

Exercise Prescription: Core Strengthening in Runners

Prepared by Erin James DPT, Cert. MDT, Wentworth-Douglass Rehabilitation Services

Front Planks:

Builds endurance in deep core stabilizers (transverse abdominis, rectus abdominis, erector spinae, multifidi, and obliques)

Start lying face down, then raise onto your forearms and toes.

Maintain this position for about 15 seconds making sure to keep good alignment between ear, hip, and ankle.

If this is easy, increase the length of hold time until able to perform 90 seconds. If this is too difficult to maintain good form, start on your forearms and knees instead.



Progression: Add alternating arm raises > Alternating leg raises for cross-body stabilization > Attempt using forearms or feet on physioball for additional stability challenges



Side Planks:

Builds endurance in oblique abdominals and lateral pelvic stabilizers (gluteus medius) to keep the knee aligned during stride versus dropping to the midline

Start side-lying, then raise up onto one forearm and sides of your feet (one atop the other), leaving your upper arm along your hip or raised straight up.

Maintain this position for about 15 seconds with a straight line from your nose, belly button, and between your ankles without rotating through your shoulders.

If this is easy, increase the length of hold until able to perform at least 60 seconds. If this is too difficult to maintain good form, start on your forearm and knees instead.



Progression: Add leg raise > hip drop > Arm drops (in front of body) >Upper Leg bent knee raises> Arm rotational reach

Bridges

Coordinates core stability with glute and hamstring strengthening (stabilizes upper leg in stance)

Start lying on your back, tighten your lower core muscles to maintain the natural arch in the small of your back, then use your glute muscles to press your hips up, aiming for a straight line through your knees, hips, and shoulder at the top. Lower hips with good control. Repeat.

Start with 2 x 10-15 working up to 3 x 15-20 prior to progressing.



Progression: Bridges with a band around knees > Single leg bridges with hips remaining level > Bridges with feet on foam roller > Bridges heels on physioball > Bridge with hamstring curls on a physiobal



WENTWORTH-DOUGLASS
HOSPITAL
A Mass General Community Hospital

Standing Kicks:

Improves stabilization for when the foot hits the ground

Balance on 1 foot with good posture, hips squared forward, and a resistance band around ankles.

Slowly kick other leg out to the side using gluteus medius with toes and kneecap remaining forward. Repeat 15-20 reps. Switch sides.

Next, kick leg straight behind using gluteus maximus while maintaining toes and knees forward. Repeat 15-20 times, then switch legs.

Next, kick the leg straight forward using hip flexor. Aim to increase up to 2-3 sets of each.



Progression: Runners stride kicks > Standing on balance board or foam



WENTWORTH-DOUGLASS
HOSPITAL
A Mass General Community Hospital

Squats:

Strengthens core stabilizers with power movers of the hip (erector spinae, transverse abdominis, glute max, hip flexors, quadriceps, and calves)

Engage lower abdominal muscles with spine in neutral curves, bend at the hips and knees making sure to keep kneecaps facing forward and remaining behind toes. Squeeze through your glutes to return into upright standing. Repeat 2 x 10-15 working towards 3 x 10-20



Progression: Offset squats - weight in one hand > Squats on balance board > Single leg squats

Lunges:

Coordinates trunk and core stabilization while challenging pelvic and hip stability of the lower leg (erector spinae, transverse abdominis, glute maximus & medius, quadriceps, hamstrings, calves).

Stand in long stride stance with feet hip width apart, pelvis squared forward, and up on the ball of your back foot. Lower straight down bending both knees toward 90 degrees until back knee is near the ground then raise back up.

Maintain your trunk upright and evenly spaced between front and back leg. Make sure the front knee does not turn inward or progress forward past the toes.



Progression: Backward lunge with high knee march > Lunge with trunk rotation > Lunge onto unstable surface



WENTWORTH-DOUGLASS
HOSPITAL
A Mass General Community Hospital