

## Lesson 1 - Understanding arthritis and exercise

Welcome to Arthritis Consumer Experts' online course on managing arthritis through exercise. In this first lesson, we will provide an overview of the benefits of regular movement. By the end, you will understand how exercise can help reduce inflammation and pain, improve joint mobility, enhance muscle strength and flexibility, and promote physical health and mental well-being.

Please read each section of this lesson carefully, and then when you are ready, take the **Lesson 1 Quiz** to test your new knowledge. The quiz is an interactive and printable PDF.



### Key points

1. Exercise can help improve joint mobility (range of motion).
2. Exercise can help control and reduce symptoms such as inflammation, pain, stiffness, fatigue, and anxiety.
3. Regular exercise can improve muscle strength, balance, heart health, and quality of life.
4. Exercise can help with mood, sleep, and brain health.
5. Exercise can improve bone and joint health.



### Arthritis and exercise

Research shows that exercise and physical activity play important roles in managing arthritis symptoms and improving physical health and mental well-being.

Exercise is defined as planned, structured and repetitive activity with the goal to improve or maintain one's physical fitness.

*The American College of Rheumatology (ACR)* states that exercise interventions, including aerobic exercise, strength training, and flexibility exercises were effective in reducing pain and inflammation in the joints and improving physical function and joint mobility in individuals with arthritis.<sup>1</sup> In the ACR's 2022 guidelines for integrative care for people with rheumatoid arthritis, the expert panel agreed on only one "strong" recommendation and that was for exercise.

Physical activity is defined as any movement that is produced by the muscles that requires energy (i.e., any movement a person does). Physical activity includes exercise, sports, and daily physical activities, such as gardening and active transportation.

The *European Alliance of Associations for Rheumatology* (EULAR)'s recommendations for physical activity for people aged 18-65 years living with arthritis are:

- Do moderate intensity aerobic physical activity for 30 minutes on 5 days per week; or,
- Do vigorous intensity aerobic activity for 20 minutes on 3 days per week.<sup>2</sup>

These EULAR guidelines can be adapted for someone living with rheumatoid arthritis, osteoarthritis, and spondyloarthritis (and less common forms of arthritis).<sup>3</sup>



## How does exercise help manage arthritis?

Exercise helps maintain joint mobility by promoting blood flow to the joints, which delivers essential nutrients and reduces stiffness. For example, a study published in the *Journal of Aging* found that exercise improved physical function and reduced joint pain in individuals with rheumatoid arthritis.<sup>4</sup>

Exercise also triggers the release of endorphins and dopamine, which are natural pain-relieving chemicals in the body. By increasing the production of endorphins, exercise can help alleviate pain associated with arthritis. Additionally, exercise has been shown to improve sleep quality, boost mood, and reduce symptoms of depression and anxiety commonly experienced by individuals with arthritis.



## Using exercise to enhance muscle strength, flexibility, and heart health.

Muscle weakness and loss of muscle size occur as people age and are common in individuals with arthritis. Exercise, particularly strength training, can help improve muscle strength, endurance, and power. Muscle power refers to how fast the muscle contracts and is key to maintaining balance and preventing falls. Strong muscles provide better support to the joints, reducing the stress on them and improving overall joint stability. Researchers have found that a progressive strength training program significantly improved muscle strength, physical function, and quality of life in individuals with arthritis.<sup>5</sup>

Mobility exercises help to maintain motion and function in the joints and reduce stiffness, making daily activities, like getting off a chair, going up stairs, or cycling, easier by maintaining enough movement in the joints.

Heart disease is the leading cause of death in people with arthritis. But, many don't know that they are linked. According to Arthritis Research Canada, people with arthritis are at the highest risk for heart attacks, strokes and blood clots in the legs and lungs in the first year

after diagnosis, when their body's inflammation is the worst.<sup>6</sup> Doing regular exercise and staying physically active can help make your heart stronger and healthier and lower the chances of getting these serious, life-threatening complications.



## Check with your health care provider before starting an exercise program

Talk to your rheumatologist or family doctor about making exercise a part of your treatment. A member of your health care team, such as a physical therapist, can work with you to find the exercise plan that's best for you. Specifically, physical therapists can help:

- Assesses your day-to-day physical function, strength, mobility, balance, and level of fitness
- Diagnose and treat physical symptoms related to arthritis
- Teach you ways to reduce your pain, stiffness, and fatigue
- Provide specific exercises, guidance, and treatments (manual therapy, heat, cold, transcutaneous electrical nerve stimulation -TENS-, or ultrasound) for your arthritis
- Work with you to restore, maximize and maintain movement, flexibility and physical independence

In addition to a physical therapist with arthritis experience, many other types of medical professionals can also provide exercise advice for people with arthritis, including occupational therapists, kinesiologists, and exercise physiologists.



## Did you know?

Delayed onset muscle soreness (DOMS) is a part of the process of getting moving. It is your body's way to signal adaptation to physical activity and exercise and the need to recover. New types and intensities of movement cause microtears and metabolite build up in your muscles that lead to soreness. The best way to manage these sensations is to do drink water, consume nutritious foods and perform mobility exercises as tolerated. If your soreness is uncomfortable or even painful (>2/10) make sure to contact your health care professional as soon as possible.<sup>7</sup>

## Additional Learning Resources

- Arthritis Consumer Experts Survey Report on Arthritis and Exercise  
<https://bit.ly/ACESurveyExerciseJHIEN>
- HealthLinkBC: Active for Health: <https://bit.ly/ActiveforHealthBC>
- Arthritis Research UK: Exercising with Arthritis: <https://bit.ly/ExerciseandArthritisVersus>
- I-START Toolkit for Exercise: <https://bit.ly/ISTARTToolKit>
- Osteoporosis Canada exercise recommendations: <https://osteoporosis.ca/exercise-recommendations/>

## References

1. American College of Rheumatology, "Arthritis and Exercise," 2023  
<https://rheumatology.org/exercise-and-arthritis>
2. 2018 EULAR recommendations for physical activity in people with inflammatory arthritis and osteoarthritis  
<https://bit.ly/38px0id>
3. Canadian Society for Exercise Physiology, "Canadian 24-Hour Movement Guidelines: An Integration of Physical Activity, Sedentary Behaviour, and Sleep", 2021  
<https://csepguidelines.ca/>
4. Brady, S. M., Veldhuijzen van Zanten, J. J. C. S., Dinas, P. C., Nightingale, T. E., Metsios, G. S., Elmsmari, S. M. A., Duda, J. L., Kitas, G. D., & Fenton, S. A. M. (2023). Effects of lifestyle physical activity and sedentary behaviour interventions on disease activity and patient- and clinician-important health outcomes in rheumatoid arthritis: a systematic review with meta-analysis. *BMC rheumatology*, 7(1), 27.  
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<https://doi.org/10.1002/acr.24805>
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<https://www.arthritisresearch.ca/diet-exercise-arthritis/>
7. Hotfiel, T., Freiwald, J., Hoppe, M. W., Lutter, C., Forst, R., Grim, C., ... & Heiss, R. (2018). Advances in delayed-onset muscle soreness (DOMS): Part I: Pathogenesis and diagnostics. *Sportverletzung: Sportschaden*, 32(04), 243-250.  
<https://doi.org/10.1055/a-0753-1884>