

Standards for EEG performed when NEAD forms part of the differential diagnosis

Video-EEG is the gold standard investigation for diagnosing non epileptic attack disorder (NEAD) and differentiating it from epilepsy. It can demonstrate the presence or absence of interictal epileptiform activity but is particularly helpful if it captures a typical attack. To enhance the diagnostic value of the test, it is therefore important to increase the chance of attacks occurring during the EEG recording. A UK survey conducted by the BSCN/ANS national audit group in 2016 showed significant variation in the use of stimulation and suggestion techniques when video-EEG is performed in patients in whom the differential diagnosis included epilepsy and NEAD. The prospective national audit project, based on data of 371 NEA recordings, showed that verbal suggestion had a marked effect in inducing NEAs and did not elicit non-habitual attacks. The more times suggestion was used, the higher the yield of attacks, with maximum seizure induction seen when suggestion was used three or more times. Clearly a balance must be struck between encouraging the patient to have a typical event without being untruthful or precipitating non-habitual attacks. These standards attempt to provide guidance on how to do this. The standards are intended for use where the EEG referral includes the possibility of NEAD (sometimes referred to as dissociative seizures, psychogenic non-epileptic seizures or pseudoseizures). However, standards 1-3, 5-8 and 10 are also applicable to epilepsy. The standards are not only based on the UK survey and prospective study but also on best practice identified in published literature.

Standard 1: The information sent to the patient prior to their appointment requests they are accompanied by a witness who has observed previous attacks.

Guideline: The information sent to the patient prior to their appointment requests video evidence of habitual attacks recorded on hand held devices to be brought and a copy of the video kept with the patient's records.

Guideline: The possible diagnoses of NEAD as well as epilepsy are mentioned in the patient information.

Standard 2: Consent for video recording is obtained at the start of the appointment and the video recording is initiated immediately afterwards and continues until the patient departs.

Standard 3: The recording physiologist obtains a clinical history from the patient/witness including a detailed description of the habitual attacks.

Guideline: The physiologist confirms the attack type with the patient/witness by repeating back to them the description. This confirmation of attack semiology by the physiologist is documented with the clinical history.

Standard 4: Verbal suggestion is used in adults and children aged 5 years and over

- The recording physiologist emphasises the importance of capturing a typical attack
- The possibility of activation techniques (photic stimulation and hyperventilation) inducing typical attacks is stated both before recording and again prior to each activation technique.
- The use of verbal suggestion is documented in the report including if verbal suggestion was used to encourage the attack to end.

Guideline: A standardised dialogue is used for verbal suggestion*

Standard 5: The EEG recording is continued for at least 5 minutes after the cessation of the final activation technique.

Standard 6: Additional staff are available to assist with patient/staff safety in case of attacks with severe motor manifestations.

Guideline: Additional staff are present for the duration of the EEG to improve likelihood of a clinical attack occurring.

Standard 7: During a non-epileptic attack, ictal testing is performed including tests of responsiveness (e.g. to verbal command) and avoidance testing (e.g. resistance to eye opening).

Guideline: The recording physiologist comments on any changes they perceive in a patient going into an attack as not all clinical observations may be apparent on video.

Standard 8: Confirmation that the recorded attack was of the habitual type is obtained from the patient and/or witness and this is stipulated in the report.

Guideline: The recording physiologist asks patients on recovery from the attack what they can remember of their attack and this is documented in the report.

Standard 9: The report describes the EEG appearances including the presence of alpha and other normal rhythms before, after and during the attack.

Guideline: The report compares the heart rate at the time of the attack with the preceding heart rate.

Standard 10: The semiology and approximate length of the captured attack(s) are described in the factual report.

*Example of standardised dialogue (this is not intended to be prescriptive and can be adapted to departmental requirements. It is merely included as a starting point for those who wish to use it. It could be equally appropriate for patients referred with NEAD or epilepsy.)

- *You have been referred so we can diagnose your condition and you can receive the right treatment*
- *To make the diagnosis it would be helpful to record one of your attacks*
- *We will ask you to do deep breathing and show you flashing lights*
- *This might help bring on one of your usual attacks by putting some stress on your system*
- *Please let me know if you feel your symptoms coming on during the EEG*