

Imaging After Total Knee Arthroplasty

Knee replacement, or total knee arthroplasty, is the most common joint replacement procedure in the United States. Most patients do not require any imaging after discharge other than the x-rays at the first postoperative follow-up appointment.

Symptoms of pain after surgery can be due to infection, loosening of the components of the joint replacement, reaction to the liner of the replacement, or fracture, among other causes. The optimal examination in this setting is an x-ray to help identify loosening or fluid.

If there is fluid in or around the joint on x-ray or swelling on physical examination, fluid removal (aspiration) can be performed under local anesthetic to check for infection. If the joint fluid is infected, no further imaging is required.

If the joint fluid does not give a clear answer and if infection is still suspected, repeating the aspiration or doing a bone scan may be appropriate.

If there is no fluid and infection is unlikely, then loosening can be evaluated in two ways. Real-time video x-ray or fluoroscopy can help identify the abnormal motion of the knee joint. CT without contrast can also assess for loosening, inflammation, bone loss, or small fracture around the prosthesis. Additionally, CT can also help evaluate whether the parts of the joint replacement have rotated from the initial placement.

If a soft tissue abnormality is suspected (such as tendon or muscle injury or nerve impingement), an MRI (<https://www.radiologyinfo.org/en/info/kneemr>) without contrast or ultrasound may be appropriate.

— By Casey Quinlan, Tasneem Lalani, MD. This information originally appeared in the *Journal of the American College of Radiology*.

Disclaimer

This information is copied from the RadiologyInfo Web site (<http://www.radiologyinfo.org>) which is dedicated to providing the highest quality information. To ensure that, each section is reviewed by a physician with expertise in the area presented. All information contained in the Web site is further reviewed by an ACR (American College of Radiology) - RSNA (Radiological Society of North America) committee, comprising physicians with expertise in several radiologic areas.

However, it is not possible to assure that this Web site contains complete, up-to-date information on any particular subject. Therefore, ACR and RSNA make no representations or warranties about the suitability of this information for use for any particular purpose. All information is provided "as is" without express or implied warranty.

Please visit the RadiologyInfo Web site at <http://www.radiologyinfo.org> to view or download the latest information.

Note: Images may be shown for illustrative purposes. Do not attempt to draw conclusions or make diagnoses by comparing these images to other medical images, particularly your own. Only qualified physicians should interpret images; the radiologist is the physician expert trained in medical imaging.

Copyright

This material is copyrighted by either the Radiological Society of North America (RSNA), 820 Jorie Boulevard, Oak Brook, IL 60523-2251 or the American College of Radiology (ACR), 1891 Preston White Drive, Reston, VA 20191-4397. Commercial reproduction or multiple distribution by any traditional or electronically based reproduction/publication method is prohibited.

Copyright © 2025 Radiological Society of North America, Inc.