ImaGene

Population Imaging Genetics

Integrating imaging and genetics for improved understanding of disease processes, and improved detection, diagnosis and therapy planning

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healthy

etiology

prediction

screening   diagnosis

diseased

population-based studies   clinical studies

POPULATION IMAGI... DISEASE   Erasmus MC

Risk factors:

Genetic

Blood pressure Smoking

Outcome:

Stroke Dementia

Required: tools for integrated analysis and interactive exploration   Erasmus MC GWAS

Data

Non-imaging data

ALLEN Brain Atlas

Prioritize Genes: Increase Power   Identify other candidate Genes

Spatial Co-expression of Genes

Imaging data

Structural measurements Structural/Functional Connectivity

Genes [~30,000]

Brain Structures [~1,000]