

DEVELOPMENT OF A 3-D CAD MODEL OF HUMAN MANDIBLE

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The purpose of this project is to develop a three-dimensional CAD model of human mandible to be used in stress analysis using computer aided engineering. A composite model of an average size human mandible was employed and using a digital caliber, its various dimensions were measured and applied in the Inventor program to create the computer model. In this initial model, we did not include the mandibular teeth in our model and only modeled the bone that forms the lower jaw. However, after refining the model to a realistic shape and size, a simplified 3-D model of a single tooth will be assemble to it. Using the three-dimensional printer (prototyper) located at the VSU engineering lab, we will create a solid model of the system and then it will be subjected to simulated biting forces to determine the magnitude and directions of the stresses developed within the mandible.