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Backgrounder on the M²a-Magnum™ Hip Replacement Surgery

Why Are Joints Replaced?

The most common reason is osteoarthritis, which is the diagnosis in 90% of patients receiving a new joint. Osteoarthritis (OA) is a disease that involves the breakdown of cartilage in one or more joints. Cartilage is a strong, smooth material that caps the articulating, or moving surfaces of the bones in the joint. It allows bone surfaces to glide against each other when you move. When the gliding cartilage breaks down or wears away, the bones grind against each other, which can cause pain and limited joint movement.

Is There a Cure for Osteoarthritis?

There is no known cure. The best that doctors can do for a patient is to restore motion and reduce pain. Fortunately, joint replacement has proven effective in accomplishing these goals.

Does Joint Replacement Work?

After a joint replacement surgery, many patients experience reduced pain, increased mobility, and improved quality of life. The performance and life span of an implant depends on many factors, including the patient's presurgical physical condition, anatomy, weight, activity and willingness to follow surgeon's instructions before and after surgery.

What Is Total Hip Replacement?

A total hip replacement removes the arthritic ball of the upper thighbone as well as the damaged cartilage from the hip socket. A metal or ceramic ball that is solidly fixed to a stem inserted into the femur replaces the arthritic ball. The socket is replaced with a cup that is fixed to the acetabulum. The implants are designed to create a new, smoothly functioning joint that prevents painful bone-on-bone contact.

What Is Metal-on-Metal Hip Replacement?

Because hip implants are subject to wear over time, Biomet developed an implant designed to withstand the higher demands of more active lifestyles.

Traditionally, hip replacement implants feature a metal ball that moves against a polyethylene (plastic) cup. Metal-on-metal implants feature a metal ball that moves against a metal cup, and this metal cup is what provides the additional resistance to wear.

Metal is much harder than polyethylene. As metal moves against another material, it creates friction, and friction wears down the material against which it moves. The more active a person is, the more movement and friction are placed against the hip implant. Because metal resists wear better than polyethylene, the M²a articulation is better able to resist wear. This means there is a strong possibility that the metal-on-metal hip can outlast traditional polyethylene, which is an important consideration for patients whose surgeons think premature wear may become an issue with patients' hip implants.

What Makes Biomet's M²a-Magnum™ Different?

Biomet's M²a-Magnum™ system combines the low-wear benefits of metal-on-metal with large head articulation, which allows for increased range of motion, stability and resistance to dislocation.



A successful hip replacement is often influenced by how closely the artificial joint can mimic a healthy joint's range of motion and stability. Lack of range of motion and stability can lead to impingement and dislocation. The Magnum has been carefully designed to provide maximum range of motion before impingement, offering the potential for over 160 degrees' range of motion. Larger heads require the head to travel more distance before it can "jump" out of the cup, therefore offering greater stability and resistance to dislocation.

The Magnum's large range of size also allows for better replication of the patient's anatomy. With traditional polyethylene and metal articulation, the size of the replacement joint is typically smaller than the original joint. Only metal-on-metal components allow the largest heads to be used throughout the entire range of implant sizes. With polyethylene and ceramic components, patients benefit from larger heads only among the larger acetabular sockets. No matter a patient's physical stature, the M²a-Magnum™ system will allow them to benefit from larger heads.

M²a-Magnum™ is a trademark of Biomet Manufacturing Corp.