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M E D I C I N E

# Guide to The Best Time for Knee Replacement

by the Editors of Johns Hopkins Health Alerts

**Special  
Report**

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The Best Time for Knee Replacement

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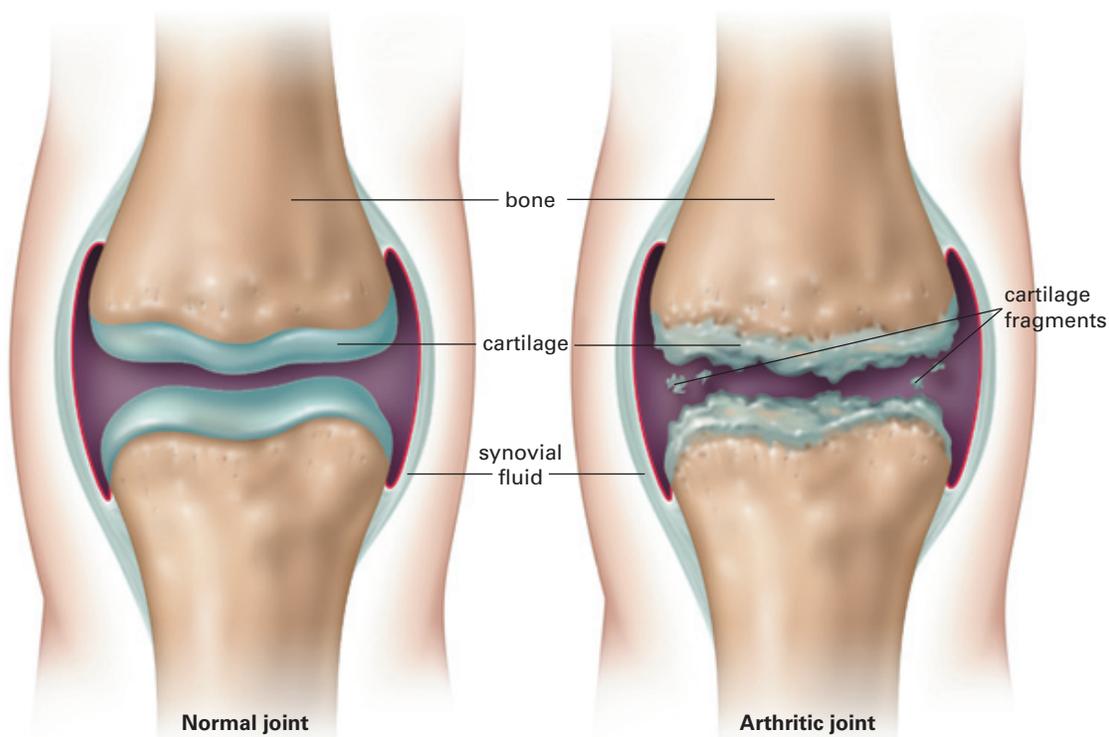
# When Is the Best Time for Knee Replacement?

**R**eplacing a knee joint with an artificial one—a procedure called knee arthroplasty—is a common treatment for severe arthritis: More than 350,000 knee replacement procedures are performed in the United States each year.

Originally, the procedure was considered most appropriate for people age 60 to 75. Doctors thought that younger, more active patients

would put too much stress on the joint and require a second artificial joint in 10 to 20 years; older patients were believed to be too frail to undergo the knee replacement procedure.

Over the past 20 years, however, researchers have concluded that knee replacement can be appropriate for people of almost any age. A federal panel convened by the National Institutes of Health (NIH) determined that joint replace-



In an osteoarthritic joint, the cartilage gradually erodes. Cartilage fragments enter the synovial fluid and cause irritation. If the cartilage wears down completely, adjacent bones rub against each other.

ment provided pain relief and improved mobility in 90% of patients. *The panel also suggested that, rather than being a last resort, knee replacement can be a valuable treatment option earlier in the course of arthritis.*

### Why Knee Replacement Is Often Delayed

Part of the reason that some patients wait a long time for knee replacement is that the decision is up to the individual surgeon, and there is no consensus as to the most appropriate time. Also, patients may be reluctant to undergo knee replacement for a variety of reasons: they don't want to believe that their arthritis has become so serious; they fear the risks, pain, or cost associated with knee replacement surgery; or they worry about taking time off from work or caregiving.

The panel reported that women (and minorities) have knee replacement surgery less often than white men, even though women are more likely than men to have arthritis. Also, women who have a knee replacement have more pain and function loss than men at the time of the procedure, suggesting that either women or their doctors tend to delay surgery. However, these patients may be doing themselves more harm than good.

### Why Earlier Knee Replacement May Be Better

Waiting until pain and function loss have become substantial may chip away at the potential benefits of knee replacement. For example, the NIH panel reported that after knee replacement, patients with worse pain and function scores before the procedure still had more pain and less function than people with better scores before the procedure. In a similar finding, a study of 222 people with osteoarthritis who

underwent knee or hip replacement reported that those with poorer function at the time of surgery also had worse function two years after surgery, compared with people with less pain and better function before surgery.

One problem with waiting too long for knee replacement is that bone as well as cartilage may be worn away, making the procedure more difficult. Also, being disabled for an extended period can affect the muscles and make rehabilitation more difficult. Increased age may also be correlated with an increased risk of surgical complications from knee replacement.

Another factor in favor of earlier joint replacement is improved materials used in the artificial joint and refined surgical techniques. Both of these advances mean that younger patients are not likely to wear out the new joints, as was once feared. Ten years after knee replacement, only 10% of artificial joints are likely to need replacement; after 20 years, the rate is 20%.

### Who Is a Candidate for Knee Replacement?

According to the NIH panel, candidates for knee replacement should have:

- evidence on x-ray of joint damage
- moderate to severe persistent pain that is not relieved by measures such as medication or lifestyle changes
- significant functional limitation resulting in reduced quality of life

Conservative treatments—such as rest, ice, heat, muscle-strengthening exercises, and pain relief medication—should always be the first step in the treatment of knee arthritis. If these measures fail, however, knee replacement may be the best treatment option for many people.



# Got Arthritis? Get Exercise!

**M**ore than 60% of U.S. adults with arthritis aren't getting enough exercise to make a difference in their health, national statistics show. This widespread inertia among arthritis sufferers is "troubling," researchers say, because regular exercise can ease arthritis pain and improve joint function, as well as maintain overall health.

Public health officials recommend that at minimum, adults get 30 minutes of moderate exercise, such as brisk walking, on most days of the week. Although arthritis may present special barriers—from painful joints and fatigue to people's fears that activity will worsen their arthritis symptoms—the researchers point out that many forms of exercise, such as swimming, biking, and moderate walking, are easy on the joints and can be done regularly by arthritis sufferers.

An arthritis exercise program should be started with the approval of a physician and, preferably, under the guidance of a physical therapist who can design and teach exercises to do at home, as well as provide periodic monitoring of progress. Ideally, your arthritis exercise program should include the three basic forms of exercise: range of motion, muscle strengthening, and endurance (also called aerobic or "fitness" exercise).

## **Three Basic Forms of Exercise for Arthritis Sufferers**

### **Arthritis exercise #1:**

#### **Range-of-motion exercises.**

Range-of-motion exercises involve moving a joint as far as possible in every direction without causing pain. The purpose is to maintain flexibility, reduce pain and stiffness, and improve joint function. These exercises are recommended as a warm-up before a workout.

### **Arthritis exercise #2:**

#### **Muscle-strengthening exercises.**

Strengthening muscles increases structural support for the joints and thereby lessens the load placed on them. Isometric exercises—pushing or pulling against a fixed object—can strengthen muscles without damaging joints, which remain immobile during the exercise. Stationary bicycling is often recommended to strengthen the muscles supporting the knees. In one study, an eight-week muscle-strengthening program improved muscle tone and decreased pain significantly in people with osteoarthritis of the knee.

### **Arthritis exercise #3:**

#### **Aerobic exercises.**

Aerobic activities improve overall body fitness. It is possible that high-impact aerobic activities such as running might accelerate the breakdown of cartilage in weight-bearing joints (although not all studies have shown this to be the case), so most doctors recommend low- or no-impact activities such as swimming, walking, and bicycling.

# Rely on Expert Health Advice From Johns Hopkins

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## Back Pain and Osteoporosis White Paper

A lifetime of walking, standing, lifting, and twisting causes significant low back pain in 80% of all adults. And as our population continues to age, osteoporosis becomes an increasingly widespread problem. In the Back Pain and Osteoporosis White Paper, Johns Hopkins experts tackle sprains, strains, spasms, disk herniation, degenerative changes in the disks and spine, spinal stenosis, and osteoporosis, a common cause of hip and spine fractures. You will explore causes and diagnostic techniques, learn about preventive steps and pain relief, and examine treatments that include the latest drug and surgical options. 96 pages.

## Arthritis White Paper

Arthritis now affects over 70 million Americans. The Johns Hopkins Arthritis White Paper provides in-depth information and research on breakthroughs in the diagnosis and treatment of osteoarthritis, rheumatoid arthritis, gout, fibromyalgia, and other arthritis-related conditions. Written by Drs. John A. Flynn and Timothy Johnson, this basic primer on arthritis belongs in the home health library of anyone affected by the pain and discomfort of arthritis. 96 pages.

## The Johns Hopkins Prostate Bulletin

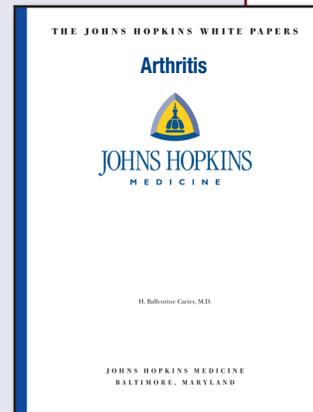
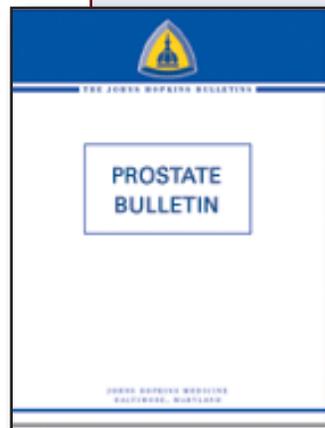
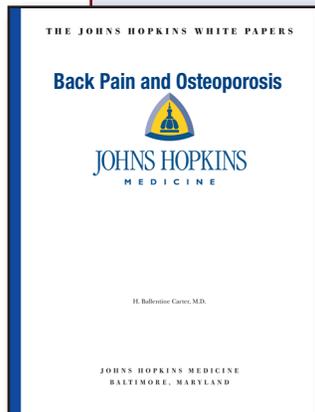
The Johns Hopkins Prostate Bulletin is an indispensable quarterly journal for men with prostate cancer, and the other prostate health concerns: Benign Prostatic Hyperplasia (BPH), prostatidnia, and the various forms of prostatitis. It also deals with side effects and related conditions, such as Lower Urinary Tract Symptoms (LUTS), overactive bladder (OA), and erectile dysfunction (ED).

Written by Dr. Jacek L. Mostwin and his esteemed colleagues at the world-renowned James Buchanan Brady Urological Institute, The Johns Hopkins Prostate Bulletin goes beyond the basics to report on the latest therapeutic treatments, advanced news of clinical trials, in-depth reports, new medications, plus detailed answers to subscribers' concerns about all aspects of your prostate health.

## The Johns Hopkins Medical Letter: Health After 50

Since 1988 this acclaimed monthly newsletter has delivered cutting-edge information on treating the major medical conditions affecting those over 50. Each eight-page issue delivers important news and research on women's health, men's health, nutrition, weight control, arthritis, COPD, colon cancer, dementia and much more. Friendly, easy-to-read, and written in plain English (without any advertising), Health After 50 speaks directly to your personal health concerns.

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