TRIMAGE: A dedicated trimodality (PET/MR/EEG) imaging tool for schizophrenia

Summary / Zusammenfassung
Schizophrenia is a severe mental disorder that manifests early in life and imposes a high social and economic burden on European societies. An imaging tool that enables the diagnosis of schizophrenia during early development is extremely desirable and is requested by the clinical community in order to make the management of the disease more effective.

TRIMAGE aims to optimise and validate an integrated diagnostic solution including simultaneous PET/MR/EEG imaging and specific biomarkers to provide the clinicians an effective tool for the diagnosis and choice of treatment of schizophrenia and other mental health disorders.

Specific biomarkers using information from PET/MR, fMRI/EEG and PET/MR/EEG will be used to define the signature of the disease. The imaging hardware will be engineered with the intent of making the instrument a cost-effective and "beyond the state of the art" commercial product so as to provide a toolset for the diagnosis of patients in most clinical psychiatric centres.

The instrument will comprise a 1.5 T cryogen-free, very compact superconducting magnet, a PET insert based on silicon photomultiplier with better performances (2 mm FWHM spatial resolution, 14% sensitivity at the center of the field of view) than any available clinical PET scanner and a fully integrated EEG. The adopted technology will reduce cost, simplify safety management, improve patient comfort and boost performance with respect to state of the art MRI and PET brain imagers.

The tool design and construction requires scientific and technological developments in both the physical and medical fields: the work plan counts on the cooperation of highly qualified academic institutions and research centers with a major research and development contribution coming from four high technology European enterprises.

Weitere Informationen unter http://www.trimage.eu

Publications / Publikationen
Not yet available.

Keywords / Suchbegriffe
PET, brain PET, SiPM, MRI, fMRI, EEG, trimodality imaging, schizophrenia, brain disorders, mental disorders, biomarkers

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