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THE NEW WAYS TO EXPLORE THE BRAIN FUNCTIONING

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The human brain is the command center for the human nervous system. It is made up of a large network of neurons and controls everything from senses to the muscles throughout the body. When the brain is damaged, it can affect many different things, including memory, motor function, sensation and even personality. Brain disorders include several rare diseases which currently have little to no effective measures of diagnoses and treatments.

In the EU, a disease is considered to be rare when the number of people affected is less than 5 per 10 000. There are more than 7000 rare diseases, most of them with a genetic basis. However, the exact cause for many rare diseases remains still unknown. A very rough estimate would be that one out of 10 persons could be affected by rare diseases with about 300 million people worldwide.

Rare diseases, also referred to as orphan diseases, are serious, often chronic and progressive conditions.

In the last decades, considerable attention has been paid to efforts to stimulates preclinical and clinical research in the field of these diseases, however basic knowledge remains still limited or not available for most of them. To date, neurological rare disorders are vastly underdiagnosed and effective treatment is often lacking or only symptomatic. A global effort is necessary in order to raise awareness and improve knowledge, aiming for earlier diagnosis and specific research programs to identify underlying molecular mechanisms and lead to possible new and/or alternative therapies.

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