

Abstract Submitted
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Experimental study of the aeroacoustic-aeroelastic behavior of model vocal folds¹ ELIZABETH CAMPO, ARL Penn State, ERNESTO CAMARENA, Purdue University, MICHAEL KRANE, ARL Penn State — The effect of vocal fold body stiffness and bilateral asymmetry was studied using a life-size physical model of the human airway using interchangeable silicone rubber models of the human vocal folds. The two layer vocal fold models are comprised of an inner body layer and an outside cover layer. The following measures were used to assess the effect of body stiffness and asymmetry: radiated sound power, phonation threshold pressure and aeroacoustic source strengths. Results obtained from the human airway model compared favorably with behavior observed in human subjects. Furthermore, the results reveal that the asymmetric cases required a higher subglottal pressure to initiate phonation and radiated less intense sound, in comparison to the symmetrical configuration.

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