

DESIGN PROCESS OF CUSTOM-MADE FEMORAL STEM PROSTHESIS

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Keywords: custom made, femoral stem prosthesis, Mimics, design, simulation.

The longevity of cementless total joints can be increased by improving implant-bone fit. This paper describes one method to generate a 3D femur model with the help of X-ray computerized tomography. The femoral medullar canal shape was used for the design of the stem prosthesis. A set of three stems were design and simulated in order to decide which one is the most suitable for the patient. The resulted implant design optimizes load transfer and minimizes stem motion within a given bone.



Fig.1. Reaction force H_y .

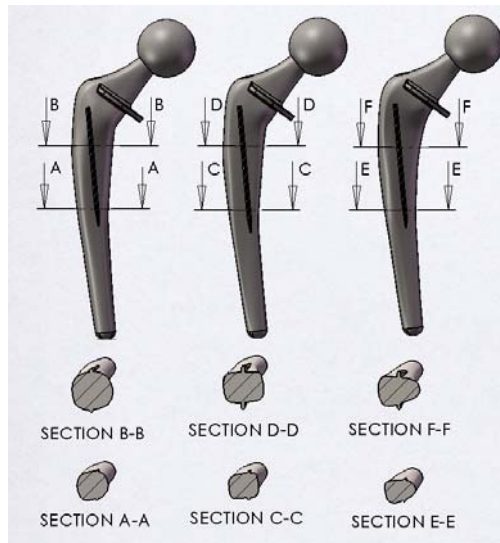


Fig.2. Prosthesis design sections.

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