



GET BACK
TO WHAT
YOU LOVE



UNDERSTANDING TOTAL HIP REPLACEMENT

Do I need a total hip replacement?

Which surgical approach is best for me?

How long will it last?

Which implant is right for me?

These are typical questions patients like you often ask when considering total hip replacement surgery. This brochure provides information about the way a hip implant works and highlights some of the unique benefits of Exactech® total hip systems.

The information in this brochure is for educational purposes only and is not intended to replace the expert guidance of your physician. Please direct any questions or concerns you may have to your doctor.

KNOWING WHEN YOU NEED SURGERY

Your surgeon may recommend Total Hip Arthroplasty (THA) when other non-surgical treatments are ineffective. Hip replacements are performed not only to relieve pain and restore range of motion, but also to prevent further damage. The number one reason for joint replacement is osteoarthritis. Other reasons for joint replacement include rheumatoid arthritis, avascular necrosis, developmental dysplasia of the hip or a simple hip fracture. If the hip joint is diseased or damaged, the muscles around it often weaken, which may make it even more difficult to move.

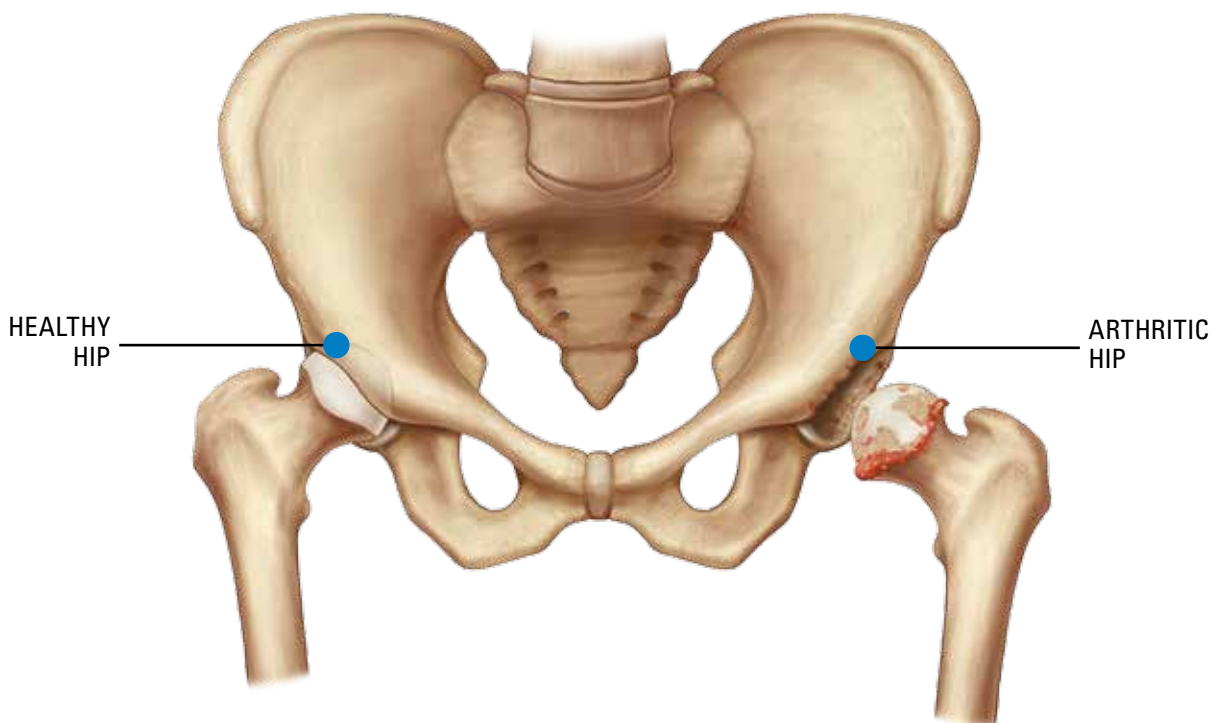
**Your doctor will evaluate
your condition and determine
if surgery is right for you.**



WHAT IS TOTAL HIP REPLACEMENT?

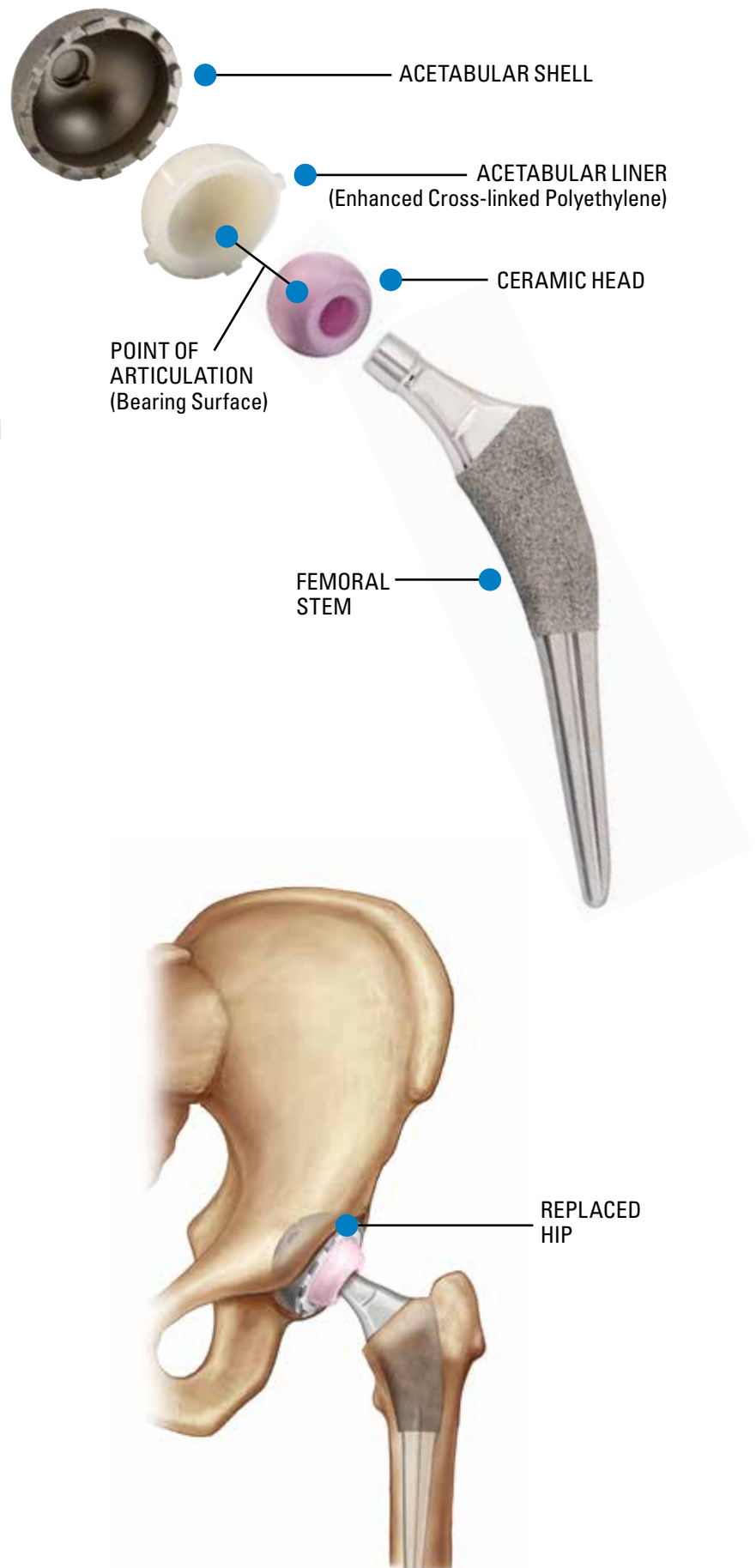
Total hip replacement involves removing the diseased bone and cartilage and replacing them with orthopaedic implants. The surgical procedure involves an incision through the skin to gain access to the hip joint through the muscles overlying the hip, all done while the patient is under anesthesia.

After the surgeon exposes the hip, your diseased hip ball (femoral head) is removed. It is replaced with an artificial ball on a stem, such as Exactech's Novation® or Alteon® femoral stems, which is inserted into the hollow part of the thighbone. The stem may be pressed into place or cemented using a special acrylic cement.



The hip socket (acetabulum) is prepared by "reaming" it, using special instruments that make it the right size and shape. A metallic acetabular shell, such as the Novation® Crown Cup, is then pressed into place and sometimes further secured with bone screws. A cup-shaped acetabular liner is then placed in this shell forming the socket part of the ball-and-socket replacement. The ball and socket are then placed together to complete the implant procedure and the soft tissues are repaired to complete the surgery. Each implant is available in a variety of sizes to accommodate different body sizes and shapes.

Ask your orthopaedic surgeon if hip replacement surgery is right for you.





WHICH SURGICAL APPROACH IS **BEST FOR ME?**

There are many different surgical approaches that your surgeon can use. They include the Anterior Approach (from the front of the hip), Anterolateral Approach (from the side of the hip) or the Posterolateral Approach (from the back of the hip), to name a few. Exactech provides instrumentation and implants that are compatible with whichever surgical approach your surgeon specializes in and feels is best for your particular situation.

Exactech provides Low Profile Instrumentation™ (LPI) and implants to supply your orthopaedic surgeon with the tools to enable a more conservative total hip replacement. These tools allow your surgeon to make an incision that is less invasive to your soft tissues (muscles and skin) and can allow for quicker recovery from your total hip replacement.

Ask your orthopaedic surgeon which surgical approach is right for you.

Exactech provides instrumentation and implants that are compatible with whichever surgical approach your surgeon feels is best for your particular situation.



HOW LONG WILL MY HIP IMPLANT LAST?

There are numerous factors that affect the longevity of a total hip replacement including patient indications (age, weight and activity level), implant design and materials used during surgery.

Just like your natural hip, the components of a hip implant are subject to wear and friction caused by bending, straightening and supporting your body weight. In the design of hip implant components—particularly the bearing surfaces that slide or rub against one another—it is very important to ensure the least amount of friction possible. Exactech hips feature a number of advanced materials and proven design features that reduce the amount of wear and stress on each component.

The bearing materials used during surgery are another important element of hip arthroplasty. In recent years, there have been significant advances in these materials that may help to increase the longevity of the artificial joint.

Advanced Bearing Materials



CONNEXION GXL®
LINERS



BIOLOX®delta
CERAMIC
FEMORAL HEAD

- **Highly Cross-linked or Enhanced Polyethylene**—the process of modifying the plastic material used as a bearing surface so it can last longer. Cross-linked polyethylene has a lower wear rate than standard polyethylene. Wear rate is one of the main reasons that hip implants fail and it is an important factor in determining the longevity of hip replacement.^{1,2}

Exactech's enhanced polyethylene, Connexion GXL®, has been designed to reduce the wear rate of polyethylene while maintaining an appropriate level of fracture toughness. Connexion GXL is the latest in a broad range of product and material development programs at Exactech that are advancing bearing surface technology to increase the longevity of total hip prostheses.^{3,4}

- **Metal**—used to create femoral heads, which are used to replace your diseased hip ball. Metal, with a cross-linked polyethylene liner, is the most commonly used bearing surface in hip arthroplasty today.
- **Ceramic**—a non-metallic substance that is derived from aluminum oxide. Ceramic-on-poly ball-and-socket replacement has a very low wear rate and is typically used for younger and more active patients.⁵

Implant Materials

There have also been improvements made to the materials used for hip stem implants.

- **Titanium**—the material used in many hip stems, which has been shown to promote bony ingrowth and allows some flexibility in the implant to mimic natural bone.

Exactech's Novation® and Alteon® hip stems use an advanced manufacturing method to increase the strength of the titanium material.⁶

- **Cobalt Chrome**—typically used for cemented hip stems and has a long history of success.



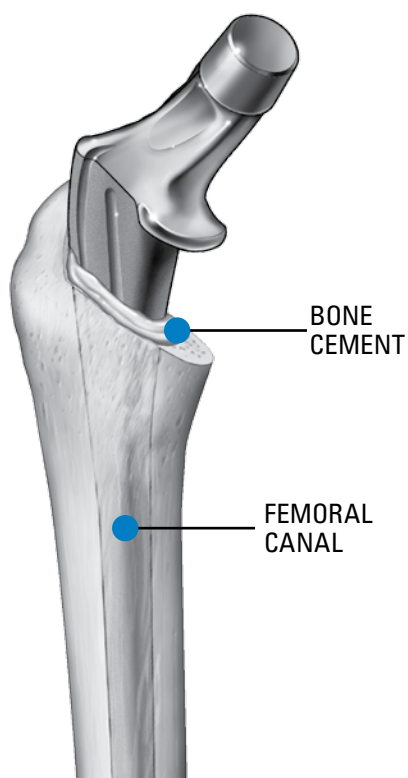
ALTEON®
TAPERED WEDGE
STEM



WHICH IMPLANT IS RIGHT FOR ME?

Hip implants may be cemented, cementless (press-fit) or a combination of both, depending on the method used to hold the implant in place. Although there are general guidelines, your surgeon will evaluate your particular situation carefully before making any decisions regarding which implant is most appropriate for you.

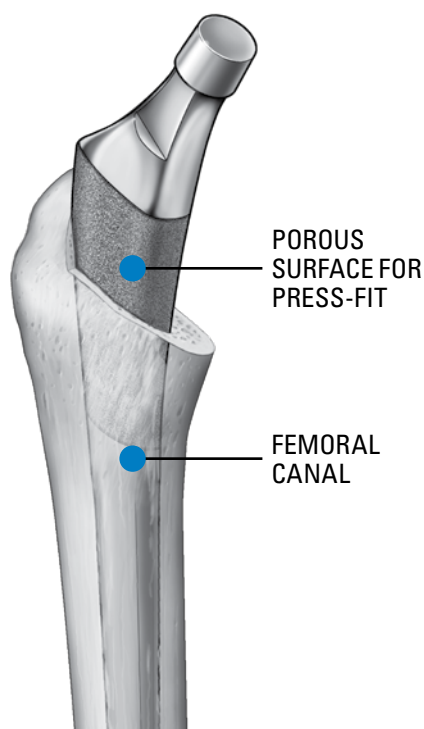
Do not hesitate to ask which type of implant will be used in your situation and why that choice is right for you.



Cemented Hip Implants

A cemented hip implant is designed to be used with bone cement, which was first used in hip replacement in 1961. First, the femoral canal is prepared and then bone cement is introduced into the femur. The surgeon then positions the implant within the femoral canal and the bone cement helps to hold it in the desired position, providing initial fixation. Cemented implants are more commonly used in older patients, patients with rheumatoid arthritis or younger patients with poor bone quality.

Exactech cemented hips use design principles that are clinically proven over the last 20 years and are enhanced by today's most modern technical and surgical innovations.⁷



Press-Fit Hip Implants

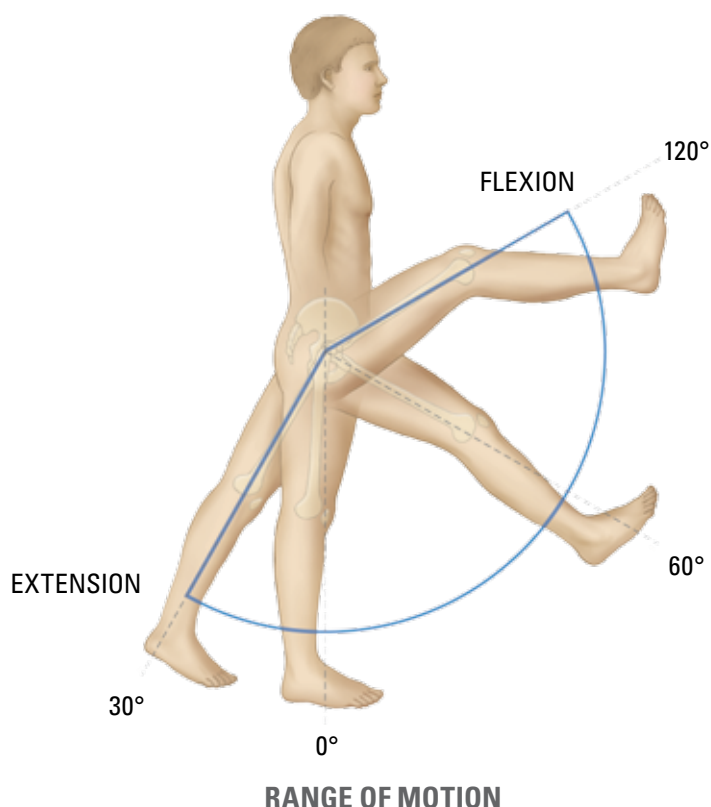
A press-fit hip implant is designed to be inserted into the prepared femoral canal without the use of bone cement. Press-fit fixation has been utilized in total hip replacement since as early as 1943. Initially, the femoral canal is prepared in much of the same way as a cemented hip implant; however, a press-fit implant is designed so that the implant fits tightly into the canal at the time of surgery. The rough surfaces on the press-fit hip implant are designed to engage the bone within the canal, permitting bone to grow onto the roughened surface of the implant. Press-fit implants are more commonly used for younger, more active patients and patients with good bone quality.

Exactech uses titanium plasma spray as its roughened surface to allow bone to grow.⁹

WILL I BE ABLE TO RETURN TO NORMAL ACTIVITY?

After successful surgery, you will be eager to return to many of the activities you enjoy. Going for walks, golfing, boating, biking and playing with children or grandchildren are usually realistic expectations. Each of these activities is based on your ability to comfortably bend and straighten the muscles around your hip. The degree to which you can perform this movement is defined as your range of motion, which is shown in the medical illustration below. A patient's normal hip provides the potential for range of motion up to 120-130 degrees of flexion (bending) and 20-30 degrees of extension (straightening).

The decision about activity level is ultimately based on the suggestions and guidelines of your orthopaedic surgeon as well as your compliance with your surgeon's recommended post-operative therapy.

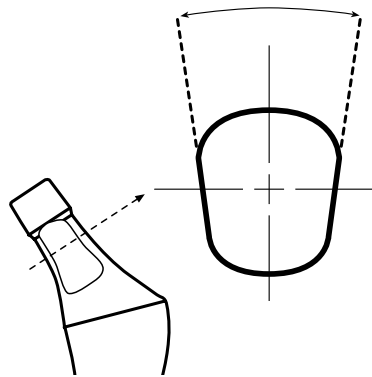




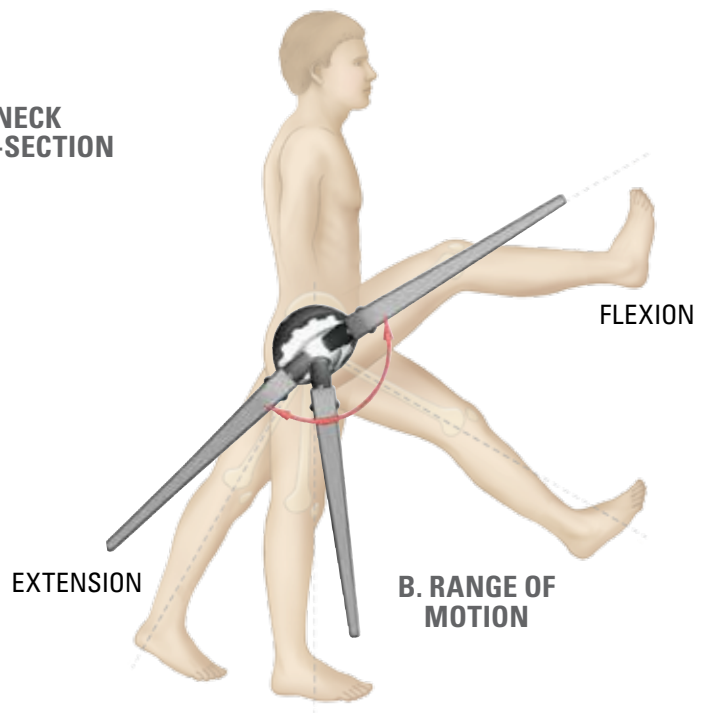


THE EXACTECH DIFFERENCE

Exactech's total hip implants are designed to maximize range of motion through an innovative neck design while maximizing overall strength of the prosthesis. The precisely designed and machined neck flats feature a cross-section (Figure A) that allows one of the greatest ranges of motion in the industry.¹⁰ This unique cross-section has been developed to maintain strength in areas where stress is high while increasing the range of motion over other neck designs (Figure B).



**A. NECK
CROSS-SECTION**



References

1. **McKellop H, Shen FW, Lu B, Campbell P, Salovey R.** Development of an extremely wear-resistant ultra high molecular weight polyethylene for total hip replacements. *J Orthop Res.* 1999;17(2):157-67.
2. **Greer KW, King RS, Chan FW.** The effects of raw material, irradiation dose and irradiation source on crosslinking on UHMWPE. Cross-linked and Thermally Treated Ultra-High Molecular Weight Polyethylene for Joint Replacements. *ASTM STP 1445.* 2002;209-20.
3. TS-2005-025. Comparison of the wear of current, research and traditional polyethylene cup. Data on file at Exactech.
4. TS-2007-028. Summary of testing for AcuMatch A-Series Acetabular Liners incorporating Connexion GXL Ultra-High Molecular Weight Polyethylene (UHMWPE). Data on file at Exactech.
5. **Taylor SK, Serekian P, Manley M.** Wear performance of a contemporary alumina: alumina bearing couple under hip joint simulation. Transactions of the 44th Annual Meeting of the Orthopaedic Research Society; 1998 Mar 16-19; New Orleans, LA. p. 51.
6. ETS 0170. Data on file at Exactech.
7. **Petty W.** Fixation methods. In: Total joint replacement. Ed. by W. Petty. Philadelphia, W.B. Saunders Co., 1991, p. 61-74.
8. **Petty W.** Total hip arthroplasty: operative technique. In: Total joint replacement. Ed. by W. Petty. Philadelphia, W.B. Saunders Co., 1991, p. 245-260.
9. TM-2005-002. Data on file at Exactech.
10. Data on file at Exactech. Lit# 711-63-20.

WHY EXACTECH IMPLANTS ARE RIGHT FOR YOU

Your surgeon will consider a wide variety of variables when selecting the hip implant that's right for you. Your age, height, weight, lifestyle and your general health are among the most important factors. Exactech's Total Hip implants are designed to accommodate these and other variations in anatomy to provide you the best possible outcome.

Sure, there are plenty of choices out there and total hip implants are being introduced every day. But there's nothing like the confidence that comes from the test of time. With Exactech's total hip implants, you have the best of both worlds—a proven design foundation¹⁰, enhanced by today's most modern surgical technologies.

For more information
www.GetBackToWhatYouLove.com