

Tracking concussion recovery with Neurofilament Light Chain

Objective evidence of neuronal injury



Neurofilament Light Chain (NfL) is a well-studied blood biomarker test now widely available through Labcorp for assessing neuronal damage from sports-related concussion.

Evaluating recovery in concussed patients has traditionally relied on subjective biophysical markers and patient feedback. NfL is an objective marker, giving direct insight into whether neurons are healing, and helping to provide insight for when a patient can safely return to play.

NfL at a glance

Neurofilament light chain (NfL) is a neuron-specific protein routinely released into the extracellular space. Serum NfL levels rise above baseline in response to neuronal injury and neurodegeneration. NfL has been widely studied for various conditions including sports-related concussion.¹ Studies have shown that NfL can be used, in conjunction with clinical observation, as a primary biomarker to assess return to play and work in concussed athletes and patients with head trauma.²⁻⁴

Test Interpretation

NfL levels in healthy patients and are known to increase with age.^{5,6} Labcorp has established reference intervals by age groups to facilitate interpretation of NfL results.

Test No.	Test Name
140455	Neurofilament Light Chain (NfL), Serum

For more details regarding specimen collection and test details, visit labcorp.com/test-menu.

References

1. Khalil M, Teunissen CE, Otto M et al. Neurofilaments as biomarkers in neurological disorders. *Nat Rev Neurol*. 2018;14(10):577-589.
2. Shahim P, Tegner Y, Marklund N, et al. Neurofilament light and tau as blood biomarkers for sports-related concussion. *Neurology*. 2018; 90:e1780-e1788.
3. McDonald SJ, O'Brien WT, Symons GF, et al. Prolonged elevation of serum neurofilament light after concussion in male Australian football players. *Biomarker Research*. 2021. 9:4.
4. Karantali E, Kazis D, McKenna J, et al. Neurofilament light chain in patients with a concussion or head impacts: a systematic review and meta-analysis. *European Journal of Trauma and Emergency Surgery*.
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6. Khalil M, Pirpamer L, Hofer E, et al. Serum neurofilament light levels in normal aging and their association with morphologic brain changes. *Nature Communications*. 2020; 11:812.

