

**DESSAVALVE:
Patient-Specific Modelling of the Aortic valve replacement:
Advance towards a Decision Support System**

ADRESSED PATHOLOGY: Heart valve failure

GENERAL OBJECTIVE:

Development of a dynamic high-resolution CT-based and 3D echocardiography-based imaging protocol to assess the state and condition of the valves and aorta before the surgery. Novel preoperative image-derived measurements will be defined and validated intra-operatively, establishing which image type is reliable and suitable for the preoperative aortic analysis. A general comparison between different prosthetic valve types, and a definition of a protocol for patient-specific 3D echocardiography-based and CT-based computational modeling of the valves and the aorta, will be performed. Prediction of valve replacement effects and pathological distortions will be assessed by means of numerical simulations.

PARTICIPANTS:

Mauro Malvè, GEMM-I3A

María Jesús Ledesma Carbayo, BITG-UPM

CLINICAL/ EXTERNAL GROUPS:

Luis Martí Bonmatí, *Instituto de Investigación Sanitaria La Fe*

Leopoldo Pérez Isla, *Hospital Clínico Sant Carlos*

Ignacio García Fernández, *Universitat de València*