During all stages of the project, the opinions from our Patient Advisory Board are taken into account. This board comprises an international group of patients and carers with experience in the three conditions, as well as representatives from relevant associations and organisations.

RADAR-CNS receives funding from the Innovative Medicines Initiative 2 Joint Undertaking under grant agreement No 115902. This Joint Undertaking receives support from the European Union's Horizon 2020 research and innovation programme and EFPIA. See www.imi.europa.eu for more details.

Disclaimer:
This communication material reflects the author's view and neither IMI nor the European Union, EFPIA, or any Associated Partners are responsible for any use that may be made of the information contained therein.

Project Partners
Remote Assessment of Disease and Relapse – Central Nervous System

Clinical Study Sites
- Major Depressive Disorder: King's College London, VUmc, Parc Sanitari Sant Joan de Déu
- Epilepsy: King's College Hospital, Uniklinik Freiburg
- Multiple Sclerose: Ospedale San Raffaele, Institut de Recerca Vall d'Hebron, RegionH

Contact information
If you have any questions about the project or would like to receive our newsletter, please contact info@radar-cns.org or visit www.radar-cns.org or Twitter: @radarcns
Studying major depressive disorder (MDD), multiple sclerosis (MS) and epilepsy

Major depressive disorder, multiple sclerosis and epilepsy are all disorders of the central nervous system. They can all have a significant harmful effect on a person’s well-being. The symptoms of each condition are different in every person and can change from day to day. Continuously measuring a person’s symptoms, mood and daily functioning could help people gain a better understanding of their condition and how it changes. This could help their healthcare team to design a more personal treatment plan and improve the management of the conditions.

About RADAR-CNS

Remote Assessment of Disease and Relapse in Central Nervous System Disorders (RADAR-CNS) is a major international research project. Clinicians, patients, researchers, engineers, computer and data scientists, from all over the world are working together to develop new ways of measuring factors and circumstances affecting patients with major depressive disorder, multiple sclerosis and epilepsy. RADAR-CNS aims to improve early detection of problems and potentially change how these, and other long-term disorders, are managed and treated.

Remote measurement

In recent years, the amount and the accuracy of data that we can collect using smartphones and wearable devices – for example, popular activity trackers such as FitBit - has rapidly increased. RADAR-CNS will use such devices, and other widely available technology, to collect data from people with these three specific conditions as they go about their daily lives.

With this data, clinicians will be able to monitor certain aspects of the symptoms which they could not measure in a hospital setting. This technology might collect information which could be used to alert both the participant and the clinician to an upcoming relapse. This would ensure early intervention and contribute to improving personalized healthcare and quality of life.

If this new way of measuring symptoms is proven to be effective, the ultimate goal is to make it available to as many people as possible.

Collection of information

Participants in the RADAR-CNS study will use devices and technology, which are best suited to them, to measure their symptoms in their home environment.

Information will be collected actively, for example by sending participants regular questionnaires.
on their mobile phone and asking them to answer questions about their daily activity and mood. Information will be collected passively by tracking the participant’s movement, step count, speech parameters and even the daily weather conditions. Both active and passive collection of information will help to create a complete picture of the participant’s health and well-being. All of this valuable information cannot be measured with standard hospital examinations.

**Clinical studies**

For the 3 conditions – major depressive disorder, multiple sclerosis and epilepsy – clinical studies have been set up across several research hospitals and universities in Europe. The studies will run for between 6 months and 2 years, depending on the condition.

**Major depressive disorder (MDD)**

This study aims to include about 600 participants with a history of depression. It will examine which daily measurements may help us understand current symptoms and, potentially, predict future relapses. The MDD study will run in London (UK), Amsterdam (The Netherlands) and Barcelona (Spain).

**Multiple sclerosis (MS)**

Two studies will be conducted with people who have MS. The first study will include about 240 participants. It will focus on measuring mood changes, particularly depressive feelings, in people with a recent diagnosis of MS. The second study will include about 400 participants. It will examine the changes and severity of disability and fatigue over time in people with relapsing remitting or secondary progressive MS. Studies for MS will run in Milan (Italy), Barcelona (Spain) and Copenhagen (Denmark).

**Epilepsy**

Due to the complexity of this disorder, a preparatory ‘pilot’ study will be performed in a hospital including about 200 participants. In this study, researchers will examine the possibility of using certain mobile devices to measure when seizures have happened.

In the next stage, the devices that show the best results will be used to monitor participants with epilepsy in their home environment. The aim will be to collect a set of daily measurements that can help predict and manage seizures at a distance. The epilepsy studies will run in London (UK) and Freiburg (Germany).
Patient Advisory Board
During all stages of the project, the opinions from our Patient Advisory Board are taken into account. This board comprises an international group of patients and carers with experience in the three conditions, as well as representatives from relevant associations and organisations.

Contact information
If you have any questions about the project or would like to receive our newsletter, please contact info@radar-cns.org or visit www.radar-cns.org or Twitter: @radarcns

RADAR-CNS receives funding from the Innovative Medicines Initiative 2 Joint Undertaking under grant agreement No 115902. This Joint Undertaking receives support from the European Union’s Horizon 2020 research and innovation programme and EFPIA. See www.imi.europa.eu for more details.

Disclaimer: This communication material reflects the author’s view and neither IMI nor the European Union, EFPIA, or any Associated Partners are responsible for any use that may be made of the information contained therein.
Clinical Study Sites

**Major Depressive Disorder:** King’s College London, VUmc, Parc Sanitari Sant Joan de Déu

**Epilepsy:** King’s College Hospital, Uniklinik Freiburg

**Multiple Sclerosis:** Ospedale San Raffaele, Institut de Recerca Vall d’Hebron, RegionH

Project Partners