Osteoarthritis
(Degenerative Joint Disease; Arthritis, Osteo-)

**Definition**
Osteoarthritis (OA) is a gradual wearing down of the cartilage in a joint. It can cause joint pain, stiffness, and eventually limit movement.

**Joints Affected by Osteoarthritis**

![Image of joints affected by osteoarthritis](image-url)

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**Causes**
Cartilage is smooth tissue that covers the areas of bone that make up a joint. It provides a cushion for the bones and helps the joint work smoothly. Over time the impact, stress, and pressure on the joint can wear down the cartilage. The damage to the cartilage can get worse over time. Eventually, the cartilage may completely wear away leaving bones to rub together.

The wear and tear of the joint is a normal part of aging. However, it may be made worse by injuries to the joint, weakness of supporting muscles, or other medical conditions.

**Risk Factors**
OA is more common in older adults. Other factors that may increase your chance of OA include:
- Excess body weight
- Family history of OA
- Certain endocrine, metabolic, or neuropathic disorders
- Avascular necrosis—death of bone due to lack of blood flow
- Having an injury or surgery to the joint surface, especially the cartilage
- Having an occupation or doing physical activities that put stress on joints

**Symptoms**

OA is most common in larger joints that support weight such as the spine, hips, and knees. It is also common in active joints like the hand and feet. Common symptoms include:

- Mild to severe pain in a joint, especially after overuse or long periods of rest
- Creaking or grating sound in the joint
- Swelling, stiffness, limited movement of the joint, especially in the morning
- Movement may be less stiff after starting activity

**Diagnosis**

You will be asked about your symptoms and medical history. A physical exam will be done. Other types of joint diseases or general illnesses can cause similar symptoms. To rule out other conditions your doctor may order:

- Blood tests
- Arthrocentesis—test fluid inside the joint

To confirm OA changes, your doctor may order:

- X-ray
- MRI scan
- Ultrasound

**Treatment**

OA can not be cured. Treatment is focused on relieving symptoms and slowing damage to the cartilage. When cartilage wears away, bone on bone friction causes pain and inflammation. The goal of treatment is to reduce joint pain and inflammation, and to improve joint function.

Options may include:

**Weight Reduction**

Losing weight can lessen the stress on joints affected by OA. The closer you are to your ideal weight, the greater the benefit. A dietitian can help with meal planning.

**Exercise and Physical Therapy**

Muscles affect the alignment of the joint, how they move, and how much stress is placed on them. The stronger the muscles the less wear and tear happens with each movement. Strengthening the muscles that support the joint may decrease pain and improve movement. Certain exercise options may be better than others. For example, swimming and water aerobics improve muscle health with less impact on the joints. The doctor or an exercise specialist can help develop a program.

If OA is making everyday tasks difficult, therapy may help. Physical or occupational therapy can provide new steps or devices to help do everyday tasks such as:

- Shoes with shock-absorbing in soles
Splints or braces help to properly align joints and distribute weight. Elastic supports. Canes, crutches, walkers, and orthopedic shoes. Home tools such as handrails and grips throughout your home or elevated seats, including toilet seats.

Other potential therapy includes:

- Transcutaneous electrical nerve stimulation (TENS)—electrical pulses that can decrease pain signals
- Manual therapy—including massage therapy and manipulation to improve muscle balance and joint alignment

**Medications**

Medications may help to manage pain or reduce inflammation from injury. Options include:

- Nonsteroidal anti-inflammatory drugs (NSAIDs)
- Topical pain medications that are applied to the skin—capsaicin is a common choice
- Opioids and similar medications
- Corticosteroid—may be by mouth or by injection
- Viscosupplementation injection (hyaluronic acid)—to replace low levels in joint, may help cushion the joint

**Heat and Ice**

Heat may help loosen stiff joints and improve movement. Heat may be applied through hot water bottles, warm soaks, paraffin, or heating pads.

Ice may help decrease swelling and pain after activity.

**Alternative Treatments**

Alternative therapies may give some additional relief. It is best when used in combination with treatments above. It is important to work with your doctor to find the treatment combination that is best for you. Alternative options that have shown some promise with OA include:

- Acupuncture
- Balneotherapy (hot water therapy)
- Relaxation therapy
- Yoga
- Tai chi

**Support**

Chronic conditions can affect lifestyle and be very frustrating. This can lead to increased stress and unhealthy habits. The medical team or a support group can help provide options to better manage stresses associated with OA. Ideally, treatment and support will help minimize the stress on your everyday life.

**Surgery**

Surgery may be needed for joints with severe damage. It may be done to:

- Remove loose pieces of bone or cartilage from joints
- Reposition bones to better balance stress on the joint
- Replace severely damaged joint with an artificial joint

**Prevention**

To help reduce your chance of OA:
• Maintain a healthy weight.
• Do regular exercise, such as walking, stretching, swimming, or yoga.
• Avoid repetitive motions and risky activities that may contribute to joint injury, especially after age 40.

Last Reviewed: May 2016 Warren A. Bodine, DO, CAQSM
Updated: 9/3/2014

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