

First look at KYON Suture and Anchor Systems

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One principle– three applications

- **MINI Suture Anchors (MINIS)**
- **Lateral Extracapsular Suture System (LESS)**
- **Intracapsular CrCL prosthesis (ACL)**

Basic problem

- if ligament prosthesis spans the joint it flexes/rotates at/about anchor point
- for infinite fatigue life, tension + flexion strain must remain below fatigue limit

Basic solution

- allow flexion only over a well-defined radius of the anchor
- use the smallest fibers available
- allow no shear coupling between the fibers

Basic solution

- the best polymers allow about 3% max strain, static (Dyneema, Spectra)
- the smaller the diameter – the higher the strength and stiffness (15 μ ; 3 GPa strength; 100 GPa modulus)
- for flexion in fatigue only: $R > 30d$

Basic solution

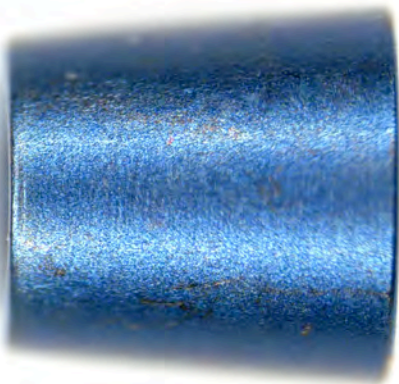
- For flexion + tension:

$$R > 45d, \text{ i.e. } R > 0.75\text{mm}$$

LESS



LESS



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LESS

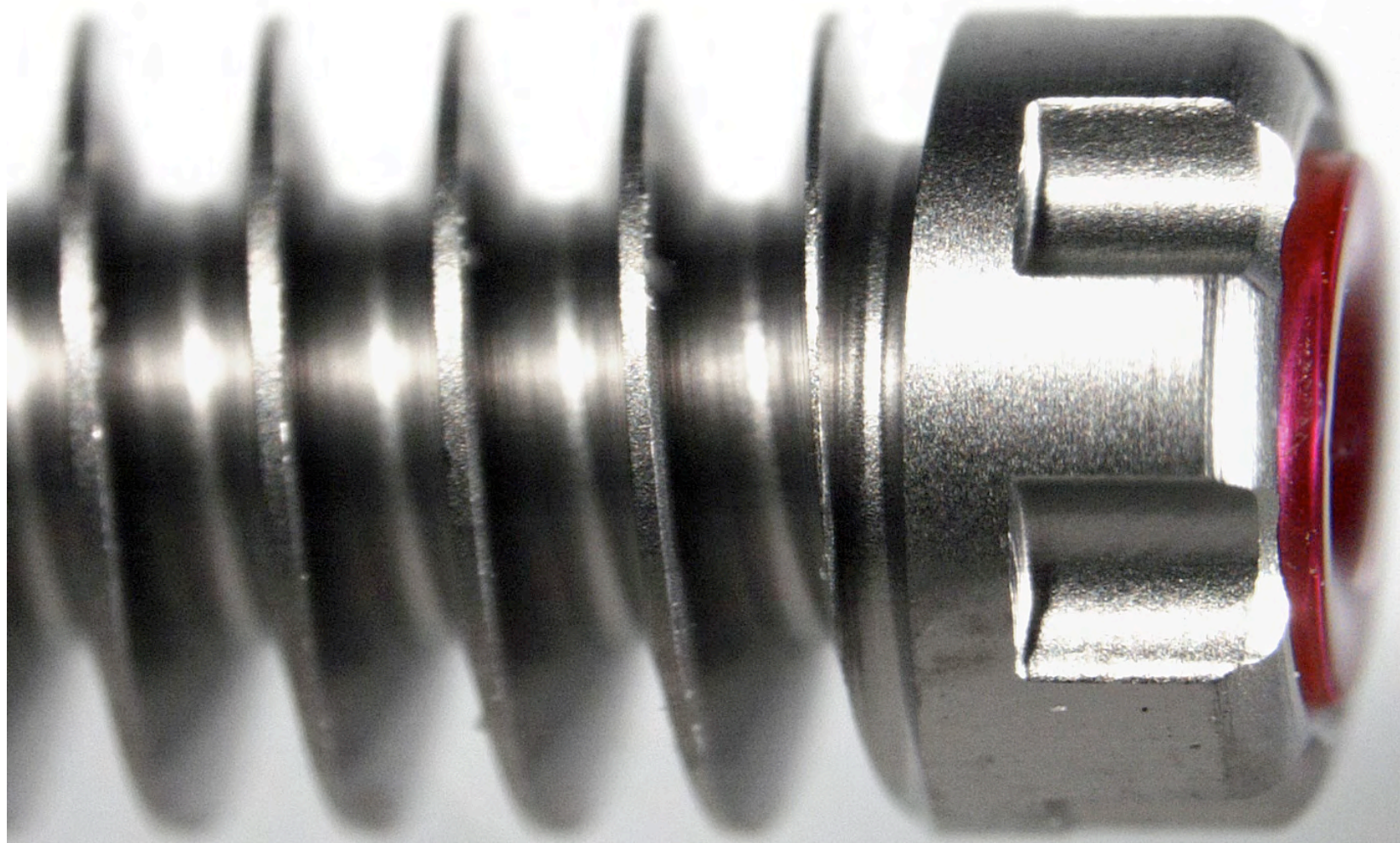


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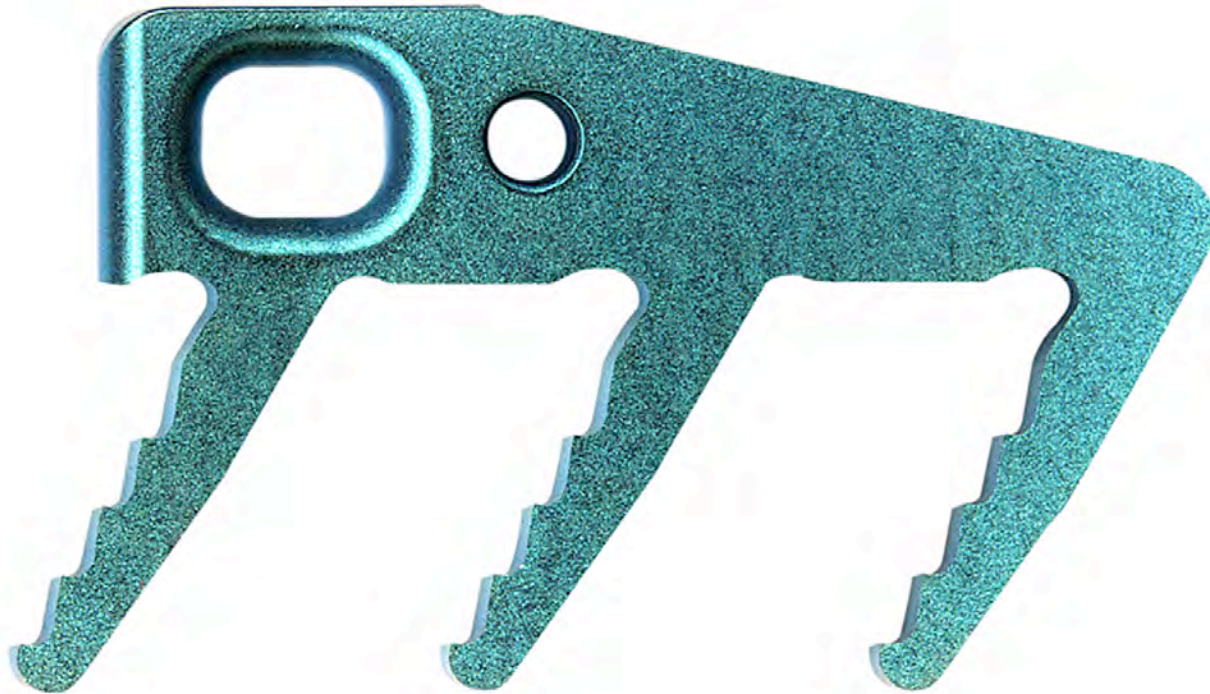
LESS



ACL

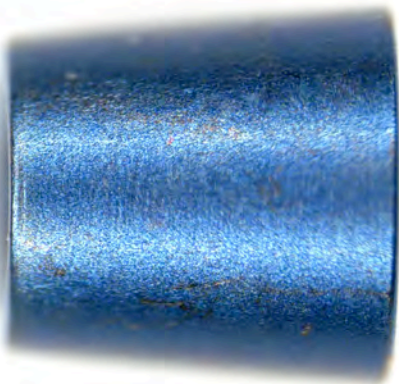


MINIS



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Status

- **MINIS** are available for use with standard sutures (+ drill guide + impactor)
- **LESS** to go into clinical testing
- **ACL** to go into clinical development (with R. Acker)