OrthoGrid Hip Brochure
Reveal Distortion

While fluoroscopy has shown to have a positive impact on patient outcomes when utilized during Total Hip Arthroplasty (THA), there is one aspect of this technology that is greatly misunderstood: image distortion.

S-Distortion is the most prevalent type of distortion and is caused by unseen continuously variable Electromagnetic Forces (EMF). Distortion can cause up to 20 mm in variation from one side of field of view to the other.¹

Fluoroscopic image distortion cannot be detected with the naked eye and could potentially influence surgeons to make incorrect adjustments, affecting outcomes negatively. When utilized for THA, one study found that grid overlay technology contributed to increased accuracy and precision of implant component placement.²
Achieve Continuity of Care

PRE-OP PLANNING
- Patient-Specific Functional Pelvic Plane
- Leg Length (Restore/Correct)
- Femoral Offset (Restore/Correct)

INTRA-OP EXECUTION
- Execute the Plan
- Alignment Accuracy²
- Time & Cost Efficiency³
- Predictable & Reproducible Outcomes²

POST-OP VERIFICATION
- Standard Measurement Technique
- Consistent Results
- Reproducible²
- Patient Satisfaction
<table>
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<tr>
<th>Features</th>
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<tr>
<td>Reveals hidden fluoroscopic distortion</td>
<td>Integrates with current surgical workflow</td>
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<td>Interfaces with existing hospital equipment</td>
<td>Open Platform - compatible with all implant systems</td>
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<td>Potentially reduces radiation exposure by requiring fewer unnecessary repetitive images</td>
<td>Compatible with traditional and digital C-arms</td>
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<td>Ghost Cup and Cup Measurement tools for acetabular inclination &amp; version</td>
<td>Hip Correction (Vs. Non-Operative Side) and Restoration (Vs. Pre-Operative Hip) options for leg length and hip offset</td>
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Three Simple and Intuitive Steps

1. OrthoGrid Hip® Pelvic Pitch™
2. OrthoGrid Hip® Cup Positioning
3. OrthoGrid Hip® Leg Length & Offset Correction/Restoration

TO ACHIEVE

- Continuum of Care
- Alignment Accuracy² Within +/-2mm for LLO or +/- 3 degrees for Angle measurements⁴
- Time and Cost Efficency³ 15% decrease in Anterior THA O.R. Time²
- Predictable Outcomes²
OrthoGrid Hip® Pelvic Pitch™

RECREATING THE PATIENT-SPECIFIC FUNCTIONAL PELVIC PLANE

PRE-OPERATIVE AP PELVIS X-RAY

- Determine Pelvic Pitch™ by examining the relationship between Trans TearDrop line and the top of the pubic symphysis on the preoperative AP pelvic x-ray.

ORTHOGRID HIP® INTRA-OPERATIVE AP PELVIS FLUORO

- LEVEL PELVIS Tool: Adjust the tilt of the C-arm to recreate the relationship between the Trans TearDrop line and top of the pubic symphysis intra-operatively.
2 OrthoGrid Hip® Cup Positioning

EXECUTE ACETABULAR CUP TARGETS REAL-TIME

CUP GRID TOOL
- Cup Inclination Targets
- Straight Cup Impactor Guide

CUP GHOST TOOL
- Cup Inclination Taget
- Cup Version Target
2 OrthoGrid Hip® Cup Positioning

EXECUTE ACETABULAR CUP TARGETS REAL-TIME:

CUP MEASUREMENT TOOL
- Confirm Final Cup Position

ORTHOGRID HIP® INTRA-OPERATIVE IMAGE

POST-OPERATIVE CONFIRMATION X-RAY
**AP Pelvis Leg Length & Offset Correction/Restoration**

- **CORRECTION TOOL**
  - Versus Non-Operative Side

- **RESTORATION TOOL**
  - Versus Pre-Operative Hip
3b AP Hip Leg Length & Offset Correction/Restoration

AP PELVIS
- Lock Angle (Teardrops)

NON-OPERATIVE SIDE
- Lock Lesser Trochanter

OPERATIVE SIDE
- Calibrate
- Pick Lesser Trochanter
- Correct / Restore
Clinically Proven Results

ACCURACY & DISTORTION / TIME EFFICIENCY / REPRODUCIBILITY

A Fluoroscopic Grid in Supine Total Hip Arthroplasty

Improving Cup Position, Limb Length, and Hip Offset

Jeremy M. Gilliland, MD, Lucas A. Anderson, MD, Shannon L. Bottelli, APRN, Christopher E. Pelt, MD, Christopher L. Peters, MD, and Erik N. Kubik, MD

Abstract: We hypothesized that use of a novel fluoroscopic grid would decrease operative time and component positioning variability during anterior supine total hip arthroplasty (THA). We reviewed 99 anterior supine THAs: 39 using a fluoroscopic grid, and 60 using fluoroscopy alone. Goals were cup abduction of 40° ± 10° and limb length and hip offset within 10 mm of the contralateral side. Surgical time was decreased in the study group (79 vs 94 minutes, P = .002). In the study group, more components met the goal for cup abduction (97% vs 83%, P = .046), limb length (100% vs 88%, P = .04), hip offset (85% vs 67%, P = .047), and all 3 combined (82% vs 52%, P = .002). We demonstrated decreased component positioning variability during anterior supine THA with assistance of a fluoroscopic grid. Keywords: total hip arthroplasty, fluoroscopic grid, limb length.

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# Competitive Market Analysis

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<th>Feature</th>
<th>OrthoGRID</th>
<th>ROBOTIC HIP</th>
<th>RADLINK</th>
<th>VELYS / JOINTPOINT</th>
<th>Open Platform - compatible with all manufacturer’s implants</th>
<th>Demonstrated reduction in OR time</th>
<th>Reveals Fluoroscopic Distortion</th>
<th>Eliminates disposable costs</th>
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CITATIONS

1. Gililland et Al. Are we being fooled by fluoroscopy - distortion may affect limb length measurements in DA THA. JOA 2020

2. Thorne, et Al. Comparison of Component Placement Accuracy Using Two Intraoperative Fluoroscopic Grid Technologies During Direct Anterior Total Hip Arthroplasty; JOA 2020


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An issued or revision date for these instructions is included for the user’s information. If two years have lapsed between the issued revision date and use of the product, contact OrthoGrid Systems, Inc. to see if any additional product information is available.

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