

# EVIDENCE MATTERS

## RESEARCH BULLETIN

### Stryker® ICONIX™ All-Suture Anchors Exhibit Market-Leading Fixation Strength in Study

#### TOP-LEVEL SUMMARY

The fixation strength of the Stryker ICONIX, Biomet JuggerKnot, and Linvatec Y-Knot all-suture anchors were compared in foam block. **The ICONIX was found to reach the highest ultimate load at failure.<sup>1</sup>**

#### METHODS

Foam blocks (20 pcf cellular rigid polyurethane foam with a 3mm 50 pcf solid rigid “cortical” layer, Sawbones) were used as a bone analogue to complete pullout testing of the following all-suture anchors:

	Sutures	Pilot Hole	Number Tested
Stryker ICONIX 1	Single Loaded #2 Force Fiber	1.4 mm	8
Stryker ICONIX 2	Double Loaded #2 Force Fiber	2.3 mm	7
Stryker ICONIX 3	Triple Loaded #2 Force Fiber	2.3 mm	7
Stryker ICONIX 25	Double Loaded #5 Force Fiber	2.3 mm	7
Biomet JuggerKnot	Single Loaded #1 MaxBraid	1.4 mm	7
Linvatec Y-Knot	Single Loaded #2 HiFi	1.3 mm	4

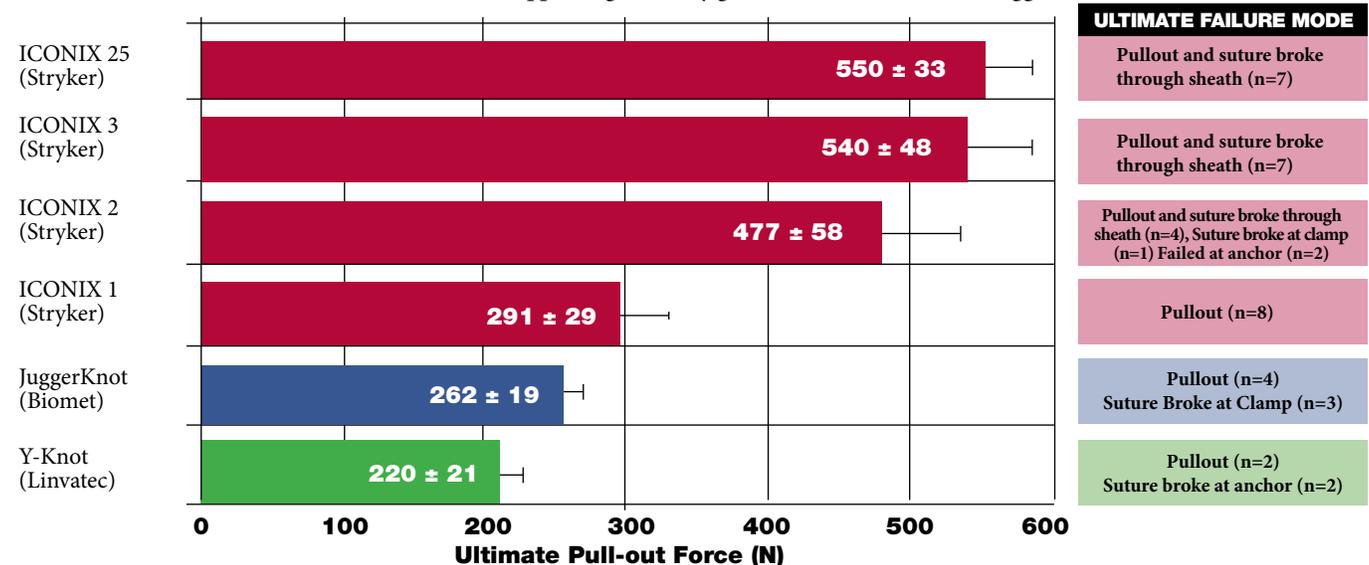
All anchors (except one Y-Knot)\* were inserted according to the manufacturer’s protocol using instruments from each manufacturer. A tensile load was applied along the axis of the anchor at a rate of 12.5mm/sec, load and displacement were measured, and failure mode was noted. An Analysis of Variance was performed to compare the three single loaded anchors (ICONIX 1, JuggerKnot, and Y-Knot) with significance assumed at  $p \leq 0.05$ .

#### RESULTS

The ICONIX1 all-suture anchor exhibited  $291 \pm 29$  ( $65 \pm 6$  lbf)<sup>^</sup> mean ultimate failure load, significantly higher than both the  $262 \pm 19$  ( $59 \pm 4$  lbf)<sup>^</sup> ultimate load for the JuggerKnot and the  $220 \pm 21$  ( $50 \pm 5$  lbf)<sup>^</sup> mean ultimate load for the Y-Knot. The JuggerKnot ultimate load was also significantly higher than the Y-Knot.

#### CLINICAL RELEVANCE

The ICONIX all-suture anchor has been shown to support significantly greater loads than both the JuggerKnot and the Y-Knot.



\* The pilot hole for one Y-Knot anchor was prepared with a standard 1.3mm spiral drill bit.

<sup>^</sup> One pound force is approximately equal to 4.5 Newtons.



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**Reference**

1. Technical Report #RD12-080

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