

All About Arthritis

1. Introduction

Good Evening

My name is Kambiz Behzadi

I am an Orthopedic Surgeon in this area

I appreciate the opportunity to be here talking to you tonight.

Before I start, I would like to ask you a few questions.

- A. How many here tonight believe that they have some form of arthritis?
- B. How many of you knew the difference between arthritis and OA?
- C. How many people here believe that if you did have arthritis, there is only one treatment option available to you?
- D. How many believe that there is at least two or three treatment options available to you?

2. Dr Wu has already talked about arthritis and the medical management of this condition. I am going to basically continue on the same subject and talk a bit about the surgical management of arthritis.

To review some general facts about arthritis, we know that musculoskeletal conditions affect millions of people, costing and estimated 254 billion dollars per year in the US alone. (3-4% GNP)

3. About 40 million Americans currently suffer from arthritis. About half of those, 20 million, suffer from Osteoarthritis. Osteoarthritis is the most common type of arthritis, of the more than 100 types of arthritis.

4. To understand arthritis it is helpful to look at a joint and understand how it works. A joint is where the *ends* of “two bones” meet. These *bone ends* of the joint are covered with a smooth material called cartilage.

Cartilage cushions bone and allows your joints to move smoothly and without pain. The synovium completely covers the joint and produces fluid that reduces friction and wear on that joint.

5. Ligaments connect bones and keep your joints stable. And, muscles and tendons power your joints and allow them to move.
6. Arthritis is, simply put, inflammation of the joints. Inflammation is our body's normal reaction to injury. Inflammation in turn results in visible swelling, pain and stiffness. Chronic inflammation in an arthritic joint may cause long lasting and permanent disability.
7. Osteoarthritis is a kind of arthritis that affects the cartilage in joints, causing it to break down and eventually be lost all together. I will primarily talk about OA tonight.
Osteoarthritis is the second most common cause of long-term disability in adults, causing 7 million physician visits per year, 3 million hospitalizations, and costing approximately \$2655 per person.
8. Osteoarthritis strikes the weight bearing joints: including the hips, knees and feet most frequently, followed by the fingers and the spine.
9. Osteoarthritis strikes all races in the US equally. The prevalence of Osteoarthritis rises with age, and after age 50, women are more affected by it than men. By the time we reach our 60s and 70s, most of us will have some degree of arthritis. It is estimated that by year 2020, 40 million Americans will be suffering from osteoarthritis.
10. Unlike other systemic forms of arthritis, Osteoarthritis does not affect the other organs of the body. The earliest symptom of osteoarthritis is pain in the affected joint. The pain in OA gets worse with prolonged use and is relieved by rest. In addition to pain, patients experience a stiffness that is commonly relieved by flexing and moving their joints.
11. The effects of OA can be fairly significant but with proper treatment, we can get you back into action. These X-rays show the difference between an osteoarthritic and healthy knee. There is no blood test to diagnose OA; however, blood tests help diagnose other forms of arthritis.

12. Most cases of OA have no known cause. These cases are classified as primary OA. Primary OA is a by-product of aging. Our Cartilage is about 80% water. As we age, the water content decreases, and the ability of cartilage to withstand stress also decreases. Additionally, as we age, the ligaments supporting our joints are weakened, making joints less stable and prone to injury.
13. By contrast, secondary OA is caused by another disease or condition. Obesity, trauma, and previous surgery are common causes of secondary OA. As well, abnormal joints at birth, gout, diabetes and various hormone disorders can also be a factor.
14. The goal for treatment of OA is to relieve pain, increase motion, and improve strength. The most conservative treatment measures include rest, exercise, weight reduction, and physical therapy. In addition, your doctor may recommend medication, and in some cases surgery may be beneficial.
15. There are a variety of medications that can provide some relief from the effects of OA. Over-the-counter pharmaceuticals like aspirin, ibuprofen, and naproxen may be used to control pain and inflammation. These medications are all *anti-inflammatory drugs*, or NSAIDs. Even though they are over-the-counter, they are not risk free when taken for prolonged periods of time. Tylenol may be also used to control pain.
16. When over the counter medications are not effective, your doctor may prescribe medications such as COX-2 inhibitors. COX-2 inhibitors cause less gastrointestinal problems than the regular NSAIDs.
17. In cases where NSAIDs are ineffective, cortisone may be injected into the joint. This provides a high dose of an anti-inflammatory medication directly into the joint. Another promising drug in the treatment of OA is a cartilage extract called Hyaluronic acid, (Synvisc, Supartz, Hylagan). Early clinical trials suggest that when injected into the joint, it may provide pain relief and reduce progression of the disease.

18. Vitamin Supplements have offered positive evidence to suggest their use in the treatment of OA. While some studies suggest that the intake of anti-oxidants A, C, D, and E may help prevent OA, this evidence comes from lab studies rather than clinical trials. And as such, there is not any proof that vitamin supplements prevent OA.
19. Glucosamine and Chondroitin SO₄ are two of the popular dietary supplements. These have become very popular as a form of treatment of OA. While positive results have been reported, the treatment effects are probably exaggerated. Patients using glucosamine and chondroitin SO₄ may experience some degree of pain relief. And if they do, I encourage them to continue to use it. However, if there is no change in symptoms after an eight-week trial, it is unlikely that these supplements will be of benefit.
20. Alternate therapy options for the treatment of OA are great in number, and people sometimes ask about them. Their effectiveness is often unclear. What complementary medicine might do for you, is to help you take an active role in your health care, ease your symptoms, especially pain, stiffness, stress, anxiety and depression, and improve your outlook towards life.
21. While complementary medicine can work with conventional medicine to enhance the effects of both of these treatment methods, it cannot treat most acute illnesses, replace medical treatments, or cure chronic diseases such as OA.
22. This table illustrates some of the current alternative treatments available for arthritis sufferers.
23. Joint protection in the form of walkers, canes and crutches, or braces may relieve stress and strain on arthritic joints. However, these devices are generally not very popular, and people don't like to use them unless absolutely necessary.

24. Possibly one of the most beneficial of the *joint protection* treatment options is exercise. Gentle exercise, done in moderation, strengthens the muscles around the joints, prevents joints from "freezing up" maintaining mobility, helps decrease weight, and promotes endurance. The goal is a ***mild exercise program*** that allows for this, but does not aggravate or flare-up your arthritic joint. Each person has a different threshold; one person can walk 5min/day and another can walk 30min/day. It is important to figure out what the right level of exercise is for you.

25. In some cases of OA, surgery may be warranted. There are several surgical options for OA patients. Arthroscopy is one of the least invasive procedures available to us for treatment of OA. With this procedure, we are able to look inside your joint with an arthroscope (a microscope with a lens and a light source) and remove the *partially damaged cartilage*. This is done through small incisions (portals). The concept here is to remove the *loose bodies* and *fragments of dead cartilage* in the joint, along with the *enzymes* that cause, and perpetuate inflammation in the joint. This "clean up" procedure, many times, provides pain relief, even though the underlying arthritic condition does not change.

26. There are certain other procedures that are done arthroscopically in order to slow the progression of OA. When you have a defect in the articular cartilage, that is somewhat localized, abrasion and drilling of that defect or the exposed bone stimulates a healing response; by increasing blood supply to this area, which then creates a *fibrocartilage*, or a "scar-cartilage". This tissue is better than bare bone but has been shown not to be as strong as normal cartilage. Again, it is important to realize that Arthroscopy procedures for arthritis are "clean up" type of procedures, and palliative type procedures, (intended to ease your symptoms). They do not arrest the arthritic process, but are helpful with pain relief.

27. Another surgery traditionally offered for treatment of OA is *Osteotomy*. This operation involves realignment of the joints, with the idea of transferring the weight-bearing load from the *diseased side* of the joint to the *healthier side*. You essentially remove a wedge of bone, close the gap, and by doing that, you have transferred the

weight from one compartment to the other. This surgery was popular in the 60s and 70s and has steadily lost popularity over time, primarily because it does not provide good long-term results. Another concern about this operation is that it makes subsequent operations, like Total Knee Replacement, a lot more difficult.

28. Another form of treatment available to patients with localized and focal arthritis, perhaps arthritis resulting from injury and trauma, is Mosaicplasty or OATS procedure. It involves transferring of a healthy *plug of bone and cartilage* from an area in your knee where there is no weight bearing, and where the cartilage is not needed as much, to the defect in the weight bearing area of the knee, where you are in desperate need of that cartilage cover. This is a good operation, and has the potential to arrest the progression of arthritis throughout the joint.
29. Another operation that is similar in concept is ACI “ Articular Cartilage Implantation”. Some have suggested that these operations are like “fixing a pothole in the road”. In this technique, your cartilage cells are harvested and sent to the lab, where they are grown in culture. In a second operation, these cells are re implanted into the defect in the joint. This operation is our first attempt to **biologically resurface the knee**. I believe in the next 5 to 10 years there will be significant advances in this area, particularly with the coming of age of stem cell research.
30. Joint replacement is considered the last solution for advanced OA in the knee, hip and shoulder. *Improved ambulation* and *decreased pain*, along with *increased range of motion*, clearly are the most desirable outcomes for this procedure. We have good to excellent long-term results for more than 90% of patients who have total joint replacements.
31. Many of those with OA now benefit from total joint replacement of their hips and knees. This surgical procedure involves removal of the diseased joint and replacement with a prosthetic joint. Many people who have had this procedure, enjoy a full return to their life activities, with only some modest modification or cautions.

32. There are also some new and exiting treatments in the field of **joint replacement** that have recently become available. Continuous advances are being made in *joint replacement procedures* and the *prosthesis*. For example, newer, lower profile equipment now allow us to perform total joint replacement in a minimally invasive fashion. MIS or minimally invasive surgery has become a hot topic now and has gotten a lot of recent attention.
33. In general, most everything about hip and knee joint replacement surgeries are improving, including materials, designs, and the techniques and the skills of the surgeon. Until now, an 8 to 12 inch incision was routinely used to perform these operations; this required generally a 3 to 5 day stay in the hospital, and a one to three month recovery period, requiring the use of a cane or walker. In the minimally invasive procedures, we now employ the same implants, however, we are using new instruments that allow us to do the surgery with minimal trauma to the muscles and tendons. In the knee, the most important factor being that we don't cut the quadriceps muscle or tendon. We get the same results, with ***less trauma to the patient***. With these techniques, hospital stays are generally decreased and the patients can walk unassisted within 2 to 4 weeks after surgery. This allows patients to get back to their *work and life activities* in two to three weeks as opposed to two to three months. (hip and knee video)
34. In Summary, Osteoarthritis currently affects in excess of 20 million Americans. It is important to find out what kind of arthritis you have, in order to make informed decisions about your care. If you have pain, stiffness, and swelling around a joint, for more than a couple of weeks, you should consider seeing your doctor. While there is no cure for arthritis, we have discussed the ***many treatment options*** available for this condition. If you have this disease; take time to understand it, and find out about *all the treatment options available to you*. You should ask questions about the *benefits* and *limitations* of each treatment. And once you are fully informed, choose the right treatment for you.

35. There are of course many websites that provide additional information about OA, and you may find them helpful.

36. Thank You