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## **Osteoarthritis**

Arthritis is a common condition that can affect any joint in the body. Osteoarthritis is typically associated with degeneration, or wear-and-tear arthritis. Osteoarthritis typically affects older people, but certain young people may be prone to developing arthritis at an earlier age. Osteoarthritis may also be hastened in joints that have been injured (post-traumatic osteoarthritis).

### **Symptoms:**

Pain is usually the first symptom. Stiffness may also be the presenting symptom. Swelling or actual fluid in the joint can occur also. There is often increased pain with activity, although as the condition progresses, pain may occur at rest, and may ultimately awaken patients from sleep. It is unclear what causes pain, as the articular (joint) cartilage and bone do not have many nerve endings, but irritation of the joint lining tissue which has abundant nerve endings is thought to be the primary source. Deformity sometimes accompanies advanced arthritis, and when the condition affects a weight-bearing joint (spine, hip, knee, ankle, foot) a limp may develop.

### **Cause:**

The precise cause of osteoarthritis (OA) is not known. It is thought to occur with degeneration, or weakening of the articular cartilage, the shiny hard cartilage layer that coats the end of the bones at the joints. This degeneration causes the cartilage to essentially wear out, leaving exposed bone in the process. There is some genetic influence, which may explain why arthritis sometimes “runs in families.” Injury to the joint, whether from a fracture that extends into the joint or from direct injury to the cartilage itself, can also cause arthritis to develop, typically years from the original injury.



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## Diagnosis:

A careful history and physical examination will usually diagnose arthritis. Plain x-rays are usually diagnostic. MRI is sometimes obtained to evaluate the soft tissues around a joint, and can now visualize the articular cartilage quite well. Ultrasound can be also be used to assess the soft tissues around a joint, but cannot visualize bone as well.

## Treatment:

There are many described treatments for OA, primarily depending on the age of the patient, and the extent or severity of the arthritis. There are 3 primary stages of treatment:

**Noninvasive:** Noninvasive treatment is usually started first. This includes activity modification (avoiding activities or positions that cause pain), pain medication (Tylenol or NSAID first), regular light exercise, weight loss (especially for weight-bearing joints), bracing or splinting, and rehabilitation. When these treatments have failed, patients may consider the next step.

**Minimally-invasive:** This stage of treatment typically involves injections, and occasionally minimally invasive surgery such as arthroscopy. There are 3 different types of injections that may be considered:

1. Viscosupplementation: injection of hyaluronic acid, one of the main constituents of joint fluid, can be beneficial, particular with mild or moderate arthritis. This is FDA-approved only for the knee, but has been used with success in almost every joint.

2. PRP: injection of PRP (platelet-rich plasma, obtained from the patient's own blood) has had some success with arthritis treatment, and may actually out-perform viscosupplementation. Similar results are being seen with injection of other *biologicals*, such as AmnioFix. Neither AmnioFix nor PRP is currently covered by insurance, however.

3. Steroid injections: these have been the mainstay of arthritis treatment, but are primarily used to buy time, as they can cause further degeneration of joint cartilage. They are typically used to confirm the diagnosis of arthritis, or to buy time until joint replacement.



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Arthroscopic surgery is sometimes used for arthritis treatment, especially for treatment of meniscal tears, cartilage flap tears, and loose bodies in the joint.

**Surgery:** Reconstructive or replacement surgery is the final stage of treatment for OA. There are many different surgical procedures, depending on the age of the patient, severity of the disease, and which joint is affected. For the older patient with end-stage arthritis, joint replacement is typically favored, although some joints may be successfully treated with arthrodesis (fusion). For the younger patient with less-severe arthritis, other reconstructive techniques may be indicated, to try to help salvage the joint.