

Arthritic Disorders and Treatments

Joint stiffness, pain or tenderness, swelling and/or redness that persists for more than two weeks—all may signal arthritis. Any of 100 forms of arthritis can damage our bodies, especially the joints, gradually wearing away protective cartilage where the bones meet to make a joint. The force our body weight generates on the toe and ankle joints makes them particularly susceptible to arthritis.

As cartilage erodes and bone rubs against bone, the joint becomes painful. Movement may become limited as bone ends erode or thicken, sometimes developing painful outgrowths, or spurs. If left untreated, damage to cartilage can seriously weaken the joints, often leading to pain and deformities.

About Arthritis

Rheumatoid arthritis and osteoarthritis are two common forms of arthritis that affect millions of Americans, especially those over age 45. The cause of rheumatoid arthritis, a 'systemic' disease that can affect the entire body, is unclear. It is believed to result when the body produces enzymes that inflame the joints and other tissues.

Osteoarthritis, sometimes called degenerative arthritis, or referred to as joint "wear and tear," is isolated to the joints. Pain and stiffness caused by cartilage destruction develop slowly as a result of years of everyday living.

Surgery When Joint Problems are Severe

Surgery to reconstruct the joint may be needed if arthritis causes chronic problems that cannot be controlled by medications, orthotics or physical therapy, especially if:

- pain is constant
- toe motion is limited, causing a change in natural stance or walk
- deformities (such as bunions and hammertoes) restrict normal activities

In the vast majority of cases, reconstructive surgery can bring improvement. Pain relief is a common benefit. Other benefits may include an improved ability to move the joint, or an improved appearance. Goals of surgery are different for each individual, and should be discussed with the podiatric surgeon.

While surgical care will not cure arthritis or completely restore the joint to its natural health, it will ease pain and make daily activities more manageable.

Surgical Treatments

If bone on both sides of the joint is damaged, the podiatric surgeon may remove a small portion of cartilage and bone, then reconstruct the synovium, ligaments and tendons. This is called a **resection**.



Fusion or arthrodesis relieves pain by uniting the bones of the joint into a permanent, yet useful position, preventing any motion at the site.

Robert P. Taylor, DPM, FACFAS

Jill C. Kranzow, DPM, FACFAS

www.stonebriarfootankle.com



The joint may require a complete reconstruction or **resection arthroplasty**. Here, the podiatric surgeon removes the bone ends at the joint, corrects tendons and ligaments that may have stretched as a result of arthritis, and replaces the joint with an implant (prosthetic joint).

Two of these surgeries, fusion and implant reconstruction, are described in greater detail in "About Your Foot Surgery."

Implants and Foot Surgery

The choice to use an implant is made carefully, only after the podiatric surgeon has decided that another type of surgery would not provide as many benefits.

Implants made from silicone rubber, polyethylene (a form of plastic), or titanium (see "implant Types and Materials") are quite safe. Like other artificial body parts, implants used in the foot have been evaluated by the Food and Drug Administration (FDA).

Implants for Pain Relief and Support

The narrow space separating the two bones of the joint permits movement. An implant's primary purpose is to maintain this joint space and support the toe. Because the implant replaces damaged or diseased bone and the bone's cartilage, it keeps the toe at an appropriate length. Without an implant, the toe may appear shorter.

The implant helps eliminate pain, and provides stability to the previously weakened joint. A secondary purpose of an implant is to permit the toe to bend and function more freely.

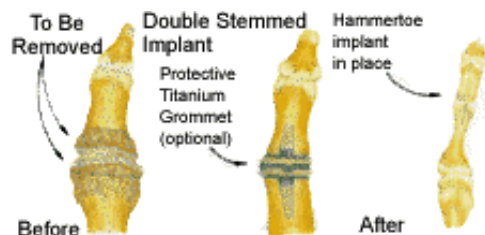
As the joint heals, new tissue forms around the implant, making the joint stable and the reconstruction more durable.

About Your Foot Surgery

Surgery usually requires only one to two hours. It is often completed on an outpatient basis, but a short hospital stay of one or two days is not unusual.

Implant Reconstruction

The podiatric surgeon will expose the damaged joint and carefully remove any inflamed tissue. A small portion of damaged bone also will be removed, and the bone ends smoothed.



The next step is enlargement of the natural canals within the bones. The sterilized implant (double-or single-stem) is then inserted and is supported by the bones. Finally, the tendons, ligaments and joint capsule are reconstructed around the implant.

Antibiotics may be administered both before and after surgery.

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Fusion

A small portion of the bone ends at the joint are removed. The bones are then compressed together, so that the two bones unite. In some cases, a bone graft may be necessary.

The fused joint will be held in position with a stainless steel or dissolvable pin, or small bone screws and plates, to allow for healing.

Care After Surgery

Immediately after surgery, the entire foot will be carefully wrapped in a bulky dressing or cast as protection for the first few days. Keeping the foot elevated during this time will help minimize swelling.

Some swelling and stiffness can be expected following surgery, for as long as eight to twelve weeks. Crutches may be needed for walking or standing as the foot heals.

Special Shoes and Splints

After surgery, the foot will be placed in a special shoe that relieves pressure from the ball of the foot and keeps the toe aligned as it heals.

A splint may be worn for the first few weeks after surgery, and possibly for an additional three to six weeks.

Although each person is different, it is likely that most activities can be resumed within three months after surgery. The podiatric surgeon will provide specific instructions as healing progresses.

Activity Restrictions

The podiatric surgeon may restrict any activity for at least 24 hours. Depending on which joint was fused, a cast and crutches may be necessary for as long as six weeks.

Implant Types and Materials

Most implants used in the foot are made from silicone rubber, a synthetic compound that is both flexible and strong.

When a less flexible implant is needed, podiatric surgeons choose implants made from metals such as titanium, a durable, lightweight material. Some implants combine a metal with a plastic such as polyethylene. All implant designs and materials are carefully evaluated and tested by the FDA.



Double-stemmed implants replace damaged bone at the base joint of any of the toes. They are widely used when cartilage is lost, the toe is painful, and to treat deformities such as bunions or bone spurs. Stems on either side of the midsection support the implant within the bones.

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Hammertoe implants, used to correct painful hammertoe deformities, also have two stems that fit into either the base or middle joints of the toe.



Implants with a single stem, made from either silicone rubber or titanium, may be used in the base joint of the big toe to treat a bunion, bone spur or toe stiffness and pain. This implant is most effective when only one side of the joint is damaged.



Two-piece ankle implants made of metal and plastic are used in less active individuals with severe arthritis, most often rheumatoid disease. The implant replaces the natural bones of the joint, permitting the ankle to retain a limited amount of movement.

Answers to Questions About Implant Reconstructions

How Long Will the Implant Last? Although every individual is different, most implant recipients can expect the benefits of surgery to last for at least 10 to 20 years. Several thousand people have had these implants for more than 15 years, and remain pain-free and without complications.

Implants are designed specifically for durability and the ability to withstand the pressures of joint movement. No implant, however, is indestructible. With use, especially in young or active people, it is possible that the implant will wear down. Another surgery may become necessary. Your podiatric surgeon can advise you about other patients' experiences with implant durability.

While these are some of the most common treatments for arthritic disorders, others may be used. Your podiatric surgeon will determine which treatment is likely to be most successful in each case.