SOP: Neurone Specific Enolase testing for prognostication of neurological outcome

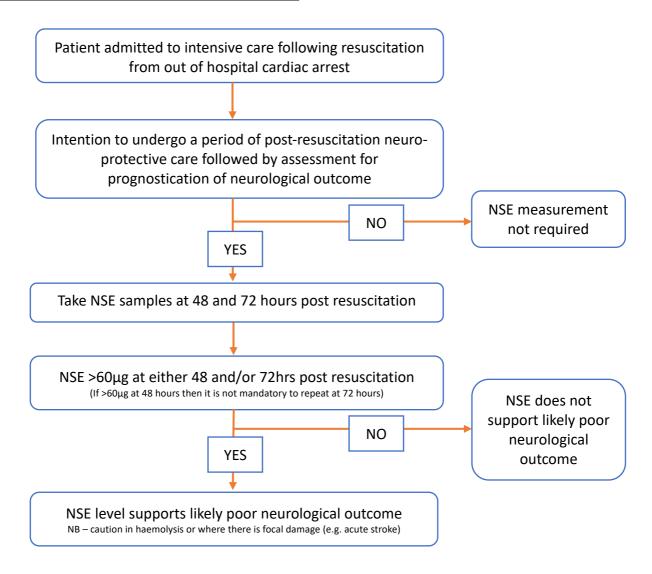
Context

Neurone specific enolase (NSE) is a biomarker used as part of multi-modal prognostication of neurological outcome in patients who remain comatose following successful resuscitation from out of hospital cardiac arrest. International guidelines published in 2021⁽¹⁾ recommend measuring blood NSE levels at 48 and 72 hours post resuscitation as a marker of neuronal damage.

NSE levels will not be used in isolation. Multi-modal prognostication includes two or more of: clinical assessment, brain imaging, multi-channel electro-encephalogram (EEG) recording and NSE measurement. NSE levels of $>60\mu g/L$ at 48 and/or 72 hours following resuscitation are considered to be supportive of a poor neurological outcome^(1,2) as part of this process.

The laboratory at University Hospital Wishaw provides NSE testing nationally for Scotland and samples must be sent away.

Patient selection and interpretation of results



Transferring samples for testing

Take a **brown top gel tube** and **hand write request form** including ICU telephone number and time of
sample collection

Send sample to lab by porter immediately and inform lab staff by telephone on:

RIE: 26824 (bleep 2221 OOH) WGH: 31898 (bleep 8452 OOH) SJH: 53160 (bleep 3728 OOH)

Sample to be centrifuged within 1 hour of collection.

RIE and SJH labs to arrange transfer to biochemistry lab at University Hospital Wishaw by same day courier

Samples received in NHS Lothian lab 07:00 – 17:00 to be centrifuged and couriered immediately.

Samples received between 17:00 – 07:00 to be centrifuged immediately, refrigerated and sent at 07:00 following day.

Result will be uploaded to NHSL Trak direct from UHW labs

NB/ will not appear in the e-workbench but will trigger an 'open book' & appear in biochemistry tabular results list

Samples should be taken as close as practical to 48 and 72 hours post resuscitation

(Sample stable for 2 days at 20 – 25*C)

Sample must be sent to the lab **by porter immediately**

(If the sample is not centrifuged within 1hr it will not be suitable for testing)

Laboratory staff must inform requesting clinician if sample rejected

Results will be available in Trak within 24 hours of taking sample

Date written: 02/05/2023 Date for review: 02/05/2025

<u>References</u>

- 1. Nolan et al. European Resuscitation Council and European Society of Intensive Care Medicine guidelines 2021: Post-resuscitation care. Intensive Care Med (2021) 47: 369 421
- 2. Sandroni C et al. Prediction of poor neurological outcome in comatose survivors of cardiac arrest: a systematic review. Intensive Care Med (2020) 46: 1803 1851