MAPLE CITY PHYSICAL THERAPY

Injury Prevention in Running

Summary

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4. Late Rehab

Facts

- At least 50 percent of all runners get hurt every year. This can be in the form of trauma but more frequently from overuse injury.

-Running is associated with a higher risk of overuse injury than other forms of aerobic exercise such as walking, swimming and cycling due to increased loading and force on the hips, knees, and ankle.

-Females tend to experience higher prevalence of knee pain (40% versus 31%) as compared to males with respect to running. However, males tend to experience higher rates of ankle/foot pain (26% versus 19%) than females.

Common injury types

Iliotibial (IT) Band syndrome

-Is a band that connects the hip and the knee. Most commonly is caused by weakness of the hip, much more prevalent in females over males as their wider hips stress the IT band and irritate the tissue.

-Often people will report outer knee pain when running, typically downhill and also with going down stairs.

-Hip is often very tight as a result, the IT band can pull on the outside of the kneecap and cause pain.

Stress Fracture (Shin Splints/Metatarsal)

- Typically due to repetitive weight bearing, pounding on surfaces that cause microfractures along the tibia (shin bone) or the metatarsals (foot bones).

-Can often be a severe pain, can end up in a complete fracture if inappropriate measures are taken.

-Diet can impact likelihood of onset, runners with minimal dairy intake or eating disorders can tend to develop this at a higher rate.

-Sometimes X-Ray is needed to diagnose, otherwise by orthopedic or physical therapy consultations are sufficient.

Patellofemoral Pain Syndrome (PFPS)

-Typically caused by muscle imbalance in the hips, knee, and ankle. Weakness in these areas can cause compensation and overuse of different muscle groups in the hips, knee and ankle.

-Flat feet/fallen arches can contribute to the development of PFPS. Typically runners with flat feet tend to compensate by overusing muscles around the knee, causing kneecap pain.

-Strain can cause wear and damage to the cartilage under the kneecap.

Prevention of Injury

Stretching

-Stretching should always be within 30 to 60 seconds while holding a constant stretch. Relaxation around the muscle sight is imperative to allow for lengthening to occur.

-Stretching should account for the hip, iliotibial band, quadriceps, hamstring, calf, and ankle muscles and tendons. Stretching just one muscle group will typically not be enough to ensure muscles are appropriately ready for use.

Strengthening

-Muscle groups to strengthen include the hip, knee, and ankle muscles. Typically strength training should be painless, best done with weightbearing for best results. In instances when there is muscle or joint pain, performing non weight bearing activities can also be beneficial.

Activity Avoidance

-Avoiding running when running is painful is very important. What could take 5-7 days to heal is a small amount to sacrifice when compared to developing a condition such as iliotibial syndrome or PFPS. Typically icing, elevation and rest for a few days is enough to allow for full healing.

-Avoiding slopes, running on even surfaces can help. Level treadmill running can help reduce strain around the knee or further, performing cardiovascular exercise such as biking, swimming, or other non weight bearing options can substitute effectively.

Proper footwear

-Using proper footwear including sneakers with arch support or use of custom orthotics to promote fallen arches can be effective at combating pain with running in both the knee and the foot. Running on uneven surfaces, such as the beach, can cause uneven force on the foot and knee. Even surface running with proper footwear is highly recommended.

Physical Therapy treatment

-Physical Therapy consists of specific muscle training. Underworked muscle groups must be identified to most effectively strength train. For example, if the hip muscle is weak and the quadriceps muscle group is overcompensating, the hip specifically must be trained.

-Typical strength progression involves non weight bearing activities such as straight leg raises to weight bearing activities such as resistance band training up to plyometric activities consisting of jumping, cutting, shuffling, and eventual return to running.

-Stretching consists of 30-60 holds to permanently lengthen muscle groups that are tight. Most common muscle groups to stretch are the iliotibial band, the arch of the foot, and muscle groups that attach on the kneecap.

-Hands on therapy can be highly effective at reducing pain. Examples include massage, such as to the shin muscle for shin splints or the arch of the foot. Hands on stretching can be helpful as it is easier to relax with stretching with proper stabilizing and stretching from a physical therapist. Patellar mobilizations can assist in restoring mobility to a previously stiff knee. Modalities such as electrical stimulation and ice can also assist in reducing pain.