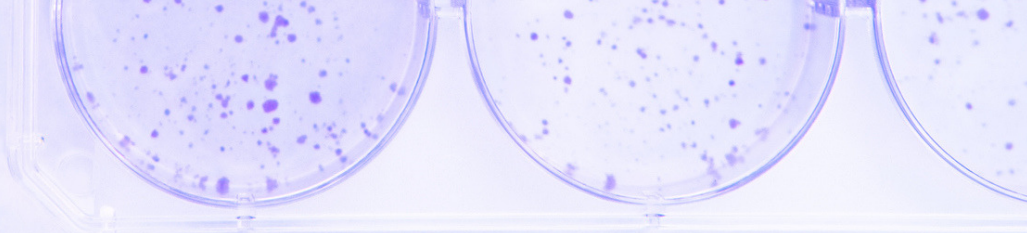




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Neurofilament light: a heavyweight biomarker for diagnosis in neurology and psychiatry

What is the problem?

Primary care physicians and specialists often have difficulty distinguishing between neurological and psychiatric disorders due to the overlap in symptoms. The availability of a simple blood test that gauges the degree of brain cell injury (high in neurological disorders, low in psychiatric disorders) would be invaluable for clinicians.

About this research translation project

Neurofilament light (NfL) is a brain cell protein that is released into the blood as a consequence of brain cell injury. The greater and more rapid the injury, the higher the levels of NfL. Our original study showed that we can distinguish neurological and psychiatric disorders by measuring NfL in cerebrospinal fluid obtained via a lumbar puncture. It is now possible to measure NfL in blood and to make this test far more broadly available, in particular to primary care. Our primary hypothesis is that blood NfL levels will be higher in patients with neurological disorders compared to patients with primary psychiatric disorders. We will measure blood NfL levels in a range of neurological and psychiatric conditions including from primary care, where there is clinical overlap and diagnostic uncertainty (young onset dementia, focal epilepsy, unexplained neurological symptoms, treatment resistant schizophrenia, movement disorders).

Patients will be recruited from specialist services that frequently see these patient groups across our partner hospitals and primary care in Practice-Based Research Networks. In the majority of participants we will obtain single NfL measures but we aim to obtain measures at two time points for a subsample of participants from epilepsy services (before and after seizures/episodes).

What will be the impact?

A simple screening blood test available to primary care and specialist physicians could dramatically alter clinical care: reducing the time to accurate diagnosis and allowing earlier, precision treatment, and reducing the need for expensive and time-consuming investigations, with positive outcomes for patients, families and the healthcare system.



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