

Pre-Total Joint Replacement Exercise Activities

Osteoarthritis Exercise Program

David F. Scott, MD

Numerous studies have demonstrated that physical activity and therapy in osteoarthritis (OA) leads to decreased pain and improved function. Years ago, it was once thought that patients with arthritis should not exercise because it would damage their joints. Although exercise does not alter the pathological processes of joint damage associated with arthritis, it does not exacerbate pain or disease progression either.

Exercise reduces joint pain and stiffness, builds strong muscle around the joints, and increases flexibility and endurance. Strong muscles help to reduce joint loading as the muscles act as shock absorbers reducing stress on arthritic joints. Exercise reduces inflammation from arthritis. It also helps to promote overall health and fitness by giving you more energy, helping you sleep better, controlling your weight, decreasing depression, and giving you more self-esteem. Furthermore, exercise impacts favorably on the risk factors for many other diseases including osteoporosis and heart disease.

When starting a new exercise program, remember to start slow and make the exercise something you can easily add to your daily routine. Also, exercising with a partner can help to keep you motivated on the days when you don't feel like exercising. The Arthritis Foundation recommends beginning slowly with stretching and flexibility exercises. Stretching exercises include positioning the body in such a way as to maximally sustain a stretch of specific muscle groups surrounding your joints. As muscles become more flexible, so do the joints they surround.

The following are examples of specific muscle stretching exercises for patients with arthritis. Remember to stretch slowly and hold for 30 second intervals. Do not bounce when you stretch. Try to complete eight to ten stretches for each of the muscle groups listed before moving on to the next group.



Single knee to chest



Adductor stretch



Prone quadriceps



Hamstring stretch

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Remember that not all stretching exercises can be safely completed by all people with arthritis symptoms. Severely damaged or painful joints may not be able to reach the positions illustrated here. As well, some people have pre-existing conditions (such as low back pain) that may be worsened by stretching incorrectly. Although stretching exercises may be uncomfortable, you should not have pain when completing them. If in doubt, consult with your physician or physical therapy provider for proper training and assistance.



Supine hip flexor

Once you are comfortable with stretching, move on to light resistive exercises. Heavy load bearing on arthritic joints is to be avoided. You should limit heavy resistance loads on both weight machines/free weights and remember to keep resistances low on upright stationary bikes and elliptical trainers. Jogging and high-impact loading (such as basketball or racquetball) should also be avoided.

The following is a simple exercise program for arthritis patients. Complete only the exercises that you feel comfortable performing. Again, some exercises may not be completed by all patients with arthritis symptoms and some modifications may be needed.



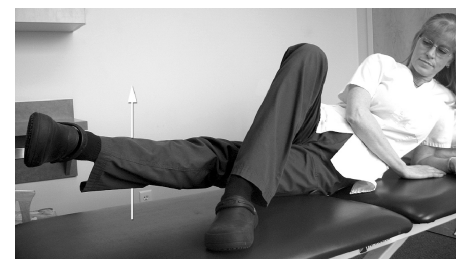
Standing gastroc/soleus stretch

Aerobic conditioning exercises such as upright biking and walking are also advocated to help increase fitness levels and functional activity tolerances. Some physicians discourage patients with arthritis from using treadmills feeling that the bounce/rebound of a commercial treadmill may cause increased loading through your joints. Some treadmills are constructed using shock-absorbing technology (for runners) which may be leading to the complaints experienced by patients with arthritis. Before deciding on a specific exercise device, first try low levels of that exercise for several days to determine if symptoms are better or worse. If you can walk comfortably on a treadmill, this is a great exercise for bad or inclement weather. Don't forget about large walks in shopping areas which can also supplement the aerobic portion of your workout plan when the weather gets bad.



Standing soleus stretch

Many patients also enjoy low-impact yoga programs and water aerobics specifically tailored for patients with arthritis. Many local gyms, including the YMCA, provide these types of programs. In the water, your body's buoyancy reduces stress on your hips, knees, and spine while building strength and increasing range of motion. Try water walking, for example. Water provides 12 times the resistance of air, so you're getting a great workout without the wear and tear on your joints.



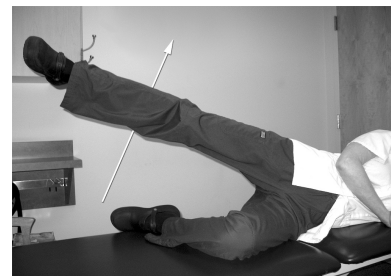
Hip adduction

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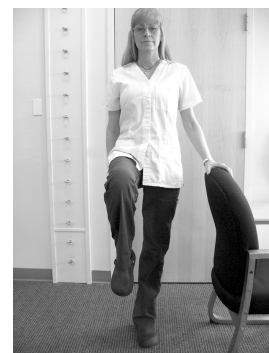
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Whatever exercise program you decide on, you should always consult with your doctor before starting out. Two other types of health professionals that can help you develop an exercise program that fits your specific needs are physical and/or occupational therapists. A physical therapist can show you the proper techniques and precautions when performing certain types of exercise. An occupational therapist can show you how to perform daily activities without putting additional stress on your joints and can provide you with splints or assistive devices that can make working out more comfortable.

The goal is to have a regular exercise program. Starting an exercise program can sound like a daunting task, but just remember that your main goal is to boost your health by meeting the basic physical activity recommendations which are: 30 minutes of moderate-intensity physical activity at least five days per week, or vigorous-intensity activity at least three days per week, and strength training at least twice per week.



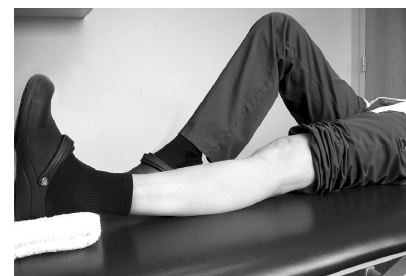
Hip abduction



Hip flexion



Hip extension



Quad setting

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The American College of Sports Medicine and the American Heart Association recommend:

**Moderately intense cardio-exercise 30 minutes a day,
five days a week**

or

Vigorous intensity cardio-exercise 20 minutes a day, 3 days a week

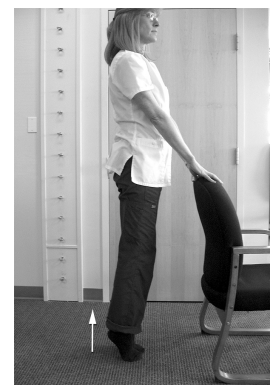
and

**8 to 10 strength-training exercises, and 3 sets of 8 to 12 repetitions
of each exercise twice a week.**

Moderate-intensity physical activity means working hard enough to raise your heart rate and break a sweat, yet still being able to carry on a conversation. It should be noted that to lose weight or maintain weight loss, 60 to 90 minutes of physical activity may be necessary. The 30-minute recommendation is for the average healthy adult to maintain health and reduce the risk for chronic disease.



Straight leg raise



Heel raises



Hamstring curls



Mini-squats