

Promotion of plasticity as a treatment for neurodegenerative conditions (PLASTICISE)

<https://www.neurodegenerationresearch.eu/survey/promotion-of-plasticity-as-a-treatment-for-neurodegenerative-conditions-plasticise/>

Title of project or programme

Promotion of plasticity as a treatment for neurodegenerative conditions (PLASTICISE)

Principal Investigators of project/programme grant

Title	Forname	Surname	Institution	Country
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Source of funding information

European Commission

Total sum awarded (Euro)

5199445

Start date of award

01-12-2008

Total duration of award in months

48

The project/programme is most relevant to

- Alzheimer's disease and other dementias

Keywords

plasticity,new animal models,macro/micro imaging,recovery of function

Research abstract in English

Neurodegenerative diseases all cause damage to the circuitry of the nervous system, with loss of connections, axons and neurons. The loss can be gradual, as in Alzheimer's disease, rapid as in stroke, or intermediate as in the delayed neuronal loss after stroke. Following damage, the nervous system is able partially to compensate through the formation of alternative connections and pathways, a process known as plasticity. Adults are therefore able to regain considerable function after stroke, and to compensate for the synapse and cell loss of Alzheimer's disease until it reaches a critical level.

Children undergo a period of enhanced plasticity in most parts of the CNS at the end of development, known as critical periods. During these periods their ability to compensate for damage to the CNS is in many cases much greater than in adults. The overall concept behind this application is that restoration of the function in neurodegeneration can be achieved through plasticity (the formation of new functional connections, withdrawal of inappropriate connections, modulation of synaptic strength). Promoting increased plasticity in selected parts of the adult nervous system back to the level seen in children is a powerful method of enhancing recovery of function in animal models. Plasticity-promoting treatments could therefore be beneficial in a wide range of conditions that damage the CNS.

The PLASTICISE project integrates scientists from four scientific areas

- Development of methods to promote plasticity
- Development of models of neurodegenerative disease
- Imaging of plasticity at the macro and micro level
- Study of recovery of function through plasticity in human patients with brain disorders. The concept that unites the partners is the belief that treatments that enhance plasticity will become one of key medications that will improve neurological function in the damaged human nervous system. The purpose of the project is to bring this moment closer.

Lay Summary