



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



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Duration	January 2024 - December 2027 (48 months)
Budget	€8 Million
Coordinator	Tampereen Korkeakoulusaatio SR
Consortium	12 beneficiaries, 2 affiliated entities and 2 associated partners, 7 countries



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Affiliated entities



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Associated partners



PHARMATICS



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This project has received funding from the Horizon Europe research and innovation programme under grant agreement number 101137115

