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Feel the *Joy* of Movement

**With Robotic-Arm Assisted
Joint Replacement Surgery**

A Patient's Guide



Your Everyday Mobility

You use your joints in almost every activity that you do. Movements such as walking, bending and turning require the use of your hip and knee joints. When the hip or knee joints become injured or diseased, the resulting pain and stiffness can severely limit your ability to use these joints and move comfortably.



80% of osteoarthritis patients have some degree of movement limitation



The risk of arthritis increases with age, and arthritis is more common among women than men



Knee replacement patients may return to driving in 4-6 weeks (or as determined by your surgeon)

What is a Joint Replacement Surgery?

A joint replacement surgery is a surgical procedure which involves removing a part or all of the damaged joint and replacing it with artificial implants. This surgery can provide significant pain relief and greatly improve a person's mobility.

The most commonly performed joint replacement surgeries are the hip and knee replacements. Other joints that can be replaced include the shoulders, fingers, ankles and elbows.

When is a Joint Replacement Surgery Recommended?

For some people, the joint pain and stiffness may not go away even after receiving conservative treatment options such as medication, physical therapy or lifestyle modification. A joint replacement surgery can be considered at this point to relieve the pain and help patients achieve a good quality of life.

The goals of a joint replacement surgery are to relieve pain, help the joint work better, and improve walking and other movements.



Robotic-Arm Assisted Joint Replacement Surgery

Frequently Asked Questions

Q: Am I too old for a joint replacement surgery?

A: While age is an important factor, your doctor will take into consideration your overall health status, review your medical history and blood test results, as well as assess your physical strength, bone density, and diet and lifestyle to determine whether joint replacement is right for you.

Q: How long will I be in the hospital?

A: Most patients will spend 1-4 days in the hospital post-surgery, depending on the individual's particular surgery and recovery process.

Q: When can I get back to doing normal activities?

A: Most patients will be required to undergo a physiotherapy regimen after the surgery in order to return to their light day-to-day activities within 3-6 weeks. Your doctor will advise on the plan best suited to your recovery and lifestyle.

Q: What activities will I be able to do after surgery?

A: Realistic physical activities include walking, swimming, golfing, driving, light hiking, biking, dancing and other low-impact sports.

Tips for You & Your Caregivers

You may need assistance after surgery, so consider making arrangements with a caregiver, such as a family member or a friend, before your surgery date. It is important to communicate with this person prior to surgery about how they can best help you when you return from the hospital.

Below are some preparation tips for you and your caregiver to discuss with your doctor.

1. Encourage your caregiver to attend your pre- and postoperative appointments so they can talk to your doctor about how to best help you after surgery.
2. Ask what you can do to reduce unnecessary movement in the first few days following your return home. This may mean organizing the items you use on a daily basis within arm's reach and around your recovery area.
3. Think safety first, and ask yourself whether you will need to remove floor rugs, cables, or clutter that may cause you to slip and fall.
4. Ask if a walking aid, such as a cane or walker, is appropriate for you to use after surgery.

Recovering from Your Surgery

Although the recovery process varies for each patient, here's what you might expect in the days following surgery.

1. Your orthopaedic surgeon, nurses and physical therapist will closely monitor your condition and progress.
2. When you are medically stable, the physical therapist will recommend certain exercises for the affected joint.
3. To ease the discomfort the activity will initially cause, pain medication may be recommended by your doctor prior to therapy. If prescribed by your doctor, your pain medication will gradually be reduced, the IV will be removed, your diet will progress to solids and you will become increasingly mobile.
4. The physical therapist will discuss plans for rehabilitation following hospital discharge. Your physical therapist will also go over exercises to help improve your mobility.
5. 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.
6. 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.



Who Should Consider a Joint Replacement Surgery?

Hip joint replacement is intended for individuals with joint disease resulting from degenerative and rheumatoid arthritis, avascular necrosis, fracture of the neck of the femur or functional deformity of the hip.

Knee joint replacement is intended for use in individuals with joint disease resulting from degenerative, rheumatoid and post-traumatic arthritis, and for moderate deformity of the knee.

What is a Robotic-Arm Assisted Joint Replacement Surgery?

Robotic arm-assisted joint replacement surgery uses a CT scan or X-ray data and software to generate a 3D virtual model of your unique anatomy to help your surgeon create a personalized preoperative plan.



Preparation Stage

When preparing the bone for the implant, the surgeon guides the robotic arm within the predefined area. This helps provide more accurate placement and alignment of your implant.



Surgery Stage

During surgery, the surgeon validates the plan and makes any necessary adjustments in real time, while the robotic arm allows the surgeon to execute the plan with a high level of accuracy and predictability. The combination of these three features of the system has the potential to lead to better outcomes and higher patient satisfaction.



Did You Know?

Compared to minimally invasive conventional surgery,

72% of respondents indicated robotic-assisted surgery was:

- Safer
- Faster
- Less painful
- Offered better results

Reference: Boys, J. A., Alicuben, E. T., DeMeester, M. J., Worrell, S. G., Oh, D. S., Hagen, J. A., & DeMeester, S. R. (2016). Public perceptions on robotic surgery, hospitals with robots, and surgeons that use them. Surgical endoscopy, 30(4), 1310–1316. 2016. <https://doi.org/10.1007/s00464-015-4368-6>

Benefits of Robotic Assisted Surgery Over Conventional Surgery

- ✓ Higher accuracy of implant placement
- ✓ Soft tissue protection around ligaments of the joint
- ✓ Smaller incisions, less scarring
- ✓ Minimal blood loss
- ✓ More natural-feeling after surgery
- ✓ Shorter hospital stay
- ✓ Less postoperative pain
- ✓ Quick return to normal activities

What are the Types of Systems used for Robotic-Arm Assisted Joint Replacement Surgery?

The 2 types of systems used are:
1. Mako SmartRobotics™
2. ROSA® Knee System



What Questions to Ask My Doctor?

Talk to your doctor about the pain you're experiencing and your doctor will help to determine if a joint replacement surgery is suitable for you. If you are unsure about what questions to ask your doctor, here are some examples that you can use:

- Could a joint replacement surgery help provide me with relief from my joint pain?
- Am I a suitable candidate for a robotic assisted joint replacement surgery?
- What are the benefits and potential risks involved in a joint replacement surgery?
- How long does it typically take to recover from surgery?
- How long will I be in the hospital?
- Will I have mobility restrictions? For how long?
- What type of rehabilitation therapy will I have to undergo after the surgery?
- How long before I can return to my normal activities?



How Do I Prepare for A Joint Replacement Surgery?

Preparing for your joint replacement begins weeks before the actual surgery. The checklist below outlines some tasks that your doctor may ask you to complete in the weeks prior to your surgery date.

3-4 weeks before surgery:

- Exercise under your doctor's supervision
- Have a general physical examination
- Have a dental examination
- Review medications
- Stop smoking
- Lose weight

1-2 weeks before surgery:

- Arrange a preoperative visit
- Get laboratory tests
- Complete forms
- Maintain a healthy diet
- Confer with a physical therapist
- Plan for post-surgery rehabilitative care

1-2 days before:

- Get plenty of rest
- Drink enough fluids for hydration
- Fast as per doctor's instructions
- Bathe surgical area with antiseptic solution