

## **Developing a Methodology for a Bending Test Device and Verification with Tissue and Non-tissue samples**

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A bending test is needed in order to properly determine the mechanical properties of various tissues in the body which deform by bending while in vivo. This device works by tracking the change in curvature a known applied load produces in a sample. However, for such a device to work, the exact methodology for its use must be determined before any reliable measurements for tissue can be ascertained.

Variables, such as the initial curvature in a sample, the calibration of the bending bar, and placement of the tracking dots, affect the final conclusions. The verification of the accuracy of the results was done by testing a tissue scaffold as well as several tissue samples. The effective modulus of elasticity (E) for each sample aligned with published data, indicating a reliable device.