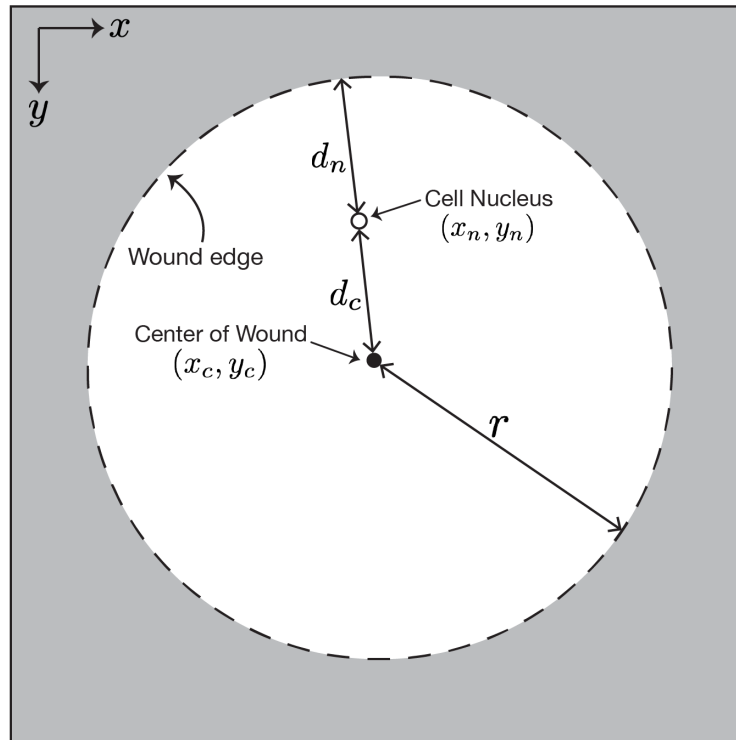
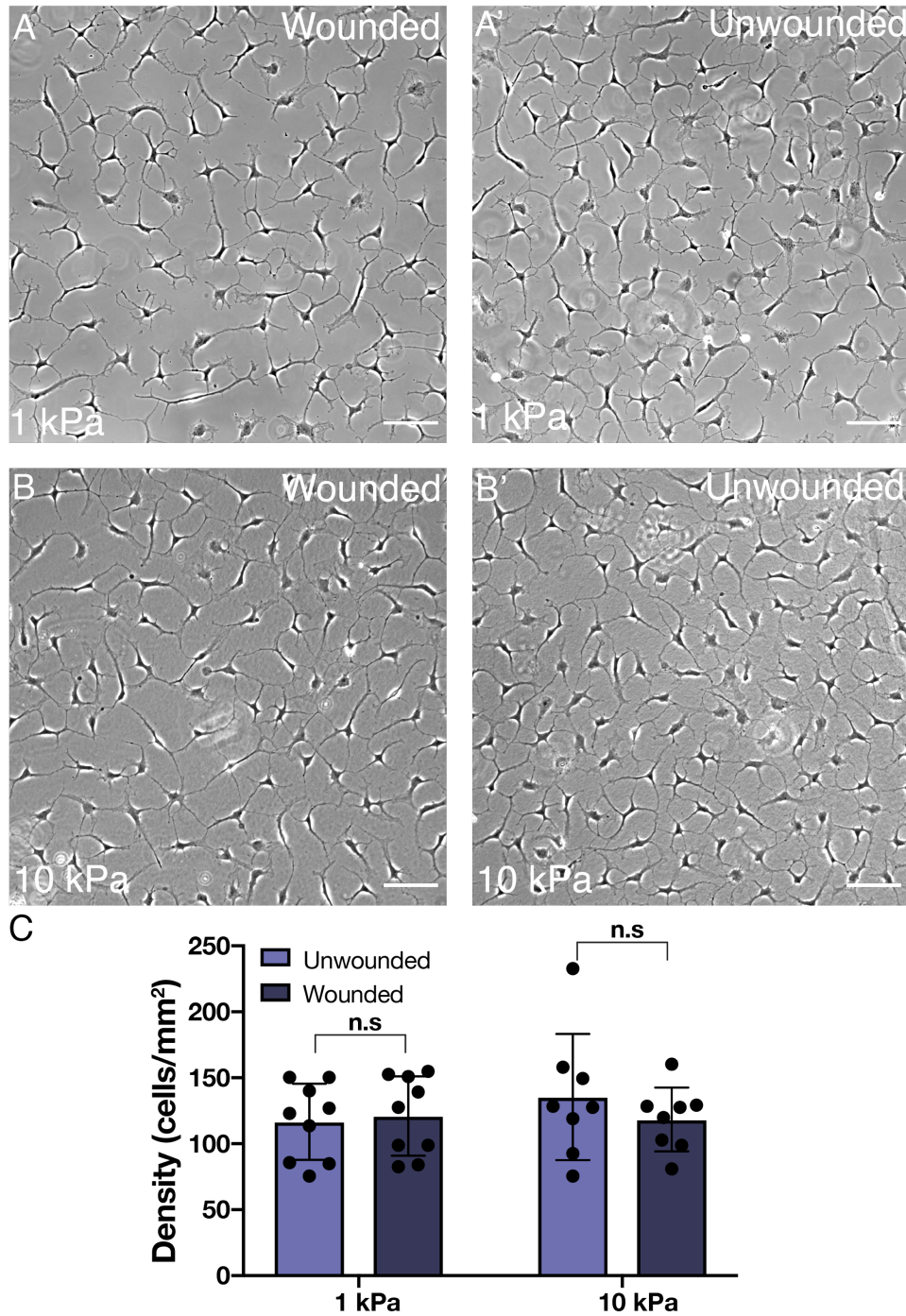


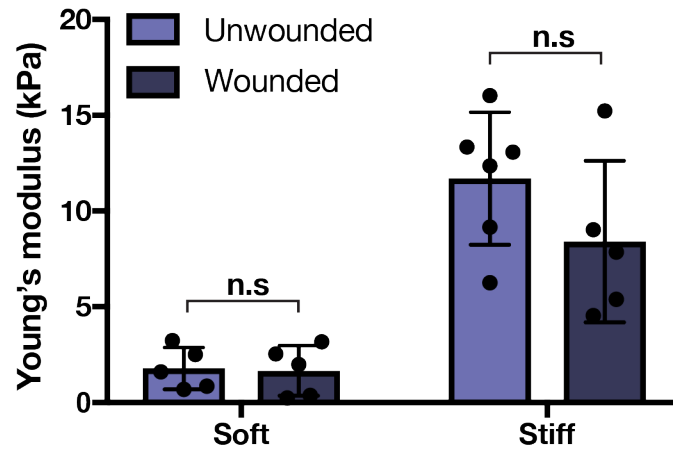
## Supplementary Figures



**Fig. S1: Schematic depicting the strategy used to compute the distance  $d_n$  of each cell nucleus from the initial wound border.** For a circular wound of radius  $r$  with center coordinates given by  $(x_c, y_c)$ , the distance from the wound border  $d_n$  for a cell nucleus located at  $(x_n, y_n)$  is given by  $d_n = r - \sqrt{(x_n - x_c)^2 + (y_n - y_c)^2}$ .



**Fig. S2: Freeze injuries do not disrupt cell attachment on PA substrata.** (A-B) Phase contrast images of keratocytes plated onto either wounded (A,B) or unwounded (A',B') regions of either soft (1 kPa) or stiff (10 kPa) PA substrata. Scale bars, 100 μm. (C) Quantification of cell density following plating on either wounded or unwounded regions of the PA gels. Error bars represent mean ± s.d. for n = 9 substrates from 3 experimental replicates. A two-way ANOVA with a Tukey post-hoc test was used to evaluate significance among groups (n.s., not significant).



**Fig. S3: Freeze injuries do not alter the mechanical properties of PA substrata.** Quantification of the measured Young's modulus in wounded and unwounded regions of either soft or stiff PA substrata. Note that there are no significant differences between wounded and unwounded regions of either gel. Error bars represent mean  $\pm$  s.d. for  $n = 6$  substrates from 3 experimental replicates. A two-way ANOVA with a Tukey post-hoc test was used to evaluate significance among groups (n.s., not significant).

## Supplementary Movies

**Movie S1:** Representative time-lapse movie of aggregate cell motion into the decellularized wound within a thin region of interest on a soft (1 kPa) PA substratum in serum-free conditions. Scale bar, 100  $\mu\text{m}$ .

**Movie S2:** Representative time-lapse movie of aggregate cell motion into the decellularized wound within a thin region of interest on a soft (1 kPa) PA substratum in the presence of PDGF-BB. Scale bar, 100  $\mu\text{m}$ .

**Movie S3:** Representative time-lapse movie of aggregate cell motion into the decellularized wound within a thin region of interest on a stiff (10 kPa) PA substratum in serum-free conditions. Scale bar, 100  $\mu\text{m}$ .

**Movie S4:** Representative time-lapse movie of aggregate cell motion into the decellularized wound within a thin region of interest on a stiff (10 kPa) PA substratum in the presence of PDGF-BB. Scale bar, 100  $\mu\text{m}$ .

**Movie S5:** Representative time-lapse movie of aggregate cell motion into the decellularized wound within a thin region of interest on a collagen-coated glass coverslip in serum-free conditions. Scale bar, 100  $\mu\text{m}$ .

**Movie S6:** Representative time-lapse movie of aggregate cell motion into the decellularized wound within a thin region of interest on a collagen-coated glass coverslip in the presence of PDGF-BB. Scale bar, 100  $\mu\text{m}$ .