

3D Surgical Planning For Total Hip Arthroplasty

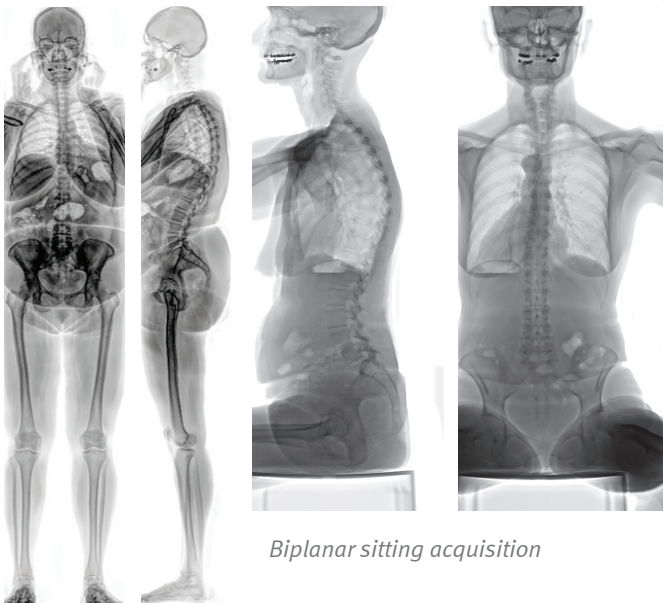
Account for your patient's unique movement

hipEOS allows surgeons to evaluate the 3D information of a patient's anatomy in both standing and seated positions to determine the size and position and orientation of the implant components for surgery. Various studies show that particular attention must be paid to patients' hip and spine relationship in order to avoid the potential risk of complications.

- 20% of patients undergoing hip replacement have spinal pathology and spinopelvic malalignment that are known risk factors for complications such as instability and dislocation.¹
- Patients with a spinal fusion are at a higher risk of total hip implant dislocation - an almost 2 times increase for a 1-2 level fusion and a greater than 3 times increase for a 3-7 level fusion.²

The combination of standing and sitting images, 3D models and measurements, provided by hipEOS helps identify an abnormal spino-pelvic relationship and optimize the surgical plan.

Powered by weight-bearing EOS images



Biplanar sitting acquisition

Biplanar full body acquisition



Features

Accurate 3D measurements: Assess the pelvis and lower limb parameters in three dimensions including: femoral version, leg length, femoral offset and neck-shaft angle

Accurate implant sizing: Sizing is based on 3D measurements and EOS images in a 1:1 scale, so there is no need for complex calibration protocols

Leg length management: Evaluate leg length surgical planning strategy while accounting for hip length, leg length and pelvic obliquity

Cup placement: Optimize anteversion and inclination based on a patient's functional standing and sitting positions as well as range of motion simulation

Open platform: hipEOS is compatible with most implant systems

Software for more confident
orthopedic surgical planning

Key Benefits

- Weight-bearing functional 3D surgical planning
- Sitting and standing pre-op assessment
- Cup and stem positioning with optimal range of motion
- Web-based and cost-effective solution

Range of Motion Simulation

functionality allows the surgeon to simulate implant-on-implant impingement in standing and seated positions while accounting for the combination of hip flexion/extension, adduction/abduction, and internal/external rotation.

hipEOS surgical planning tools allows the surgeon to optimize the orientation of the acetabular cup according to femoral version in order to achieve patient-specific range of motion.



Workflow Process

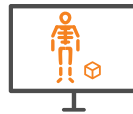
Our products and services work together to provide a complete solution from imaging to surgery, postoperative assessment and follow up.



1 Imaging Center acquires EOS images



2 2D data is uploaded to our compliant server
EOS 3DServices team prepares the 3D model and 3D dataset



3 Surgeon uses 3D data for online, surgical planning in 3D with hipEOS



4 Surgeon performs total hip arthroplasty with accuracy and confidence



5 Post-operative EOS images are acquired for confirmation of surgical success



1. Buckland, Aaron J., et al. "Prevalence of Sagittal Spinal Deformity Among Patients Undergoing Total Hip Arthroplasty." *The Journal of Arthroplasty*, vol. 35, no. 1, 2020, pp. 160–165., doi:10.1016/j.arth.2019.08.020.



2. Buckland, A. J., et al. "Dislocation of a Primary Total Hip Arthroplasty Is More Common in Patients with a Lumbar Spinal Fusion." *The Bone & Joint Journal*, 99-B, no. 5, 2017, pp. 585–591., doi:10.1302/0301-620x.99b5.bjj-2016-0657.r1.

If you are interested in utilizing hipEOS, please contact us at contact@eos-imaging.com

EOS 3DServices uses the FDA cleared sterEOS Workstation and does not provide diagnostic or treatment recommendations. The 3D information proposed by EOS 3DServices is limited to the intended use of the sterEOS Workstation.

Caution: US Federal law restricts these devices to sale by or on the order of a physician. Please read carefully the labeling provided with the devices.
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