SMASH HCM

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 cardioyopathy stratification and disease management for patients and clinicans.

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 managment

STRATIFICATION	PERSONALISATION	COORDINATION	EMPOWERMENT
Identifying high-risk patients for tailored management strategies	Customised treatment plans based on patient-specific models	Integrating care from diagnosis to long-term management	Equipping patients with knowledge and tools for self-management

HCM Platform

Modelling platform for HCM research

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 reaearch 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

smash-hcm.eu

SMASH-HCM

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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

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Université de Rennes

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UCD DUBLIN

CHU Rennes

UNIVERSITÀ DEGLI STUDI FIRENZE

UKE HAMBURG

InSilicoTrials

Affiliated entities

Azienda Ospedaliero Universitaria Careggi

Inserm Institut national de la santé et de la recherche médicale

Associated partners

PHARMATICS

UNIVERSITY OF OXFORD DEPARTMENT OF COMPUTER SCIENCE

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