Exercises for Healthy Hiking
Presented by
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Course Outline

• Muscular Adaptations
  – Strength, Endurance, Balance/Coordination, Flexibility

• Training Modifications
  – Repetitions, Sets, Rest Periods, Surfaces, Movements

• Common Hiking Injuries and Anatomy/Physiology
  – Ankle/Foot, Knee, Low-back

• Hiking Exercises
  – For Injury Prevention and Improved Performance
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Overload Principle

The **overload principle** states that body system adaptation fails to occur without an overloading stimulus.

Muscles experience overload when exposed to a stimulus greater than normally accustomed to, as stated by the American College of Sports Medicine. In comparison, activity below habitual level causes detraining, while continuing an accustomed lifting intervention maintains your current muscle strength and size.
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HOW MANY SETS & REPS?

STRENGTH
3-5 SETS
1-5 REPS
2-5 MIN REST

FLEXIBILITY
4-6 REPS
30 SEC HOLDS

ENDURANCE
2-3 SETS
12-20+ REPS
30-75 SEC REST
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Ankle and Foot Pain

- Achilles Tendonitis
- Plantar Fasciitis
Gastrocnemius Stretch

The leg you want to stretch should be the back leg. Make sure that your knee is straight, and that your heel stays on the ground. You can also do this stretch by trying to bring your foot towards your shin, by pushing it on a ledge with a straight knee. 4-6 reps/ 30 sec holds, everyday.
Soleus Stretch variation

This stretch can be done either against a wall or on a ledge. For both the knee needs to be slightly bent as you bring your shin over your foot. For the wall variation, the back leg is the leg being stretched, and the heel should stay on the ground. For the ledge variation the foot on the ledge is the stretching leg. 4-6 reps/30 second holds/everyday
Romanian Dead Lifts (RDLs)

Only allow a slight bend from the knee, bending more from the hip, and reaching with the opposite hand. Keep 70% of your weight on your pinky toe and outside heel, but don’t allow your big toe to come off the ground. _10-15_ reps/ _2-3_ sets / every other day.
Three direction single leg calf raises

Keep knee as straight as possible, you may use upper extremity support (such as a kitchen table or chair) for balance, but try to minimize lifting assistance with upper extremity. Hips should be facing straight for all three positions. Try to allow heel to go below the step, and then raise yourself onto your toes. _10-15_ reps/ _2-3_ sets / every other day.
Knee Pain

IT Band Syndrome

Patello Femoral Pain Syndrome (PFPS)
Crabwalks

With a resistance band wrapped around your ankles, try your best to keep your toes facing straight forward as you take big wide steps. Your knees should also stay wide and behind your toes as you perform this exercise. Notice in the last picture that the butt is sticking far back, and that the knee is behind the toes. 10-15 reps / 2-3 sec holds at the top / 2-3 sets / every other day.
Clamshells

Keep your ankles together, and left knees apart. Resistance band can be applied above the knees. Do not allow your trunk to rotate, get the motion from your hip. _10-15_ reps/ _2-3_sets / every other day.
Lunges with core twist

Notice that front knee is perpendicular to the foot, the knee should not track over the toes. Try your best to get your front hip down to the same height as your knee. Do not allow your knee to cave in medially. Keep your chest up. Rotate whole body, not just your shoulders, to both sides, try your best to minimize medial and lateral movement at your knee. _10-15_ reps/ _2-3_ sets / every other day.
ITB Stretch on table

Keep your trunk upright. Imagine pushing your hip towards the table. The stretching leg should have a straight knee. The stretch should be felt at the hip, there should be no discomfort at the knee. Stretching leg should be behind the non-stretching leg. 4-6 reps/30 sec holds, everyday.
Try to keep your back/hip on the ground, bringing just the leg across your body with a straight knee. Minimize rotation coming from you trunk, and isolate the motion to your hip. _4-6_reps/ _30_sec holds, everyday.
Low Back Pain

**Balanced**

**Posterior** Pelvic Tilt

**Anterior Tilt**

**Anterior** Pelvic Tilt
Posterior Pelvic Tilt (PPT)

The picture on the left is an example of an “anterior pelvic tilt”. The picture on the right is the “posterior pelvic tilt” or PPT. Notice that the butt does not come off the bench. Your arms do not need to be raised to your head, they can be rested at your side to make exercise easier. 5-10 second holds/_10-15_ reps/_2-3_sets / every other day.
Plank

Keep head down. Maintain a posterior pelvic tilt. Minimize rotation and lateral shift of the trunk. 2-4 reps/ 30-60 sec holds at the top/ every other day.
Single leg bridges

Hips should go straight up towards the ceiling, try to get full hip extension, don’t let hips sag down. Uninvolved leg should be at the height as the involved knee. Minimize hip rotation. For more advanced position, do without elbows on the ground. 10-15 reps/ 2-3 sec holds at the top/ 2-3 sets / every other day.
Kneeling Hip flexor stretch (+) core rotation

The stretching leg should be behind you. Make sure to keep your back upright as you lunge forward with the front leg. To get a deeper stretch you can add more trunk extension and rotation by reaching up and away from the stretching leg. _4-6_reps/_30_sec holds, everyday.
Strength
Endurance
Repetitions
Sets
Thank you!