

Abstract Submitted
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Mechanical properties of human cancer cells XINYI GUO, KEITH BONIN, MARTIN GUTHOLD, Wake Forest Univ — Here we plan to report on the elastic Young's modulus E measurements of individual cells from a cell line that has normal, immortal, and tumorigenic cells. The Young's modulus is measured using an atomic force microscope (AFM) with a spherical tip of $5.3 \mu\text{m}$ in diameter. Results demonstrate that a cell's environment influences its stiffness, and that cells become softer as they get to the most advanced transformed stage. The Young's modulus measurements were made on cytoplasm and on nuclear regions (in all 3 types of cells) to how the modulus depended on cell region. We also measured cells in three different environments: isolated, at the periphery of a colony, and in the middle of a colony. We will report results on all three cells in the three different environments and for both cell regions.

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