Automated Multimodality Image-based Classifiers for Early Detection of Alzheimer's Disease

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Netherlands

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Automated Multimodality Image-based Classifiers for Early Detection of Alzheimer's Disease

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ZonMw

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€ 458,611

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3

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Research Abstract
This project will combine modern, efficient pattern classification methods with integrated representations of multimodality data. Its main milestones are:
• to tailor pattern recognition methods to neuroimaging data by introducing optimal data structures that represent the common spatial structure of multimodality inputs;
• to train the software using an optimised normative multimodality imaging data set from the ADNI-2 cohort (N=550, controls and patients);

- to validate the clinical relevance of the resulting biomarkers in terms of reliability in a test-retest setting, and in terms of validity/generalisability in a cross-validation setting;
- to apply and validate these biomarkers in existing, ecological multi-modality imaging cohorts from
1. the VUmc (N=160 patients Alzheimer Center)
2. CITA-Alzheimer (N=480 elderly controls, recruited via the regional media);

- to quantify classifier accuracy by relating its outcomes to disease variables of amyloid-beta, tau, genetic and cognition data;
- to define, validate and test diagnostic patterns for various early stages of AD to facilitate clinical decision making;
- to develop a quantitative diagnostic tool for decision support and to assess its clinical value.

Further information available at:

http://www.zonmw.nl/nl/projecten/project-detail/automated-multimodality-image-based-classifiersfor-early-detection-of-alzheimers-disease/samenvatting/

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