

Standardization of Malaysian adult female nasal cavity

ABSTRACT

This research focuses on creating a standardized nasal cavity model of adult Malaysian females. The methodology implemented in this research is a new approach compared to other methods used by previous researchers. This study involves 26 females who represent the test subjects for this preliminary study. Computational fluid dynamic (CFD) analysis was carried out to better understand the characteristics of the standardized model and to compare it to the available standardized Caucasian model. This comparison includes cross-sectional areas for both half-models as well as velocity contours along the nasal cavities. The Malaysian female standardized model is larger in cross-sectional area compared to the standardized Caucasian model thus leading to lower average velocity magnitudes. The standardized model was further evaluated with four more Malaysian female test subjects based on its cross-sectional areas and average velocity magnitudes along the nasal cavities. This evaluation shows that the generated model represents an averaged and standardized model of adult Malaysian females.

Keyword: Nasal cavity model; Adult Malaysian females; Caucasian model; Nasal cavity