

Regulation of cell fate and integrity by nuclear mechanotransduction

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Cells are constantly subjected to a spectrum of mechanical cues, such as shear stress, compression, differential tissue rigidity, and strain, to which they respond to by engaging mechanisms of mechanotransduction. These forces function as important morphogenetic cues that are transmitted to the nucleus to alter genetic programs. On the other hand, excessive mechanical stresses have the potential to damage cells and tissues. In my presentation I will discuss our recent research on how dynamic changes in chromatin organization in response to force change the mechanical properties of the nucleus and chromatin to prevent damage, as well how cells can adapt to differential force environments by changing their structure.

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