

# You Don't Have to Live with Joint Pain

Causes and Treatment of Joint Pain

A Patient's Guide



## You Don't Have to Live with **Joint Pain**

Your joints are involved in almost every activity you do. Simple movements such as walking, bending, and turning require the use of your hip and knee joints. Normally, all parts of these joints work together and the joint moves easily and without pain. But when the joint becomes diseased or injured, the resulting pain can severely limit your ability to move and work.

Whether you are considering a total joint replacement, or are just beginning to explore available treatments, this booklet is for you. It will help you understand the causes of joint pain and treatment options. Most importantly, it will give you hope that you will be able to do more of the things you enjoy—with far less pain.

Once you're through reading this booklet, be sure to ask your doctor any questions you may have. Gaining as much knowledge as possible will help you choose the best course of treatment to help relieve your joint pain—and get you back into the swing of things.



## Understanding the Causes of **Joint Pain**

### **What Is a Joint?**



A joint is formed by the ends of 2 or more bones that are connected by thick bands of tissue called ligaments. For example, the knee joint is formed by the lower leg bone, called the tibia or shinbone, and the thighbone, called the femur. The hip joint is a ball-and-socket joint, formed by the ball, or femoral head, at the upper end of the thighbone, and the rounded socket, or acetabulum, in the pelvis.

The ends of the bone in a joint are covered with a smooth, soft material called cartilage. Normal cartilage allows nearly frictionless movement. The rest of the surfaces of the joint are covered by a thin, smooth tissue lining called the synovium. The synovium produces fluid that acts as a lubricant to reduce friction and wear in the joint.

# Common Causes of Joint Pain



One of the most common causes of joint pain is arthritis. The most common types of arthritis are:

- **Osteoarthritis (OA)**—sometimes called degenerative arthritis because it is a “wearing out” condition involving the breakdown of cartilage in the joints. When cartilage wears away, the bones rub against each other, causing pain and stiffness. OA usually occurs in people aged 50 years and older, and frequently in individuals with a family history of osteoarthritis.
- **Rheumatoid Arthritis (RA)**—produces chemical changes in the synovium that cause it to become thickened and inflamed. In turn, the synovial fluid destroys cartilage. The end result is cartilage loss, pain, and stiffness. RA affects women about 3 times more often than men, and may affect other organs of the body.



- **Post-traumatic Arthritis**—may develop after an injury to the joint in which the bone and cartilage do not heal properly. The joint is no longer smooth and these irregularities lead to more wear on the joint surfaces.
- **Avascular Necrosis**—can result when bone is deprived of its normal blood supply. Without proper nutrition from the blood, the bone’s structure weakens and may collapse and damage the cartilage. The condition often occurs after long-term treatment with cortisone or after organ transplantation.

Joint pain can also be caused by deformity or direct injury to the joint. In some cases, joint pain is made worse by the fact that a person will avoid using a painful joint, weakening the muscles and making the joint even more difficult to move.

# Obtaining a **Quality Diagnosis**

The medical management of arthritis and joint degeneration may be handled by a family doctor, an internist, or a rheumatologist. However, when medical management is not effective, an orthopaedic surgeon should be consulted to determine if surgery is an option. In some cases, the orthopaedic surgeon may be the first physician to see a patient and make the diagnosis of arthritis.

## **The Orthopaedic Evaluation**

While every orthopaedic evaluation is different, there are many commonly used tests that an orthopaedic surgeon may consider in evaluating a patient's condition.

In general, the orthopaedic evaluation usually consists of:

- A thorough medical history
- A physical examination
- X-rays
- Additional tests, as needed

A medical history is taken to assist the orthopaedic surgeon in evaluating your overall health and the possible causes of your joint pain. In addition, it will help him or her determine to what degree your joint pain is interfering with your ability to perform everyday activities.

What the physician sees during the physical examination, which includes standing posture, gait analysis (watching how you walk), sitting down, and lying down, helps confirm (or rule out) the possible diagnosis. The physical exam will also enable the orthopaedic surgeon to evaluate other important aspects of your hips and legs, including:

- Size and length
- Strength
- Range of motion
- Swelling
- Reflexes
- Skin condition



If you are experiencing pain in your hip joint, your back may be examined because hip pain may actually be the result of problems in the lower spine.

After the physical examination, X-ray evaluation is usually the next step in making the diagnosis. The X-rays help show how much joint damage or deformity exists. An abnormal X-ray may reveal:

- Narrowing of the joint space
- Cysts in the bone
- Spurs on the edge of the bone
- Areas of bony thickening called sclerosis
- Deformity or incorrect alignment

# Treatment Options



## Diagnosis Cont.

Occasionally, additional tests may be needed to confirm the diagnosis. Laboratory testing of your blood, urine, or joint fluid can be helpful in identifying specific types of arthritis and in ruling out certain diseases. Specialized X-rays of the back can help confirm that hip pain isn't being caused by a back problem. Magnetic Resonance Imaging (MRI) or a bone scan may be needed to determine the condition of the bone and soft tissues of the affected joint.

In order to assist the orthopaedic surgeon in making a diagnosis, it may be helpful to write down your answers to the following questions before the appointment:

- Where and when do I have pain?
- How long have I had this pain?
- Do I have any redness or swelling around my joints?
- What daily tasks are hard to do now?
- Did I ever hurt the joint or overuse it?
- Does anyone in my family have similar problems?

Following the orthopaedic evaluation, the orthopaedic surgeon will review and discuss the results with you. Based on his or her diagnosis, your treatment options may include:

- Medication
- Physical therapy
- Joint fluid supplements
- Joint replacement



## Medication

Many different medications are used to treat the pain and stiffness of arthritis. One of the most commonly prescribed types of drugs are the non-steroidal anti-inflammatory agents, or NSAIDs, which can be taken long-term to reduce both the pain and swelling caused by arthritis.

Another type of medication prescribed to reduce severe pain and swelling are corticosteroids. Corticosteroid injections offer quick, effective pain relief. However, they can be used only a few times a year because they weaken bone and cartilage. Also, corticosteroids can cause other potentially serious side effects; their use must be monitored by a physician.

# Treatment Options (Continued)

## Physical Therapy

Physical therapy can be helpful in the management of OA and RA. For example, a physical therapist may recommend:

- Isometric (“pushing”) exercises to help build muscle strength without subjecting inflamed joints to excessive wear
- Isotonic (“pulling”) exercises to further increase muscle strength and help preserve function
- Daily walking, using a cane or other assistive device as needed

## Joint Fluid Supplements

For patients whose knee joint pain does not improve with medication or physical therapy, “joint grease” injections may provide temporary relief. The knee is injected with a joint fluid supplement that acts as a lubricant for the damaged joint. Joint injection schedules and duration of relief vary according to the treatment chosen and the individual patient. However, these injections do not cure the diseased knee, and joint replacement may be needed as the joint worsens with time.



## Total Joint Replacement

Total joint replacement is usually reserved for patients who have severe arthritic conditions. Most patients who have artificial hip or knee joints are over 55 years of age, but the operation is being performed in greater numbers on younger patients thanks to new advances in artificial joint technology.

Circumstances vary, but generally patients are considered for total joint replacement if:

- Functional limitations restrict not only work and recreation, but also the ordinary activities of daily living
- Pain is not relieved by more conservative methods of treatment, such as those described above, by the use of a cane, and by restricting activities
- Stiffness in the joint is significant
- X-rays show advanced arthritis or other problems

## What is Total Joint Replacement?

Total joint replacement is a surgical procedure in which certain parts of an arthritic or damaged joint, such as a hip or knee joint, are removed and replaced with a plastic or metal device called a prosthesis. The prosthesis is designed to enable the artificial joint to move just like a normal, healthy joint.

Hip replacement involves replacing the femur (head of the thighbone) and the acetabulum (hip socket). Typically, the artificial ball with its stem is made of a strong metal, and the artificial socket is made of polyethylene (a durable, wear-resistant plastic). In total knee replacement, the artificial joint is composed of metal and polyethylene to replace the diseased joint. The prosthesis is anchored into place with bone cement or is covered with an advanced material that allows bone tissue to grow into it.

Total joint replacements of the hip and knee have been performed since the 1960s. Today, these procedures have been found to result in significant restoration of function and reduction of pain in 90% to 95% of patients. While the expected life of conventional joint replacements is difficult to estimate, it is not unlimited. Today's patients can look forward to potentially benefiting from new advances that may increase the lifetime of hip and knee prostheses.



## Recent Advances in Total Joint Replacement

Nearly half a million hip and knee replacements are performed each year in the U.S. using conventional metal/plastic prostheses. As successful as most of these procedures are, over the years, the artificial joints can become loose and unstable, requiring a revision (repeat) surgery.

These issues—together with the fact that increasing numbers of younger and more active patients are receiving total joint replacements, and older patients are living longer—have challenged the orthopaedic industry to try to extend the life cycle of total joint replacements.

Recent improvements in surgical techniques and instrumentation will help to further the success of your treatment. The availability of advanced materials, such as titanium and ceramic prostheses and new plastic joint liners, provides orthopaedic surgeons with options that may help to increase the longevity of the prosthesis.

### Preparing for Joint Replacement Surgery

Preparing for a total joint replacement begins weeks before the actual surgery date. In general, patients may be told to:

- **Consider autologous blood donation**—while some total joint procedures do not require blood transfusion, it is possible that a patient may need blood during or after surgery. To avoid using donor blood, patients may donate their own blood ahead of time (autologous donation).
- **Begin exercising under a physician's supervision**—it is important to be in the best possible overall health to help promote the best possible surgical experience. Increasing upper body strength is important because of the need to use a walker or crutches after hip or knee replacement. Strengthening the lower body is also key because increasing leg strength before surgery can reduce recovery time.

# Preventing Possible Complications of Surgery

- **Have a general physical examination**—patients who are considering total joint replacement should be evaluated by their primary care physician to assess overall health and identify any medical conditions that could interfere with surgery or recovery.
- **Have a dental examination**—although infections after joint replacement are not common, an infection can occur if bacteria enter the bloodstream. Therefore, dental procedures such as extractions and periodontal work should be completed before joint replacement surgery.
- **Stop taking certain medications**—your orthopaedic surgeon can advise you which over-the-counter and prescription medications should not be taken before surgery.
- **Stop smoking**—a good idea at any time, but particularly before major surgery in order to help reduce the risk of post-operative lung problems and improve healing.
- **Lose weight**—in patients who are obese, losing weight will help reduce stress on the new joint.
- **Arrange a pre-op visit**—an important opportunity to meet with healthcare professionals at the hospital to discuss your personal hospital care plan, including anesthesia, preventing complications, pain control, and diet.
- **Have routine laboratory tests**—blood tests, urine tests, an EKG or cardiogram, and chest X-ray may be prescribed to confirm that you are fit for surgery.
- **Evaluate post-surgical needs for at-home care**—every patient who undergoes total joint replacement will need help at home for the first few weeks, including assistance with preparing meals and transportation.



The complication rate following joint replacement surgery is **very low**. Serious complications, such as joint infection, occur in less than 2% of patients. Nevertheless, as with any major surgical procedure, patients who undergo total joint replacement are at risk for certain complications—the vast majority of which can be successfully avoided and/or treated. Possible complications include:

## Infection

Infection may occur in the wound or within the area around the new joint. It can occur in the hospital, after the patient returns home, or years later. Following surgery, joint replacement patients receive antibiotics to help prevent infection. For the rest of their lives, they may also need to take antibiotics before undergoing even minor medical procedures to reduce the chance of infection spreading to the artificial joint.

## Blood Clots

Blood clots can result from several factors, including the patient's decreased mobility following surgery, which slows the movement of the blood. There are a number of ways to reduce the possibility of blood clots, including:

- Blood thinning medications (anticoagulants)
- Elastic support stockings that improve blood circulation in the legs
- Plastic boots that inflate with air to promote blood flow in the legs
- Elevating the feet and legs to keep blood from pooling
- Walking hourly

## Lung Congestion

Pneumonia is always a risk following major surgery. To help keep the lungs clear of congestion, patients are assigned a series of deep breathing exercises.

# What to Expect

## the Day of Surgery



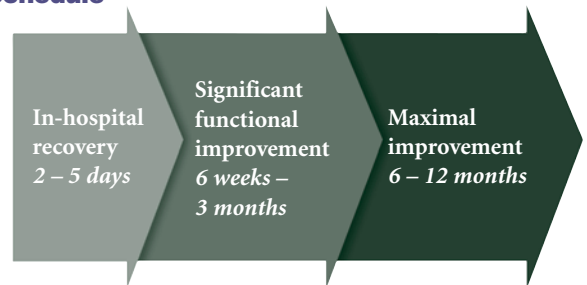
Every hospital has its own particular procedures, but total joint replacement patients can expect their day-of-surgery experience to follow this basic routine:

- Arrive at the hospital at the appointed time
- Complete the admission process
- Final pre-surgery assessment of vital signs and general health
- Final meeting with anesthesiologist and operating room nurse
- Start IV (intravenous) catheter for administration of fluids and antibiotics
- Transportation to the operating room
- Joint replacement surgery—generally lasts 1 to 2 hours
- Transportation to a recovery room
- Ongoing monitoring of vital signs until condition is stabilized
- Transportation to individual hospital room
- Ongoing monitoring of vital signs and surgical dressing
- Orientation to hospital routine
- Evaluation by physical therapist
- Diet of clear liquids or soft foods, as tolerated
- Begin post-op activities taught during pre-op visit

In the days following surgery, your condition and progress will continue to be closely monitored by your orthopaedic surgeon, nurses, and physical therapists. Much time will be given to exercising the new joint, as well as deep breathing exercises to prevent lung congestion. Gradually, pain medication will be reduced, the IV will be removed, diet will progress to solid food, and you will become increasingly mobile.

Joint replacement patients are generally discharged from the hospital when they are able to achieve certain rehabilitative milestones, such as getting in and out of bed unassisted or walking 100 feet. Whether you are sent directly home or to a facility that assists in rehabilitation will depend on your physician's assessment of your abilities.

### Estimated Recovery Schedule



# Getting Moving Again

It may come as a surprise to you that total joint replacement patients are encouraged to get up and start moving around as soon as possible after surgery—as early as the day of surgery.

When you are medically stable, the physical therapist will recommend certain exercises for the affected joint. Physical therapy is a key part of recovery. The more quickly a joint replacement patient gets moving again, it is likely the more quickly he or she will regain independence. To ease the discomfort the activity will initially cause, pain medication is recommended prior to therapy. In addition, the physical therapist will discuss plans for rehabilitation following hospital discharge. Depending on your limitations, an occupational therapist may provide instruction on how to use certain devices that assist in performing daily activities, such as putting on socks, reaching for household items, and bathing. A case manager will discuss plans for your return home and will ensure that you have all the necessary help to support a successful recovery. If needed, the case manager can help arrange a home therapist.

## Life After Total Hip Replacement

The vast majority of individuals who have joint replacement surgery experience a dramatic reduction in joint pain and a significant improvement in their ability to participate in the activities of daily living. However, joint replacement surgery will not allow you to do more than you could before joint problems developed. Each patient's physician will recommend the most appropriate level of activity following joint replacement surgery.

In the weeks following total joint replacement, certain limitations are placed on every patient's activities. Using a cane or walker may be necessary for several weeks. Kneeling, bending, and jumping will likely be forbidden for the first month. It may be 6 weeks before driving is permitted. The orthopaedic surgeon and physical therapist will provide specific recommendations.

When fully recovered, most patients can return to work, although some types of work—such as construction work, certain types of carpentry, and occupations that involve repeated or high climbing—may not be advisable for individuals with a joint replacement. Also, athletic activities that place excessive stress on the joint replacement, such as skiing, basketball, baseball, contact sports, distance running, and frequent jumping, should be avoided.

After joint replacement, a good rule of thumb is that acceptable physical activities should:

- Not cause pain, including pain felt later
- Not jar the joint, as happens with running or jumping
- Not place the joint in the extremes of its range of motion
- Be pleasurable

It is also important for an individual with a joint replacement to keep his or her body weight as close to normal as possible. Joint wear and loosening increases with weight increase.



## Talk to Your Doctor

You don't have to live with severe joint pain and the functional limitations it causes! Even if you have not experienced adequate results with medication and other conservative treatments, total joint replacement may provide the pain relief you long for—and the resulting return to your favorite activities.

Use the space at the end of this booklet to write down a list of questions about your condition, your concerns, and the ways that total joint replacement might benefit you. Then make an appointment to talk to your doctor—and make note of his or her answers and recommendations.

Remember, even if your orthopaedic surgeon determines that joint replacement is a good medical option for you, it is still up to you to make the final decision. The ultimate goal is for you to be as comfortable as possible...and that always means making the best decision for you based on your own individual needs.



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