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A piecewise mass-spring-damper model of the human breast

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Abstract (250 words)

Previous models to predict breast movement whilst performing physical activities have, erroneously, assumed uniform elasticity within the breast. Consequently, the predicted displacements have not yet been satisfactorily validated. In this study, real time motion capture of the natural vibrations of a breast that followed, after raising and allowing it to fall freely, revealed an obvious difference in the vibration characteristics above and below the static equilibrium position. This implied that the elastic and viscous damping properties of a breast could vary under extension or compression. Therefore, a new piecewise mass-spring-damper model of a breast was developed with theoretical

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