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**A New Model for the Suction Pressure Under the Contact Lens<sup>1</sup>**

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We study the dynamics of the contact lens to better understand how the design of the lens can be optimized for patient comfort and ocular fit. When a contact lens is inserted on an eye, it is subjected to forces from both the tear film in which it is immersed and the blinking eyelid. In response, the lens bends and stretches. These forces center the lens, and they produce the suction pressure that keeps the lens on the cornea. In this presentation, we couple fluid and solid mechanics to determine the most prominent forces acting on the lens. We present a mathematical model that predicts the suction pressure. We explore the influence of contact lens properties on the suction pressure.

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