Optimizing Material Properties of Tape Spring Based Steerable Needles to Minimize Required Insertion Force

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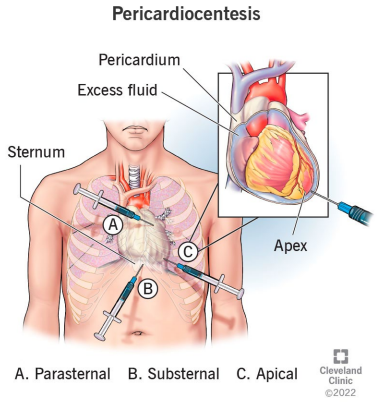
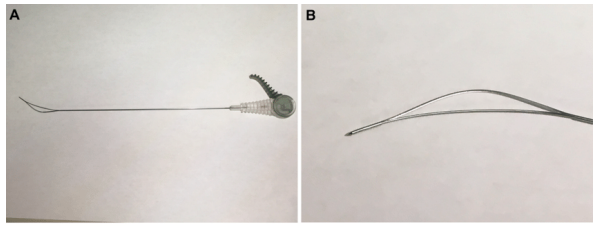
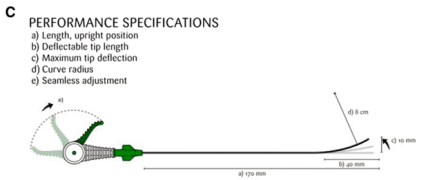
The Summer Undergraduate Fellowship in Sensor Technologies

Conventional Needles

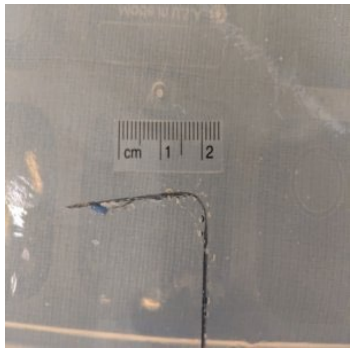


Steerable Needles

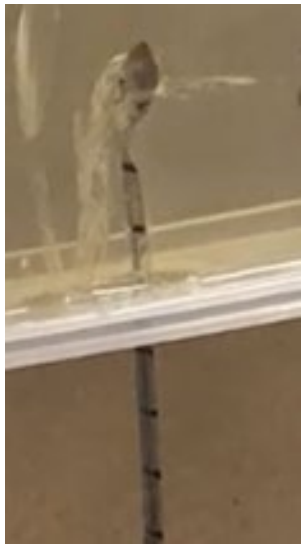


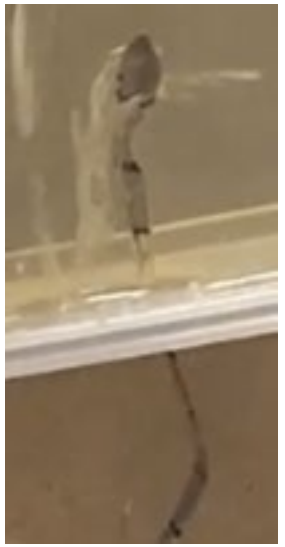


Tape Spring-based Steerable Needles



Primary mode of error with Tape Spring-based steerable needles = **buckling**





<u>How can needle buckling be prevented?</u>

- lowering insertion force!

<u>How can the insertion force be lowered?</u>

- Stop by my poster during the symposium to find out!