

The Fitness Professional's Guide to Training Clients with Osteoarthritis

Strength Exercise Progressions

These exercises represent the recommended flexibility, range-of-motion (ROM) and strength exercises presented in the ACE online course. You may wish to refer to the online course for more information. Find exercises that work best for each individual client given his/her limitations and preferences.

Flexibility/ROM

The following range-of-motion and stretching exercises for the knee, calf, hip, spine and hand can help your clients with osteoarthritis improve ROM and promote more fluid movement.

Knee

1. Heel Slide-Supine
 - a. - c. Slowly slide one knee towards buttocks as far as possible
 - d. Towel or strap may be used to assist movement
2. Supine knee to chest-Grasp the thigh (*not* over the knee/shin)

Calf

1. Wall calf stretch with both straight leg and bent knee (gastroc and soleus)
2. Step heel drop

Hip

1. Sitting external hip rotation-Ankle on thigh and sit tall. Modify ankle on shin if necessary.
2. Mat piriformis stretches:
 - a. Supine with ankle on thigh- Apply slight pressure to assist with hip external rotation.
 - b. Supine with ankle on thigh- Reach through to pull the "floor leg" forward.
 - c. Prone external hip rotation- One knee is bent and foot lies under opposite leg.
3. Hamstring stretches:
 - a. Supine hamstring stretch using strap. Opposite leg can be straight or bent knee depending upon comfort.
 - b. Sitting hamstring stretch. One leg is stretched out straight with foot flexed. Sit tall and reach for that foot.
4. Complex hip stretches (supine):
 - a. Reach underneath thigh and pull knee up towards same shoulder
 - b. and then opposite shoulder.
 - c. Place hand on top of thigh above knee and pull across the body. Same arm is outstretched.
 - d. Lie with knee bent and leg externally rotated.

Spine

1. Cat/Camel
2. Lower trunk rotation (supine)- Drop knees to the side
3. Pec Stretch - in a corner or doorway
4. Thoracic extension over a foam roller
5. Butterfly Shoulder ROM exercise

Hands

1. Digit Mobility - Make a fist and then open completely
2. Opposition of Thumb - Touch each finger to the thumb and then straighten out fully

Strength

The following are sample strength exercises for the knee, hip and spine. These exercises are ordered by general level of difficulty (most basic exercises first), but should be individualized to your client. If an individual experiences joint pain while performing a specific exercise, either **modify the exercise to eliminate joint pain** or **utilize another exercise**. Modify an exercise by altering the range of motion, changing the body's movement pattern/position (prone, supine, side-lying) or lightening the resistance.

Knee (Isometric)

1. Quad sets - isometric tightening of the quadriceps muscle. Supine position. Towel rolled under the knee for support.
2. Straight leg raise to 45 degrees coupled with isometric quad tightening. Can progress to using light ankle weights (1-2 lbs)

Knee (Dynamic)

3. Short Arc Quad Extensions
4. Terminal knee extension (last 30 degrees) either lying or sitting. Can also use last 30 degrees on leg extension machine with light weights. Use pin to limit ROM. (open chain)
5. Terminal knee extension (closed chain)-use bar for balance if needed
6. Step up with or without weights. Modify step height as appropriate, for example 4-8 inches. Also use single leg step up.
7. Leg press (both legs/single leg) Stay "above the pain". Limit knee bend only to a pain-free range.
8. Wall slide (stay above the pain).
9. Wall ball partial squat.
10. Partial squat, with or without weights.
11. Squat with band- (use strap to apply gentle inward force) on lateral thigh to engage hip abductors. Cue client to resist your pressure to maintain the knee over the foot.

Hip weakness can place additional stress on the knee. Watch for knee pain. Limit knee bend only to a pain-free range.

Hip (dynamic)

1. Clamshell Side-lying
2. Side-lying leg raises (both hip AB/Adduction)
3. Prone hip extension
4. Quadriped hip extension

Spine

Coach your clients to activate their core musculature (pull belly button in towards the spine and bear down as if you were going to be punched in the gut) during all dynamic exercise movements, particularly those where the arms and/or legs move far from the center of the body.

1. Quadriped Progression
2. Supine Stabilization Progression
 - a. Engage abs (pull belly button toward spine and bear down) and then reach arms alternately over the head to the floor while maintaining neutral spine.
 - b. With both knees bent, pull in belly button toward spine, bear down, and lift first one and then the other foot until shin is parallel to floor. Maintain a neutral spine. Stop when client can no longer maintain core control.
 - c. Beginning with both knees bent, slowly slide one leg out until fully extended, maintaining core control. Repeat other side.
3. Hip bridges
4. Plank Progression (prone)
5. Side Plank Progression