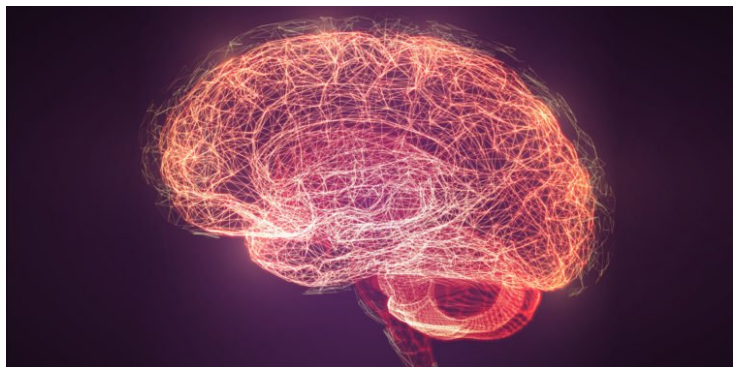


Partnership in Japan to develop novel imaging device for human brain

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The world's first high-sensitivity imaging device capable of operating at low frequencies with compact power supply, will facilitate diagnosis of pre-Alzheimer's



Mitsubishi Electric, Okayama University and Osaka University's Graduate School of Engineering, in Japan, have developed a magnetic particle imaging device capable of sensitive imaging of magnetic particles in an area equivalent in size to that of the human brain, in a project supported by the Japan Agency for Medical Research and Development (AMED).

The device operates at low frequencies of 1 kHz or less, a world-first, allowing the use of a significantly smaller power supply unit. The utilisation of this device to image magnetic particles that bind to amyloid- β , the causative agent of Alzheimer's, will allow the accumulation and distribution of amyloid- β to be quantified. The aim is to allow imaging-based assessments of the likelihood of Alzheimer's developing prior to the onset of the disease.

The number of dementia patients aged 65 and older in Japan is expected to reach 7 million in 2025. Significant statistical findings indicate that Alzheimer's accounts for 67.6% of these dementia cases. In June of this year, Japan enacted the Dementia Basic Law, aimed at advancing dementia prevention efforts.

In August, a panel of experts from Japan's Ministry of Health, Labour and Welfare gave a green light for the manufacture and sale of a drug that targets the accumulation of amyloid- β in the brain, a potential factor in the development of Alzheimer's, thereby inhibiting the progression of the disease. Initiating medication early during a phase of low amyloid- β accumulation in the brain has been shown to help suppress the onset of the disease. This underscores the necessity for technology capable of measuring both the accumulation and distribution of amyloid- β .