Quanterix™

Neurofilament light **(NfL)**

NEUROLOGY

Plasma Neurofilament Light Chain (NfL) Assay

Neurofilament light (NfL) is a cytoskeletal intermediate filament protein that is expressed in neurons and associates with the neurofilament medium (NfM) and the neurofilament heavy (NfH) to form neurofilaments. Neurofilaments can be released in significant quantities following axonal damage or neuronal degeneration and NfL has been shown to be associated with traumatic brain injury, multiple sclerosis, frontotemporal dementia and other neurodegenerative diseases.

The need for a more sensitive method of measuring NfL, a critical biomarker associated with multiple sclerosis (MS), is becoming increasingly important as we continue to see a rise in this disease worldwide. Simoa® NfL blood test, with its Breakthrough Device designation, is seen by many as an ultra-sensitive, accurate, and non-invasive method to detect NfL proteins. Researchers can now push the boundary of detection well beyond the current limit, thus allowing the examination of critical proteins at ultra-low, even baseline, levels.

Solutions to Advance Your Research

OPTIONS OF SIMOA®:

- *Purchase assays for use on the Quanterix SR-X™, or Simoa HD-X Analyzer® platform*
- *Submit samples to our **Accelerator Laboratory** for analysis*
- *Choose between singleplex and multiplex assay options to measure NfL alone or in combination with other key neurology biomarkers*

BENEFITS OF SIMOA®:

- *Access biomarker data with unparalleled sensitivity and accuracy*
- *Study health and disease with a less invasive approach*
- *Transform the way we detect and diagnose diseases*
- *Advance scientific understanding of diseases like multiple sclerosis*

SR-X™ Biomarker Detection System
The first benchtop instrument to offer true multiplex detection at both acute and baseline levels.

HD-x Analyzer™
Delivering fully-automated ultra sensitive biomarker detection you can count on.

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Simoa® Technology Enables Best-in-Class Research to Advance Scientific Breakthroughs

Below represents a curated list of peer-reviewed publications where the Quanterix Simoa® NfL assay was used as part of a multiple sclerosis study.

Serum neurofilament light chain for individual prognostication of disease activity in people with multiple sclerosis: a retrospective modelling and validation study.
The Lancet Neurology
doi:10.1016/s1474-4422(22)00009-6

Longitudinal analysis reveals high prevalence of Epstein-Barr virus associated with multiple sclerosis.
Science.
doi: 10.1126/science.abj8222

Implications of extreme serum neurofilament light chain levels for the management of patients with relapsing multiple sclerosis.
Therapeutic Advances in Neurological Disorders
doi:10.1177/17562864211001977

Efficacy and safety of ofatumumab in recently diagnosed, treatment-naive patients with multiple sclerosis: Results from ASCLEPIOS I and II.
Multiple sclerosis (Houndmills, Basingstoke, England)
doi:10.1177/13524585221078825

Sustained reduction of serum neurofilament light chain over 7 years by alemtuzumab in early relapsing-remitting MS
Multiple sclerosis (Houndmills, Basingstoke, England).
doi:10.1177/13524585211032348

Serum NfL levels in the first five years predict 10-year thalamic fraction in patients with MS
Multiple sclerosis journal - experimental, translational and clinical
doi:10.1177/20552173211069348

MRI Lesion State Modulates the Relationship Between Serum Neurofilament Light and Age in Multiple Sclerosis
J Neuroimaging
doi.org/10.1111/jon.12826

Thebault S, Reaume M, Marrie RA, et al. High or increasing serum NfL is predictive of impending multiple sclerosis relapses
Multiple sclerosis and related disorders
doi:10.1016/j.msard.2022.103535

NfL predicts relapse-free progression in a longitudinal multiple sclerosis cohort study: Serum NfL predicts relapse-free progression.
EBioMedicine.
doi:10.1016/j.ebiom.2021.103590

Serum neurofilament light chain levels in healthy individuals: a proposal of cut-off values for use in multiple sclerosis clinical practice.
Multiple sclerosis and related disorders.
doi:https://doi.org/10.1016/j.msard.2021.103090

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