

## COLLAGEN ORGANIZATION IN THE UTERINE CERVIX DURING PREGNANCY

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Preterm birth (PTB) presents a serious, worldwide medical health concern. The incidence of PTB in both developed and developing countries ranges from 11% to 18%. Despite ongoing research into the causes and treatments, the incidence of PTB has not shown any significant decline in the past decade. Part of the lack of treatment for PTB is due to a paucity of accurate and quantifiable methods for predicting time to labor onset. We utilize a polarization-sensitive optical imaging approach to specifically assess cervical collagen changes during pregnancy, which are hallmarks associated with PTB. Collagen organization at various time points was analyzed in a mouse model showing a direct relation between loss of collagen organization and pregnancy timeline. This work responds to the critical need of the general healthcare community for a minimally invasive modality to monitor cervical remodeling during pregnancy as a readout of preterm birth risk.