VELYS™
Hip Navigation

2021 Otto Aufranc Award: A simple Hip-Spine Classification for total hip arthroplasty : validation and a large multi-centre series

Vigdorchik JM, Sharma AK, Buckland AJ, Elbuluk AM,
Eftekhary N, Mayman DJ, Carroll KM, Jerabek SA.
Bone Joint J. 2021 Jul;103-B(7 Supple B):17-24.

The authors present a simple preoperative approach and framework for surgery according to a novel Hip-Spine Classification system for the evaluation and care of patients with spinopelvic pathology. The aim of this study was to determine if the use of the Hip-Spine Classification system in these patients would result in a decreased rate of postoperative dislocation in patients with spinal pathology. The study included 2081 posterior approach patients.

Group	Classification		Pathology	N
	Alignment	Mobility		
1A	Normal	Normal	Normal	987 (47%)
1B	Normal	Stiff Spine	“Stuck Standing”	232 (11%)
2A	Flatback Deformity	Normal	Increased anterior or posterior tilt	715 (34%)
2B	Flatback Deformity	Stiff Spine	“Stuck sitting”	147 (7%)

- **Group 1A** – conventional target of 20-25° anteversion and 40° Inclination
- **Group 1B** - increased anteversion of between 25-30°, increased inclination of 40-45°, and restoration or slight increase in native offset
- **Group 2A**
  - Anterior tilt - conventional target of 20-25° anteversion and 40° Inclination
  - Posterior tilt >13° - increase anteversion and inclination to avoid increased risk of anterior dislocation
- **Group 2B**
  - <13° posterior tilt – slight increase in anteversion with target of 20-25° anteversion and 40° Inclination
  - >13° posterior tilt – target less than native anteversion and inclination, and use Dual Mobility construct

Use of the Hip-Spine Classification system on 2081 posterior total hip replacements demonstrated **99.2% survivorship free of dislocation at 5 years.** Data used from the preoperative risk evaluation and component positioning resulted in a **0.8% dislocation rate.**

CUPTIMIZE™ Hip-Spine Analysis, the latest surgical planning feature in VELYS™ Hip Navigation, is a simple, x-ray–based digital tool that uses patient-specific data to help surgeons assess dislocation risk and identify patients who may require unique cup placement or dual mobility design.

CUPTIMIZE Hip-Spine Analysis provides an intuitive, immediate approach to help identify and treat patients with abnormal pelvic tilt, advancing the precision of component placement to enable optimized outcomes.

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Please refer to the instructions for use for a complete list of indications, contraindications, warnings, and precautions.

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