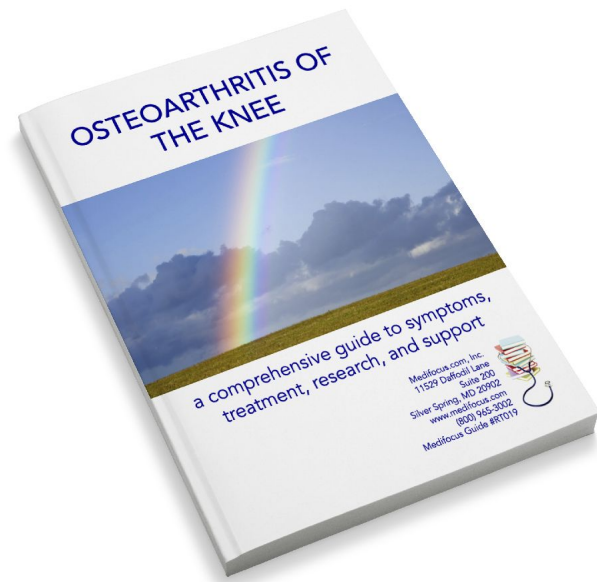


Preview of the Medifocus Guidebook on: Osteoarthritis of the Knee

Updated October 29, 2009



This document is only a SHORT PREVIEW of the **Medifocus Guidebook on Osteoarthritis of the Knee**. It is intended primarily to give you a general overview of the **format and structure** of the Guidebook as well as select pages from each major Guidebook section listed in the Table of Contents.

To purchase the COMPLETE Medifocus Guidebook on Osteoarthritis of the Knee (131 pages; Updated October 29, 2009), please:

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1 - Background Information

Introduction

Chronic or life-threatening illnesses can have a devastating impact on both the patient and the family. In today's new world of medicine, many consumers have come to realize that they are the ones who are primarily responsible for their own health care as well as for the health care of their loved ones.

When facing a chronic or life-threatening illness, you need to become an educated consumer in order to make an informed health care decision. Essentially that means finding out everything about the illness - the treatment options, the doctors, and the hospitals - so that you can become an educated health care consumer and make the tough decisions. In the past, consumers would go to a library and read everything available about a particular illness or medical condition. In today's world, many turn to the Internet for their medical information needs.

The first sites visited are usually the well known health "portals" or disease organizations and support groups which contain a general overview of the condition for the layperson. That's a good start but soon all of the basic information is exhausted and the need for more advanced information still exists. What are the latest "cutting-edge" treatment options? What are the results of the most up-to-date clinical trials? Who are the most notable experts? Where are the top-ranked medical institutions and hospitals?

The best source for authoritative medical information in the United States is the National Library of Medicine's medical database called PubMed®, that indexes citations and abstracts (brief summaries) of over 7 million articles from more than 3,800 medical journals published worldwide. PubMed® was developed for medical professionals and is the primary source utilized by health care providers for keeping up with the latest advances in clinical medicine.

A typical PubMed® search for a specific disease or condition, however, usually retrieves hundreds or even thousands of "hits" of journal article citations. That's an avalanche of information that needs to be evaluated and transformed into truly useful knowledge. What are the most relevant journal articles? Which ones apply to your specific situation? Which articles are considered to be the most authoritative - the ones your physician would rely on in making clinical decisions? This is where *Medifocus.com* provides an effective solution.

Medifocus.com has developed an extensive library of *MediFocus Guidebooks* covering a wide spectrum of chronic and life threatening diseases. Each *MediFocus Guidebook* is a

high quality, up- to-date digest of "professional-level" medical information consisting of the most relevant citations and abstracts of journal articles published in authoritative, trustworthy medical journals. This information represents the latest advances known to modern medicine for the treatment and management of the condition, including published results from clinical trials. Each *Guidebook* also includes a valuable index of leading authors and medical institutions as well as a directory of disease organizations and support groups. *MediFocus Guidebooks* are reviewed, revised and updated every 4-months to ensure that you receive the latest and most up-to-date information about the specific condition.

About Your MediFocus Guidebook

Introduction

Your *MediFocus Guidebook* is a valuable resource that represents a comprehensive synthesis of the most up-to-date, advanced medical information published about the condition in well-respected, trustworthy medical journals. It is the same type of professional-level information used by physicians and other health-care professionals to keep abreast of the latest developments in biomedical research and clinical medicine. The *Guidebook* is intended for patients who have a need for more advanced, in-depth medical information than is generally available to consumers from a variety of other resources. The primary goal of a *MediFocus Guidebook* is to educate patients and their families about their treatment options so that they can make informed health-care decisions and become active participants in the medical decision making process.

The *Guidebook* production process involves a team of professionals with expertise in diverse areas including experienced medical database researchers and practicing physicians who serve as members of the *Medifocus.com* Medical Advisory Board (MAB). This team approach to the development and production of the *MediFocus Guidebooks* is designed to ensure the accuracy, completeness, and clinical relevance of the information. The *Guidebook* is intended to serve as a basis for more meaningful discussions between patients and their health-care providers in a joint effort to seek the most appropriate course of treatment for the disease.

Guidebook Organization and Content

Section 1 - Background Information

This section provides detailed information about the organization and content of the *Guidebook* including tips and suggestions for conducting additional research about the condition.

Section 2 - The Intelligent Patient Overview

This section of your *MediFocus Guidebook* represents a detailed overview of the disease or condition specifically written from the patient's perspective. It is designed to satisfy the basic informational needs of consumers and their families who are confronted with the illness and are facing difficult choices. Important aspects which are addressed in "The Intelligent Patient" section include:

- The etiology or cause of the disease
- Signs and symptoms
- How the condition is diagnosed
- The current standard of care for the disease

- Treatment options
- New developments
- Important questions to ask your health care provider

Section 3 - Guide to the Medical Literature

This is a roadmap to important and up-to-date medical literature published about the condition from authoritative, trustworthy medical journals. This is the same information that is used by physicians and researchers to keep up with the latest developments and breakthroughs in clinical medicine and biomedical research. A broad spectrum of articles is included in each *MediFocus Guidebook* to provide information about standard treatments, treatment options, new clinical developments, and advances in research. To facilitate your review and analysis of this information, the articles are grouped by specific categories. A typical *MediFocus Guidebook* usually contains one or more of the following article groupings:

- *Review Articles*: Articles included in this category are broad in scope and are intended to provide the reader with a detailed overview of the condition including such important aspects as its cause, diagnosis, treatment, and new advances.
- *General Interest Articles*: These articles are broad in scope and contain supplementary information about the condition that may be of interest to select groups of patients.
- *Drug Therapy*: Articles that provide information about the effectiveness of specific drugs or other biological agents for the treatment of the condition.
- *Surgical Therapy*: Articles that provide information about specific surgical treatments for the condition.
- *Clinical Trials*: Articles in this category summarize studies which compare the safety and efficacy of a new, experimental treatment modality to currently available standard treatments for the condition. In many cases, clinical trials represent the latest advances in the field and may be considered as being on the "cutting edge" of medicine. Some of these experimental treatments may have already been incorporated into clinical practice.

The following information is provided for each of the articles referenced in this section of your *MediFocus Guidebook*:

- Article title
- Author Name(s)
- Institution where the study was done

- Journal reference (Volume, page numbers, year of publication)
- Link to Abstract (brief summary of the actual article)

Linking to Abstracts: Most of the medical journal articles referenced in this section of your *MediFocus Guidebook* include an abstract (brief summary of the actual article) that can be accessed online via the National Library of Medicine's PubMed® database. You can easily access the individual abstracts online via PubMed® from the "electronic" format of your *MediFocus Guidebook* by clicking on the corresponding URL address that is provided for each cited article. If you purchased a printed copy of a *MediFocus Guidebook*, you can still access the article abstracts online by entering the individual URL address for a particular article into your web browser.

Section 4 - Centers of Research

We've compiled a unique directory of doctors, researchers, medical centers, and research institutions with specialized research interest, and in many cases, clinical expertise in the management of the specific medical condition. The "Centers of Research" directory is a valuable resource for quickly identifying and locating leading medical authorities and medical institutions within the United States and other countries that are considered to be at the forefront in clinical research and treatment of the condition.

Inclusion of the names of specific doctors, researchers, hospitals, medical centers, or research institutions in this *Guidebook* does not imply endorsement by Medifocus.com, Inc. or any of its affiliates. Consumers are encouraged to conduct additional research to identify health-care professionals, hospitals, and medical institutions with expertise in providing specific medical advice, guidance, and treatment for this condition.

Section 5 - Tips on Finding and Choosing a Doctor

One of the most important decisions confronting patients who have been diagnosed with a serious medical condition is finding and choosing a qualified physician who will deliver high-level, quality medical care in accordance with currently accepted guidelines and standards of care. Finding the "best" doctor to manage your condition, however, can be a frustrating and time-consuming experience unless you know what you are looking for and how to go about finding it. This section of your *Guidebook* offers important tips for how to find physicians as well as suggestions for how to make informed choices about choosing a doctor who is right for you.

Section 6 - Directory of Organizations

This section of your *Guidebook* is a directory of select disease organizations and support groups that are in the business of helping patients and their families by providing access to information, resources, and services. Many of these organizations can answer your questions, enable you to network with other patients, and help you find a doctor in your geographical area who specializes in managing your condition.

2 - The Intelligent Patient Overview

OSTEOARTHRITIS OF THE KNEE

Introduction to Osteoarthritis of the Knee

Arthritis, sometimes called *osteoarthritis*, is an inflammation of the joints that results in pain, swelling, stiffness, and limited movement. There are many different types of arthritis and each has a different cause. The National Institutes of Health estimates that approximately 37 million people in the United States (1 out of every 7) have arthritis. The most common form of arthritis is *osteoarthritis* which typically affects the fingers, hips, and knees. The knees are affected more than any other joint.

There are three types of arthritis that may affect the knee:

- Osteoarthritis - a degenerative condition characterized by erosion of cartilage in the knee.
- Rheumatoid arthritis - an inflammatory arthritis that can destroy cartilage in the joint. It usually affects both knees and can develop at any age.
- Post-traumatic arthritis - similar to osteoarthritis and can develop years after an injury to the knee joint such as a meniscus tear, ligament injury, or fracture.

In order to understand the nature of osteoarthritis of the knee and its treatments, it is important to understand the anatomy of the knee and how it works.

Anatomy of the Knee

The knee is one of the most complex joints in the body. It is a weight-bearing joint that functions like a hinge enabling the lower legs to move forward (extend), move backward (flex), and rotate. It is more likely to be injured than any other joint in the body. The knee joint has several components including bone, muscle, ligaments, tendons, cartilage, and *synovium* (a layer of connective tissue that lines the joint cavity). It is basically composed of three bones that are held together by a tough band of tissue called *ligaments*. The muscles, ligaments, and tendons stabilize the knee and enable it to function smoothly.

- Bones - There are three bones that make up the knee. The function of the bones is to support the knee and give it a rigid structure. The bones include:
 - femur - the bone that runs from the hip to the knee and is the largest bone in the body
 - tibia - the bone that runs from the ankle to the knee and is the second largest bone in the body. This is also called the *shin bone*. (The fibula bone runs behind and parallel to the tibia).
 - patella - small triangular-shaped bone in front of the knee, also known as the *knee cap*.

It covers and protects the joint formed by the tibia and femur. As the knee bends and straightens, the patella slides up and down in a groove on the femur called the *femoral groove* or *trochlear sulcus*.

The knee is composed of three *compartments* (areas where the bones of the knee make contact with each other): *medial tibiofemoral* - the inner part of the knee where the tibia and femur bones meet; *lateral tibiofemoral* - the outer part of the knee where the tibia and femur bones meet; *patellar femoral* - the area where the patella slides over the femur bone joints.

- Muscles - muscles control the movement of the knee joint. The muscles responsible for movement of the knee, namely bending and straightening, are found in the front and back of the thigh. These muscles include:
 - quadriceps - this muscle group is made up of four large muscles and forms a large mass that covers the front and sides of the thigh bone. It extends down to the front of the knee and functions to straighten the knee (extension).
 - hamstring - this muscle group is located at the back of the thigh and extends down to the back of the knee and is responsible for bending the knee backwards (flexion).
- Ligaments - dense connective tissue that connects bone to bone (tibia, patella, femur) and stabilizes the knee. Four ligaments hold the knee joint together and provide stability for the knee: two in the center of the knee, which cross each other ("cruciate"), one on the inner side of the knee, and one on the outside. The pair of ligaments in the center of the knee controls the backward and forward motion while the other two ligaments control and stabilize the sideways motion of the knee. Smaller ligaments hold the patella in the center of the femoral groove. The four knee ligaments are:
 - anterior cruciate ligament - this ligament is found in the center of the knee and connects the tibia to the femur. It prevents the femur from sliding backwards on the tibia by restraining excessive forward movement of the lower leg (tibia) in relation to the upper leg (femur). It also limits and stabilizes the rotational movement or inward twisting of the leg. This ligament frequently sustains injury from twisting.
 - posterior cruciate ligament - this ligament is located just behind (posterior) the anterior cruciate ligament. It limits the backward motion of the tibia and prevents the femur from sliding forward over the tibia.
 - medial collateral ligament - located on the inner side of the knee
 - lateral collateral ligament - located on the outer side of the knee
- Tendons - tough bands of tissue that connect muscle to bone. The quadriceps muscles form tendons as they attach to the top of the patella, pass over the patella, and attach to the front side of the tibia. The hamstring muscles at the back of the thigh form tendons that attach to the back of the knee and continue down to attach to the tibia from the back. The *patellar tendon* attaches from below the patella to the front of the tibia.
- Cartilage - this is a dense tissue matrix that contains large amounts of water. It is smooth, shiny, jel-like, porous, and elastic and acts as a cushion between bones. It provides a

low-friction, load-bearing surface which facilitates the easy motion of joints. When cartilage is damaged, it has limited ability to repair itself. There are two types of cartilage:

- *meniscus* or *meniscal cartilage* is a C-shaped, smooth pad which sits between the weight-bearing bone ends in the knee, namely the tibia and the femur. The meniscus acts as a shock absorber and cushions and spreads the weight load. There are two menisci in each knee: *medial meniscus* located on the inner side of the knee and the *lateral meniscus* located on the outer side of the knee. Each meniscus evenly distributes weight and also distributes joint fluid for lubrication.
- *articular cartilage* - also smooth and shiny but slightly different than the meniscus. It covers the ends of the femur, the femoral groove, the top of the tibia, and the underside of the patella. In general it is found wherever two bony surfaces come in contact with each other. The *articular surface* is where the ends of the bones meet. The articular cartilage acts like a ball bearing and allows all of the bones to slide easily during movement. The part of the bone under the cartilage is called *subchondral bone*.
- Synovium - the membrane in the knee joint that secretes *synovial fluid* which lubricates the joint, nourishes the cartilage, and keeps it smooth and slippery.
- Joint capsule - The joint capsule is dense fibrous connective tissue that is attached to the bones and forms a sleeve around the joint. Some of its functions include sealing the joint space and providing stability. It is locally thickened to form capsular ligaments. The joint capsule is often injured resulting in weakness, constriction, and/or adhering to surrounding structures.

Additional definitions that are helpful for understanding the way a knee joint works include:

- Bone remodeling - the mechanism whereby damaged bone tries to repair itself
- *Osteophytes* - bony outgrowths at the joint margins that may develop in order to shift the load away from the damaged part of the joint by increasing the surface area that bears the weight.
- Bursa - small fluid sac located in areas around the knee that helps muscles and tendons slide freely by decreasing friction and also protects bony structures. The bursa is lined with the synovial membrane.

How Does the Knee Work?

Our knees are involved in many of our activities in the course of a day. Walking, running, sitting, bending, or climbing stairs are only some of the common activities that require active involvement of the knees. Efficient functioning of the knees is dependent on their stability, the good condition of each of the component parts, and their proper anatomical alignment so that the joint can easily glide in any direction. Muscles in the front and back of the thigh move the knee. There should be perfect balance between those muscles for the patella and the rest of the knee joint to function.

What happens when we use our knees? When we take a step forward, the quadriceps muscles located at the front of the thigh contract making the knee extend the lower leg. At the same time, the hamstring muscles in the back of the thigh relax allowing the lower leg to extend. As we follow through with the step, the hamstring muscles contract and shorten, causing the knee to pull the lower leg backwards. At the same time, the quadriceps relax enabling the leg to bend backwards. This happens with ease, comfort, and requires no active concentration on our part.

What is Osteoarthritis of the Knee?

Osteoarthritis (OA) of the knee is a chronic, inflammatory, degenerative arthritic condition in which the cartilage in the knee joint gradually wears away. Osteoarthritis affects the knees more than any other joint. The average age at diagnosis of OA of the knee is 50. The incidence of OA increases with age, and is the leading cause of disability among the elderly.

The pain in OA of the knee is a major issue for most patients and is typically related to physical activity such as climbing stairs, getting out of a chair, or jumping. In mild cases, walking may not cause pain since there is minimal bending of the knee involved. The patient may feel stiffness in the knee upon getting up in the morning that usually lasts less than 30 minutes. Many people with severe OA of the knee experience a feeling as if their knee is "giving way" or "buckling under". There also may be swelling of the knee. At rest, pain is usually not present unless OA is severe.

Traditionally, osteoarthritis of the knee had been divided into two groups: *primary* OA of the knee where, for unknown reasons, symptoms develop as a result of stress on weight-bearing knee joints, and *secondary* OA of the knee where OA develops secondary to other associated medical conditions and occurs either because of abnormal mechanical forces on a normal knee joint or normal mechanical forces on an abnormal knee joint. However, the American Academy of Orthopaedic Surgeons (AAOS) notes that the distinguishing features are increasingly unclear as more is understood about the underlying process involved in OA of the knee.

What Happens in Osteoarthritis of the Knee?

Some of the major changes that occur in the knee joint of a person suffering from osteoarthritis (OA) of the knee include:

- Narrowing or obliteration of the joint space (area between the femur and tibia) due to wearing away of the cartilage
- *Synovitis* - local inflammation in the synovium
- Bone cysts resulting from cartilage erosion and exposure of subchondral bone
- Bony remodeling - damaged bone tries to repair itself
- Formation of bony outgrowths at the margins of the bone (*osteophytes*)
- Capsular stretching
- Loose ligaments
- Lesions in the bone marrow around the joint
- Decrease in *hyaluronan*, a compound in the cartilage that helps with lubrication of the knee

Osteoarthritis typically begins when cartilage in the knee begins to deteriorate. There is a breakdown of articular cartilage which lines the surface of the subchondral bones of the knee. It often follows injury, trauma, or infection of the joint but not always. Recent research has shown that there are actually many changes to cartilage that occur in OA of the knee - not just wear and tear. These include metabolic changes, inflammatory changes, and new growth to cover bony spurs.

As the cartilage thins, the joint space between the femur and tibia also thins. Thinning can usually be visualized on x-ray studies and is often the earliest symptom of OA. The patient may not necessarily feel pain at this point.

As the cartilage continues to thin, it becomes grooved and small fragments develop in the joint space. The bones around these areas react and become thicker, growing outward and forming bony spurs at their margins (*osteophytes*) that can limit movement of the knee. The synovium becomes inflamed, thickens, and produces extra fluid (sometimes known as "*water on the knee*"). This causes additional pain and swelling. Over time, these changes cause a shift in the mechanics of the joint resulting in increased deformity, instability, pain (bone rubbing against bone) and further bone erosion. This leads to the formation of more bone cysts under the cartilage, resulting in further remodeling of the bone.

Damage to the knee joint does not happen in a uniform fashion - it occurs in specific areas of the joint. Because it is not uniform, stress is added to the joint since it is no longer working in total harmony that results in further damage to the joint and loss of cartilage. Continuous loss of cartilage or changes to the bone can further destabilize the knee joint to the point where it becomes misaligned or tilted. A vicious cycle develops where injury adds to destabilization which promotes further injury.

The most common sources of pain in OA of the knee are the *patellofemoral joint* where the patella and the femur come in contact with each other and the medial compartment. The pain is due in part to the bone changes, exposed bone or bone-on-bone rubbing, inflammation of the synovium, and stretched ligaments.

People with OA of the knee are prone to other knee injuries especially in advanced or severe OA including:

- Meniscal tears
- Anterior cruciate ligament tears

Pathophysiology of Osteoarthritis of the Knee

While it is known that inflammation and swelling in the knee is caused by bits of cartilage that break off and cause inflammation in the synovium, recently there has been additional information about the origin of OA. Magnetic resonance imaging (MRI) studies have shown that synovitis (inflammation of the synovium) is already present in early OA even when the cartilage still appears normal on X-rays. This has led researchers to investigate other inflammatory mechanism that may be involved in OA of the knee and they have found evidence of an inflammatory process.

This finding may impact treatment options regarding various types of anti-inflammatory drugs.

Researchers have found that the progressive degeneration of the cartilage of the knee stimulates the production of *chondrocytes* (cartilage cells) to help repair the tissue. However, the degenerative process is faster than the attempted repair which results in further erosion and cracking of the superficial layers of cartilage, eventually leading to damage in deeper layers of the cartilage and subchondral bone.

The destruction of cartilage is caused primarily by enzymes called *matrix metalloproteinases* (MMPs) which are secreted in excess by the synovial cells and the chondrocytes. The MMPs are not responsive to cells that normally inhibit their production. It is thought that a pro-inflammatory cytokine called IL-1 (interleukin 1) is responsible for causing this proliferation of MMPs and the subsequent destruction of cartilage.

Inhibition of MMPs and stimulation of the repair of cartilage cells are among the areas under investigation for development of new treatments for OA of the knee.

Risk Factors for Osteoarthritis of the Knee

Several risk factors for osteoarthritis (OA) of the knee have been identified some of which carry a higher risk than others. The most common risk factors include:

- Obesity - excess weight increases the "load" or stress on the knees (known as "weight-bearing joints")
- Age - the risk of osteoarthritis of the knee increases with age perhaps because of reduced ability of the cartilage to heal itself
- Gender - until the age of 50, more men than women are diagnosed with OA of the knee but after age 65, there is a strong predominance of women. Women over age 50 are more likely to develop OA of the knee than men.
- Genetics - there is strong evidence that familial genetic mutations may make a person more vulnerable to OA of the knee based on reports from a number of sources, including epidemiological studies of family history and family clustering, twin studies, and exploration of rare genetic disorders.
- Bone density - while high bone density is a risk factor for developing OA of the knee, low bone density is a risk factor for more rapid progression.

Other risk factors for the development of OA of the knee include:

- Trauma - such as injury to the knee in an accident or sports injury
- Previous surgery to the knee
- Repetitive stress from activities such as:
 - kneeling or squatting that may be associated with certain occupations such as assembly line worker, shipyard or dockworker, miner, carpet or floor layer, or some performing artists
 - people who lift at least 55 pounds regularly

- people who walk more than two miles a day
- High-impact sports such as soccer, tennis, and long distance running
- Inflammatory conditions - repeated episodes of gout or rheumatoid arthritis
- Osteoarthritis of the hand appears to raise the risk of developing osteoarthritis in the knee.

Medical conditions that may be associated with OA of the knee include:

- Metabolic disorders
 - *hemochromatosis* - iron overload in the blood
 - *Gaucher disease* - an inherited condition involving a deficiency of an enzyme called glucocerebrosidase
 - *Ehler's-Danlos Syndrome* - an inherited disorder of connective tissue
- Endocrine disorders
 - acromegaly - overgrowth of soft tissue, bone, and cartilage due to a tumor of the pituitary gland that secretes growth hormone
 - severe hypothyroidism (underactive thyroid)
 - hyperparathyroidism - elevated levels of the parathyroid hormone
- Dysplastic diseases affecting bone development such as calcium crystal deposition diseases that results in the accumulation of deposit calcium crystals in joints and bursa
- Congenital deformities involving malformed joints or defective cartilage resulting in unequal leg length, *varum* (bow-legged), or *valgus* (knock-kneed) deformity
- Other systemic conditions such as *Paget's disease*, a skeletal disorder resulting in large bones

Incidence of Osteoarthritis of the Knees

The incidence of osteoarthritis (OA) of the knee increases with age and it is more common in women than men. According to some estimates, more than 80% of people 55 years or older have evidence of OA of the knee seen with X-ray imaging. Of these, 10-20% have symptoms which many people find debilitating at worst or limiting daily activities in the least. Osteoarthritis of the knee is more common in Caucasians than in African-Americans. As baby boomers age, the incidence of OA of the knee is expected to rise significantly.

According to a survey conducted by the American Academy of Orthopaedic Surgeons:

- In 2001, approximately 13.5 million people complained of pain, stiffness, or swelling of the knee. Among the people in this group who were diagnosed with osteoarthritis of the knee, 50% were over age of 65.
- Approximately 88% of those people diagnosed with OA of the knee were Caucasian and 9%

were African-Americans.

- People with OA of the knee accounted for more than 5.5 million visits to doctors and for more than 271,000 out-patient hospital visits.
- Osteoarthritis of the knee was one of the five leading causes of physical disability in noninstitutionalized elderly men and women.
- The risk of disability from OA of the knee was as great as the risk for disability from cardiovascular disease.

For more information about osteoarthritis and this study, please click on the following link:
<http://www.aaos.org>.

Assessment of Function in Osteoarthritis of the Knee

Assessment of function in patients with osteoarthritis of the knee (OA) is an important indicator of the severity of the condition as well as an effective method for evaluating the success of treatment or the need for more intense intervention. Two of the assessment scales which are widely used by clinicians include:

- Western Ontario and McMaster Osteoarthritis Scale (WOMAC). This scale assesses symptoms in OA of the knee and hip, including: pain, disability, and physical function (such as walking) in a series of 24 different scenarios. Lower WOMAC scores indicate less disability, pain, or stiffness.
- Lequesne Index - this is a 10-question survey for patients with OA of the knee and hip. It contains five questions relating to pain or discomfort, one question regarding maximum distance the patient can walk, and four questions about activities of daily living. Lower scores indicate less impairment.

The **Intelligent Patient Overview** in the complete **Medifocus Guidebook on Osteoarthritis of the Knee** also includes the following additional sections:

- **Diagnosis of Osteoarthritis of the Knee**
- **Treatment Options for Osteoarthritis of the Knee**
- **Complementary Medicine and Osteoarthritis of the Knee**
- **Quality of Life**
- **New Developments in Osteoarthritis of the Knee**
- **Questions to ask you Doctor about Osteoarthritis of the Knee**

To Order the Complete **Guidebook on Osteoarthritis of the Knee** [Click Here](#)
Or Call 800-965-3002 (USA) or 301-649-9300 (Outside USA)

3 - Guide to the Medical Literature

Introduction

This section of your *MediFocus Guidebook* is a comprehensive bibliography of important recent medical literature published about the condition from authoritative, trustworthy medical journals. This is the same information that is used by physicians and researchers to keep up with the latest advances in clinical medicine and biomedical research. A broad spectrum of articles is included in each *MediFocus Guidebook* to provide information about standard treatments, treatment options, new developments, and advances in research.

To facilitate your review and analysis of this information, the articles in this *MediFocus Guidebook* are grouped in the following categories:

- Review Articles - 48 Articles
- General Interest Articles - 20 Articles
- Surgical Therapy Articles - 20 Articles
- Clinical Trials Articles - 53 Articles

The following information is provided for each of the articles referenced in this section of your *MediFocus Guidebook*:

- Title of the article
- Name of the authors
- Institution where the study was done
- Journal reference (Volume, page numbers, year of publication)
- Link to Abstract (brief summary of the actual article)

Linking to Abstracts: Most of the medical journal articles referenced in this section of your *MediFocus Guidebook* include an abstract (brief summary of the actual article) that can be accessed online via the National Library of Medicine's PubMed® database. You can easily access the individual abstracts online via PubMed® from the "electronic" format of your *MediFocus Guidebook* by clicking on the URI that is provided for each cited article. If you purchased a printed copy of the *MediFocus Guidebook*, you can still access the abstracts online by entering the individual URI for a particular abstract into your computer's web browser.

Recent Literature: What Your Doctor Reads

Database: PubMed <October 2007 to October 2009>

Review Articles

1.

Minimally invasive computer-navigated total knee arthroplasty.

Authors: Biasca N; Schneider TO; Bungartz M
Institution: Clinics of Orthopedic Surgery, Sports Medicine and Trauma Surgery, Department of Surgery, Spital Oberengadin, CH-7503, Samedan (St. Moritz), Switzerland. Biasca@medicmotion.com
Journal: Orthop Clin North Am. 2009 Oct;40(4):537-63, x.
Abstract Link: <http://www.medifocus.com/abstracts.php?gid=RT019&ID=19773060>

2.

Clinical inquiries. Do hyaluronic acid injections relieve OA knee pain?

Authors: Das A; Neher JO; Safranek S
Institution: Valley Medical Center, Renton, and University of Washington, Seattle, WA USA.
Journal: J Fam Pract. 2009 May;58(5):281c-e.
Abstract Link: <http://www.medifocus.com/abstracts.php?gid=RT019&ID=19442386>

3.

The role of the meniscus in knee osteoarthritis: a cause or consequence?

Authors: Englund M; Guermazi A; Lohmander SL
Institution: Musculoskeletal Sciences, Department of Orthopedics, Clinical Sciences Lund, Lund University Hospital, Klinikgatan 22, SE-221 85 Lund, Sweden. martin.englund@med.lu.se
Journal: Radiol Clin North Am. 2009 Jul;47(4):703-12.
Abstract Link: <http://www.medifocus.com/abstracts.php?gid=RT019&ID=19631077>

The **Guide to the Medical Literature** in the complete **Medifocus Guidebook on Osteoarthritis of the Knee** includes the following sections:

- Review Articles - 48 Articles
- General Interest Articles - 20 Articles
- Surgical Therapy Articles - 20 Articles
- Clinical Trials Articles - 53 Articles

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4 - Centers of Research

This section of your *MediFocus Guidebook* is a unique directory of doctors, researchers, medical centers, and research institutions with specialized research interest, and in many cases, clinical expertise in the management of this specific medical condition. The *Centers of Research* directory is a valuable resource for quickly identifying and locating leading medical authorities and medical institutions within the United States and other countries that are considered to be at the forefront in clinical research and treatment of this disorder.

Use the *Centers of Research* directory to contact, consult, or network with leading experts in the field and to locate a hospital or medical center that can help you.

The following information is provided in the *Centers of Research* directory:

- **Geographic Location**

- United States: the information is divided by individual states listed in alphabetical order. Not all states may be included.
- Other Countries: information is presented for select countries worldwide listed in alphabetical order. Not all countries may be included.

- **Names of Authors**

- Select names of individual authors (doctors, researchers, or other health-care professionals) with specialized research interest, and in many cases, clinical expertise in the management of this specific medical condition, who have recently published articles in leading medical journals about the condition.
- E-mail addresses for individual authors, if listed on their specific publications, is also provided.

- **Institutional Affiliations**

- Next to each individual author's name is their **institutional affiliation** (hospital, medical center, or research institution) where the study was conducted as listed in their publication(s).
- In many cases, information about the specific **department** within the medical institution where the individual author was located at the time the study was conducted is also provided.

Centers of Research

United States

CA - California

<u>Name of Author</u>	<u>Institutional Affiliation</u>
Chakravarty EF	Division of Immunology and Rheumatology, Department of Medicine, Stanford University School of Medicine, Palo Alto, California 94304, USA. echakravarty@stanford.edu
Erickson J	Department of Orthopaedic Surgery, Keck School of Medicine, University of Southern California, Los Angeles, California 90033, USA. vangsness@usc.edu
Fries JF	Division of Immunology and Rheumatology, Department of Medicine, Stanford University School of Medicine, Palo Alto, California 94304, USA. echakravarty@stanford.edu
Gearen PF	Department of Anesthesiology, UCSD Center for Pain Medicine, 9300 Campus Point Dr.-MC 7651, LA Jolla, CA 92037-7651, USA. bilfeld@ucsd.edu
Ilfeld BM	Department of Anesthesiology, UCSD Center for Pain Medicine, 9300 Campus Point Dr.-MC 7651, LA Jolla, CA 92037-7651, USA. bilfeld@ucsd.edu
Sarin VK	Los Angeles Orthopaedic Institute, 4955 Van Nuys Boulevard, Suite 615, Sherman Oaks, CA 91403, USA. laortho1@yahoo.com
Sisto DJ	Los Angeles Orthopaedic Institute, 4955 Van Nuys Boulevard, Suite 615, Sherman Oaks, CA 91403, USA. laortho1@yahoo.com
Vangsness CT Jr	Department of Orthopaedic Surgery, Keck School of Medicine, University of Southern California, Los Angeles, California 90033, USA. vangsness@usc.edu

CO - Colorado

<u>Name of Author</u>	<u>Institutional Affiliation</u>
Steadman JR	Steadman Hawkins Sports Medicine Foundation, 181 West Meadow Drive, Vail, CO 81657, USA.
Yen YM	Steadman Hawkins Sports Medicine Foundation, 181 West Meadow Drive, Vail, CO 81657, USA.

The **Centers of Research** in the complete **Medifocus Guidebook on Osteoarthritis of the Knee** includes the following sections:

- Centers of Research for relevant states in the United States
- Centers of Research listed for relevant countries outside the United States

To Order the Complete **Guidebook on Osteoarthritis of the Knee** [Click Here](#)
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5 - Tips on Finding and Choosing a Doctor

Introduction

One of the most important decisions confronting patients who have been diagnosed with a serious medical condition is finding and choosing a qualified physician who will deliver a high level and quality of medical care in accordance with currently accepted guidelines and standards of care. Finding the "best" doctor to manage your condition, however, can be a frustrating and time-consuming experience unless you know what you are looking for and how to go about finding it.

The process of finding and choosing a physician to manage your specific illness or condition is, in some respects, analogous to the process of making a decision about whether or not to invest in a particular stock or mutual fund. After all, you wouldn't invest your hard earned money in a stock or mutual fund without first doing exhaustive research about the stock or fund's past performance, current financial status, and projected future earnings. More than likely you would spend a considerable amount of time and energy doing your own research and consulting with your stock broker before making an informed decision about investing. The same general principle applies to the process of finding and choosing a physician. Although the process requires a considerable investment in terms of both time and energy, the potential payoff can be well worth it--after all, what can be more important than your health and well-being?

This section of your Guidebook offers important tips for how to find physicians as well as suggestions for how to make informed choices about choosing a doctor who is right for you.

Tips for Finding Physicians

Finding a highly qualified, competent, and compassionate physician to manage your specific illness or condition takes a lot of hard work and energy but is an investment that is well-worth the effort. It is important to keep in mind that you are not looking for just any general physician but rather for a physician who has expertise in the treatment and management of your specific illness or condition. Here are some suggestions for where you can turn to identify and locate physicians who specialize in managing your disorder:

- **Your Doctor** - Your family physician (family medicine or internal medicine specialist) is a good starting point for finding a physician who specializes in your illness. Chances are that your doctor already knows several specialists in your geographic area who specialize in your illness and can recommend several names to you. Your doctor can also provide you with information about their qualifications, training, and hospital affiliations.

The **Tips on Finding and Choosing a Doctor** in the complete **Medifocus Guidebook on Osteoarthritis of the Knee** includes additional information that will assist you in locating a highly qualified and competent physician to manage your specific illness.

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6 - Directory of Organizations

American Academy of Orthopaedic Surgeons

POB 1998 Des Plaines, IL 60017

800.324.2663

www.aaos.org

American College of Rheumatology

1800 Century Place Suite 250 Atlanta, GA 30345

404.633.3777

www.rheumatology.org/

American Physical Therapy Association

111 North Fairfax Street Alexandria, VA 22314

800.999.2782

www.apta.org

Arthritis Care (UK)

18 Stephenson Way London NW1 2HD UK

0808 800 4050

www.arthritiscare.org.uk

Arthritis Foundation

POB 7669 Atlanta, GA 30357

800.283.7800

www.arthritis.org

Arthritis Research Campaign (UK)

POB 177 Chesterfield Derbyshire S41 7TQ

0870 850 5000

www.arc.org.uk

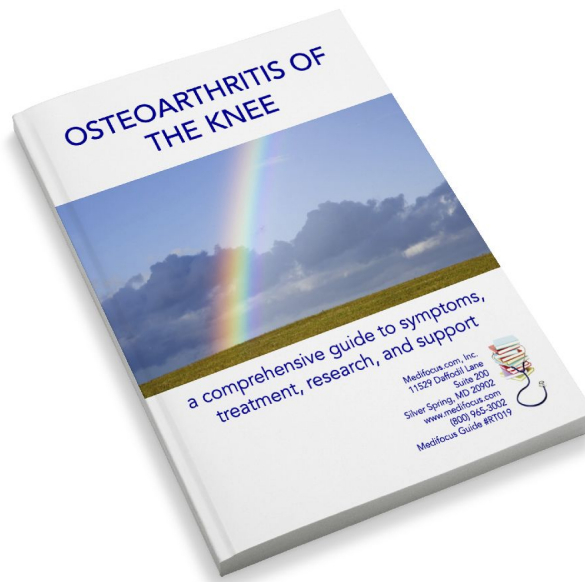
Health Canada

info@hc-sc.gc.ca

hc-sc.gc.ca

The **Directory of Organizations** in the complete **Medifocus Guidebook on Osteoarthritis of the Knee** includes a list of selected disease organizations and support groups that are helping people diagnosed with Osteoarthritis of the Knee.

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This document is only a SHORT PREVIEW of the **Medifocus Guidebook on Osteoarthritis of the Knee**. It is intended primarily to give you a general overview of the **format and structure** of the Guidebook as well as select pages from each major Guidebook section listed in the Table of Contents.

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