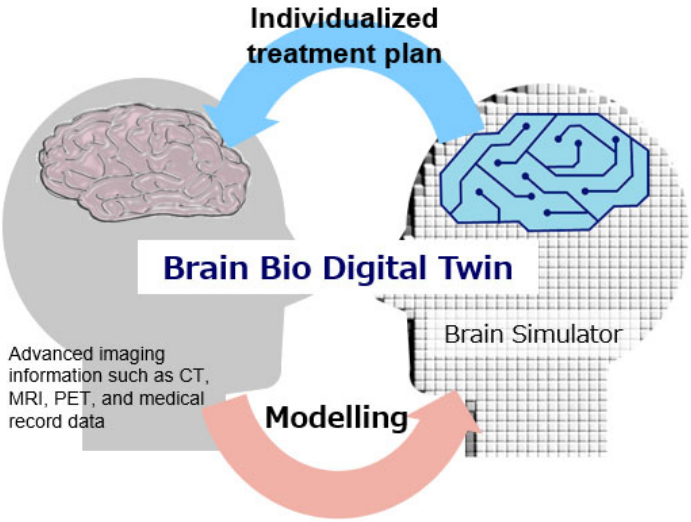
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ASIA EDITION

Japan to develop brain bio-digital twin technology

September 15, 2023 | News

To focus on the early detection and prevention of dementia, depression and other diseases



NTT Corporation and the National Center for Neurology and Psychiatry (NCNP), in Japan, have entered into a partnership agreement to develop “Brain Bio-Digital Twin” technology. The collaboration will focus on applying this groundbreaking technology to detect and prevent dementia, depression and other mental illnesses. NTT and NCNP will initially focus on practical applications of this technology that eliminate the need for invasive and costly testing of various brain diseases.

By implementing NTT’s Artificial Intelligence (AI) and Machine Learning (ML) technologies, the Brain-Bio Digital Twin technology has the potential to truly personalise medicine, helping to prevent medical errors and accelerate drug trials.

The Brain Bio-Digital Twin incorporates various types of body data obtained through medical examinations into a computer as digital data and enables the creation of detailed maps and biological models through digital twin computing technology. The practical application of the Brain Bio-Digital Twin will enable the "twin" to be used for testing, rather than the patient's own brain and nerves.

By bringing together accumulated data and knowledge, NCNP and NTT will begin to build a platform for processing Brain Bio-Digital Twin in FY 2024. In the next three years, the organisations plan to model several brain and nervous system functions and diseases. Subsequently, the organisations will cooperate with pharmaceutical regulations on pressing issues that require the development of effective therapeutic medicines and aim to create a practical system for the early detection and prevention of diseases; for example, accurately predicting an individual's risk for severe side effects before taking medications.