



## Arthritis

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**Osteoarthritis (OA)** (*Also known as: degenerative joint disease, degenerative arthritis, or osteoarthrosis.*): Caused by a loss of cartilage which is the specialized smooth gliding surface at the ends of the bones that make contact at the joint surface. OA is one of the most common ailments for middle aged and older persons. More than 1/3 of people over the age of 45 experience joint related pain or stiffness. The joints most commonly affected are the hands, feet, knees, hips, and spine. The first signs include a decrease in speed and freedom of active joint motion. Other signs include the joints being warm to the touch, swelling, pain, immobility, stiffness, deformity, and night pain.

Radiographs are obtained to confirm the diagnosis but beware; it is well known that the severity of changes on X-ray does NOT correlate with the patient's clinical picture. The point is, only you can determine how disabling your arthritis is. Characteristic radiographic findings include: joint space narrowing, increased density of subchondral bone (hard white line at the bone around the joint), and osteophyte formation (bone spurs).

Osteoarthritis typically has no known cause (translation: a combination of genetic factors and the addition of pressure and time). Factors that may contribute to arthritis are: trauma (previous injury including meniscal tears, ligament injuries, previous fracture, previous knee arthroscopy in which cartilage or meniscus was removed), high impact, abnormal joint shape/alignment, aseptic or avascular necrosis (death of the bone due to poor vascularity), hemophilia, gout or pseudogout, diabetes, and other metabolic conditions. Obesity has been linked to causing arthritis not just by increased pressure but also by systemic release of harmful chemicals from fat tissue. The two most important risk factors are age and impact to the joint beyond its ability to repair itself. Fortunately, normal daily activities up to and including regular recreational running have not been shown to increase the risk of arthritis.

### **Inflammatory Arthritis:**

These arthritides include: rheumatoid arthritis, lupus, gout, pseudogout, ankylosing spondylitis, Reiter syndrome, psoriatic arthritis, polymyalgia rheumatica. The goal of treating these conditions is to medically manage the condition to decrease its deleterious effects on the joints. This medical management is coupled with many of the same treatment protocols as osteoarthritis with the end result being total joint replacement.

### **Conservative Management:**

Being informed that you have arthritis does not necessarily imply that you need surgery. Simple modifications in activities and lifestyle can positively impact your symptoms. Improving muscle strength, joint flexibility, aerobic capacity, and decreasing body weight can improve the longevity of your affected joints and prevent problems from arising in those joints currently not affected. A one pound weight loss results in a decrease in joint stress by 3-4 pounds. A loss of

33 pounds can decrease joint force by 100 pounds which can be a reduction of 100 tons of extra force per day!

### **Physical Therapy:**

Physical therapy is aimed at improving range of motion through gentle active and active-assisted exercises and to increase strength to the surrounding musculature. Additional modalities such as heat, cold, ultrasound, and electrical stimulation can provide useful adjuncts. For the knee focus is predominantly placed on the quadriceps musculature. For the hip the focus is predominantly on the abductors or gluteal musculature. Low impact exercises include: elliptical trainers, cycling, pilates, yoga, walking, stair-masters, and swimming or water aerobics. A supervised fitness program improves functional capacity and stamina while decreasing pain and the use of medications. TENS units and neuromuscular electrical stimulation braces have shown some benefit at improving strength. The focus of therapy programs should be on strengthening.

### **Assistive Devices:**

A cane used in the opposite hand of the affected joint can decrease joint forces by 50-60% and can increase walking distances by three times. Over the counter braces or neoprene sleeves can provide symptomatic relief with activity. Use of an off-loading brace has met with inconclusive results regarding effectiveness. Lateral heel wedges have not been shown to be effective. Patellar taping has been shown to achieve short term pain relief and improvement in function.

### **Acupuncture:**

While many find relief of pain with acupuncture, there exists no clear evidence for its value for arthritis. If you find that it helps then I have no objection to its use.

### **Analgesics [Acetaminophen (Tylenol), Aspirin, NSAIDs (Aleve, Motrin, etc)]:**

These medications have long been the mainstay of treatment for managing arthritis, however, just because they are available over the counter does not mean they are safe for long term use. Evidence exists that they better control symptoms when used on a regular basis rather than in response to increasing symptoms but they may be detrimental especially in the face of patients with kidney or liver dysfunction, bleeding disorders, gastrointestinal problems, or hypertension. NSAIDs appear to be more effective at reducing pain than acetaminophen but they are associated with a higher risk of gastrointestinal complications.

### **Hyalurons:**

Hyalurons or hyaluronic acid is a medication classified by the FDA as a medical implant device and is currently only approved for osteoarthritis of the knee. Hyalurons are an essential component of normal joints which maintain synovial fluid viscosity and support articular cartilage shock absorption. Most formulations are derived from chicken combs so please notify us of any avian (bird) allergies. No identified serious reactions have been reported. Reactions which may occur include: injection site pain, edema, arthralgia (joint pain), joint swelling, stiffness, rash, pruritis (itching). The medication is administered with an intra-articular injection (injected into the joint). It consists of 2 milliliters of fluid injected typically once a week for

three weeks. A singular injection of 6cc is also available and appears to be equally effective. As with any injection there is a small theoretical risk of infection. The Agency for Healthcare Research and Quality 2007 could neither recommend for or against the use of hyalurons but stated, viscosupplementation generally shows positive effects and is associated with very low risks. In 2013 the American Academy of Orthopedic Surgeons recommended against the use of HA stating that no clear benefit could be demonstrated. Most orthopedists still offer HA injections as a viable treatment option.

### **Intra-articular Steroids (Cortisone):**

Intra-articular steroids exert their effect by reducing inflammation, pain and swelling. Their use has been extensively studied and they have been found to have a very high safety profile. Reactions include: injection site pain, edema, arthralgia (joint pain), joint swelling, stiffness, rash, pruritis (itching), and infection. The American Academy of Orthopaedic Surgeons (AAOS) recommends the use of corticosteroids for short term pain relief. While felt to be safe for use in diabetics, some studies indicate that they should be held in poorly controlled diabetics.

### **Vitamin Supplementation:**

The AAOS can not recommend the use of glucosamine and chondroitin sulfate as they found no strong support for clinical efficacy.

**Glucosamine:** stimulates the production of glycosaminoglycans by chondrocytes and hyaluronic acid by synoviocytes (translation: the building blocks of articular cartilage). Most preparations are derived from shellfish so beware if you have a shellfish allergy. It has been found to be safe in diabetics. Typical dose is 1500 mg/day. Most common adverse effect is GI (gastrointestinal) complaints.

**Chondroitin Sulfate:** inhibits the enzymes that break down articular cartilage. Typical dose 800 mg/day. Most common adverse effect is GI (gastrointestinal) complaints.

**MSM:** Methylsulfonylmethane is an organic form of sulfur and like omega 3 and niacinamide helps to relieve discomfort from arthritis related joint pain. People with sulfa allergies should beware but MSM is essentially a form of dietary sulfur.

**Vitamin D:** Vitamin D is an important agent for prevention of osteoporosis and studies now indicate that low levels of Vitamin D can increase the progression of pre-existing OA. It has been estimated that 40% of Americans may be Vitamin D deficient. Recommended dose is between 2000-5000IU daily. For documented deficiency 50,000IU weekly for 10 weeks followed by maintenance dosing. Vitamin D is also valuable in increasing bone density. Vitamin D3 is the recommended form.

**Other:** Omega 3, Eicosapentaenoic acid (EPA) and Docosahexaenoic acid (DHA) have all been described at reducing inflammation and possibly delaying progression of OA.

### **Arthroscopy:**

The role of arthroscopic treatment for arthritis remains controversial. Several studies have called into question whether or not arthroscopic treatment has any benefit and some studies have challenged that it may be detrimental. The perceived benefits are thought to occur by removing mechanical irritants, painful debris, and inflammatory enzymes. Favorable prognostic indicators for successful treatment include: short duration of mechanical symptoms, minimal mechanical axis malalignment, absence of flexion contractures (near normal knee range of motion), mild radiographic changes, and realistic patient expectations. In the right patient, arthroscopic intervention has been demonstrated to provide short term beneficial outcomes in 2/3 of patients. The AAOS recommends against arthroscopic lavage or debridement but recommends for loose body retrieval and treatment of symptomatic meniscus tears.

### **Future Trends:**

Research is focusing on trying to find and produce an alternative to damaged native cartilage to eliminate pain, improve function and slow or halt the progressive degeneration of normal articular cartilage. Significant interest exists regarding platelet rich plasma or stem cells. These treatment modalities remain classified as experimental and thus are not covered by insurance companies.

Keep in mind. Osteoarthritis is a degenerative process meaning it worsens over time. You can expect acute exacerbations of this chronic condition. There will be good days and bad days and as time progresses bad days will outnumber the good ones. It is analogous to glacier activity. Slow gradual erosion occurs regularly and occasionally a large piece breaks off dramatically changing the landscape.

### **Total Joint Replacement:**

When should you consider joint replacement:

- Conservative measures have failed to arrest your decline in function.
- Your pain level is greater than 5 or 6 out of 10 more days than not.
- You are unable or unwilling to participate in activities you feel that you should be able to perform for your age.
- You begin to recognize limitations in motion and loss of strength

**\*Please ask for a frequently asked question form for joint replacement.**

**For more information you may visit:**

**[www.arthritis.org](http://www.arthritis.org)**

**[www.aaos.org](http://www.aaos.org)**

**[www.aahks.org](http://www.aahks.org)**

**[www.brincetonhippsmd.com](http://www.brincetonhippsmd.com)**

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