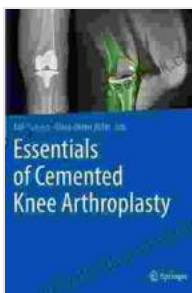


# Cemented Knee Arthroplasty: A Comprehensive Guide to Surgical Techniques, Materials, and Outcomes

Cemented knee arthroplasty, also known as total knee replacement, is a surgical procedure to replace the damaged knee joint with artificial components. It is a common and successful treatment for severe knee pain and disability caused by osteoarthritis, rheumatoid arthritis, and other conditions.



## Essentials of Cemented Knee Arthroplasty

by Christopher Paul

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The procedure involves removing the damaged cartilage and bone from the knee joint and replacing them with artificial components made of metal and plastic. The metal components are typically made of titanium or cobalt-chrome alloys, while the plastic component is typically made of polyethylene.

Cemented knee arthroplasty is named after the use of bone cement to secure the artificial components to the bone. Bone cement is a type of acrylic that hardens quickly and provides a strong bond between the components and the bone.

## **Surgical Technique**

Cemented knee arthroplasty is typically performed under general anesthesia. The patient is positioned on their back with the knee bent. The surgeon makes an incision on the front of the knee and exposes the joint.

The surgeon then uses a saw to remove the damaged cartilage and bone from the knee joint. This creates a space for the artificial components to be placed.

The artificial components are then inserted into the knee joint. The metal components are first placed on the top of the thigh bone (femur) and the top of the shin bone (tibia). The plastic component is then placed between the metal components.

Bone cement is then used to secure the artificial components to the bone. The bone cement is applied to the surface of the components and the bone, and it hardens quickly to create a strong bond.

Once the components are secured, the surgeon closes the incision and the patient is taken to the recovery room.

## **Materials Used**

The materials used in cemented knee arthroplasty are:

\* **Metal components:** The metal components are typically made of titanium or cobalt-chrome alloys. These materials are strong and durable, and they are resistant to wear and tear. \* **Plastic component:** The plastic component is typically made of polyethylene. Polyethylene is a strong and flexible material that is resistant to wear and tear. It is also biocompatible, which means that it does not cause any adverse reactions in the body. \* **Bone cement:** Bone cement is a type of acrylic that hardens quickly and provides a strong bond between the artificial components and the bone. Bone cement is made of a mixture of methyl methacrylate (MMA) and polymethyl methacrylate (PMMA).

## **Expected Outcomes**

Cemented knee arthroplasty is a successful treatment for severe knee pain and disability caused by osteoarthritis, rheumatoid arthritis, and other conditions. The majority of patients experience significant pain relief and improved function after surgery.

Cemented knee arthroplasty has a high success rate. The vast majority of patients are able to walk and perform daily activities without pain. The artificial joint can last for many years, and most patients do not require revision surgery.

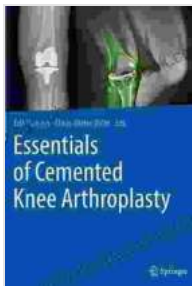
However, there are some risks associated with cemented knee arthroplasty. These risks include:

\* **Infection:** Infection is a rare but serious complication of cemented knee arthroplasty. It can occur if bacteria enter the joint during surgery or in the weeks following surgery. \* **Blood clots:** Blood clots can form in the legs or lungs after cemented knee arthroplasty. Blood clots can be prevented by

taking medication and wearing compression stockings. \* **Stiffness:** Stiffness is a common complication of cemented knee arthroplasty. It can occur if the artificial joint is not properly aligned or if the patient does not follow the rehabilitation instructions. \* **Loosening:** Loosening is a complication of cemented knee arthroplasty that can occur over time. It occurs when the artificial components lose their bond to the bone. Loosening can cause pain and instability.

Cemented knee arthroplasty is a successful treatment for severe knee pain and disability caused by osteoarthritis, rheumatoid arthritis, and other conditions. The majority of patients experience significant pain relief and improved function after surgery.

However, there are some risks associated with cemented knee arthroplasty. These risks include infection, blood clots, stiffness, and loosening. It is important to discuss these risks with your doctor before deciding whether to undergo cemented knee arthroplasty.



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