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<b>Title:</b>	213 nm Wavelength in Refractive Surgery
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<b>Purpose:</b>	To address practicality and safety of 213nm in corneal refractive surgery.
<b>Methods:</b>	Comparisons between ablation characteristics and DNA damage with solid state 213nm and excimer 193nm were done. Cytotoxicity, mutagenicity and free radical production of 213nm in comparison to 193nm and 266nm were studied in rabbit eyes. Amount of apoptosis, live cell proliferation and endothelial cell counts in post-lasered corneas were studied in relation to 213nm and 193nm. Absorption characteristics of 213nm and 193nm in Balanced Salt Solution (BSS) and Sodium Chloride (NaCL) were studied.
<b>Results:</b>	Ablation characteristics, DNA damage, Cytotoxicity, Mutagenicity and Free radical production were similar in 213nm and 193nm lasered corneas. Highly significant differences in Sparsely Labelled Epithelial Cells and Keratocytes were found in corneas lasered with 266nm. Endothelial cell counts were similar after 12 months following laser refractive surgery in human corneas with 213nm and 193nm. Apoptosis was similar but there was a significant number of live cells found following 193nm ablation, suggesting more inflammation with 193nm. The absorption coefficients in BSS and NaCL were much lower for 213nm than 193nm.
<b>Conclusion:</b>	Histological characteristics showed great similarity between 213nm and 193nm. 213nm proved to be more effective as it produced less inflammation and has low absorption coefficients in BSS and NaCL. This makes 213nm an effective alternative wavelength for safe, stable and predictable corneal refractive surgery.