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Hip Replacement Surgery

Hip replacement surgery is a procedure where the damaged ball and socket of the hip joint are removed and replaced with new synthetic materials like a prosthesis. Also called total hip arthroplasty, this procedure is needed when all other treatments for arthritis related hip pain fail to give adequate relief to the patient.

The decision to undergo a joint replacement should be made after an assessment and thorough discussion with your orthopaedic hip surgeon. Ultimately, the decision rests with you, and it's important to carefully consider all the information provided, including expected benefits, potential risks, and available alternatives. Your surgeon will provide you with all relevant information to ensure you make an informed choice.

The Procedure:

During a hip replacement, the worn hip joint is removed and replaced with an artificial implant (prosthesis). There are two components to a hip replacement: the ball and the socket.

Replacement of the ball

The ball of the hip joint is removed and then bone from inside the thigh bone is hollowed out so that a metal stem can fit. A new highly polished and smooth femoral head ball is attached to this. The ball is composed of either highly polished chrome and cobalt alloy or highly polished ceramic.

Replacement of the socket

The hip socket is prepared for a new implant by removing the damaged arthritic layer of worn cartilage and bone. A new socket comprised of a titanium metal shell with highly wear resistant plastic is inserted to replace the hip socket.

Bearing surfaces

There are many options available to make up the moving parts of a hip replacement. The decision to use one bearing over another depends on durability, level of performance, wear resistance, and your personal needs. The bearing itself is not just a single part, but the point where the ball and socket of the hip replacement meet. So, the bearing can involve joining of a different combination of materials.

Materials include:

Polyethylene – this is a durable, non-toxic and versatile plastic that is commonly used in hip replacement for the socket side or 'cup'. The current generation of this polyethylene has increased toughness by creating extra chemical 'crosslinks', reducing the level of wear compared to earlier generations of polyethylene

Ceramic – the currently-used fourth generation ceramic bearings are made up of a mix of zirconia and alumina. The ceramic is tough, smooth, has a low-wear rate and is non-toxic. Ceramic bearings are used in two configurations – a ceramic ball with a ceramic socket (ceramic on ceramic) or a ceramic ball with a polyethylene socket (ceramic on poly). Both configurations give very low-wear rates

Metal – this can be used for the ball of bearing surface. It may be made of either highly polished surgical stainless steel or an alloy of chromium, cobalt and molybdenum. Metal heads are the most used femoral head bearing. In conventional hip replacements, metal heads are combined with polyethylene sockets to make the bearing surface (metal on poly).