

EVIDENCE MATTERS

RESEARCH BULLETIN

Human cadaveric testing of all-suture anchors

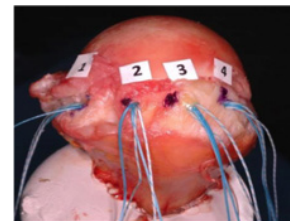
TOP-LEVEL SUMMARY:

Human cadaveric humeri were used to compare the pull out strengths of all-suture anchors currently on the market. **There were no significant differences in Cyclic Displacement, Load at 3mm Displacement, Ultimate Tensile Load, or Displacement at Ultimate Load among the anchors available for testing.¹**

METHODS:

Four anchors were implanted randomly into each human cadaveric humerus. The anchors and instrumentation evaluated are shown in the table below:

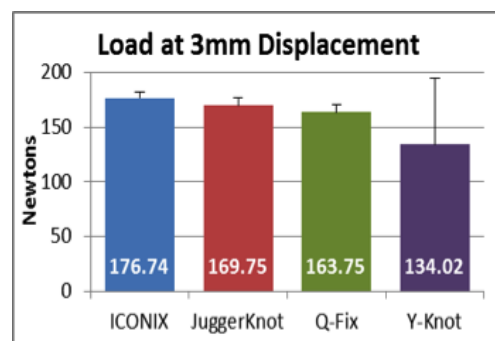
Anchor	Company	Catalog Number	Number Available	Instrumentation
ICONIX2	Stryker	3910-500-522	10	2.3mm disposable drill #3910-500-569 guide #3910-500-555
JuggerKnot 2.9mm	Biomet	912050	10	2.9mm disposable kit #912057
Q-Fix 2.8mm	ArthroCare	25-2800	4	2.8mm disposable kit #25-2810
Y-Knot 2.8mm	Conmed	YRC02 YRC03	4	2.8mm Disposable Drill Bit #Y28D and guide #Y-DGRC



Testing was conducted on individual anchors rather than multi-anchor constructs representative of clinical use. After 200 cycles of loading between 10 and 100N, anchors were pulled to ultimate failure at 12.5mm/sec. Testing was performed with the load applied parallel to the axis of insertion. While this is not the anatomic direction of loading, it is a worst case scenario commonly used for mechanical testing.² Significance was assumed at $p \leq 0.05$.

RESULTS:

There were no significant differences among the anchors tested in displacement at 100 or 200 cycles or in any measurement during pullout testing.¹



CLINICAL RELEVANCE:

Using porcine bone, Barber observed comparable pullout strengths of all-suture anchors.² **This human cadaver study also resulted in comparable initial pullout strength of all all-suture anchors using cadaveric humeri.¹**

References:

1. Stryker Tech Report RD14-064
2. Barber + Herbert. Arthroscopy, 29(5):832-44, 2013.

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