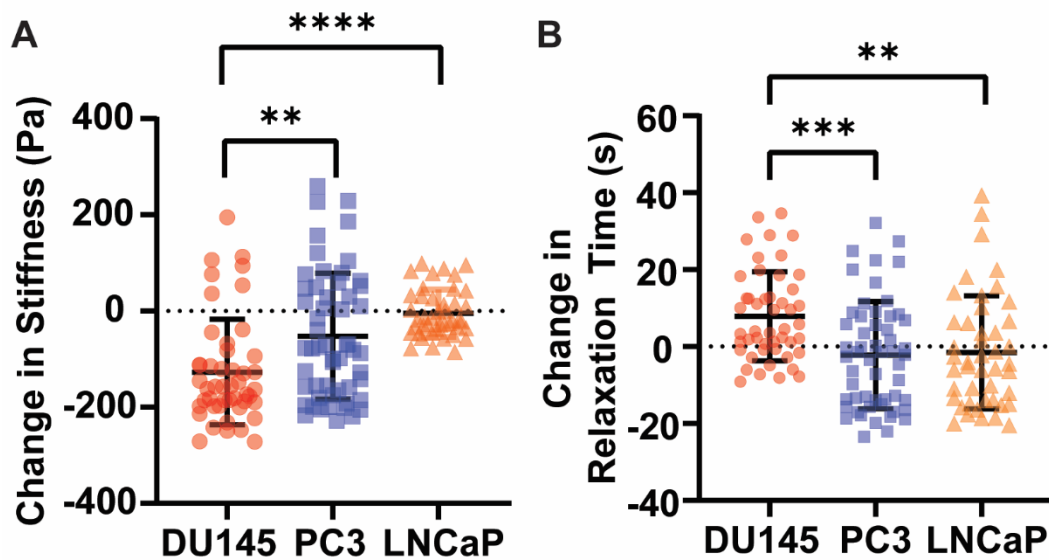


**Figure S1 – Flow cytometry scatter plot gating examples.** Forward and side scatter gating to isolate cells from debris. **A)** example flow cytometry gating of scatter and histogram plots of AV/PI stain, **B)** cell membrane damage/repair (same gating method was used for dextran cell membrane damage measurements), **C)** dextran-PI cell fate tracking, and **D)** LAMP-1 surface staining for DU145 static controls.



**Figure S2 – change in biophysical properties of cancer cells after treatment with 10 pulses of FSS. A)** Change in cancer cell stiffness in response to FSS treatment (DU145 – n = 46; PC3 – n = 54; LNCaP – n = 41), and **B)** change in viscoelastic relaxation time following FSS exposure (DU145 – n = 48; PC3 – n = 54; LNCaP – n = 45). Mean and S.D. shown. N = 3 independent experiments of stiffness and relaxation time. \*\* p < 0.01, \*\*\* p < 0.005, \*\*\*\* p < 0.001. Unpaired two-tailed t test was used to compare groups.