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MMA: The fight against obstructive sleep apnea

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MMA: The fight against obstructive sleep apnea.

Obstructive Sleep Apnea (OSA) occurs when an individual's airway self-obstructs during sleep. Affecting billions worldwide, OSA is more than severe snoring resulting in daytime sleepiness. People with OSA are generally less healthy and are more likely to develop a myriad of disorders that are known collectively as Metabolic Syndrome. Symptoms are wide but include depression, respiratory distress, and high blood pressure. One solution to OSA is maxillomandibular advancement surgery (MMA), involving upper and lower jaw (maxilla and mandible) repositioning resulting in a wider airway. The mechanism of MMA and reduction of OSA is unclear. This project will simulate breathing in cadavers who have undergone MMA. Cadaveric surgery offers multiple opportunities to adjust the jaw incrementally. Modelling breathing at differing MMA advancements, we will directly measure resistance generated within the airway. Measuring MMA advancement and airway resistance is novel, we predict a linear relationship and forthcoming clinical applications.