



Stratification, Management, and Guidance of Hypertrophic Cardiomyopathy Patients using Hybrid Digital Twin Solutions

SMASH-HCM sets out to develop a digital-twin platform to improve Hypertrophic cardiomyopathy stratification and disease management for patients and clinicians.

CONCEPT



Personalised HCM treatment planning and decision support for clinicians. Development of patient-facing tools for education, self-management, and empowerment, enabling patients to take an active role in their health journey.



Create better tools for deep phenotyping, understanding of the mutations that causes HCM genotype and their effects. Uncover the mechanisms that connect genetic origins, structural alterations, and functional phenotypes.



SMASH-HCM multilevel platform

Multi-scale, multi-organ digital twin technologies for cost-efficient clinical decision making and disease management

HCM Platform

Modelling platform for HCM research

STRATIFICATION

Identifying high-risk patients for tailored management strategies

PERSONALISATION

Customised treatment plans based on patient-specific models

COORDINATION

Integrating care from diagnosis to long-term management

EMPOWERMENT

Equipping patients with knowledge and tools for self-management

CLINICAL IMPACT

SMASH-HCM aims to create advanced tools for deep phenotyping and understanding the mutations that cause HCM genotype and their effects. The project will uncover the mechanisms that connect genetic origins, structural alterations, and functional phenotypes in HCM patients, enabling more precise diagnosis and targeted therapies.


HCM RESEARCH

SMASH-HCM integrates data-driven and biophysical modeling approaches and combines different clinical research areas. Researchers will develop detailed biophysical in-silico models and build patient-specific digital twin models that capture molecular mechanisms affected by HCM, which will enable the exploration of disease pathways.

In a Nutshell...



smash-hcm.eu

SMASH-HCM 

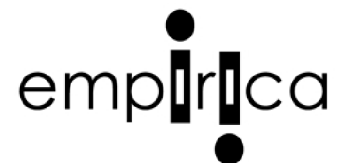
jari.hyttinen@tuni.fi 

Duration January 2024 - December 2027 (48 months)

Budget €8 Million

Coordinator Tampereen Korkeakoulusaatio SR

Consortium 11 beneficiaries, 2 affiliated entities and 2 associated partners, 7 countries



**POLITECNICO
MILANO 1863**



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA



Affiliated entities



Azienda
Ospedaliera
Universitaria
Careggi



Associated partners



PHARMATICS



DEPARTMENT OF
**COMPUTER
SCIENCE**

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