

# Osteoarthritis

## Introduction

The topic that I researched was osteoarthritis. Although I did not choose this particular topic, it was very interesting to learn more about. This is not a topic that I was entirely familiar with, rather I just knew about the basic facts. The fact sheet enabled me to become more knowledgeable about this medical problem that affects many people throughout aging. I will be able to share the information that I am learning with my grandparents that are dealing with osteoarthritis now, as well as inform my parents in the hopes that they will take preventative measures.

## Section 1: Background and Problem Statement

- **Web site #1 Name:** PubMed Health (Healthy People 2020 did not have information on this topic).
- **Web address:** <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001460/>
- **Background Information:**
  - Osteoarthritis (OA) is caused by 'wear and tear' on a joint. Cartilage, which is the firm, rubbery tissue that cushions your bones at the joints, and allows bones to glide over one another, starts to break down and wear away. As a result, the bones rub together, causing pain, swelling, and stiffness. Bony spurs or extra bone may form around the joint, and the ligaments and muscles around the hip become weaker and stiffer. Frequently, the cause of osteoarthritis is unknown but it is linked to aging. The symptoms usually begin during middle age, and almost everyone has some symptoms by the time he/she is 70 years old. However, these symptoms may be minor. Before age 55, OA occurs equally in men and women. After age 55, it is more common in women. Pain and stiffness in the joints are the most common symptoms. The pain is often worse after exercise and when placing weight or pressure on the joint. Joints may become stiff and harder to move over time. You may notice a rubbing, grating, or crackling sound when you move the joint. When you first wake up, it is common to go through a phase of "morning stiffness" which is the stiffness you usually feel when you wake up. This phase lasts for about 30 minutes or less. Throughout the day it is common for the pain to get worse as you go through you're daily activities. Sometimes it feels better with rest. Signs that you have osteoarthritis can show during a physical examination, and an x-ray can show the loss of the joint space.
- **Web site #2 Name:** Center for Disease Control and Prevention
- **Web address:** <http://www.cdc.gov/arthritis/basics/osteoarthritis.htm>
- **Background Information:**
  - According to the CDC, Osteoarthritis is a disease characterized by degeneration of cartilage and its underlying bone within a joint as well as bony overgrowth. The breakdown of these tissues eventually leads to pain and joint stiffness. The joints most commonly affected are the knees, hips, and those in the hands and spine.

Osteoarthritis is the most common type of arthritis. It is classified as: Idiopathic (localized or generalized) or Secondary (traumatic, congenital, metabolic/endocrine/neuropathic and other medical causes). Usually defined by symptoms, pathology or combination. OA of the knee is 1 of 5 leading causes of disability among non-institutionalized adults.

- **Web site #3 Name: Medline Plus**
- **Web address:** <http://www.nlm.nih.gov/medlineplus/osteoarthritis.html>
- **Background Information:**
  - Osteoarthritis is a public health problem because it affects so many people. Osteoarthritis breaks down the cartilage in your joints. Cartilage is the slippery tissue that covers the ends of bones in a joint. Healthy cartilage absorbs the shock of movement. The loss of cartilage is caused from your bones rub together. After a while, this rubbing can permanently damage the joint. Factors that may cause osteoarthritis include injuring a joint, aging, being obese. Ways to help manage osteoarthritis pain and improve function include exercise, weight control, rest, pain relief, alternative therapies and surgery.

## Section 2: Research

**Web site #1 Name: Smart Publications: The Four Stages of Osteoarthritis and Natural Pain Solutions**

**Web address:** <http://www.smart-publications.com/articles/view/the-four-stages-of-osteoarthritis-and-natural-pain-solutions/P3/>

### **Summary of the research:**

- King's College in London did a study that compared the effectiveness of glucosamine with ibuprofen for the relief of joint pain. The study found that glucosamine can be used as an alternative to anti-inflammatory drugs and analgesics or as a useful adjunct to standard analgesic therapy. Glucosamine's pain-relieving effects might be due to its cartilage-rebuilding properties which could help reduce the pain of osteoarthritis. The longer glucosamine is used, the more dramatic and long-lasting the improvement. This article talks about some natural pain solutions, including Boswellia, Curcumin, Chondroitin sulfate, Betaine (trimethylglycine), and ginger. Curcumin is an extract of the spice turmeric that provides a huge number of health benefits. Studies show it inhibits prostaglandin production and stimulates the creation of cortisol, which relieves inflammation. Chondroitin sulfate is a powerful antioxidant and anti-inflammatory derived from cartilage. Chondroitin compounds are naturally manufactured by your body, and are essential for normal joint function. Betaine—also known as trimethylglycine—is essential for rebuilding connective tissue and manufacturing cartilage components. Ginger's anti-inflammatory properties have been used effectively for thousands of years. Ginger reduces inflammation by inhibiting prostaglandin and leukotriene synthesis. This research has shown that although there is still not a definite cure for osteoarthritis, there are alternative measures that can be taken in order to help decrease the severity of the pain.
- **Web site #2 Name: Osteoarthritis Research Society International**

- **Web address:** <http://www.oarsi.org/>
- **Summary of the research:**
  - The Osteoarthritis Research Society International (OARSI) was formed in 1990 (then Osteoarthritis Research Society) to promote and encourage fundamental and applied research, and to find the results of that research in order to inform others of osteoarthritis and of its treatment. The goal of OARSI is to research a way to increase in life-span around the world has resulted in osteoarthritis becoming more prevalent. Although the research project will not be complete until a cure is found, members of OARSI are still working very diligently to accomplish their goals. In recent years, both clinical and basic research in osteoarthritis has increased, and osteoarthritis has become the leading reason of physical consultation in Europe. Osteoarthritis is the most common rheumatic disease, and before OARSI, no previous organization specifically addressed its fundamental, clinical and pharmacologic aspects. The members of this research organization include physicians, researchers, and other health industry personnel from around the world who have an interest in bone, synovium and cartilage - are integral to spreading the concepts, hypotheses and developments concerning osteoarthritis among the international rheumatology community. With all of these knowledgeable people working hard to learn as much as they possibly can, it is promising that hopefully some day there will be a cure.
  
- **Web site #3 Name: Health Effects: Fluoride/Osteoarthritis**
- **Web address:** <http://www.fluoridealert.org/health/bone/fluorosis/arthritis/osteoarthritis.html>
- **Summary of the research:**
  - This article researches the possible connection between fluoride and osteoarthritis, while discussing the confusion between osteoarthritis and Skeletal Fluorosis. Excessive fluoride exposure is well known to produce an arthritic disease called Skeletal Fluorosis. Many of the symptoms that have been found for Skeletal Fluorosis mirror those of osteoarthritis of the spine. Doctors are still somewhat unfamiliar with the disease, therefore differentiating between the two still posing some problems. Skeletal Fluorosis has been studied in other countries for nearly 40 years, yet there has been basically no research done on it in the United States to determine how people are afflicted with the disease in the earlier stages. The symptoms of the first two phases of Skeletal Fluorosis are very similar to osteoarthritis, which means there is a high risk of misdiagnosis. Further research still needs to be done in order to clarify the confusion between these two similar diseases.

### Section 3: Statistics

- **Web site #1 Name: Center for Disease Control and Prevention**
- **Web address:** <http://www.cdc.gov/arthritis/basics/osteoarthritis.htm>
- **Summary of the statistics:**
  - Overall OA affects 13.9% of adults aged 25 and older and 33.6% (12.4 million) of those 65 and older. It is an estimation that the number of adults affected by OA

has increased to 26.9 million in 2005 from 21 million in 1990 (believed to be conservative estimate). Men have 45% lower incident risk of knee OA and 36% reduced risk of hip OA than women. Prevalent knee OA, but not hip or hand OA, is significantly more severe in women compared to men. Around 500 deaths per year attributed to OA; numbers increased during the past 10 years. These statistics show that OA is affected many people in the U.S. along with many other countries. This statistics show that the number of people suffering from osteoarthritis in America is on the rise.

- **Web site #2 Name: Knee Osteoarthritis Statistics**
- **Web address: <http://orthoinfo.aaos.org/topic.cfm?topic=a00399>**
- **Summary of the statistics:**

Knee osteoarthritis is a leading cause of disability in the United States. In 2005, approximately 9 million American adults were diagnosed with knee osteoarthritis. About 55% of people with knee osteoarthritis are older than 65. These statistics show that it is a fairly large number of people that were diagnosed with knee osteoarthritis. These statistics show the importance of taking care of your body, and staying in shape. By staying in shape, you are reducing your chances of being diagnosed with OA.

- **Web site #3: Osteoarthritis: Diagnosis and Therapeutic Considerations**
- **Web address: <http://www.aafp.org/afp/2002/0301/p841.html>**
- **Summary of the statistics:**
  - Osteoarthritis is a common rheumatologic disorder. It is estimated that 40 million Americans and 70 to 90 percent of persons older than 75 years are affected by osteoarthritis. Estimates of the prevalence of osteoarthritis based on radiographic evidence range from 30 to 90 percent. Men and women are equally affected, but symptoms occur earlier and appear to be more severe in women.

## Section 4: Consumer Information

- **Web site #1 Name: Osteoarthritis**
- **Web address: <http://www.consumerreports.org/health/conditions-and-treatments/osteoarthritis/how-common-is-it.htm>**
- **Summary of the information:**
  - About 9 in 100 to 12 in 100 older Americans (about 3 million people) are disabled from osteoarthritis and cannot do everyday tasks like wash their hair or get out of the bath on their own. About half of them use wheelchairs or have to stay in bed. There is no cure for osteoarthritis, but there are some treatments that can be used to make it not as painful. You will most likely need a combination of treatments to control your symptoms, rather than a single treatment. Nonsteroidal anti-inflammatory drugs (NSAIDs) work well to control pain in the short term, although these drugs may potentially have side effects. Acetaminophen (Tylenol) may also work to control pain, but it is not as effective as NSAIDs. Exercising moderately but regularly may reduce your pain and help you stay active. There

are surgeries that can be used such as hip replacements, and the results typically last at least ten years.

- **Web site #2 Name: Osteoarthritis**
- **Web address:** [http://www.arthritis.org/disease-center.php?disease\\_id=32](http://www.arthritis.org/disease-center.php?disease_id=32)
- **Summary of the information:**
  - Osteoarthritis is known by many different names, including degenerative joint disease, osteoarthrosis, hypertrophic arthritis and degenerative arthritis. It is thought that osteoarthritis dates back to ancient humans. Evidence of osteoarthritis has been found in ice-aged skeletons. Today, an estimated 27 million Americans live with OA. There are several stages of osteoarthritis. Some of these stages include the loss of elasticity in the cartilage and it becomes damaged more easily by injury or use. The wear of the cartilage causes changes to underlying bone. The bone thickens and cysts may occur under the cartilage, bony growths, called spurs or osteophytes, develop near the end of the bone at the affected joint, bits of bone or cartilage float loosely in the joint space. The joint lining, or the synovium, becomes inflamed due to cartilage breakdown causing cytokines (inflammation proteins) and enzymes that damage cartilage further.
- **Web site #3 Name: Managing Symptoms of Osteoarthritis**
- **Web address:** [http://www.arthritistoday.org/conditions/osteoarthritis/all-about-  
oa/manage-osteoarthritis-pain.php](http://www.arthritistoday.org/conditions/osteoarthritis/all-about-oa/manage-osteoarthritis-pain.php)
- **Summary of the information:**
  - The beginning steps to managing OA are to control the symptoms, like pain and stiffness, while also improving joint mobility and flexibility. It is also important that you have a reasonable body weight and to maintain a healthy exercising routine. One thing that is key is to stretch yourself. Slow, gentle stretching of joints may improve flexibility, lessen stiffness and reduce pain. Morning is a great time to stretch to get joints ready for the day's tasks. Yoga may be a great way to work on strength and stretching. Physical activity is a proven way to manage OA symptoms. Simply activities, such as walking, or a water exercise class can help manage symptoms.

## Section 5: Solutions to the Problem (or Issue)

- **Web site #1 Name: Arthritis Foundation**
- **Web address:** <http://www.arthritis.org/>
- **Summary of the information:**
  - The Arthritis Foundation was created to raise money for Arthritis research. They sponsor many benefits, walks, and fundraiser to help people gain awareness for this disease. When you visit the website, you could tell they the organization is really trying to get you involved. You could click on the different links to learn more about their research projects, events, programs, the types of arthritis and more. You could even go straight to this website to make a personal donation.
- **Web site #2 Name:** Treatment for osteoarthritis of the hand

- **Web address:**  
<http://www.assh.org/Public/HandConditions/Pages/ArthritisOsteoarthritis.aspx>
- **Summary of the information:**
  - Treatment is designed to relieve pain and restore function. Anti-inflammatory or other analgesic medication may be of benefit in relieving pain. A cortisone injection can often provide relief of symptoms, but does not cure the arthritis. Surgery is usually not advised unless these more conservative treatments fail. Surgery is indicated when the patient either has too much pain or too little function. The American Society of Surgery of the Hand (ASSH) provides ways of treatment on the website in order to try to help the problem.
- **Web site #3 Name: Cleveland Clinic- Diseases and Conditions**
- **Web address:**  
[http://my.clevelandclinic.org/disorders/osteoarthritis/or\\_overview.aspx](http://my.clevelandclinic.org/disorders/osteoarthritis/or_overview.aspx)
- **Summary of the information:**
  - Osteoarthritis is caused by both primary and secondary factors. Primary osteoarthritis is linked to old age when the cartilage begins to break down due to daily use of the joint. Secondary osteoarthritis is caused by physical factors such as congenital defects and obesity. The main symptoms of osteoarthritis of the hip include pain in the groin and thigh. Sometimes pain can develop in the knee. The Cleveland Clinic sets up its website so you are able to tell the symptoms of the disease and how to treat it all on one page. It does a good job of addressing the health problem, as well as providing ways to treat it.

## Conclusions

Doing the research on Osteoarthritis has opened my eyes to the symptoms, stages, and treatments of this disease. Prior to this assignment, I did not know that much about this disease. It was interesting to learn how many people it affects, and how it differs in men and women. I did not know that over 27 million Americans were currently suffering from this disease. My grandmother, who is 74 years old just recently found out that she has osteoarthritis of the knees. I now feel like I would be able to answer questions regarding this topic if she had any.

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## Five-minute Twitter Brief

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Tweets:

- About 9 in 100 to 12 in 100 older Americans (about 3 million people) are disabled from osteoarthritis and cannot do everyday tasks like wash their hair or get out of the bath on their own. About half of them use wheelchairs or have to stay in bed.
- Currently, 27 million Americans are living with Osteoarthritis

I chose to tweet about these facts because 27 million people is a very significant amount of people. All of these people are living with this disease that does not yet have a cure. The facts that I want to share with the class are:

- Osteoarthritis (OA) is caused by 'wear and tear' on a joint. Cartilage, which is the firm, rubbery tissue that cushions your bones at the joints, and allows bones to glide over one another, starts to break down and wear away.
- As a result, the bones rub together, causing pain, swelling, and stiffness.
- OA of the knee is 1 of 5 leading causes of disability among non-institutionalized adults.
- Osteoarthritis is the most common type of arthritis.
- Joints most commonly affected are the knees, hips, and those in the hands and spine.
- Ways to help manage osteoarthritis pain and improve function include exercise, weight control, rest, pain relief, alternative therapies and surgery.
- It is thought that osteoarthritis dates back to ancient humans. Evidence of osteoarthritis has been found in ice-aged skeletons. Today, an estimated 27 million Americans live with OA.

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