

## Total Hip Replacement Using Robotic Technology

### Background:

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Total hip replacement is perhaps one of the most important breakthrough technologies developed in the last 50 years. It is predictable in relieving the pain from hip arthritis, restoring motion to an arthritic hip, and therefore allows restoration of overall function.

The long term success of total hip replacement can be linked to accuracy of implantation of the device. Total hip malalignment has been associated with hip dislocation, accelerated wear of artificial bearing, and can be associated with discrepancy of the length of legs.

### Emerging Technology:

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In order to more accurately insert the artificial hip joint, enabling technologies such as navigation systems and robotic assistance has been in development. These navigation and robotic systems are analogous to the GPS (Global Position System) in your car: you still need to drive, but the GPS guides your position.

Dr. Padgett has been on the development team with the company Mako Surgical Corp.<sup>®</sup> for the past several years. The robotic system has been approved for use since 2010, and Dr. Padgett has performed extensive research on its use, safety and validated its precision and accuracy.

### FAQ's

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- **Is there any additional cost to the robotic use?** No.
- **Does the robot require any additional testing?** Yes, preoperatively, a computerized tomographic (CT) scan is required so that the computer attached to the robot “knows” all the information and the exact location of your hip bone.
- **Is the surgery faster?** No, in fact it takes about 10-12 minutes longer to perform the hip replacement using the robot (total Operating Room time is approximately 75 minutes).
- **Is my incision shorter/smaller?** No, the incision for the insertion of the hip implant is the same size as one which does not use the robot. Additionally, a second incision at the top of the pelvis

about 1 inch long is required to place a temporary tracking device to “tell” the robot where your hip is in space.

- **Is there any difference in blood loss?** No.
- **Is there any difference in length of hospital stay, rehab protocol, or postoperative rehabilitation?** No.
- **Are there any disadvantages to use of the robot?** No.
- **What happens if the robot/computer “crashes” during the case?** The case proceeds without the use of the robot, similar to what I have performed for 20 years.

#### **Summary of advantages:**

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- More precision in preparation of bone and insertion of your hip implant.

#### **Resources:**

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- You may visit the Mako website ([www.makosurgical.com](http://www.makosurgical.com)) for an overview.

#### **Disclosures:**

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I have developed intellectual property in conjunction with MAKO Surgical Corp.® regarding the robot hip application, and I am a consultant. I receive royalties on sales of software used by the robot related to their hip application. Additionally, I have invested in Mako, and currently own stock. I do not receive any additional compensation from Mako for using the robot on your replacement.