Implants and Hardware

What are implants and hardware used for?

In the upper extremity, implants are primarily used for joint reconstruction and/or to repair fractures and hold bones together while they heal. Plates, pins and screws are commonly referred to as 'hardware.'

Joint reconstruction

A variety of different implants are designed for joint reconstruction **(see Figure 1)**. Depending on the specific reconstruction, some implants are designed to resurface the joint. Others act as spacers, filling in the space between the ends of the bones after the arthritic surface has been removed. Joints are sometimes also fused, and pins, plates, or screws may be used to hold the bones together until the joint is solidly fused.

Fracture fixation

Not all fractures will need surgery or any hardware in order to heal; many can be treated with casts or splints, but some fractures may need surgery to properly realign and stabilize the fragments, in which case implants may be used. A variety of pins, plates, screws, and wires may be used to hold the pieces together while the broken bone heals **(see Figure 2)**. The particular hardware utilized will depend on the specific fracture pattern and treatment approach.

What are implants made of?

Most fracture hardware is made of metal, either stainless steel or titanium. Joint implants are usually made of plastic, metal, or some combination of the two. Some joint implants are also made of other materials, such as carbon or ceramics.

Will I set off metal detectors?

A common concern, especially given heightened security measures in the past several years, is the possibility that an implant may trigger a metal detector during check-in at the airport or other similar settings. The type of material, its location and size, and the sensitivity of the detector are all factors that can affect the likelihood of triggering the security device. In general, the hardware used in the hand and wrist is small enough that it is unlikely to trigger a metal detector. However, it may be helpful to advise security personnel at check in if you have metal implanted. You may also wish to obtain a note from your doctor indicating the presence of implanted metal hardware or joints.

If I have an implant, do I need to take antibiotics before dental work?

Antibiotic pre-treatment is not routinely needed, but several factors need to be considered when deciding whether or not to take an antibiotic before dental work if you have a joint replacement or implanted hardware. Certain dental procedures have greater risk of disseminating bacteria. Some patients have other medical conditions that may make them more prone to getting an infection, such as diabetes or a weakened immune system. Duration since the original surgery may be a factor, as well as any history of prior infection. Your dentist and your hand surgeon can best advise you on the need for preventive antibiotics prior to having dental work.

Figure 1: Joint replacements in the hand and wrist

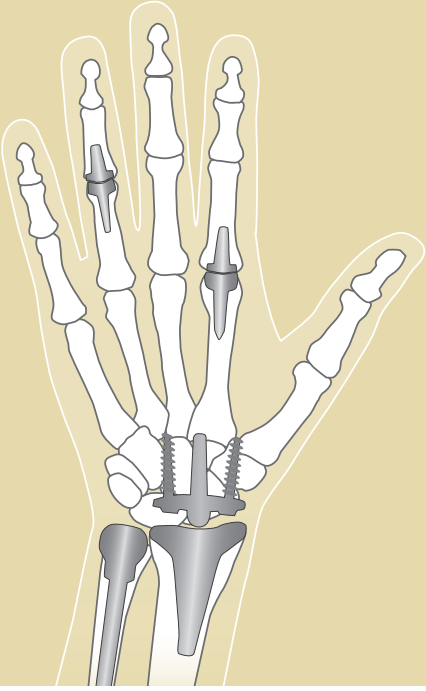
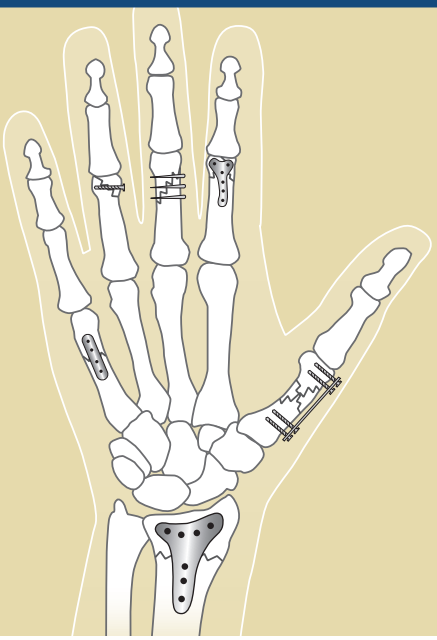


Figure 2: Examples of hardware for fracture repair



Will the hardware need to be removed in the future?

Hardware often does not need to be removed. Plates, screws, pins, and wires are usually tolerated well without causing any difficulty. However, there are some situations in which a plate, pin, or screw may be placed across a joint for temporary support until the fracture or ligament repair is healed, with the plan to remove it later. Pins in particular are often placed as temporary devices with plans for later removal. Sometimes irritation of tendons or other problems may develop that may warrant removal of the hardware, too. Your hand surgeon can best advise you as to the need for removal in your case.

Can I get an MRI if I have a joint replacement or metal hardware?

In general, most orthopaedic hardware and joint replacements are not magnetic, even those made of stainless steel, and so an MRI can be safely performed. The implants can distort images if they are in the same area as that being studied. Again, it is best to check with your surgeon to verify the type of implant.