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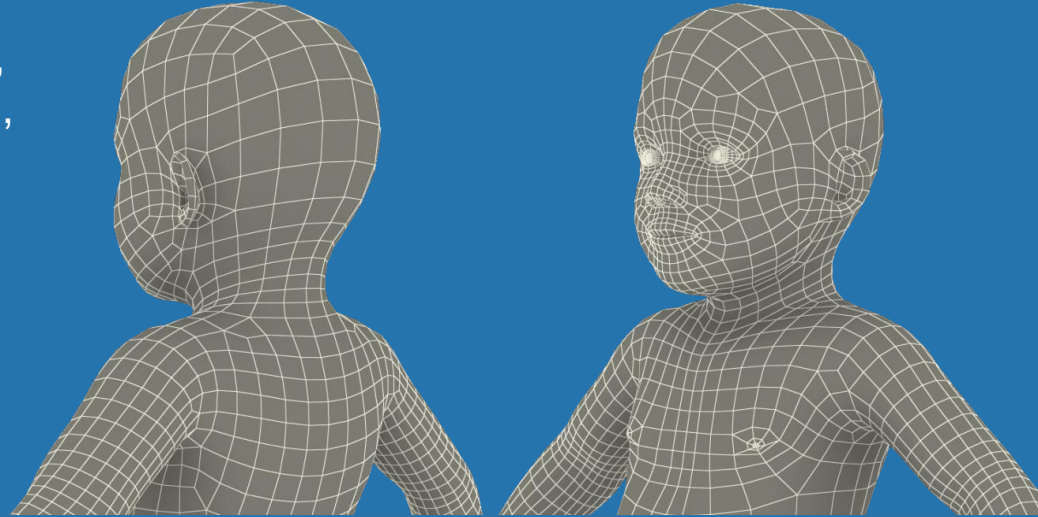


Children's Hospital

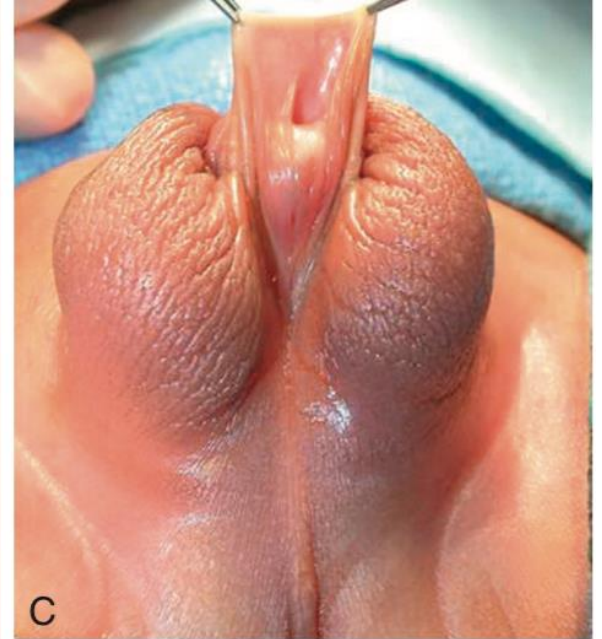
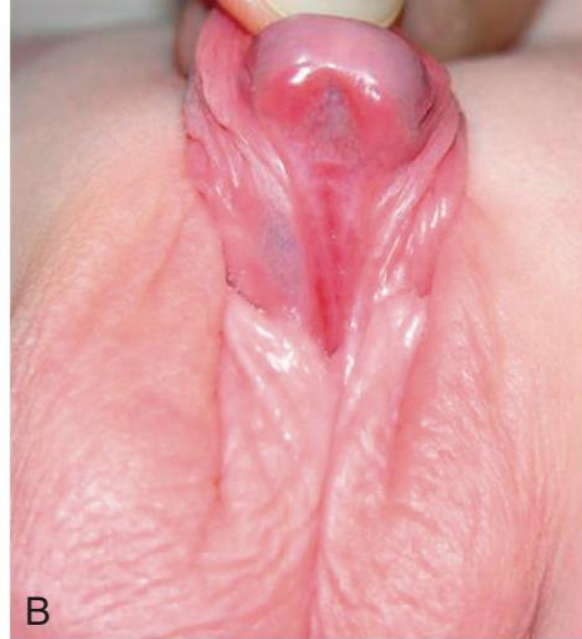
Structured Light Scanning Versus Goniometry for Angle Assessment

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Wide Variation in Hypospadias Phenotype



Goal

Seek methods to objectively quantify phenotypic variation in congenital penile anomalies

Objective

Evaluate measurement accuracy and reliability of a structured light scanner versus goniometer for angle assessment

Goniometer vs Structured Light Scanner

**3D Printed
Blocks**

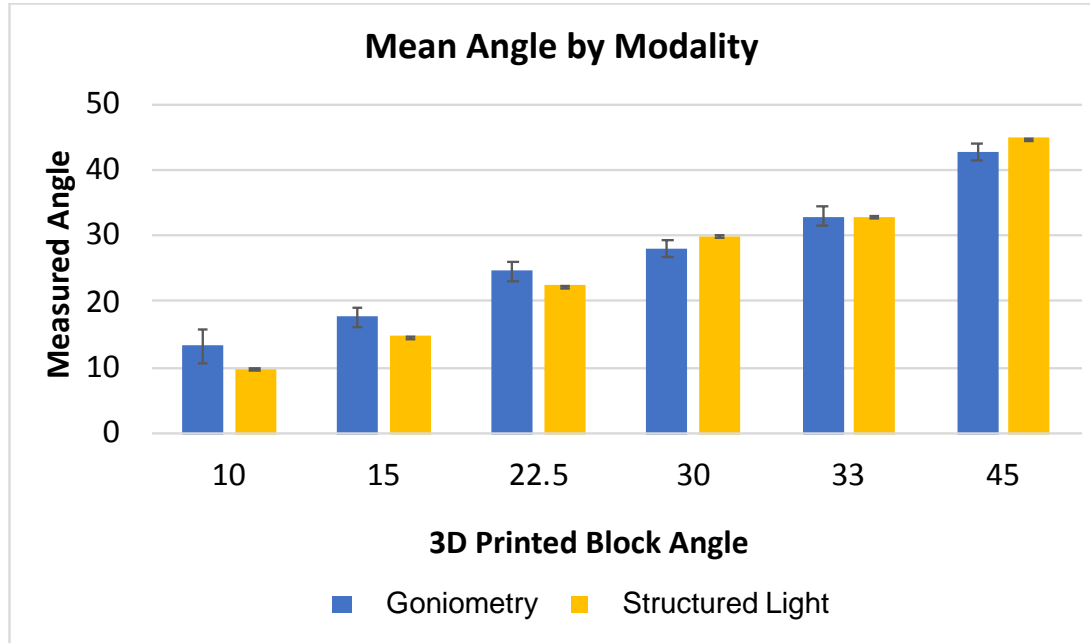


**Goniometer
(n=10)**

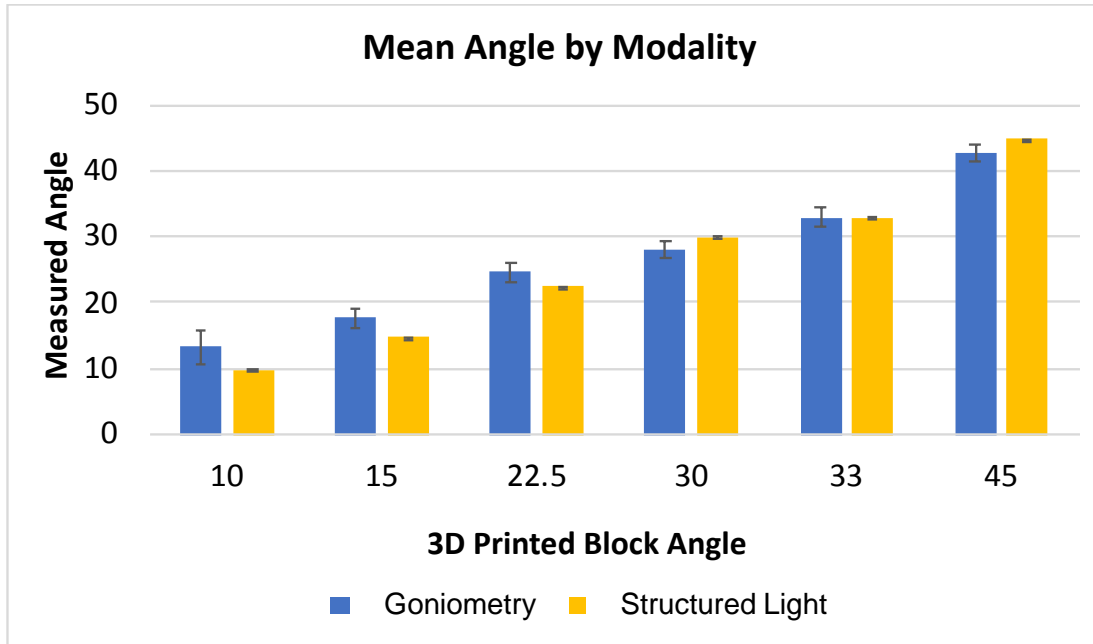
**Artec Space
Spider
(n=5)**



Structured Light Scanner is Accurate and has Excellent Reliability

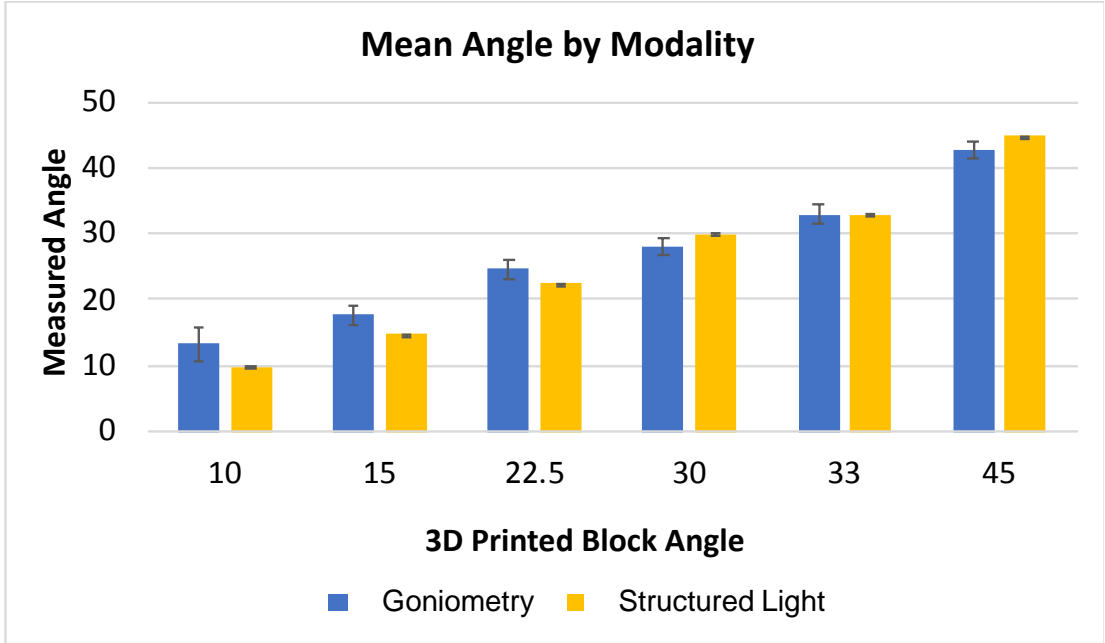


Structured Light Scanning is Accurate and has Excellent Reliability



	ICC (95% CI)	Mean Time
Goniometry	0.78 (0.43, 0.92)	33 sec
Structured Light Scanning	0.99 (0.99, 0.99)	4 min

Structured Light Scanning is Accurate and has Excellent Reliability



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Structured light scanning is an efficient and effective means of angle measurement

- Future Directions

- Lab validation (measurement, volume)
- OR use, database application

- Poster

- Additional technologies (photogrammetry, 3D camera)
- 3D model samples: tinyurl.com/uclaurology3d

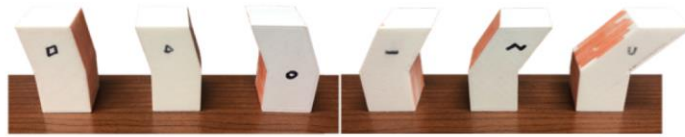


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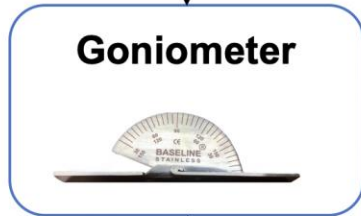


Children's Hospital

3D Printed Blocks



Standardized Education



Measurement

Artec Space Spider Light Scanner

A handheld 3D scanner, the Artec Space Spider, which is compact and designed for scanning small objects.

Artec Studio 13

Digital 3D Model

Autodesk Inventor

- Rapid multi-step process for digital 3D model creation

- Automated CAD software angle measurement in central plane