Hughston Health Alert

6262 Hamilton Road P.O. Box 9517 Columbus GA 31908-9517

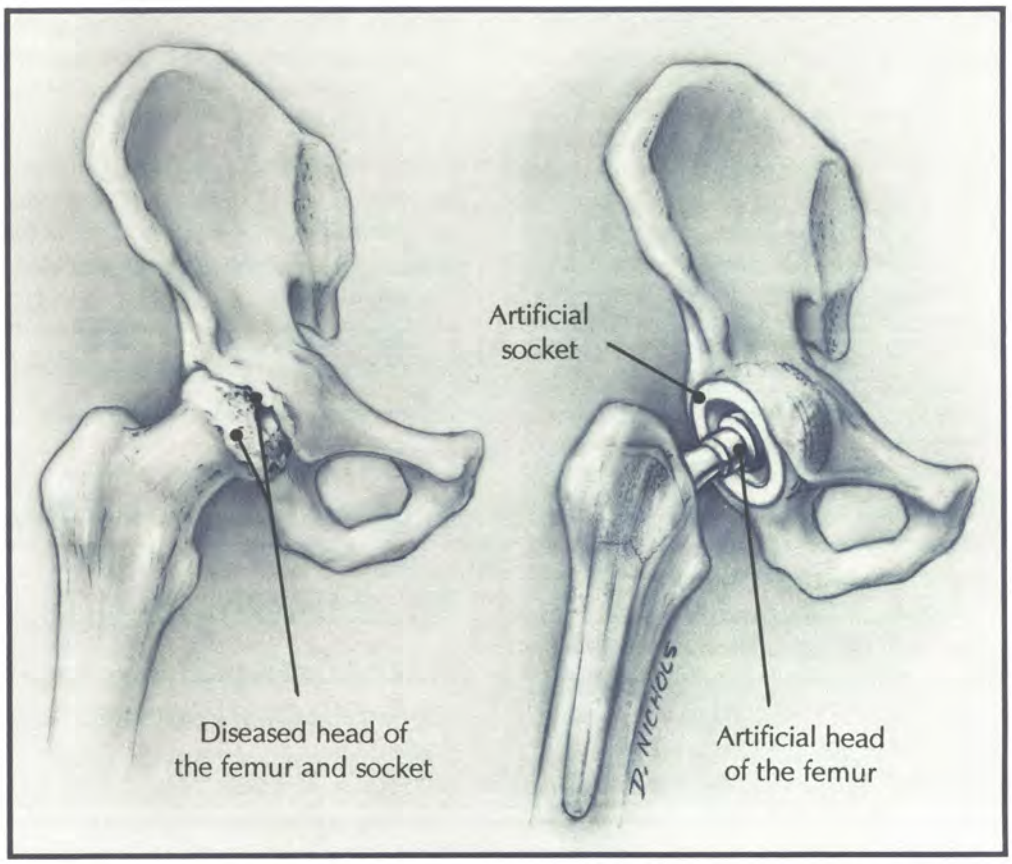
VOLUME 5, NUMBER 1 | *For a Healthier Lifestyle* | WINTER, 1993

Total Hip Replacement

The thighbone's connected to the....artificial hip bone

Bo Jackson is hoping to make a baseball comeback next season on an artificial hip. His football and baseball careers ended after an injury forced him to have hip replacement surgery. Whether or not he succeeds, his comeback attempt could prompt others who suffer from hip problems – athletes and nonathletes alike – to consider surgery.

Total hip replacement, or arthroplasty, is a surgical option for people with stiff, painful hips that cannot be managed by nonsurgical means. Osteoporosis (porous bone), osteoarthritis, rheumatoid arthritis, or a fracture of the head of the femur (thighbone) can cause your hip joint to lose its normal shape, cartilage surface, and mobility, resulting in pain, stiffness, and irreversible loss of motion. Osteonecrosis (also called avascular necrosis) is another condition that can necessitate hip replacement. Osteonecrosis affects the ends of bone, causing cells to die from lack of blood supply. It was this condition that caused Bo Jackson to need surgery in 1992.



Although medication, physical therapy, limiting your activity level, and using crutches can provide temporary relief, surgical replacement of your affected hip with an implant or prosthesis (artificial hip joint) is a more permanent form of relief. This replacement procedure improves the motion and function of your hip and relieves the pain you have experienced. Some 200,000 implants will be installed this year.

The hip is a simple ball-and-socket

Inside This Issue:

- Total Knee Replacement
- Arthritis of the Foot & Ankle
- Use of Ambulatory Aids
- Arthritis of the Hand and Wrist
- Nutritional Needs for Surgery
- Total Shoulder Replacement
- Ageless Athlete

joint where the femur joins with the pelvis. An artificial hip has the same parts as your own hip. It is a ball-and-socket design that fits together to resemble the natural hip joint (see figure on preceding page). The metal ball replaces the damaged head of your femur with an attached stem inserted into the bone for stability. The artificial socket (a plastic cup) is inserted to take the place of your damaged acetabulum (bony socket).

During surgery, the diseased head of the femur and any damaged tissue within the acetabulum are removed, and a canal is made in the femur. The artificial socket is inserted, the stem is placed into the newly formed canal, and the ball is snapped into the socket. Both the artificial socket and stem are "press-fitted" to their bony attachments and usually do not need to be cemented in place with bone cement. In certain cases, though, cement may need to be used. This will be decided by your orthopaedic surgeon.

Like a healthy hip, an artificial hip has smooth gliding surfaces that allow you to move easily and without pain. However, because it does not have the same full range of movement as a healthy hip, you will need to take special safeguards after surgery to make sure it is protected.

Patients are normally out of bed within a short period. Walking is done with the assistance of a walker or crutches until the patient can bear full weight on the new hip, as directed by the surgeon. Within a few weeks, healing occurs and physical therapy is started to strengthen your hip muscles and restore your hip's range of motion.

Just as important as technology and surgical technique is patient behavior. Most patients don't place the demands on an artificial hip that Bo Jackson plans to. Technical advances have greatly improved today's artificial hip joints and, with proper care, they can be expected to last at least 10 years. Ideally, patients having their hip joint replaced should be over the age of 60, because the person's activity level and life span should not exceed the ability or longevity of the artificial joint. Some activities - running, jumping, twisting - can shorten an implant's life. Occasionally, a younger patient with severe problems is considered for joint replacement. In addition, because unsatisfactory results are most commonly seen in overweight patients, those who are overweight should make an effort to lose the amount of weight recommended by their surgeon.

Hip replacement surgery has become an extremely successful operation that can help you be active again. And while it appears unlikely that Bo will be able to play professional sports again, surgery will very probably bring him relief from pain.

Stephen C. Hunter, M.D.
Columbus, Georgia

Total Knee Replacement

Surgery for the severely arthritic knee

When stiffness and pain in your knee prevent even simple motions, such as stooping and walking, it is time to see your doctor. Although total knee replacements are still not as common as total hip replacements, artificial knees have already permitted hundreds of thousands of people disabled by arthritis to walk again.

In the United States, some 150,000 total knee joint replacements (arthroplasty) are currently being performed each year. About 460 were done at the Hughston Sports Medicine Hospital last year. This surgical procedure is primarily done to relieve pain that does not respond to nonsurgical treatment. The relief from pain, in turn, allows the patient to move the joint again. The same medical conditions that affect the hip (osteoarthritis, rheumatoid arthritis, and injury) are most often responsible for problems of the knee.

Artificial knees are still the subject of much research. Many designs have been developed to duplicate the complex motion of the human knee. The knee, classified as a hinge joint, is made up of the lower end of the femur (the thighbone), the upper end of the tibia (the shinbone), the patella (the kneecap), cartilage, and ligaments (Fig. 1). Artificial knee joints (prostheses) come in a variety of sizes and closely resemble the anatomy of the human knee. The artificial joint is made of metal and plastic and consists of three pieces. One section fits on the lower end of the femur, one on the upper end of the tibia, and one duplicates the function of the patella (Fig. 2).

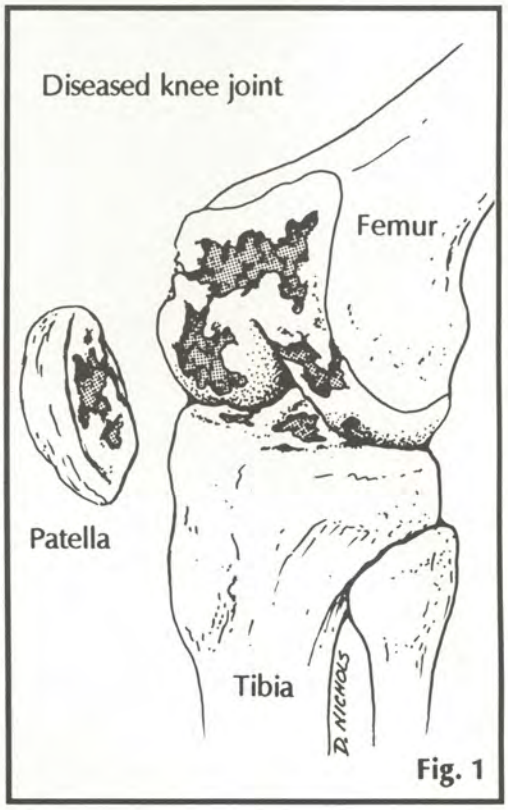


Fig. 1

Knee replacement surgery cannot be done when the patient has an infection in the bone or tissue of the knee. Other factors that may prevent surgery include excessive obesity, extensive damage to the muscles and ligaments around the knee, significant instability (looseness) of the knee, and paralysis.

During surgery, damaged tissue is removed, the bones of the joint are reshaped, holes are drilled into the bottom of the femur and top of the tibia, and the femoral and tibial parts of the artificial knee are implanted. The back part of the patella is removed to leave a flat surface, and the patellar component is implanted on this surface. Cement may or may not be used to fix the artificial components to the bony structures.

The risks of surgery are similar to those of any other type of major surgical procedure. Seven to ten days of hospitalization is normally required after your operation. This is followed by the use of a walker or crutches for at least six weeks. Regular activities are gradually phased in. Although a walking cane may be used, your goal is to function without the need for external supports. Ultimately, you should be able to walk without a limp (or with only a slight limp) and be able to straighten and bend your knee. While recovering from knee replacement surgery, you should not participate in high impact sports, such as tennis and running.

Over the past 15 years, total knee replacement has become one of the most successful surgical procedures performed by orthopaedic surgeons. Advances in technology and materials used for artificial knee joints have improved greatly, and patients can now expect excellent results that last for longer periods of time. Knee joint replacement is an extremely gratifying procedure for both patient and surgeon because of its high degree of success in relieving pain and improving the patient's quality of life.

Carlton G. Savory, M.D.
Columbus, Georgia

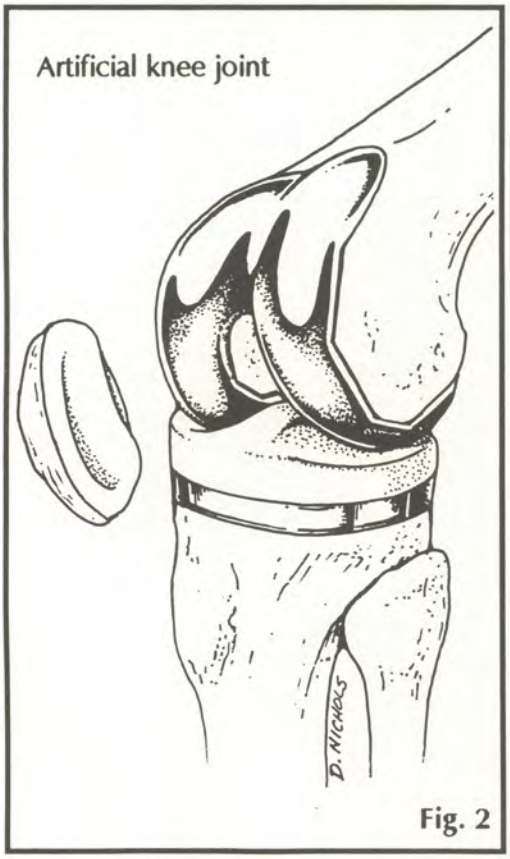


Fig. 2

Arthritis of the Foot and Ankle

The foot is unique because it is under constant stress during walking and requires good flexibility and strength to function normally. When one or several of the joints of the foot become arthritic, the resulting pain and loss of function can be debilitating.

Various types of arthritis can affect different parts of the foot and ankle. The most common types of arthritis are osteoarthritis (caused by wear and tear or injury), rheumatoid arthritis, and gout (uric acid accumulates in the joint). There are other rare types of arthritis that involve only the foot, for example, arthritis related to psoriasis.

The foot joint most commonly affected by arthritis is the metatarso-phalangeal joint (see figure below), but any of the joints can be involved. Rheumatoid arthritis most often affects the forefoot. Arthritis of the midfoot or hindfoot usually occurs because of an earlier fracture to one of these joints.

When you see your physician for these conditions, he or she will conduct a thorough history, perform a physical examination, take x-rays to assess the degree of joint damage, and, in some cases, do blood tests to check for inflammatory types of arthritis.

Treatment is usually nonsurgical and involves anti-inflammatory medications, physical therapy for gentle strengthening and flexibility, orthotics (shoe inserts) to reduce stress to the joints, shoe modifications, and, occasionally, bracing of the foot. Cortisone injections can be helpful in some instances. Often, your symptoms improve with simple treatment.

Severe cases of arthritis that do not respond to treatment may require surgery. Some of these operations are simple, involving removal of bone spurs and debridement (removal of foreign material and dead or

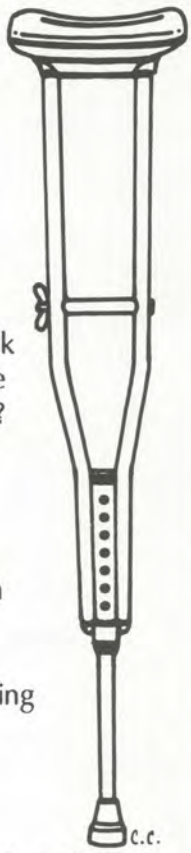
damaged tissue) of the joints. Other, more complicated procedures involve permanently fusing an arthritic joint to prevent painful motion. Total joint replacements with artificial joints are rarely performed in the foot and ankle because the high stresses in these areas cause the implants to wear out.

After surgery, improvement in foot function usually follows, and you may be able to return to all of your previous activities (sports, work, and leisure). Because patients with arthritis of the foot and ankle often alter their walking patterns, other joints in the leg and back can become painful. Therefore, foot or ankle arthritis should be treated before other involved joints because secondary problems may correct themselves.

Leland C. McCluskey, M.D.
Columbus, Georgia

The Use of Ambulatory Aids

Getting around after surgery



Are you unable to walk normally because you're recovering from surgery? Have you sustained an injury that resulted in a contusion, sprain, or fracture? Do you suffer from a painful condition such as arthritis? If your answer is yes, then you may need to use a walking aid – crutches, cane, or walker – to help you maintain normal gait motion.

To achieve maximum benefit from crutches, a correct fit is essential. The length is adjusted so that two to three fingers can fit between the top of the crutch and your armpit. The hand grip is adjusted to allow your elbow to bend 25° to 30° (see illustration below).

When using crutches, you progress through three phases of weight bearing. During the first phase, no weight is placed on the affected leg. As you walk, weight is placed on your hands (bringing the crutches into play) and your noninjured leg, while the injured leg swings through the motion.

The second phase is partial weight bearing. Some weight is placed on your injured leg while using the crutches to share weight-bearing responsibilities.

The third phase is full weight bearing, during which you are weaned from your crutches as soon as you can walk with a limp. The crutch on your injured side is removed first, with continued use of the crutch on your noninjured side to maintain proper gait motion. When you can walk without a limp and without severe pain, your remaining crutch is no longer needed.

There is a correct way to go up and down stairs with crutches – remember the phrase "up with the good, down with the bad." This means that when you go up stairs, lead off with your good leg and bring your injured leg and the crutches up at the same time. When you go down stairs, lead off with your injured leg and the crutches and follow with your good leg. On stairs with a handrail, you can place both crutches underneath one arm and place your hand on the rail on the other side to go up and down.

A cane is used to assist people who need weight-bearing assistance but do not need crutches. A cane can help provide stability while you are learning to walk correctly on your injured leg. The location of the handgrip should be such that your elbow remains bent at 25° to 30°. The cane is used on the noninjured side of your body.

If you have a difficult time keeping your balance with crutches or a cane, you may need to use a walker. Walkers are especially helpful to elderly patients who have undergone knee or hip surgery or who have sustained an injury to their leg. The handgrip placement is the same as with crutches or a cane. The walker helps you make the gradual progression from bearing no weight to bearing full weight.

Jon Hay, M.Ed., A.T.,C.
Columbus, Georgia

Arthritis of the Hand and Wrist

"But Doc, will I be able to play the piano?"

Everyone, at one time or another in their lives, notices some degree of swelling, soreness, and stiffness of their hands in the morning with accompanying enlargement about the small joints of the fingers. For some people, this is only a mild annoyance and is usually ignored. For others,

Nutritional Needs for Surgery Patients

Eat your vegetables!

After an operation, patients often lose their appetites because of pain or nausea from the anesthesia, and they often think that is a good time to begin a strict weight loss diet. Often the painful condition that has necessitated surgery in these patients has caused them to become inactive and gain weight. But this is no time for a starvation diet.

After surgery, your body needs all of the calories and protein it can get to promote healing. Most patients are able to meet their calorie and protein needs with a hospital diet. A healthy person usually does not require vitamin or mineral supplements. However, patients with decreased appetites due to pain or worry or patients who fast for long periods before surgery may require supplements. Deficiencies in vitamins A, B, and C or the mineral zinc can interfere with normal wound healing by impairing collagen synthesis. Vitamin K deficiency can decrease prothrombin, a substance that helps the blood clot, resulting in excessive bleeding.

When your body does not get enough calories, it breaks down protein for energy. Depletion of protein can result in very serious consequences, especially after surgery. Protein deficiency can cause swelling, interfere with wound healing, increase the chances of infection, produce anemia, delay the return of normal muscular strength, result in excessive weight loss, produce liver damage, and even cause shock.

Being underweight or overweight can be an additional risk factor when facing surgery. Either of these conditions should be corrected, if possible, before surgery. If you have other health problems (such as diabetes, hypertension, or heart disease), you should maintain any special diet you were on before your operation. Your doctor and the hospital dietician should be told about any special dietary needs.

Whatever the nature of your – surgery – orthopaedic or otherwise one way to better your chances for an uncomplicated operation and a quick recovery is to prepare your body nutritionally. Your body needs help to heal itself.

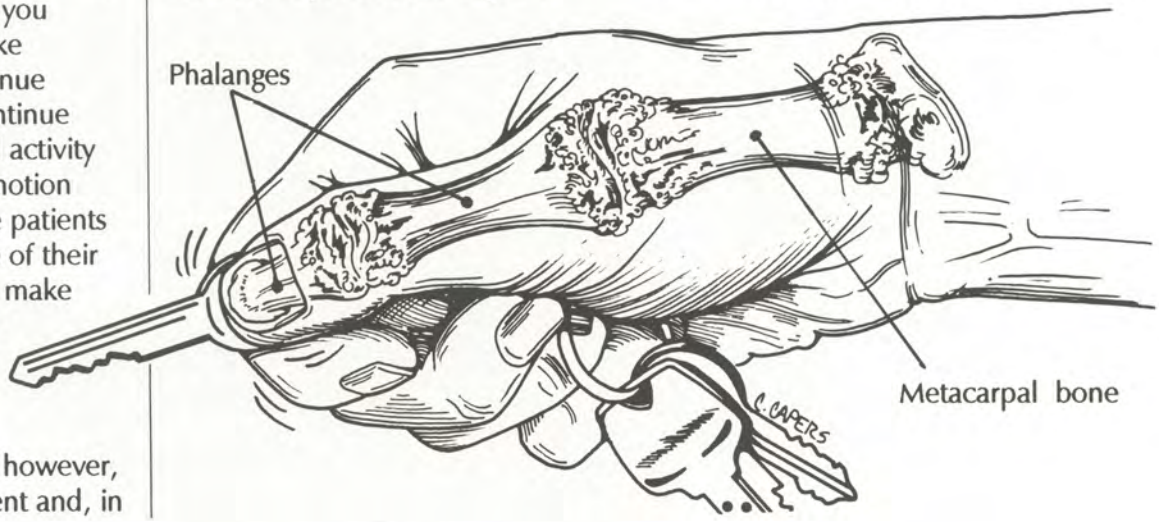
Joan E. Conyers, M.S., R.D., L.D.
Hughston Sports Medicine Hospital
Dietician
Columbus, Georgia

however, it can progress to the point where dressing, typing, sewing, or performing other activities of daily living become difficult for them.

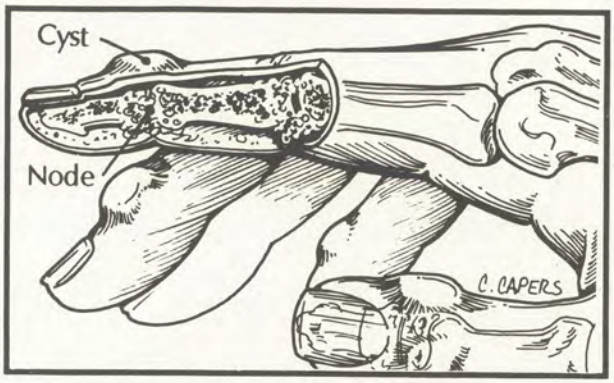
In most cases, these symptoms are caused by osteoarthritis (also known as degenerative arthritis), and no medical treatment is necessary. However, it is important to continue using your hands as much as possible, especially with activities that you enjoy. For example, if you like needlepoint or sewing, continue them; if you are a golfer, continue golfing. Only with continued activity will your hand maintain its motion and strength. Although some patients believe that avoiding the use of their hands will protect them and make them "last longer," nothing could be further from the truth – it is the active hand that remains functional.

There are some disorders, however, that require medical treatment and, in some cases, surgery. The first is osteoarthritis at the base of the joints of the thumb. It is a common condition that primarily affects women in their late 40s to early 60s (see figure below). Pain at the base of the thumb is the main symptom. Initially, the pain may just be an annoyance, perhaps occurring only on rainy days. Later, it begins to interfere with use of the thumb, finally resulting in constant pain. Most women who have this condition get relief from the pain and maintain function by wearing a simple splint on the thumb. Others, however, require reconstructive surgery to reduce the pain and increase the strength of their pinch.

The second most common arthritic



problem of the hand is bony enlargements at the end joints of the fingers (known as Heberden's nodes) (see figure at right). These bony enlargements are usually painful when they first develop, but the pain tends to disappear over time as the joints stabilize. Occasionally, a mucous cyst (a lump about the size of a BB) appears over the outside of the knuckle. This cyst may rupture and drain a clear, thick fluid. If these cysts remain or continue to drain, they should be removed to prevent infection of the joint.



Arthritis of the wrist is most commonly seen in men in their 50s or 60s. It may be the result of an injury they sustained to their wrist when they were younger. Often, people notice only minimal symptoms until middle age approaches. Then the wrist becomes painful and surgery may eventually be necessary. Fortunately, there are a number of procedures available that preserve a certain degree of motion in the wrist, allowing the patient to continue with normal activities.

As we move into the 1990s, many hand surgeons are avoiding the use of artificial joints in the hands and trying to use the body's own tissues to maintain hand and wrist function and improve the patient's ability to participate in work and leisure time activities.

And, yes, you might be able to play the piano – but only if you could play it before!

Richard A. Sanders, M.D.
Columbus, Georgia

Total Shoulder Replacement

Keeping your most mobile joint moving

In recent years, the greatest advance made in the treatment of arthritic and degenerative conditions of the shoulder is that it is now possible to replace the worn and painful surfaces of the humeral head (ball) and glenoid (socket) with an artificial joint . Shoulder replacement can reduce pain and improve function in carefully chosen patients. In addition to the various forms of arthritis that can cause damage to the shoulder, damage to the rotator cuff (the muscles of the shoulder), congenital defects (those that are present at birth), and tumors of the shoulder can cause a person to need joint replacement.

Why your shoulder hurts

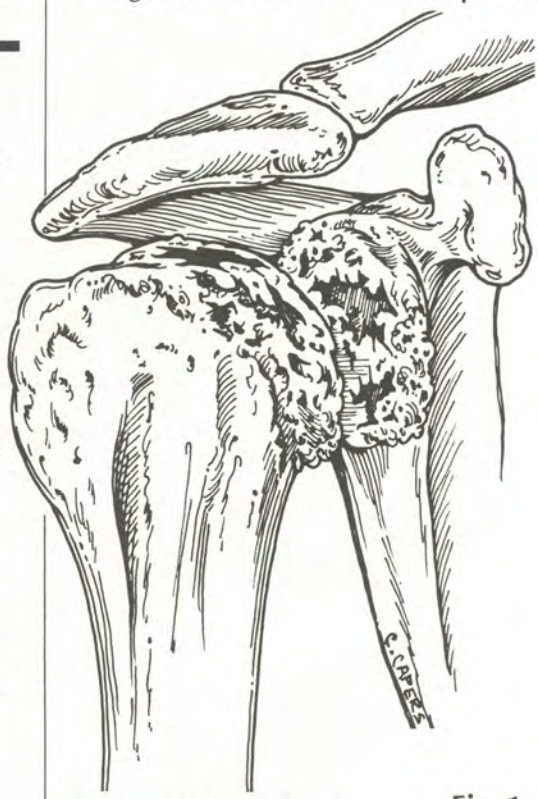
The shoulder joint has a greater range of motion than any other joint in the body. This freedom of movement comes at the expense of stability. Unlike your hip joint, which gets its stability from the bony architecture of the joint, your shoulder relies on surrounding muscles, tendons, and ligaments to provide stability. Degenerative or arthritic diseases destroy and distort the cartilage on the articular surfaces of the ball and socket (Fig. 1). However, the soft-tissue envelope that surrounds and stabilizes the ball and socket is frequently diseased as well. Muscle contractures, scar tissue formation, bone and soft-tissue loss, and nerve injuries contribute to pain and loss of function.

Surgery

When the damage to the surfaces of your shoulder becomes so severe you can no longer use your shoulder, replacement of the joint can provide pain relief and a smoother range of motion. During shoulder replacement surgery, the surfaces of the humeral head or glenoid are replaced with artificial components, or parts, made of metal and polyethylene (Fig. 2). These components are often secured into position with bone cement. Muscles, tendons, and ligaments on all sides of the joint must be balanced to allow full motion of the new shoulder components while providing stability.

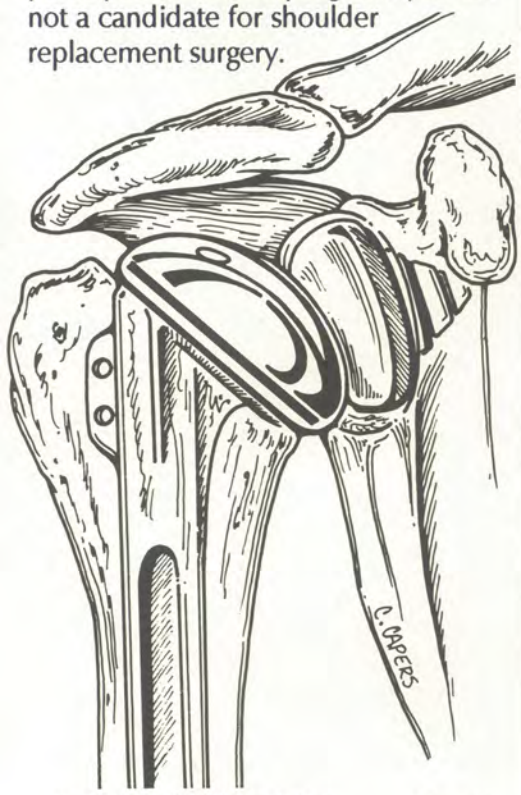
Physical therapy

Rehabilitation after surgery usually takes a year to regain full motion and strength of the shoulder and requires



Diseased shoulder joint **Fig. 1**

understanding and discipline on the part of the patient. Your physician and physical therapist will work with you to design a therapy program to meet your individual needs and progress. If you are unwilling to participate in such a program, you are not a candidate for shoulder replacement surgery.



Artificial shoulder joint **Fig. 2**

The results of shoulder replacement surgery vary according to the disease that necessitated the operation. Patients with osteoarthritis, for example, who had good range of motion and healthy muscles before their surgery often achieve near normal motion and function after surgery. In contrast, patients with rotator cuff tears, scar tissue and adhesions from previous surgeries, nerve injuries, or significant bone loss often do not regain normal shoulder function, but they get relief from pain. Unlike osteoarthritis, rheumatoid arthritis affects not only cartilage and bone but also muscles, blood vessels, and tendons. The recovery goals in patients with these two diseases would not be the same.

In summary, total shoulder replacement offers relief from pain and stiffness in the arthritic and degenerated shoulder. The surgery should be done primarily to relieve pain. Improvement in shoulder function should be a secondary goal. All patients who have a shoulder replacement should not expect the same results and this must be well understood before surgery. However, studies have shown that this operation gives satisfactory pain relief to most patients.

George M. McCluskey III, M.D.
Columbus, Georgia

THE AGELESS ATHLETE

Activities for the Ageless Athlete after Surgery

More older people than ever before are participating in sports, such as golf, tennis, swimming, biking, skiing, running, and hiking. And each year, many older athletes require surgery for a malady commonly associated with aging - arthritis.

Although such surgery may have signaled the end of your sporting activities in the past, we now know that this is far from being true. Today, the results of surgery are greatly improved because rehabilitation and exercise programs are started immediately after the operation. And some patients who have suffered debilitating arthritic pain for many years can once again enjoy physical activities because their pain is gone and their joints are more flexible after surgery.

Common sense, however, should always guide you in deciding what postoperative activities are appropriate. Some of the things that determine what you can do are the type of surgery performed, your general health, and the recommendations of your surgeon and physical therapist. Proper preactivity stretching and warm-up exercises are essential for all who participate in sports. In all cases, the principle of "start slow, go slow" should be followed.

Total joint replacement, or arthroplasty, is the most common surgical procedure performed on arthritic joints and often results in significant limitations. Nevertheless, with proper conditioning, many patients can walk, swim, hike, or bike within a relatively short period of time. Even skiing is not out of the question, but this and other vigorous sports are not suitable for everyone after joint replacement. Other surgical procedures, such as osteotomies (which involve removing bone to realign the joint so that it bears weight on healthy cartilage) and joint fusions, also permit continued participation in sports.

Walking is, without a doubt, the best and the safest all-around exercise for people of all ages. It requires no special equipment, and its cardiovascular benefits enhance physical capacity, helping to maintain and improve health and lifestyle. Swimming, biking, and stationary bike riding are also excellent activities for athletes of any age after surgery and are rarely discouraged by physicians.

There is no denying the potential physical and emotional benefits associated with participating in sporting activities. This is especially true after surgery. Careful evaluation and consultation with your surgeon and primary care physician after surgery can help you maintain an active lifestyle at any age.

Clark H. Cobb, M.D.
Columbus, Georgia

Hughston Affinity Network

Contribute to the Hughston Sports Medicine Foundation without spending a cent of your own money.

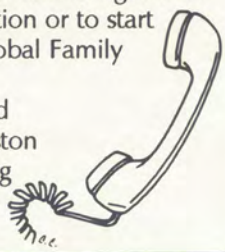
Before you the patient can benefit from new technology and surgical techniques, such as those discussed in this issue of the Hughston Health Alert, they must be thoroughly researched. The Hughston Sports Medicine Foundation has been involved in this type of orthopaedic research for many years.

Now, you can contribute to the research and education programs of the Hughston Sports Medicine Foundation every time you make a long distance call. In fact, you can get four hours of free long distance service and save on every long distance call you make.

When you upgrade your long distance service to Hughston Affinity Network, the Hughston Sports Medicine Foundation will receive a contribution of 3% of your long distance payment every month. You get all-digital, fiber-optic long distance service at substantial savings over AT&T, MCI, and Sprint, plus four hours of free long distance service just for signing up.

Upgrading to Hughston Affinity Network is simple. Call 1-800-775-0436, and we take care of everything. Your long distance charges will appear on your local phone bill, so there's no separate bill to pay. There are no monthly fees or minimum obligations.

For more information or to start your service, call Global Family Network at 1-800-775-0436 and ask about the Hughston Affinity Network long distance service.



The Hughston Health Alert is a quarterly publication of the Hughston Sports Medicine Foundation, Inc. The Foundation's mission is to help people of all ages attain the highest possible standards of musculoskeletal health, fitness, and athletic prowess. Information in the Hughston Health Alert reflects the experience and training of physicians at the Hughston Orthopaedic Clinic, P.C., of physical therapists and trainers at Rehabilitation Services of Columbus, Inc. and Committed Fitness Systems, of physicians who trained as residents and fellows under the auspices of the Hughston Sports Medicine Foundation, Inc., and of research scientists and other professional staff at the foundation. The information in the Hughston Health Alert is intended to supplement the advice of your personal physician, and should not be relied on for the treatment of an individual's specific medical problems.

Postmaster: Send address changes to Medical Writing, Hughston Sports Medicine Foundation, Inc., P.O. Box 9517, 6262 Hamilton Road, Columbus GA 31908-9517 USA. Telephone (706) 576-3322.

Copyright 1993, Hughston Sports Medicine Foundation, Inc.

Editor
Fred Flandry, M.D., F.A.C.S
General Manager
Susan A. Thomason
Editorial Associates
Carol M. Binns, M.A.
Dan Faber
Art Director
Carolyn M. Capers, M.S.M.I.
Production Assistant
Dan W. Nichols, M.S.M.I.

Editorial Board
Michael J. Behr, M.D.
Douglas G. Browning, M.D., A.T.,C.
David T. Curd, M.S.
William C. Etchison, M.S.
Jon Hay, M.Ed., A.T.,C.
Fran W. Hempstead
John M. Henderson, D.O.
Leland C. McCluskey, M.D
Keith Webster, M.A., A.T.,C.
Jessie G. Wright, M.S., R.D., L.D.

President & CEO Hughston Sports Med. Fdn.
William C. Behrens

Ask the Doctor

Is general anesthesia necessary for arthroscopic surgery?

No. The type of anesthetic used is a decision that should be reached jointly by the patient, the physician, and the anesthesiologist. Many factors, including medical conditions, govern the choice of anesthetic. Although general anesthesia is most commonly used, arthroscopic procedures can be done using regional or, in some cases, local anesthesia.

Hughston Health Alert
P.O. Box 9517
Columbus GA 31908-9517

BULK RATE
U.S. POSTAGE PAID
COLUMBUS GA
PERMIT NO 525
NONPROFIT ORG.