Understanding Total Ankle Replacement Surgery: Procedure, Benefits, and Recovery

Considering **ankle replacement surgery?** When severe **ankle arthritis** makes everyday activities painful, **total ankle replacement** offers a viable solution. This procedure replaces damaged joint surfaces with prosthetic implants, restoring mobility and alleviating pain.

Ankle replacement surgery involves intricate steps to replace damaged bone and cartilage in the ankle joint with prosthetic components. Modern advancements ensure minimal bone removal and precise alignment, optimizing outcomes.

Can Ankles Be Replaced?

Ankle replacement surgery has been an option for a considerable time, and recent improvements in technology and surgical methods have made it increasingly popular for treating ankle arthritis. This procedure can relieve arthritis pain and maintain joint mobility, allowing patients to walk on uneven surfaces and navigate stairs more easily. Furthermore, ankle replacement helps safeguard other foot joints, preventing them from developing arthritis.

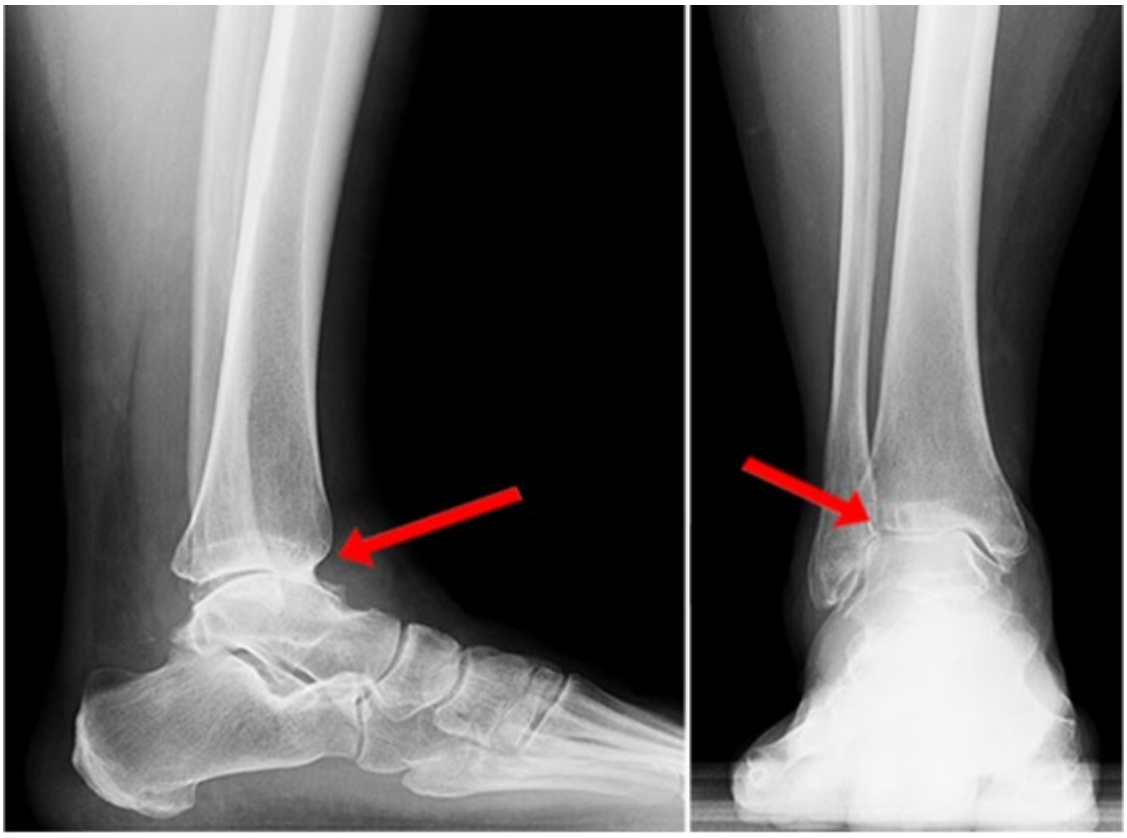
Ankle Joint Anatomy and Arthritis

The ankle, medically known as the tibiotalar joint, is a complex structure that enables your foot to rotate and pivot relative to your leg. The joint is formed by the meeting of three bones:

- Tibia: The larger bone in your leg.

- Fibula: The smaller bone on the outside of your leg.
- Talus: The bone that connects your leg to your foot.

Cartilage covers the ends of these bones, providing cushioning that allows for smooth movement. When the cartilage in the ankle is damaged or wears down due to injury or disease, the bones can rub against each other during movement. This causes osteoarthritis, characterized by joint inflammation, pain, and swelling. Over time, this bone-on-bone grinding can lead to the formation of bone spurs and stiffness in the joint.

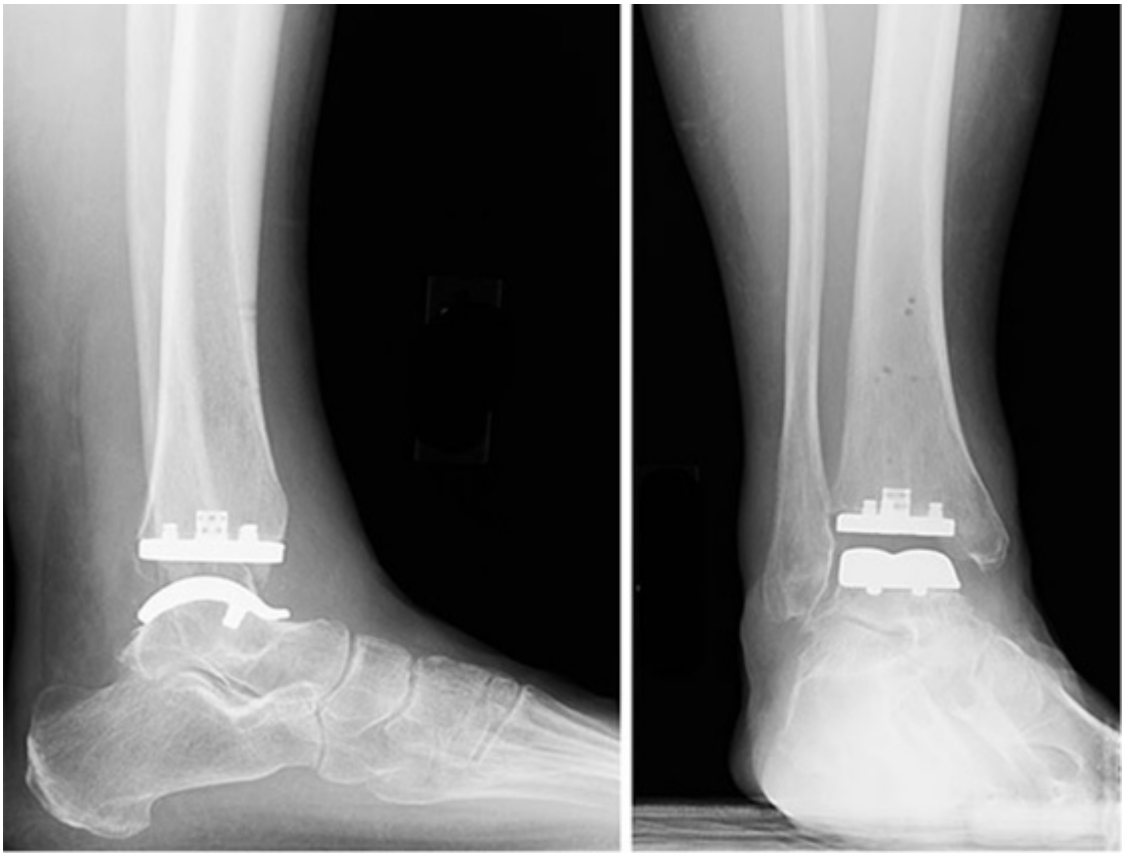


Lateral (side view) and anteroposterior (front view) X-rays can show end-stage arthritis, where there is bone-on-bone contact in the ankle joint.

What is replaced in an ankle replacement?

The surface of the tibia and talus, which form the ankle joint, is removed. Instead, metal pieces are implanted into the bone. Then, a plastic insert was applied to the metal component on the tibia. In a replacement, the metal piece on

the talus will rub against the plastic piece that holds the tibial implant. This relieves discomfort associated with ankle arthritis while also preserving joint motion.



Lateral (side view) and anteroposterior (front view) X-rays of the total ankle replacement implants.

What happens if I have avascular necrosis of the talus?

In some situations, part of the talus loses blood supply and collapses (known as avascular necrosis, “AVN,” or osteonecrosis). When this occurs, the bone is no longer healthy enough to support an **ankle replacement**. However, there are several possibilities based on how much of the bone is infected.

If the necrotic region is minimal, it can be excised during the replacement procedure, and the implant can be placed on the remaining healthy talus bone.

If the necrosis is extremely large, the entire talus bone could be replaced with a metal component created specifically

for the patient.

Who should get an ankle replacement?

Total Ankle Replacement Surgery is not for everyone. It's typically recommended for people with severe ankle arthritis whose pain and swelling can't be managed with non-surgical treatments like:

- Physical therapy
- Ankle braces
- Anti-inflammatory medication (NSAIDs)
- Cortisone injections

Should I get an ankle replacement or an ankle fusion?

- Both **ankle replacement** and fusion surgeries provide similar pain relief. However, ankle replacement offers better functionality by preserving the joint's flexibility. In some cases, ankle replacement may not be feasible, making fusion the appropriate option
- Before **ankle replacement** became widely accepted, ankle fusion surgery was the standard treatment for ankle arthritis. In an ankle fusion, the tibia and talus bones are joined together with plates and/or screws, eventually healing into one solid bone. This eliminates pain but also stops the joint from bending.



When is ankle fusion a better option than ankle replacement?

Ankle replacement isn’t suitable for everyone. Here are some reasons why ankle fusion might be a better option:

- **Weak bones** in the ankle may not support a replacement.
- **Deformity or misalignment** in the ankle and foot that can’t be corrected.
- Certain **neuromuscular disorders** or **Charcot arthropathy** (nerve damage causing foot insensitivity).
- **Active infection** in the ankle.

Why is ankle replacement a better option now than years ago?

Recent advancements have made ankle replacement more effective. Modern total ankle implants are designed to mimic the natural anatomy of the ankle, requiring minimal removal of bone tissue. Improved surgical instruments allow for greater accuracy and reliability. Additionally, there is a better understanding of how to balance ankle ligaments and align the foot during the procedure, resulting in improved outcomes for patients.

Why Choose Dr. Ashish Singh for Your Ankle Replacement Surgery?

Total ankle arthroplasty is a specialized procedure performed by relatively few surgeons. Meet Dr. Ashish Singh, a leading **orthopedic surgeon in Patna** specializing in total ankle replacement surgery. With extensive expertise in orthopedic care, Dr. Ashish Singh at AIOR-AJRC, Center of Excellence in Orthopedics, provides comprehensive treatments for ankle arthritis, offering surgical solutions when needed to effectively alleviate symptoms. His dedication ensures personalized care, guiding patients through conservative treatments to advanced surgical interventions with precision and compassion

The process begins with a thorough assessment of your ankle and foot. Together, we create a personalized plan to address your specific arthritis condition and correct any deformities or misalignments. Post-surgery, we collaborate with your

physical therapist to ensure you achieve the best possible results, aiming to help you return to the activities you love.

What Are Ankle Replacement Implants Made Of?

Ankle replacement prostheses are composed of titanium, cobalt-chromium alloy, and polyethylene. For individuals with a nickel allergy, a custom all-titanium implant may be an option.

Is Ankle Replacement Done Under General or Regional Anesthesia?

Ankle replacement procedure is carried out under regional anesthesia. The leg is numbed for the duration of the procedure, with the numbing effect often lasting for a day or two afterward, which helps manage pain. Patients are also given medication to help them sleep during the surgery, but they remain conscious and breathe on their own.

Will I Have to Stay in the Hospital Overnight for Ankle Replacement Surgery?

Most patients can return home on the same day as their surgery. However, some patients may need to stay in the hospital for one night and be discharged the following day.

What Is Ankle Replacement Recovery Like?

Recovery from ankle replacement surgery involves several stages, which may vary from patient to patient. Here are the typical recovery timeframes and milestones:

The First Four Weeks

Immediately after surgery, your ankle will be in a cast, and you should avoid putting weight on your foot. For the first two weeks, keep your ankle elevated above heart level as much as possible to reduce swelling and help the incision heal quickly. You can get up for meals and to use the bathroom with the aid of crutches. After two weeks, the sutures will be

removed, and you will switch to a removable boot. You can remove the boot for showering, sleeping, and performing exercises, but keep your leg elevated about 60% of the time.

After Four Weeks: Starting Physical Therapy

At four weeks, you can begin to put weight on your leg while wearing the protective boot and start **physical therapy for ankle replacement.** By eight weeks, you can stop using the boot and transition to wearing regular shoes or sneakers for walking.

Four Months and Beyond: Recovery Progress Milestones

- **Four Months**: Most patients feel significantly better than before the surgery.
- **Six Months**: Approximately 75% of recovery is achieved.
- **One Year**: Full recovery is expected, with maximum improvement following ankle replacement surgery.

These milestones provide a general guideline for the recovery process, though individual experiences may differ.

Frequently Asked Questions About Ankle Replacement Recovery

Here are answers to some common questions regarding the recovery process and timeline for ankle replacement surgery.

What Is the Recovery Time for an Ankle Replacement?

Most patients can begin bearing some weight on their ankle while wearing a removable boot after four weeks. At six months, patients are typically about 75% recovered. Full return to activity may take up to a year.

How Long Before You Can Walk After an Ankle Replacement?

Patients generally start walking with the help of a protective boot at four weeks post-surgery and transition to wearing regular shoes at eight weeks. If additional surgery is required on the foot during the ankle replacement, it may take six weeks before walking in a boot and ten weeks before

walking in a shoe. A detailed recovery timeline is provided below.

When Can I Drive Again After an Ankle Replacement?

Most patients can resume driving eight weeks after surgery if the right ankle was operated on, and possibly sooner if the left ankle was involved.

Will I Need Assistance at Home After Ankle Replacement?

It is advisable to have someone assist you at home, particularly during the first two weeks, as you will not be able to bear weight on your foot for four weeks post-surgery to allow the bone and soft tissues to heal properly.

When Can I Be Active Again After Ankle Replacement?

For the first four weeks, your activity will be extremely limited since you cannot put any weight on your foot. After this period, you will begin walking in a boot. It may take at least six months to a year before you can return to heavy activities like sports.

What Physical Limitations Will I Have After Ankle Replacement?

Post-surgery, patients can engage in activities such as walking, hiking, strolling on the beach, playing golf, or doubles tennis. The main limitation is to avoid running or jumping, except in emergencies.

How Successful is Ankle Replacement Surgery?

Ankle replacement surgery is generally highly successful in relieving pain and maintaining motion in the ankle. However, like any surgical procedure, it carries certain risks. Potential risks of ankle replacement surgery include infection, numbness, blood clots, and the possibility that the implant may initially fail to integrate with the bone. Similar to other joint replacements, total ankle replacement prostheses can loosen over time. Regular follow-up with your doctor is crucial. At HSS, surgeons closely monitor patients' progress and conduct long-term monitoring of implants through

X-rays.

How Long Do Ankle Replacement Implants Last?

In approximately 90% of cases, ankle replacements last for about 10 years or more. While they often endure longer, there are instances where implants may fail sooner than expected. Over time, ankle replacements can loosen, potentially causing pain and swelling. If the implant becomes loose and painful, a second ankle replacement surgery may be necessary, or the implants may be removed and the ankle fused.

Will Ankle Replacement Eventually Need Replacing?

There are situations where the plastic insert between the metal prostheses might require replacement, or cysts may develop in the bone surrounding the implants that need addressing. If the implants loosen and cause pain, they may be replaced with a revision total ankle replacement. If the bone is not strong enough to support another replacement at that time, there are options such as custom 3D printed implants or converting the failed replacement into a fusion procedure.

Conclusion:

Ankle replacement surgery is a proven method for managing severe ankle arthritis, offering relief from pain and preserving joint motion. With advancements in technology and surgical techniques, the procedure has become increasingly effective, enhancing patient outcomes and recovery.

Schedule a consultation with our experienced surgeons to discuss ankle replacement surgery. Take the first step towards a pain-free life with improved mobility