FURTHER GUIDELINES FOR THRESHOLD ABR ASSESSMENT – issued by NBHSW Setember 2006 following discussion with John Day, Rhys Meredith and Michelle Dodd.

These guidelines have been issued for two reasons

1. To ensure that assessment data are collected in a consistent way across the NBHSW Divisions for audit purposes
2. To discuss the issues round further testing after a "pass result" has been obtained

The relevant protocol recommendations for data collection, recording, display and analysis should be followed in assessment of all NBHSW cases referred. If Auditory Dys–synchrony (Neuropathy) is suspected ensure that all information is recorded clearly.

1. <u>For comparison of ABR traces for audit purposes</u>

- In order to reduce the noise level the baby should be positioned at least 1.5 meters from electrical equipment. Short uncurled leads should be used. The background noise level should be down to 0.05 µ volts. The reject level should be better than +or- 10 µ volts.
- Latency should be 1ms/division.
- The recommended amplitude scale should be used and shown in µv/division clearly on each set of waveforms with wave V presented upwards.
- The stimulus type, frequency (if tone pip used) and level in dBnHL should be clearly labeled on waveforms. For bone conduction ABR results an age corrected stimulus level figure should additionally be recorded.
- Homogeneous stimulus and data acquisition parameters should be used (as per protocols) with consistent stimulus level steps (no more than 10 dB apart) and runs repeated as appropriate. As threshold is approached the steps should be 5dB apart and repeated.
- The number of sweeps collected and rejected should be noted on the traces and a comment about recording conditions presented. The number of sweeps used should be 1000 to 2000 as threshold is approached.
- Threshold is referred to as ≤ where lower level is not tested. i.e. when tested to 35dBnHL only.
- If the results are > 35 dBnHL in one or both ears (a fail result), an increment below the threshold must be recorded to mark threshold more clearly. If in doubt the level recorded as threshold must be 10dB higher to limit the error to 10 dB (a further pair of recordings).
- It is good practice to record with a non auditory stimulus or stimulus deemed to be well below auditory threshold to verify the recorded waveforms.

- When sending waveforms for audit purposes the subjects name must be omitted but all relevant other information such as gestation age, date of test etc must be provided.
- All ABR tests must be peer reviewed by an experienced audiologist who completes assessments for NBHSW. When peer review has been completed, it must be recorded with the original test results.

2. Further testing after a "pass result" has been obtained

There several reasons why it is suggested that further testing following a response at 35 dBnHL in both ears is carried out.

- It gives experience in looking for threshold
- It gives experience in other testing which will be required for babies that do not reach a pass result
- If you test at a lower intensity or complete bone conduction, it verifies the pass result

Testing should always be done in consultation with the parents and it will not be appropriate to carry on testing in all cases. However, Audiologists are encouraged to routinely test down to lower stimulus levels/use alternative stimuli unless contraindicated.
The reasons for stopping testing should be recorded.
i.e. satisfactory results obtained
parents do not wish further testing
baby restless

The options for further ABR testing are lower intensities than 35 dBnHL, bone conduction, 4 KHz tone pip and less usefully 1KHz tone pip.

The problem worth thinking about is that you may not obtain "normal results' if you further test after a "pass result" but for the reasons stated above it should be considered in all appropriate cases.

You must be familiar with correction factors and the limits of testing i.e. 4 KHz tone pip has a wide confidence interval below 40 dBnHL and any results obtained below this must be treated with extreme caution.

If necessary a further appointment should be offered at 7 – 8 mths to review the baby's hearing.

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Details of Outcomes of Initial Assessment: NBHSW

Outcome	ABR result A/C click stimuli	Result of Test	Action	Plan to be entered on assessment form
DNA after 2 appts (after 1st DNA – contact parents and HV if appropriate) Declined assessment	-	Non attender, test at 7/12	▪ Add name to TDT ▪ Provide report* ▪ Notify Professional Lead ▪ Letter No. 8 to parent and further appointment if requested (DNA only) ▪ Fill out assessment result form ▪ Letter No. 7 to GP and HV	DNA rebook
Attended test but no result	-	Unable to test – requires further assessment	▪ Verbal explanation to parent. ▪ Requires further assessment appointment ▪ Provide report* ▪ Note in parent held record ▪ Fill out assessment result form	Rebook
Definite result in one ear only	<= 35dBnHL	Pass assessment procedure in one ear but unable to test second ear.	▪ Verbal explanation to parent ▪ Requires further assessment or audiological follow up appointment/TDT ▪ Leaflet (Hints for Parents) if appropriate ▪ Provide report* ▪ Note in parent held record ▪ Fill out assessment result form	Not significantly deaf
Pass	Bilateral <= 35dBnHL With TDH ear phones	Pass	▪ Verbal explanation to parent ▪ Leaflet (Assessment- clear response) ▪ Add name to TIDT if fit criteria ▪ Provide report* ▪ Note in parent held record. ▪ Fill out assessment result form	Normal for the purposes of NBHSW
Fail	One or both ears >35 dBnHL	Further assessment procedures to be carried out	▪ Verbal explanation to parent, ▪ Requires further assessment or audiological follow up appointment/TDT ▪ Provide report* ▪ Note in parent held record. ▪ Consider carrying out advanced assessment with Professional Lead present ▪ Fill out assessment result form	Not significantly deaf Possibly deaf Significantly deaf

* Reports should be provided to Professional lead, Divisional Coordinator, GP, HV and Paediatrician on all cases where reports indicated except for cases when advanced assessment is indicated when the PL and DC only should be notified pending further results.