

GEMINI – A generation of multi-scale digital twins of ischaemic and haemorrhagic stroke patients

**Digital twin in healthcare:** A computational simulation that predicts quantities of interest necessary to support decision-making within a specific context of use in healthcare.

## **OBJECTIVES SIGNIFICANCE** Tailor interventions to individual acute Develop and validate multi-organ digital ischemic stroke patients. twins (DTs) for acute strokes. WP6 Potential for reduction in time and Evaluate benefit of personalized acute costs for novel device development. ischemic stroke DTs in clinical practice. **Proof of concept** Clinical trial **Ethics** Implementation Patient specific **Personalised** WP 5 stroke models Pathophysiology **Physiology** Management WP 4 **WP 3** Etiology & prevention **Onset & treatment Ischemic** Hemorrhagic Disease progression stroke models stroke models WP 2 Multi-scale (patho) physiology models Utilizing existing models Developing new models Implementation of a personalized digital twin in stroke management Vascular, thrombus, and Results of treatment simulation in DT Digital 54% 62% 84% Stroke onset Comprehensive Stroke Informed treatment Center decision 2025 2028 2027 2029 Start of DT based Trial completion and First patient-specific DT Validated DT clinical trial evaluation

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