

- High mileage or fast progression(s) in a short period of time
- Distance and Speed
- Frequency and Intensity
- Rapid changes or transitions
- Running Form and Technique
- Shoe Wear
- Running Surfaces or Terrain
- Type of training

**Other factors for running injuries can also include:**

- Age
- Gender
- Experience
- Structural abnormalities or body build
- Previous Injuries

**Most training errors can be prevented** with the correct training program, receiving proper treatment, wearing correct shoe type, and having the right knowledge regarding running and overuse injuries.

Physical Therapy can assess injuries and treat musculoskeletal impairments. It can be a valuable tool for any runner suffering from an injury, who wants to return back to running. By performing running evaluations and foot assessments, the runner is evaluated by the PT for impairments that may be contributing to their injury and assess ways to address the source and prevent future injuries. The evaluation does not just focus on the area of injury, but evaluating the entire lower extremity in addition to gait and running assessment to identify any deviations or compensations. Often times if a deviation or impairment is found in one's gait, it is amplified during running.

**Common Running Injuries include the following:**

- Anterior Tibialis Shin Splints
- Posterior Tibialis Shin Splints
- Achilles Tendonitis
- Plantar Fasciitis
- Stress fractures
- Hamstrings strain
- Quad strain
- Lateral ankle sprains
- Patellofemoral pain
- Patellar tendonitis
- ITB Syndrome
- Trochanteric Bursitis
- Piriformis Syndrome

## SORENESS RULES

Injuries can be minimized by listening to the body's cues. It is important to differentiate between pain and muscle soreness. Painful activities should be avoided or modified to allow pain-free activity. The following "Soreness Rules" are a guideline to determine exercise progression:

- If no soreness is present from previous day's exercises, progress exercise by modifying only ONE variable
- If soreness is present from previous day's exercises, but recedes with warm-up, stay at the same level
- If soreness is present from the previous day's exercise, but does not recede with warm-up, decrease exercise to the level prior to progression. Consider taking the day off if soreness is still present with reduced level of exercises. When exercise is resumed, it should be at the reduced level.

***If you have additional questions or concerns about your specific situation, please feel free to call one of our running specialists at 216-286-REHAB (7342) or go to [UHhospitals.org/OPRehab](http://UHhospitals.org/OPRehab).***



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## RUNNING PROGRAM

### What is a running program?

A running program is a comprehensive rehab program developed to allow a patient to return to running following injury or surgery. It can help to prevent or reduce the risk of injuries by identifying potential risk factors. It consists of the following:

- Evaluation
- Video Analysis of Gait and Running
- Patient Education
- Home Exercise Program (HEP)
- Return to Running Program (RTR)

A running program is developed based upon the patient's impairments and symptoms. Each program is individualized and tailored to specific goals. Visits can be scheduled one-three times a week and can vary in length from 4-12 weeks depending on the patient. It consists of four stages:

- **Stage 1: Evaluation**  
The patient is assessed and impairments are identified. It is comprehensive evaluation that looks at the whole body. Often times, impairments are categorized as primary or secondary to better identify the source of the patient's need for PT. The patient will be educated in the findings of the evaluation in addition to developing a HEP, how to prevent injury/re-injury and explain progressions of therapy.
- **Stage 2: Basic Rehab**  
Once impairments are identified, they are addressed through specific exercise programs and treatment such as strengthening, core stabilization, flexibility, gait training, postural/balance retraining, and neuromuscular reeducation. The key to successful rehab is compliance with HEP and patient education. Education is the gold standard of all therapy
- **Stage 3: Functional Strengthening and Plyometrics**  
Once the basics of rehab and HEP are established, specific exercises and progressions are introduced with emphasis placed on single leg activities and plyometrics. During running, the majority of the time is spent on one leg and single leg balance is essential as well as performing the basics of jumping. Running is a series of jumps from one foot to the other. If a patient is unable to maintain balance or jump correctly then poor form/technique and other deviations may be present during running.
- **Stage 4: Return to Running**  
During the last stage, a return to running program is initiated and a patient can begin a training/running schedule based upon their needs and goals. At this point, running and training is resumed and eventually the patient is discharged to an independent HEP.

### What is a running evaluation?

A running evaluation consists of a comprehensive examination of lower extremity strength, range of motion, flexibility, posture and gait. It also includes video analysis of the patient while walking and running on a treadmill to identify and assess impairments. If deviations are seen during gait then they are often exaggerated during running. Multiple angles and views are used— anterior, posterior and lateral views of the patient are recorded to better assess how a patient is running and what is happening at the hips, knees and ankles during each phase of running.

**What is a foot assessment?**

A foot assessment is a specific type of assessment used to determine the patient's foot type. Foot type is based upon multiple features such as arch appearance, callus pattern, ankle/foot positioning, and joint mobility. Using these measures and tests, classification of foot type into rearfoot and forefoot can be done. This information can then be used to identify which type of shoe wear is best for the patient.

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