This article provides an overview of the key factors necessary to understand why and how exercise should be an integral part of the treatment plan for individuals with arthritis. After reading this article, the fitness professional will be able to design a safe and effective exercise program for clients.

**Key words:**
Osteoarthritis, Exercise Prescription, Healthy People 2020, Causes of Arthritis, Rheumatoid Arthritis

For many years, the recommendation was that individuals with arthritis should limit activity, and, for the most part, confine that activity to the pool. Now, however, an abundance of research validates the beneficial effects of a variety of exercise modalities in managing the symptoms of arthritis (7). In addition, one of the goals of Healthy People 2020 is the prevention of illness and disability related to arthritis and other rheumatic conditions (9). Fortunately, the fitness professional is in a position to provide programs to manage the disease safely and effectively. The key issue for the fitness professional is to understand the role exercise can play in the treatment plan. It also is important to know what constitutes an appropriate exercise program for clients with arthritis based on current guidelines.

This article addresses both factors.

**ARTHRITIS: UNDERSTANDING THE BASICS**

For fitness professionals to train clients with arthritis effectively, they need to have a working understanding of this medical condition (Table). As such, an awareness of key factors involving arthritis is essential (7).

- **What is arthritis?** Arthritis is a term that collectively refers to a group of approximately 100 different rheumatic diseases that typically affect the body’s skin and musculoskeletal system—primarily, the joints. The more common types of arthritis include osteoarthritis (the most prevalent type), rheumatoid arthritis (the most crippling form), gout, juvenile arthritis, lupus, and fibromyalgia (3,10,11). See Figure 1 for a comparison of osteoarthritis (OA) and rheumatoid arthritis (RA).
TABLE: Frequently Asked Questions About Arthritis

1. If the joints of individuals with arthritis ache, should they avoid exercise? If symptoms are chronic (as opposed to acute) and a person is not experiencing active inflammation, exercise can improve the situation (1).

2. What happens to the condition of individuals who do not exercise? Without exercising, joints will experience even more stiffness and pain with decreased function.

3. Do age and gender affect a person’s relative risk for arthritis? Yes. Although all age groups experience arthritis, the condition is more common as individuals get older. Furthermore, women are approximately 50% more likely to have arthritis than men (7).

4. Should exercise be adapted for individuals with arthritis? The American College of Sports Medicine recommends several exercise modifications for people with arthritis, including begin slowly and progress gradually, avoid strenuous exercises during acute flare-ups and periods of inflammation, and adapt the exercise to the specific needs of the individual (2).

5. Should individuals with arthritis exercise under the supervision of a trained professional? If multiple health problems exist or the exercise needs modification, a health professional trained in arthritis protocols and procedures should monitor an individual (13).

6. Does diet affect the efforts to maintain joint health? Yes. In addition to helping an individual maintain a healthy body weight and thereby reducing the load forces (stress) on weight-bearing joints, a number of foodstuffs (e.g., omega-3 oils and antioxidants) decrease the symptoms of certain forms of arthritis (5).

○ What are the symptoms of arthritis? Depending on the type of arthritis, there are a number of symptoms that can be associated with the condition. They include stiffness of the joints; joints that exhibit redness, swelling, warmth and/or tenderness; fever; weight loss; lethargy; and an overall sense of being unwell.

○ What causes arthritis? Subject to the type of arthritis in question, a number of factors can lead to arthritis. Osteoarthritis results from wear and tear on the body’s cartilage and most commonly affects the joints of the hands, hips, spine, and/or knees (2). Rheumatoid arthritis is a systemic inflammatory disease that results from overactivation of the body’s immune system affecting joint tissues (2). Other factors that lead to different forms of arthritis include diet, obesity, a defect in the body’s chemistry, a disease of the body’s connective tissue, or an injury to a joint.

○ How should arthritis be treated? Treatment options for arthritis depend on the form of arthritis and the individual’s personal needs and situation. A comprehensive treatment program for arthritis can include several elements, for example, weight loss, actions to protect the joint, medications, surgery, dietary changes, and a properly designed exercise program.

EXERCISE AND ARTHRITIS: THE PROGRAM

Exercise is as essential for individuals with arthritis as for anyone else. Individuals with arthritis who exercise regularly have less pain, more energy, and improved function (1). Specifically, exercise helps keep bones and cartilage tissue healthy and strong, helps keep joints from becoming unduly stiff, helps enhance the level of muscular fitness around the joints, and helps improve the overall level of fitness.

Modes of Exercise Training for Clients With Arthritis

The key to an arthritis exercise program is to identify an exercise regimen that best meets an individual’s needs and expectations. It must be safe, effective, and personally enjoyable. As a rule, the fitness professional should design an exercise program that includes four major types of exercise (1,2). The recommendations for frequency, intensity, time, and type are similar to those for apparently healthy clients with some additional considerations (2).
Exercise and Arthritis

- Flexibility. Flexibility exercises involve stretching muscles and connective tissues and moving all the joints of the body through their normal maximal range of motion. Range-of-motion exercises help reduce stiffness in affected joints. These are performed at least daily (1,2).

- Resistance or strength training. There are several contributing factors in the loss of muscle strength in arthritis (Figure 2). Resistance exercise, however, can increase strength and enhance the capability of muscles to support the joints of the body. The client performs exercises with a relatively low amount of weight to start, about 10% of maximum, and progresses about 10% per week as tolerated. All major muscle groups should be included. Frequency should be 2 to 3 days per week with one or more sets of 10 to 15 repetitions per exercise per session. The more traditional form of resistance training is isotonic exercising/active strengthening, which typically is undertaken using machines, handheld weights (e.g., dumbbells), or resistance bands. At all times, emphasis should be placed on proper body alignment and exercising to the point of pain tolerance.

- Aerobic. Aerobic or cardiovascular exercise helps improve the overall level of fitness. Aerobic exercise involves non- or low-impact activities (e.g., walking, water aerobics, swimming, indoor or outdoor cycling, elliptical training) that engage the major muscles of the body, thereby placing a demand on the body’s cardiovascular system. Depending on the existing level of overall fitness, clients should start slowly and progress gradually. When first starting out, the client should perform several brief (i.e., a few minutes) bouts of aerobic exercise as tolerated to reach 20 to 30 minutes daily. At times, pain limits the intensity level, but 150 minutes of moderate-intensity activity per week accumulated for 3 to 5 days or 75 minutes of vigorous-intensity per week is the recommended goal (7). The fitness professional should keep in mind the guidelines for exercise prescription and modify the use of equipment, as needed, such as seat height and load, or resistance, in cycling (2).

Figure 2. Loss of muscle strength in arthritis (12).
Body awareness. A joint and its surrounding muscles are often affected by surgery or the disease itself, resulting in impaired balance and coordination. Exercises to improve posture, balance, joint position, coordination, and relaxation should be included in a comprehensive treatment plan (7,13).

Examples of this less recognized group of exercises as a component of the arthritis exercise program are tai chi, qi gong, and yoga. The fitness professional should determine the need for these exercises in improving overall function and include as tolerated in the exercise plan (Figure 3).

Incorporating Exercise Into a Treatment Plan for Clients With Arthritis and Special Considerations

Integrating exercise into an arthritis treatment program involves several key components including:

- Checking with the individual’s physician or health care team to identify any risk factors that may interact with safely performing the exercise, that is, cardiovascular disease, medications, or joint instability.

- Designing an exercise regimen to address a client’s individual level of fitness. Individuals with arthritis generally tolerate symptom-limited exercise testing to determine fitness levels (2).

- Incorporating an adequate warm-up and cool down in the exercise plan to protect joints and decrease the potential of pain. The warm-up and cool-down periods should be 5 to 10 minutes in length and involve slow movements through a joint’s range of motion (2).

- Educating the client to listen to his/her body to reduce the risk of injury. Clients should avoid strenuous exercise during acute bouts of inflammation, but it is beneficial to continue to move joints gently through their full range of motion during this period (2). Fear of pain often leads clients to avoid exercise (Figure 4).

- Notifying the referring physician if the exercise regimen causes persistent fatigue, a diminished level of range of motion in joints, swelling in joints, and/or continued pain. If such circumstances occur, the fitness professional needs to modify the exercise program, paying special attention to the duration and/or intensity of exercise (2).

**TAKE-HOME POINTS**

Arthritis is a serious medical problem because it is the leading cause of disability in the United States.

- The term “arthritis” encompasses more than 100 types of rheumatic diseases.

- Exercise is beneficial for people with arthritis.

- Relative to the specific form of arthritis, a number of factors can cause arthritis.

- The type of arthritis and an individual’s personal needs and situation influence the treatment options.

- Depending on the form of arthritis and a person’s gender, age, and genetic predisposition, individuals can lower their relative risk or suffering from arthritis by undertaking certain steps.

- The general benefits of exercise for individuals with arthritis are similar to those for healthy individuals.

- An appropriate exercise program for individuals with arthritis is one that is safe, effective, and enjoyable.

- An exercise prescription for arthritis should include flexibility exercises, resistance exercises, aerobic exercise, and body awareness programs.

- A regular exercise program provides a viable means for most individuals with arthritis to control and manage their medical condition by decreasing symptoms (pain and stiffness) and improving function.
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SUMMARY
The increase in the number of individuals, especially older adults, with a variety of disease-related symptoms affecting their exercise regimen, provides fitness professionals with opportunities to expand their scope of services. As Healthy People 2020 indicates, exercise remains an underused intervention in the treatment of arthritis. Extend your knowledge base to position yourself to work with these individuals. You should be well versed in pain relief methods, proper body mechanics, and exercises to protect the joints. There are a number of organizations offering continuing education credits, certifications, programs, and courses focused on training individuals with arthritis (2,4,12). With the appropriate background and education, you, the fitness professional, can provide a referral pathway to achieve the goal of Healthy People 2020.

Acknowledgments
The authors thank the Aquatics Department at HealthPlus Fitness Center, AL, for providing the pictures of its arthritis program.

References

Additional Resources

Disclosure: The authors declare no conflict of interest and do not have any financial disclosures.

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CONDENSED VERSION AND BOTTOM LINE
Individuals with arthritis should exercise. This article reviews the epidemiology, the physical symptoms associated with arthritis, and current exercise guidelines. Fitness professionals can have a positive impact on clients with arthritis by developing a safe, effective, and relevant exercise regimen.