

Revolutionizing Patient Care

Consortium



A multidisciplinary approach for the stratification of patients with carotid artery disease

The Risk Stratification Tool: A Dynamic, Multilevel Approach to Patient Care

Integration of Complex Data

The risk stratification tool brings together an extensive array of data - from clinical information and imaging results to the results of multi-omics analyses - to deliver a holistic view of the patient's disease state.

Identification of High-Risk Patients

The tool allows us to pinpoint individuals or groups of patients at high risk of cerebrovascular events, supporting clinical decision making and potentially averting catastrophic health events.

Predictive Capability

Through advanced algorithms and machine learning, the tool can predict disease progression, aiding in timely medical intervention and improved patient outcomes.



Objectives

TAXINOMISIS Risk Stratification Tool

The 6 main objectives of the project are to:

1

Investigate the causal relationship of the major pathways and factors identified in symptomatic carotid artery disease

2

Study disease phenotypes and disintegrate them into endotypes according to specific pathobiological mechanisms

3

Integrate a computational model and an agent based model of plaque progression in the risk stratification tool

4

Perform a test for determining the presence of single Nucleotide Polymorphisms and predicting drug response

5

Evaluate the risk model of carotid artery disease stratification in an observational multicentre clinical study

6

Present a cost-effectiveness analysis

Three Levels of Modeling



02 | Blood Flow Simulations & Wall Shear Stress Calculations



- The second level of the platform leverages the power of computational fluid dynamics to simulate blood flow within the carotid artery.
- These simulations enable the calculation of wall shear stress, providing a more detailed understanding of the mechanical forces contributing to plaque buildup.

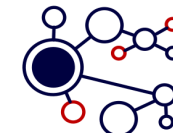
01 | Baseline Data-Driven Risk Assessment

- The first level of the TAXINOMISIS platform utilizes cutting-edge machine learning algorithms to analyze extensive datasets of patient information.
- By identifying patterns within this data, the platform can more accurately predict an individual's risk of developing Carotid Artery Disease.

03 | Plaque Progression Simulation



- The third level of the TAXINOMISIS platform employs computational models to simulate the progression of plaque over time.
- This predictive capability allows clinicians to forecast future plaque growth and identify patients who are at high risk of developing severe disease



TAXINOMISIS


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