JPND research

EU Joint Programme – Neurodegenerative Disease Research

STRENGTH

Survival, Trigger and Risk, Epigenetic, eNvironmental and Genetic Targets for motor neuron Health

Amyotrophic lateral sclerosis (ALS) is a devastating neurological disease causing relentless and progressive paralysis. Most people die within three years of first symptoms when the muscles controlling breathing become too weak to work properly. ALS kills one in every 300 people and affects about 50,000 people in Europe at any time. It is a greatly feared diagnosis and is the commonest reason to seek assisted suicide. Finding a treatment that will slow, stop or reverse ALS is essential, but the design of new drugs is hampered by our lack of knowledge, and the tendency to consider all ALS as if it is a single, uniform disease.

The aim of STRENGTH is to discover factors that change the risk of ALS, trigger ALS or affect how rapidly it progresses, so that these can be used to target the design of new treatments.

To do this, STRENGTH uses a novel approach:

- Clinical features, laboratory findings and statistics are used to detect subgroups of ALS that might share risk, trigger or modifying factors in common
- Multiple layers of genetic, environmental and clinical information are analysed within each group.

STRENGTH consortium partners have DNA, exposure information and clinical information from people with ALS enrolled in pan-European population registers covering a population of about 120 million people. This is the largest such resource for studying ALS in the world and is unique because the information is population-based. STRENGTH takes advantage of existing projects such as the EU-FP7-funded *EuroMotor,* designed to help consortium partners collect large amounts of information, and the JPND-supported *SOPHIA*, which makes sure all information is collected the same way. By studying a large, well col- lected set of multi-layered data in a novel and powerful way, STRENGTH will find the factors that influence ALS, and identify targets for the design of new therapies.

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STRENGTH
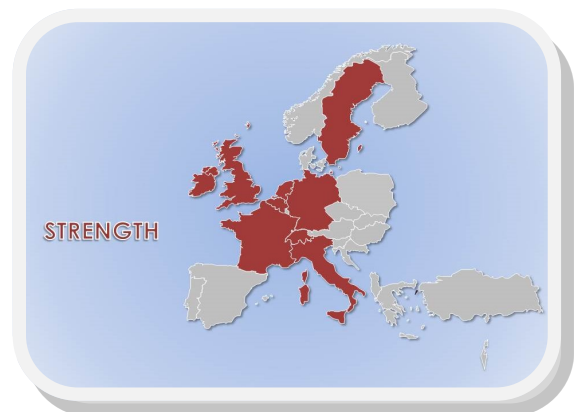
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* Contributions from participating JPND Member Countries are currently being finalised for this project