MEDICAL NEED
Shoulder injuries are common in swimmers; the relationships between training, stiffness, and injury are poorly understood.

No current solutions can quantify stiffness for pool-side usage.

SOLUTION
Design consists of:
- An extendable base to meet the heights of therapy tables (30-60")
- Arm piece connected to angle and torque sensor
- User interface for measurements in < 7min

APPROACH
Measuring stiffness is not possible, but can be calculated using measured angular rotation and torque.

RESULTS
Internal and external rotation of the arm piece can be tracked as angular displacement

IMPACT
Successfully collects angular motion within 135° range

Future work
Verification of torque sensor recordings based on calibration results required