Hammersmith Neurological Examinations (Http://hammersmith-neuro-exam.com/)

FAQ (http://hammersmith-neuro-exam.com/faq/)

FREQUENTLY ASKED QUESTIONS

Below you'll find answers to the questions we get asked the most about the HNNE & the HINE. Most of the answers are included in the videos, and it is important to watch them more than once.

If you have a question that you cannot find the answer to, please use the contact form.

GENERAL QUESTIONS

01

Can I use the HNNE and the HINE in infants other than preterm or those born with HIE?

Yes these are neurological examinations that can be used in any infant and young child for documenting and recording their neurological status.

02

How often should I repeat the exam?

HNNE: This depends on whether you are dealing with an acute situation or a clinical visit. With an infant who is acutely ill the condition is changing rapidly and a daily exam would be needed. Similar advice applies to an infant who suddenly deteriorates. An exam shortly before discharge from the hospital and at term age when there is most normal data to compare is very useful.

HINE: On first review at around 3 months (or on referral) and on subsequent clinic visits – there is comparative normative data at 3, 6, 9, 12 and 18 months. The recording proforma can be used at any time – you do not need to wait for these standardised times.

03

How do I calculate a score if some items scores are missing

If you are undertaking a research project, then those responsible for the study need to decide on a consistent approach to missing items. It is possible to estimate a score allowing for missing items, but we recommend this should not be more than 5 items – after that it is better to exclude the case.

In a clinical context clearly doing this might lead to worrying clinical interpretation e.g. if the child did not fix or follow or suck feed – these are highly significant findings in themselves and calculating an overall score would not be helpful or in the child's interest. However, usually one missing item will not be crucial for deciding whether a child needs further follow-up or not, but it is always important to look at the overall pattern of findings and the clinical issues, not just the score. We encourage checking that the proforma is complete before the child leaves the clinic.

QUESTIONS ABOUT HNNE (NEONATAL EXAMINATION)

01

Can the HNNE be used in infants before term equivalent age (TEA)?

Yes, the exam and proforma can be used for recording the neurological findings at any age in infants of all gestational ages and also for recording sequential changes in neurological development. But there are no standardised normative data prior to 34 weeks gestational age to allow a strict description of normality for all combinations of gestation and post-natal ages, or scoring for the purposes of prediction of outcome.

Normative data for infants at term equivalent age are included in one of the proformas in the Proformas section. (http://hammersmith-neuro-exam.com/recording-scoring-proformas/) For infants born at 34-36 weeks gestation and examined in the first few postnatal days, normative data can be obtained from the article by Romeo et al (https://pubmed.ncbi.nlm.nih.gov/23380499/).

02

Up to what age can the HNNE be used?

The HNNE can be used up to 2-3 months post-term age for recording neurological findings. See the paper by Guzzetta A et al (https://www.karger.com/Article/Abstract/82977) in term infants showing that 6 weeks post-term age is an important milestone for changes in neurological development and the use of the scoring for defining normality and outcome prediction should not be used beyond this age. Please also see the paper by Spittle A et al (https://www.sciencedirect.com/science/article/abs/pii/S0378378215300621) on the use of the HNNE in the first months after birth in infant born between 32-42 weeks GA.

03

Why are there two different printed versions of the HNNE?

The test items in the two printed versions are exactly the same. One version (the earlier one from Dubowitz L et at J Pediatrics 1998;133:406-416) gives information on how to perform each of the different items on the left hand side of the page; it is better to use this version when you are starting out as you have a guide in front of you on how to carry out the exam. The other version from the later paper by Ricci et al (2008) does not give this information but on the right hand side of the page gives data relating to the normal ranges of findings for newborn term infants and also for infants born at different gestational ages when they reach term equivalent age. This version is more helpful when assessing whether the infant you are examining is performing within the normal range.

04

When can I use the short version of the HNNE?

This is used as a screening tool both for newborn term infants and for preterm infants at term age.

QUESTIONS ABOUT HINE (INFANT EXAMINATION)

When can the HINE start to be used?

01

There are normative data for the HINE from 3 months but it can be used for recording findings from 2 months. Between 3 and 7 months not all reflexes are fully developed and, in addition, control of posture matures, so it is important to take age into account when assessing the scoring and prediction of outcome. More detail about this is given in the video about examining younger children using the HINE.

02

Can the HINE alone be used to diagnose cerebral palsy?

The HINE is a neurological exam which will show the signs typical of cerebral palsy (CP). However to make that diagnosis the signs have to be interpreted in the light of the history, mode of presentation and preferably brain imaging findings (see diagnostic criteria for CP here (https://eu-rd-platform.jrc.ec.europa.eu/scpe/reference-and-training-manual_en)). Whilst cerebral palsy is the commonest single cause of neurological abnormality in young children it is extremely important to think about and to rule out other conditions e.g. genetic, metabolic, neuromuscular disorders that may lead to neurological abnormality.

In the context of cerebral palsy the scores from the HINE after 5-6 months can be used to predict the later ability to sit and walk. In general, the lower the scores the more severe the impairment and cerebral palsy. Scores for children with milder hemiplegia may be in the normal range but number of asymmetries and the asymmetry score developed by Hay et al 2018 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6320694/pdf/nihms-1506231.pdf) will help in suggesting this diagnosis.

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