

PMAS/21/06 - *Precision-MS*: Integrating Precision Metrics of Brain Health Into Early Treatment Of Multiple Sclerosis.

Multiple sclerosis (MS) is the leading cause of acquired neurological disability in young people, and rates of MS in some regions of Scotland are the highest in the world. Over the past decade there has been a revolution in the discovery of drugs for the treatment of multiple sclerosis. There are now at least 10 different drugs, each of varying strength. The strongest drugs are the riskiest, so choosing a drug of appropriate strength, and monitoring its effectiveness is very important. If MS is under good control then the risk of future disability is less.

However, the methods used to monitor activity of MS in Scotland are imprecise and variable. More precise and accurate ways of measuring MS disease activity are needed if we are to give the right treatment at the right time, to the right person.

The Precision-MS study will introduce precise measurements of brain health to people with MS, to help them make more informed treatment decisions about their disease. We aim to recruit 220 patients with newly diagnosed relapsing-remitting MS from different sites in Scotland, and generate precision measurements of MS disease activity. For example we will measure whether there has been any brain shrinkage on brain MRI scans, and will also see if we can detect brain proteins in a blood test. If brain shrinkage is detected, or brain proteins can be detected in the blood, then this can mean an increased risk of disability in the future. We will therefore make these results available to people with MS so they can make better informed decisions about treatment with their doctors.

We will carefully monitor how these more precise measurements of brain health help people with MS achieve better control of their disease. We will ask whether this approach reduces future risk of disability.

The ultimate aim is to make these precision tests widely available across Scotland and transform MS care. As part of the study we will build the expertise and structures to make these approaches available to all people with MS in Scotland.