Research Device to Measure Suture Tension During Syndesmotic Injury Repairs

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1) NEED:
1) 187 ankle fractures per 100,000 people
2) Cannot currently measure suture tension during syndesmotic repair surgery

2) DESIGN INPUTS:
1) Measures 20 - 125N of applied tension
2) Compatible with current suture solution
3) Optimal for surgical space: 128mm x 50mm x 48mm

3) BUILD:
1) Tension Load Cell/Amplifier: Force Input
2) Arduino Nano: Data Processing
3) Bluetooth Transceiver: Communication
4) Batteries: Power Supply
5) Handle: Grip

4) TESTING RESULTS:
Results prove device can measure suture tension within required range

5) FUTURE:
User Impact: Correctly quantify tension applied during surgery
Societal Impact: Research tool to guide clinical decision-making resulting in better patient outcomes