

ARTHRITIS

INTRODUCTION

Arthritis is the most common disease affecting the joints. There are various forms of arthritis but the two that are the most common are **osteoarthritis (OA)**, and **rheumatoid arthritis (RA)**. There are over 100 other forms of arthritis such as arthritis associated with the skin disease psoriasis, arthritis associated with the autoimmune disease lupus erythematosus, and septic arthritis but these are much less common than OA and RA..

Learning Break: The term arthritis is actually a combination of two medical terms. *Arthro* is a prefix that means of or relating to the joints. *Itis* is a suffix that means inflammation.

Osteoarthritis is a disease that causes damage to the joints. The most common areas of the body that are affected are the hip joints, the knee joints, specific areas of the spine, and specific areas of the foot. Osteoarthritis can be mild or severe. People with OA can have significant pain and that, combined with the damage to the joints, can severely limit their ability to walk and move.

Approximately 30 million Americans have some degree of OA, and it is expected that more and more people will develop the disease in the coming years. There are some clear risk factors that increase an individual's chances for developing osteoarthritis. However, no one knows exactly what causes the disease. Many people can live comfortably with OA, but OA can get worse over time and there is no cure.

Rheumatoid arthritis is also a disease that causes damage to the joints. However, there are very big differences between RA and OA. RA tends to affect the joints in the fingers, hands, and feet. There is no cure for RA, and it is a far more serious disease than OA. Many people with RA have significant disabilities. Rheumatoid arthritis is also less common: it only affects approximately 1% of the population.

OBJECTIVES

When the student has finished this module, he/she will be able to:

1. Identify the correct definition of OA and RA.
2. Identify the body structures that are affected by OA and RA.
3. Identify the medical term used for the body structures affected by OA and RA.
4. Identify the gender that is more commonly affected by OA and RA.
5. Identify the four causes of OA.
6. Identify the three causes of RA.
7. Identify the specific type of disease that RA is thought to be.
8. Identify four common signs and symptoms of OA and RA.
9. Identify an important difference between OA and RA.
10. Identify the most important approach for working with a patient with OA or RA.

A BASIC REVIEW OF THE MUSCULOSKELETAL SYSTEM

Osteoarthritis and rheumatoid arthritis cause damage to the joints. In order to understand OA and RA and what happens to the affected joints, it is necessary to understand some basics about the **musculoskeletal system**.

Our skeleton is comprised of bones. The bones give our bodies structure, shape, and support. The bones meet at various places and these areas are called articulations, or more commonly, joints. Some of the joints in the body are very complicated but many are very much like a simple hinge on a door. But all of the joints, whether they are simple or complicated, have similarities.

First, at the places where the end of one bone meets the end of another in the joint, there is a material called **cartilage**. Cartilage is a tough, thick, dense tissue, similar to a very, very dense and compact foam rubber. The cartilage provides cushioning and a smooth surface so that the ends of the bones do not grind against each other when the joint is moved. Second, the joints need to have some support, something to hold them together, and this function is accomplished by the **ligaments**. The ligaments, like the cartilage, are thick, dense, and strong. They cross a joint, hold it together and prevent the joint from being moved too far and injured.

Learning Break: A useful way of imagining what the ligaments are and what they do is to imagine a door with a hinge. The doorway and the door itself would represent the bones of a joint and the hinge would represent the ligaments, holding the door together and allowing it to move but not move too far.

The ligaments, bones, and the cartilage are part of the musculoskeletal system, but they have their own specific name: **connective tissue**. They are very strong and they can resist a lot of force and recover from a lot of trauma. **However, when connective tissue does become damaged, it can be very slow to heal.** This is one of the reasons why arthritis is hard to treat and *may* be one of the reasons why it progresses instead of getting better.

OSTEOARTHRITIS AND RHEUMATOID ARTHRITIS: THE SCOPE OF THE PROBLEM

Osteoarthritis in one way or another affects almost everyone as they get older. An estimated 40% of people aged 55 to 64 years of age have some evidence of OA, and approximately 100% of the population over the age of 75 has some evidence of the disease. Osteoarthritis is found in men and women, but after the age of 55 it is more commonly seen in women.

Osteoarthritis is common, and it will probably become more so. The number of people who have OA has been steadily increasing. Many experts feel this is due to the growing incidence of obesity. They predict that by the year 2020, the number of people with OA may increase 60% to 100%.

Rheumatoid arthritis is much less common than OA. Rheumatoid arthritis is 2-3 times more common in women than in men. The older someone is, the greater the chances of developing RA. But unlike OA, RA is *not* a disease that is associated with the wear and tear of aging.

Learning Break: Both OA and RA are more common in women than in men.

WHAT ARE THE CAUSES OSTEOARTHRITIS AND RHEUMATOID ARTHRITIS?

Osteoarthritis

Osteoarthritis is like many diseases: there is no one single factor that causes OA. Instead, **OA happens when there is an interaction between genetics, lifestyle factors, and age and gender. Those are the basic causes of OA.**

- **Genetics:** It seems very clear that the risk of someone developing OA is higher if that person's parents or close relatives had OA. Osteoarthritis can also be "inherited" in specific joints such as the hands and hips. No one is exactly certain why this happens. It may be that people inherit weaknesses in the joints or the supporting structures around the joints, or they may inherit the tendency to gain weight. (Obesity and OA will be discussed further in this section)
- **Age:** One fact is definite about OA: the older you get, the more likely you are to have the disease. But although there is absolutely no doubt about the association with increasing age and OS, no one knows why this is so. It is possible that the joints and the muscles and structures that support them simply wear out with age. However, it is also possible that because many people get less active as they get older, it is not age, but lack of exercise that puts older people at risk for OA.
- **Gender:** Up to a certain age, OA affects men and women almost equally. But after the age of 55, OA becomes more common in women.
- **Lifestyle factors:** Trauma, a sedentary lifestyle, and repetitive stress (such as found in certain occupations in which a single movement or movements are repeated all day long) can increase a person's risk for developing OA. However, the biggest lifestyle risk factor is obesity.

Learning Break: It has been estimated that an increase of one pound of body weight increases the stress on the knee three to six fold.

Rheumatoid Arthritis

No one knows what causes RA, **but it is probably due to a combination of genetic, infectious, and the immune system factors working together.**

- **Genetics:** There is no doubt that the tendency to develop RA is inherited.
- **Infection:** It is possible that RA may be caused by an infection by certain viruses. However, these viruses are found in many people who don't develop

RA, so infection with a virus probably causes RA only in people who are susceptible to the disease.

- Immune system: There is a lot of evidence that RA is an autoimmune disease.

Learning Break: The body has defenses against infection and trauma and one of these is the *immune system*. The immune system is made of specialized cells and blood components that attack and neutralize harmful bacteria, viruses, etc. However, at times the immune system malfunctions and starts attacking normal structures and tissues. This condition is called an autoimmune disease. Autoimmune diseases are common: multiple sclerosis, RA, psoriasis, and Type I diabetes are all autoimmune diseases.

WHAT HAPPENS TO THE JOINTS IN OSTEOARTHRITIS AND RHEUMATOID ARTHRITIS?

The bones, ligaments, and cartilage in the joints are like every other part of the body. They require blood and nutrients to stay healthy. They also break down and must be replaced. For instance, the cartilage that lines the ends of the bones where two bones meet wears out periodically and new cartilage must be formed. This process is very similar to the way the surface of the skin is always dying, being lost, and replaced.

However, this process of breakdown and replacement gets disrupted in OA and RA. In OA, the cartilage, bone, and ligaments break down a little faster than would normally occur, and the replacement does not happen as quickly as it should. In RA, the connective tissue is actively destroyed by infection or an autoimmune process, and it does not get replaced.

In either situation, the joints become affected. The bone breaks down, the cartilage is not replaced, and the ligaments get weak and loose. Often times, the joint gets scarred and inflamed. The end result is a joint that is weak, painful, and difficult to move.

Learning Break: The breakdown processes and joint damage that occur in OA and RA are made worse by the fact that the blood supply to bones, cartilage, and ligaments is limited. Healing in any part of the body requires an adequate blood supply. Normally, the blood supply to the connective tissue is good enough. But when someone has OA or RA, the limited blood supply is one of the reasons that healing process in connective tissue is slow. The breakdown happens faster than the healing and the joint never recovers.

SIGNS AND SYMPTOMS OF OSTEOARTHRITIS AND RHEUMATOID ARTHRITIS

The signs and symptoms of OA and RA are basically the same, but there are some important differences between the two diseases. The most common signs and symptoms of OA and RA are:

- Pain in the joints
- Swelling of the joints

- Pain when moving the joints
- Limited range of motion of the joints

Learning Break: In summary, *someone who has OA or RA has joints that are painful, swollen, hurt to move, and can't be moved normally.*

These signs and symptoms are common to both OA and RA. The differences between OA and RA are:

- Rheumatoid arthritis tends to affect the joints of the hands, fingers and feet.
- Osteoarthritis tends to affect the joints of the hips, knees, spine, and occasionally the feet.
- **Rheumatoid arthritis produces more pain and disabilities than OA.**
- Rheumatoid arthritis progresses much faster than OA and most people with RA have signs and symptoms.
- Osteoarthritis progresses much slower than RA and a good percentage of people with OA have no signs and symptoms or minimal signs and symptoms.
- Rheumatoid arthritis produces serious complications and people with RA have a shortened life expectancy.
- Osteoarthritis does not produce serious complications and people with OA have a normal life expectancy.

Learning Break: In a previous section, it was stated that after a certain age, OA affects almost everyone. However, for some people, the OA is something that can be noticed by a physician during an exam or seen on x-ray, but the OA does not cause any signs or symptoms. This is not true of RA.

TREATING OSTEOARTHRITIS AND RHEUMATOID ARTHRITIS

People with OA and RA do not simply have a disability that prevents them from living a vigorous, athletic lifestyle. *People with OA and especially RA often have a great deal of difficulty performing very simple physical tasks.* These people will often have great difficulty in walking, getting out of bed, using a computer keyboard, stretching, opening a jar, turning a key in a lock. For some people, at certain times of the day, these simple activities may be too painful or actually impossible.

There is no cure for OA or RA. But OA and RA can be managed. **The goals of treatment for OA and RA are to decrease the pain and allow the patient to live a normal life.** These diseases are treated using a variety of approaches to meet these goals.

- Medications: Medications can help relieve the joint pain and allow for normal – or more normal – movement. Acetaminophen, ibuprofen, Celebrex® and glucosamine-chondroitin are drugs that are commonly used to treat OA and RA. Some people like to use topical creams, but there is no proof that the over-the-counter creams are effective. Occasionally, for severe cases of OA or RA, a physician can inject medications that reduce inflammation directly into the joint.

- Lifestyle changes: There is no special diet required for people with OA or RA. People with OA or RA that are overweight can definitely benefit from losing weight.
- Physical therapy and exercise: Physical therapy and exercise are useful for patients with OA and RA. Physical therapy involves, systematic and planned stretching and exercise that proceeds slowly and step by step. This can help the joints become looser, less painful, and help the patient function. Exercise strengthens the muscles that support the affected joints.
- Surgery: There are some surgical techniques that can be used to treat OA and RA.

Learning Break: People with OA and RA have joints that are painful and have limited range of motion. It's perfectly natural in that situation to limit activity. However, this weakens the muscles supporting the joints. That puts more stress on the joints and damages the joint even further. Although many people with OA and RA find exercise difficult and uncomfortable, every effort should be made to encourage these people to follow the exercise program prescribed by the physician and the physical therapist.

WORKING WITH A PATIENT WITH ARTHRITIS

It is not difficult to work with a patient with OA or RA. It does require some patience and a basic understanding of these diseases. Perhaps the most important issue to remember is that the person with OA and RA many times cannot perform physical tasks that are very simple, physical tasks that you and I can do without thinking. Also, there may be times when the person with OA and RA *can* do what he/she wants to do, but it takes that person time to prepare for the activity and it takes that person much longer to accomplish the activity. **And a large area of responsibility you will have as a CNA working with someone who has OA or RA is the area of physical activity, e.g., movements, transfers, etc.**

So in order to make the experience successful for you and the patient, *work with the patient and make plans. This is vital.* Make a plan – with the patient's input – for every physical activity. If you make plans for physical activities with the patient's input, the activity will be accomplished much smoother and with a minimal amount of pain and frustration.