

Supplemental Information

SUPPLEMENTAL TABLE 5 MDI and IQ Scores Among Survivors With and Without Neuromotor Impairment at 18–22 mo and 6–7 y

Classification of Neurodevelopmental Quotients	GMFCS at 18–22 mo					Fine Motor and Hand Function ^a			
	Normal-Level I	Level II–III	Level IV	Level V	Total, <i>n</i> (%)	Fine Pincer	Gross Grasp	No Grasp	Total, <i>n</i> (%)
BSID-II at 18–22 mo									
MDI >84, <i>n</i>	53	0	0	0	53 (48)	48	3	1	52 (48)
MDI 70–84, <i>n</i>	26	1	0	0	27 (25)	17	9	0	26 (24)
MDI <70, <i>n</i>	7	6	6	11	30 (27)	5	12	13	30 (28)
Total, <i>n</i> (%)	86 (78)	7 (6)	6 (5)	11 (10)	110	70 (65)	24 (22)	14 (13)	108
PDI >84, <i>n</i>	69	0	0	0	69 (63)	62	4	1	67 (63)
PDI 70–84, <i>n</i>	11	0	0	0	11 (10)	6	5	0	11 (10)
PDI <70, <i>n</i>	5	7	6	11	29 (27)	1	15	13	29 (27)
Total, <i>n</i> (%)	85 ^b (78)	7 (6)	6 (6)	11 (10)	109	69 (64)	24 (22)	14 (13)	107
IQ at 6–7 y									
Full Scale IQ >84, <i>n</i>	51	1	0	0	52 (47)	45	6	1	52 (48)
Full Scale IQ 70–84, <i>n</i>	27	0	0	0	27 (25)	22	4	0	26 (24)
Full Scale IQ <70, <i>n</i>	8	6	6	11	31 (28)	3	14	13	30 (28)
Total, <i>n</i> (%)	86 (78)	7 (6)	6 (5)	11 (10)	110	70 (65)	24 (22)	14 (13)	108

PDI, Psychomotor Developmental Index.

^a For manual function at 18–22 mo, the worst hand function is reported.

^b PDI was missing for 1 child in the normal-level I GMFCS range.

SUPPLEMENTAL TABLE 6 Full Scale IQ Scores and Neuromotor Functional Outcomes at 6–7 y

Functional Motor Outcome	IQ >84, <i>n</i> = 52	IQ 70–84, <i>n</i> = 27	IQ <70, <i>n</i> = 31
Gross motor function			
Gait normal, <i>n</i> (%)	49 (94)	27 (100)	7 (23)
Complex motor function			
Straight line walking normal, <i>n</i> (%)	45 (87)	25 (93)	2 (6)
Stand on 1 foot normal, <i>n</i> (%)	46 (88)	27 (100)	5 (16)
Hop normal, <i>n</i> (%)	46 (88)	27 (100)	5 (16)
Romberg eyes open normal, <i>n</i> (%)	50 (96)	27 (100)	8 (26)
Romberg eyes closed normal, <i>n</i> (%)	44 (85)	25 (93)	7 (23)
Fine motor and coordination ^a			
Finger to nose normal, <i>n</i> (%)	45 (87)	24 (89)	4 (13)
Alternate fingers to thumb opposition normal, <i>n</i> (%)	36 (69)	19 (70)	3 (10)

^a Manual function was assessed for the dominant hand.

SUPPLEMENTAL TABLE 7 Concordance Between 18- to 22-mo and 6- to 7-y Outcomes Among Survivors

Neurodevelopmental Outcomes	Hypothermia Group		Normothermia Group	
	18–22 mo, (%)	6–7 y, (%)	18–22 mo, (%)	6–7 y, (%)
Total follow-up, <i>N</i>	63	63	47	47
<i>N</i> (%) disabled	15 (24)	37 (59)	18 (38)	26 (55)
With one or more of				
CP	14 (22)	9 (15)	16 (34)	14 (30)
Ataxic CP	0	0	2 (13)	1 (7)
Spastic unilateral CP	1 (7)	0 (0)	1 (6)	1 (7)
Spastic bilateral CP	13 (93)	6 (67)	11 (69)	9 (64)
Dystonic CP	0	2 (22)	1 (6)	2 (14)
Other (eg, mixed)	0	1 (11)	1 (6)	1 (7)
Level of CP				
Mild (GMFCS level I)	4 (29)	0 ^a	3 (19)	0 ^a
Moderate (GMFCS level II–III)	0	2 (22)	3 (19)	3 (21)
Severe (GMFCS level IV–V)	10 (71)	7 (78)	10 (63)	11 (79)
BFMF ^b				
Mild (BFMF level I)	N/A	7 (50)	N/A	5 (38)
Moderate (BFMF level II–III)	N/A	3 (21)	N/A	2 (15)
Severe (BFMF level IV–V)	N/A	4 (29)	N/A	6 (46)
Cognitive deficit, DQ				
>84	33 (52)	30 (48)	20 (43)	22 (47)
70–84	17 (27)	17 (27)	10 (21)	10 (21)
55–69	2 (3)	5 (8)	4 (9)	3 (6)
<55	11 (17)	11 (17)	13 (28)	12 (26)
Epilepsy	10 (16)	7 (11)	10 (22)	8 (17)
Blindness	2 (3)	1 (2)	5 (11)	2 (4)
Sensorineural hearing loss necessitating amplification	2 (3)	3 (5)	3 (6)	1 (2)
<i>N</i> (%) multiply disabled	16 (25)	13 (21)	17 (36)	15 (32)

Total sample (hypothermia + normothermia groups): sensitivity 87%, specificity 96%, positive predictive value 90%, and negative predictive value 95% for IQ <70 at 6–7 y of age for children with MDI <70 at 18–22 mo. Hypothermia group: sensitivity 75%, specificity 98%, positive predictive value 92%, and negative predictive value 92% for IQ <70 at 6–7 y of age for children with MDI <70 at 18–22 mo. Moderate encephalopathy: sensitivity 70%, specificity 98%, positive predictive value 88, and negative predictive value 93%. Severe encephalopathy: sensitivity 83%, specificity 100%, positive predictive value 100%, and negative predictive value 83%. Normothermia group: sensitivity 100%, specificity 94%, positive predictive value 88%, and negative predictive value 100% for IQ <70 at 6–7 y of age for children with MDI <70 at 18–22 mo. Moderate encephalopathy: sensitivity 100%, specificity 96%, positive predictive value 89%, and negative predictive value 100%. Severe encephalopathy: sensitivity 100%, specificity 83%, positive predictive value 88%, and negative predictive value 100%. BFMF, Bimanual Fine Motor Function; DQ, developmental quotient; N/A, not applicable.

^a At 6–7 y, moderate CP was defined as GMFCS level I–III, and severe CP was defined as GMFCS level IV–V. There were no children with level I at 6–7 y.

^b The Bimanual Fine Motor Function classification was used to assess hand function in children at 6–7 y. This classification is recommended for children ≥4 years of age, and therefore data at 18–22 mo are not available.

SUPPLEMENTAL TABLE 8 Rates of Special Education, Speech Therapy, and Behavior Problems at Follow-up

	18–22 mo	6–7 y
Hypothermia group, <i>n</i>	63	63
Early intervention or special education, <i>n</i> (%)	19/63 (30)	19/60 (32)
Speech therapy, <i>n</i> (%)	11/63 (17)	18/60 (30)
Behavior problems, <i>n</i> (%)	11/52 (21)	4/60 (7)
Questionable, <i>n</i> (%)	8/52 (15)	N/A
Normothermia group, <i>n</i>	47	47
Early intervention or special education, <i>n</i> (%)	17/46 (37)	22/47 (47)
Speech therapy, <i>n</i> (%)	8/46 (17)	20/47 (43)
Behavior problems, <i>n</i> (%)	12/38 (32)	4/47 (9)
Questionable, <i>n</i> (%)	5/38 (13)	N/A

Details of Special Education at 6–7 y

	IQ >84, <i>n</i> (%)	IQ 70–84, <i>n</i> (%)	IQ <70, <i>n</i> (%)
Appropriate grade level without special education ^a	41 (80)	18 (72)	0 (0)
Reported grade level			
Preschool	1 (2)	0 (0)	2 (6)
Kindergarten	9 (17)	9 (33)	7 (23)
Grade 1	22 (42)	10 (37)	8 (26)
Grade 2	12 (23)	4 (15)	4 (13)
Grade 3	5 (10)	4 (15)	0 (0)
Other	3 (6)	0 (0)	3 (10)
Ungraded	0 (0)	0 (0)	7 (23)
Special education services by diagnostic code			
Coded for special education	5 (10)	6 (23)	30 (100)
Cognitive disability	1	1	23
Learning disability	2	2	17
Physically and otherwise health impaired	0	0	22
Hearing impairment	0	1	3
Vision impairment	0	0	7
Speech and language	3	3	23
Behavior	1	1	5
Type of services			
Occupational therapy	1	1	25
Physical therapy	2	1	24
Speech and language	4	6	28
Behavior management and counseling	2	1	1
Reading tutoring and assistance alone	1	1	12
Math tutoring and assistance alone	1	0	9

Information on early intervention, special education, and speech therapy is based on parental report. At 18 mo, behavior problems were identified based on the BSID-II Behavior Rating Scale: problems designated by nonoptimal factor score or total score (a score \leq 10th percentile); questionable behavior problems included questionable scores (11th–25th percentile). At 6–7 y, behavior problems were identified by parental report based on the Child Behavior Checklist and receipt of school services for behavioral problems or behavior management. Among 31 infants with IQ <70, 30 children were coded for special education. All 30 of these children received \geq 1 services, and 25 children received \geq 3 services. The most common services were speech and language (28), occupational therapy (25), and physical therapy (24). 1 child had missing data. Among 27 infants with IQ 70–84, 20 children were not receiving special educational services. 6 children were coded for special education; all 6 received speech and language services, and 3 received 1 or 2 additional services. 1 child had missing data.

^a Data were missing for 3 participants who could not be categorized into appropriate grade level (seen during summer vacation, grade level was not indicated). $P < .001$ by Fisher's exact test.