Zimmer’s new M/L Taper Hip Prosthesis with Modular Neck Kinectiv® Technology

Hip replacement procedure using device designed to match individual patient anatomy and restore hip joint kinematics

On March 12th at 7:00pm EST ORLive will present a webcast featuring the new Zimmer® M/L Taper Hip Prosthesis with Kinectiv Technology. Dr. John Maltry of Tucson Orthopaedics Institute performs the minimally invasive hip procedure with moderating assistance from Dr. Audrey Tsao of Sun Valley Orthopaedics. This webcast will train surgeons on the safe and effective use of the M/L Taper Kinectiv stem.

Restoring leg length, joint stability, and range of motion involve distinct and separate surgical challenges. The Zimmer M/L Taper Hip Prosthesis with Kinectiv Technology is a system of modular stem and neck components designed to help the surgeon restore the hip joint center intraoperatively by addressing leg length, offset, and version independently. “This system offers the neck variability needed for straight, antverted and retroverted measurements as well as offset options,” says Dr. John Maltry. The implement also allows surgeons to independently adjust leg length and offset intraoperatively. “You can place stem position within the femoral canal and then independently adjust your Varus, Valgus and offset positions,” adds Dr. Tsao. Viewers will be able to participate in a live email forum during the webcast. Dr. Maltry will answer pertinent questions about the implants and the procedure.

Clinical Characteristics

- Independent leg length and offset adjustability to restore hip joint kinematics and function.
- Independent version adjustability to alter head center position without affecting proximal stem fit, leg length or offset.
- Reduced neck geometry and antverted / retroverted neck options for impingement resolution.
- Range of head centers to match range of patient anatomies.
- Range of head centers designed to restore fit and function in the limited view environment encountered in minimally invasive hip procedures.

Independent Control
Proper offset and leg length restoration is important for total hip replacement function and to minimize the risk of dislocation and limp.\textsuperscript{1,2} For traditional hip systems, leg length and offset are coupled and surgeons are often forced to accept the coincidental change in leg length or offset when making changes intraoperatively (i.e. when simply changing the head). The Zimmer M/L Taper Hip Prosthesis with Kinectiv Technology allows surgeons to independently adjust leg length and offset intraoperatively after stem implantation.

The Zimmer M/L Taper Hip with Kinectiv Technology also allows independent version adjustments after stem implantation.

**The Head Center Grid**

- Varus, valgus, and version options using +0 heads only
- 60 head centers
- 16mm leg length and offset range

**Independence**

- Independent leg length and offset adjustability following stem implantation
- Leg length discrepancy is a leading source of patient dissatisfaction in total hip replacement

**Version by Design**

- Independent version adjustability following stem implantation
- Progressively increasing version with decreasing offset to better match patient anatomy
- Intraoperative range of motion adjustment to resolve impingement and may help to mitigate risks of accelerated implant wear and dislocation

**Intraoperative Flexibility**

- No need for surgeon to adjust stem fit to achieve version
- Version options to adjust head center location
Stem: non-modular, straight neck
Disadvantage: cannot adjust for version following stem implantation

Stem: modular, straight neck

Stem: modular, anteverted neck
Advantage: optimized version following stem implantation

### Range of Motion

Impingement of the femoral and acetabular components has been shown to increase risk of dislocation and accelerate wear of the liner. Since *Kinectiv* Technology uses +0 heads only, the geometry of each neck component can be specifically optimized for strength and range of motion based on the +0 head length. *Kinectiv* Technology also eliminates the use of skirted femoral heads that are necessary for the longer offset options of other designs. In addition, the ante/retroverted necks allow the surgeon to adjust version intraoperatively after cup and stem implantation and further fine tune the range of motion for the patient.

### Reduced Neck Geometry

- Each neck can be adjusted for use with +0 head
- Reduced neck geometry increases range of motion

### Anteverted and Retroverted Necks

- When cup placement is not optimal, version options can relieve impingement
- Version options provide opportunity for surgeon to intraoperatively tune the range of motion to avoid dislocation
- Dislocation is the second most prevalent complication in total hip replacement with a 2-4% incidence
Dislocation is the leading cause of revision surgery and poses a significant financial burden to health care system.