



## AB005: Anatomical and optical changes during the development of myopia

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**Abstract:** Myopia is not only a serious problem in Hong Kong, but is a rising global phenomena. It is predicted that by 2050, 49.8% of the world's population will have myopia with approximately 900 million people developing high myopia. High myopia is associated with the development of staphyloma, lacquer cracks and myopic macular degeneration, and is a leading cause of profound blindness. Understanding how high myopia develops and its relationship to myopia susceptibility is critical for the development of appropriate treatments. Animal models have provided insight into the possible underlying mechanisms, and are useful for testing potential treatment options. We have developed a mammalian model of myopia using the guinea pig in which eye growth is manipulated through classical aberrant visual input. This talk will review some of the major insights gained from such models and present new data on the anatomical and optical changes associated with the progression of myopia. This includes the effect of blur exposure on the optical development of the eye, the transition between myopia and high myopia development, and the potential impact of scleral treatments for high myopia.

**Keywords:** Myopia; cross-linking; optical development, optic nerve; glaucoma; animal models

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