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**CENTRAL AUDITORY PROCESSING  
IN CHILDREN WITH A HISTORY  
OF NEONATAL JAUNDICE**

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## ABSTRACT

An experimental group (Group A) of 22 children around 7 years of age who had normal hearing for pure tones but who had experienced neonatal jaundice with peak bilirubin levels of at least 300  $\mu\text{mol/l}$  was tested on a range of audiological tests selected to assess aspects of their central auditory processing. Children who had not been tested for bilirubin level were selected as control subjects (Group B); they were matched on the variables gender, race, gestational age, birthweight, Apgar scores and occurrence of respiratory problems. A smaller experimental group, Group C ( $n=7$ ), with peak bilirubin levels between 250 and 299  $\mu\text{mol/l}$  but with perinatal complications was also studied. The experimental groups had higher mean acoustic reflex thresholds and lower mean reflex amplitudes than the control group. Acoustic reflex threshold patterns of abnormality consistent with central dysfunction occurred in two children from the main experimental group and two children in the control group. None of the children from Group C showed abnormal reflex thresholds. Acoustic reflex amplitude patterns of abnormality consistent with central dysfunction were present in six children from Group A and two children from Group C, compared with three children from the control group. Masking level differences were absent in five subjects from Group A and three children from Group C, compared with three control subjects. No group differences were evident for ABR latency or amplitude measures, but poor morphology or repeatability of wave V was observed in ten subjects from Group A and three children from Group C, compared with five children from the control group. A larger number of failures within the experimental groups was found for two of the four speech tests, that is, for interrupted and filtered speech tests, but not speech in noise or competing words tests. Five children from Group A (but none from Group C) performed poorly on the interrupted speech test, compared with two from

Group B. The filtered speech test was failed by six children from Group A and two children from Group C, compared with two from Group B. Parental reports of behavioural or learning disorders were distributed equally among the groups and were not associated with particular patterns of test failure. Overall, children in the experimental groups failed significantly more tests of central auditory functioning than did children in the control group ( $F(2,48)=5.5, p < .01$ ). The results were interpreted as implicating jaundice in long-term central auditory processing abnormalities.

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## CONTENTS

	Page
List of Figures	vii
List of Tables	viii
Introduction	1
Pathological effects of hyperbilirubinemia	6
Early research	6
Animal research	9
Short-term effects	11
Long-term effects	14
Treatment of hyperbilirubinemia	19
Gender differences	20
Central Auditory Nervous System	21
Ascending pathways	21
Descending pathways	26
Tests of Central Auditory Processing	28
Acoustic reflexes	30
Reflex measurement using immittance audiometry	30
Function of the acoustic reflex	31
Anatomy of reflex arc	34
Acoustic reflex response parameters	37
Acoustic reflex threshold	42
Acoustic reflex amplitude	50
Auditory brainstem responses	53
Neural generators of the ABR	54
Effects of peripheral pathology	57
Effects of CANS disorders	59
ABRs in children with learning difficulties	61
Middle latency responses	65
Neural generators of the MLR	65
Effects of peripheral hearing loss	67
Effects of CAP disorders	67
MLRs in children	67
Masking Level Differences	71
Stimulus parameters	72
Effects of peripheral hearing loss	73
Effects of CANS disorders	73
MLDs in children	75
Speech tests of CAP	76
Effects of peripheral hearing loss	77
Effects of CANS pathology	77
CAP speech test batteries	78
Interrupted speech	79
Filtered speech	81
Speech in noise	84
Competing words	85
The SCAN test	89
Study Objectives	91
Method	93
Development of database	93
Subject selection	95
Audiological test battery	99
Equipment	100
Test procedures	101
Data analysis	105

Results	
1. Pure tone audiometry	106
2. Tympanometry	106
3. Acoustic reflex thresholds	107
4. Acoustic reflex amplitude	108
5. Auditory brainstem responses	114
6. Middle latency responses	134
7. Masking level differences	140
8. Speech tests	141
9. Inter-test relationships	144
Behaviour problems	151
Effects of degree and duration of jaundice	151
Discussion	152
Subject selection	152
Effects of neonatal jaundice	153
Theoretical issues	156
Audiological test results	157
Acoustic reflexes	157
Auditory brainstem responses	161
Middle latency responses	162
Masking level differences	163
Speech tests	164
Relationships between test results	164
Conclusion	166
References	167
Appendices	183
A Analysis of perinatal database.	183
B Subject information sheet.	195
C NAC Interrupted Speech Test.	196
D Subject details.	197
E Results of analysis of variance.	215
F Relative amplitude data.	221

## List of Figures

	Page
1. Tonotopicity of the cochlear nuclei.	8
2. Ascending auditory pathways.	22
3. Descending auditory pathways.	27
4. Ipsilateral and contralateral acoustic reflex pathways.	35
5. The influence of AR amplitude on ART.	39
6. Effect of sensorineural hearing loss on AR amplitude.	41
7. Effects of eighth nerve and brainstem disorders on the acoustic reflex.	46
8. Description of five AR patterns.	47
9. Neural basis of ABR.	55
10. Correlation of neural centres with ABR waveform.	58
11. Example of MLR waveform.	66
12. Varieties of MLR waveforms in normals.	69
13. Detectability of MLR waves as a function of age.	70
14. Effect of interruption rate on speech intelligibility.	80
15. Effect of filtering on speech intelligibility.	83
16. Ear advantage in dichotic speech tests.	87
17. Distribution of PBLs among infants tested Feb 1982-Jan 1983.	94
18. Mean ARTs to stimuli presented contralaterally.	111
19. Mean ARTs to stimuli presented ipsilaterally.	112
20. Mean AR amplitude for contralateral stimuli.	116
21. Mean AR amplitude for ipsilateral stimuli.	117
22. Means for average AR amplitude (for stimuli 90, 100 and 110 dB HL).	120
23. Correlation between middle ear compliance and average AR amplitude.	121
24. Mean relative AR amplitude (in dB re compliance) for contralateral stimuli.	125
25. Mean relative AR amplitude (in dB re compliance) for ipsilateral stimuli.	126
26. Number of children with AR amplitudes below 1 dB. Presentation = contralateral.	128
27. Number of children with AR amplitudes below 1 dB. Presentation = ipsilateral.	129
28. Examples of AR amplitude for four subjects within Group A.	130
29. Examples of AR amplitude for three subjects within Group B.	131
30. Examples of two peripheral patterns of AR amplitude.	132
31. Percentage of children in each group with ABR morphological abnormalities on one or both sides.	137
32. Sample ABR traces from Group A.	138
33. Sample ABR traces from Groups B and C.	139
34. Mean number of test types failed for each group.	145
35. Percentage of each group failing different tests.	146
36. Mean number of test types failed by boys and girls in each group.	148
Appendices:	
A-1. Percentage of children with PBLs exceeding 250 $\mu\text{mol/l}$ as a function of gestational age.	186
A-2. Risk of deafness per 1000 births for various factors.	194
D-9. Sample MLR traces.	209



## List of Tables

	Page
1. Mean MLDs for 500 Hz tones.	72
2. Site of lesion and speech test performance.	79
3. Mean pure tone thresholds at audiometric frequencies.	106
4. Number of children with various tympanogram types.	107
5. Mean ear canal volume and compliance.	108
6. Mean ARTs for pulsed stimuli presented contralaterally.	109
7. Mean ARTs for pulsed stimuli presented ipsilaterally.	110
8. Number of children with absent ARs at 4000 Hz.	113
9. Number of children with various patterns of ART abnormality.	114
10. Mean AR amplitude (in ml/100) for contralateral stimulation.	115
11. Mean AR amplitude (in ml/100) for ipsilateral stimulation.	119
12. Mean average reflex amplitude.	119
13. Mean relative AR amplitude for contralateral stimulation.	123
14. Mean relative AR amplitude for ipsilateral stimulation.	124
15. Number of children with various AR amplitude patterns.	134
16. Mean ABR data.	135
17. Mean MLDs.	140
18. Mean interrupted speech scores.	141
19. Mean raw scores on SCAN subtests.	142
20. Mean standard scores on SCAN subtests.	143
21. Number of children showing abnormal ear advantages in the competing words test.	144
22. Factors contributing significantly to "prediction" of group.	149
23. Inter-test correlations for right ear data.	150
24. Inter-test correlations for left ear data.	150
A-1. Gender differences in incidence of jaundice.	183
A-2. Racial differences in incidence of jaundice.	184
A-3. Incidence of jaundice in various Pacific Island groups.	184
A-4. Incidence of jaundice with children of varying birthweights.	185
A-5. Incidence of jaundice in children with various maternal-infant blood-type combinations.	187
A-6. Percentage of each racial group with various maternal-infant blood-type combinations.	189
A-7. Percentage of positive Coombs test in children of different races.	189
A-8. Incidence of jaundice and maternal blood pressure post 20 weeks.	190
A-9. Incidence of jaundice and maternal smoking during pregnancy.	190
A-10. Perinatal data on 13 congenitally deaf children born at National Women's Hospital during Feb 1982-Jan 1983.	191
D-1. Details of all children identified from the database with PBLs of at least 300 $\mu$ mol/l.	197
D-2. Personal and perinatal details of subjects.	200
D-3. Some perinatal details of experimental subjects.	202
D-4. Summary of abnormal AR amplitude indices for each subject.	204
D-5. Summary of AR and MLD data for each subject.	205
D-6. Summary of ABR data for each subject.	206
D-7. Summary of ABR morphology for each subject.	207
D-8. Number of peaks and troughs recorded for each subject during MLR testing.	208
D-10. Summary of speech test data for each subject.	210
D-11. Data summary for each subject.	211
D-12. Summary of test failures for each subject	213
E-1. Analysis of variance results for pure tone threshold.	215
E-2. Analysis of variance results for middle ear compliance.	215
E-3. Analysis of variance results for ear canal volume.	215

E-4. Analysis of variance results for ART	216
E-5. Analysis of variance results for AR amplitude (ml)	217
E-6. Analysis of variance results for AR amplitude (dB)	218
E-7. Analysis of variance results for ABR I-III interval.	219
E-8. Analysis of variance results for ABR I-V interval.	219
E-9. Analysis of variance results for ABR relative amplitude	219
E-10. Analysis of variance results for MLD.	219
E-11. Analysis of variance results for interrupted speech.	220
E-12. Analysis of variance results for SCAN subtests.	220
F-1. Acoustic reflex amplitude (ml) to dB conversion table.	221