

# How are osteoarthritis and rheumatoid arthritis different?

[Science](#), [Biology](#)



Osteoarthritis usually affects people 60 or older and is caused by increasing wear and tear at the joint surfaces or from genetic factors affecting collagen formation. On the other hand rheumatoid arthritis is an inflammatory condition. It is caused by the body attacking its own tissues as well as allergies, bacteria, viruses, and other genetic factors.

2) When the triceps brachii muscle contracts, what movements does it produce? When the triceps brachii muscle contracts, it produces extension of the arm. ) Why is the inferior region of the shoulder joint most vulnerable to dislocation? It is most vulnerable to dislocation because it is the most mobile synovial joint. Because of this it is frail and relies only on the surrounding ligaments, muscles, and tendons for stability. 4) A high school student comes to the emergency room complaining of persistent pain and stiffness in her shoulder joint. In talking with her, you discover that she has been spending many hours trying to improve her pitching skills for her school's softball team. What is likely causing the pain? A shoulder subluxation is most likely causing her pain. This is a partial dislocation of the shoulder and is caused by her overusing her shoulder.

This may cause a loose shoulder where her shoulder capsule will be stretched out as well as the ligaments. This could further lead to chronic shoulder instability. 5) Mary wants to enter a weight-lifting competition and consults you as to what type of muscle fibers she needs to develop and how she should go about it. What would you suggest to her? Mary needs to develop her fast muscle fibers. In order to do this, she will need to have frequent, brief and intensive workouts. She also needs to create muscle

hypertrophy which will create an enlargement of the stimulated muscle. She can gain this by repeated and exhaustive stimulation which will create more mitochondria.

With repeatedly stimulated muscles she can create near-maximal tension. 6)

Describe the basic sequence of events that occurs at the neuromuscular junction and in the muscle cell. The first step is the arrival of an action potential at the synaptic terminal, next is the release of acetylcholine into the synaptic cleft, then Ach binds at the motor end plate and causes sodium-ion to rush into sarcoplasm which is then quickly broken down by AChE. The last step is it returns to initial state which occurs if another action potential arrives at the NMJ. 7) Many visceral smooth muscle cells lack motor neuron innervation. How are their contractions coordinated and controlled? Visceral smooth muscle cell's contractions are coordinated by rhythmic cycles of activity that are controlled by pacesetter cells. ) A hypothetical genetic disease causes the body to produce antibodies that compete with acetylcholine for receptors on the motor end plate.

Patients with this disease exhibit varying degrees of muscle weakness and flaccid paralysis in the affected muscles. If you could administer a drug that inhibits acetylcholinesterase or a drug that blocks acetylcholine, which one would you use to alleviate these symptoms? I would use a drug that inhibits acetylcholinesterase so that acetylcholine is not blocked. If the disease is producing antibodies that compete with acetylcholine than we would not want a drug that blocks it, we would want to inhibit it to activate the muscles. 9) Thirty minutes after Mary has completed a 25-km race, she

begins to notice severe muscle soreness and stiffness in her legs. Her urine is dark colored. She wonders whether she may have damaged her muscles during the race. She visits the ER, and the doctor orders several blood tests.

What kind of blood tests can help determine whether muscle damage has occurred? The type of blood tests that can help determine whether muscle damage has occurred include Creatine kinase tests, blood enzyme tests, kidney tests, electrolytes tests, red blood cells tests, and a complete blood count test. 10) Describe a motor unit. How many fibers does a muscle unit contain? A motor unit is controlled by a single motor neuron. It contains hundreds of muscle fibers that contract at the same time. All of the fibers will be the same type and the number of muscle fibers will vary within each unit. Usually, the number of muscle fibers innervated by a motor unit is a purpose of a muscle's need for polished motion