3D Printing of Aortic Models to Improve the Informed Consent Process

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Abstract Id: ***52*** *Submitted:* ***February 2, 2017*** *Event:* ***The Houston Aortic Symposium: Frontiers in Cardiovascular Diseases, the Tenth in the Series*** *Topic:* ***Aortic***

This abstract refers to a study protocol. Aims of the study will be to assess the impact of 3D-printing, during informed consent process for aortic surgery, in improving patients' understanding and to validate a questionnaire measuring understanding in this setting. This pilot study will include ten patients undergoing elective thoracic endovascular or open aortic repair. Through computed-tomography-angiography imaging processing, a 3D modular aortic model will be designed and 3D-printed for each patient. The model will be displayed to the patient, including an endograft deployment demonstration, to assist medical disclosure and informed consent process. Patients will be asked to respond a questionnaire before and after the 3D model demonstration to measure any change in disease and treatment understanding. A seven-item questionnaire, revised by experts in vascular surgery for content validity, will be pilot tested for principal-component-analysis. Differences between positive and negative wording and test-retest reliability will be analyzed. Demographics and level of education will be recorded.