

Supplemental Online Content

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This supplemental material has been provided by the authors to give readers additional information about their work.

eTable 1. Baseline participant and pregnancy characteristics: the analysis cohort versus the whole eligible cohort

Participants	Analysis cohort n = 1389	Whole cohort n = 1433
Age (years), mean (SD)	30.6 (6.5)	30.6 (6.6)
Parity, No. (%)		
0	722 (52.0)	738 (51.5)
≥ 1	667 (48.0)	695 (48.5)
Ethnicity, No. (%) ^a		
European	945 (68.0)	966 (67.4)
Asian	231 (16.6)	237 (16.5)
Aboriginal or Torres Strait Islanders	36 (2.6)	46 (3.2)
Pacific	56 (4.0)	61 (4.3)
Māori	81 (5.8)	82 (5.7)
Other	40 (2.9)	41 (2.9)
Body mass index (kg/m ²), median (IQR)	25.2 (22.2-29.9)	25.2 (22.2-30.1)
Gestational age at entry (weeks), mean (SD)	32.1 (1.1)	32.1 (1.1)
30 to < 32, No. (%)	612 (44.1)	631 (44.0)
32 to < 34, No. (%)	777 (55.9)	802 (56.0)
Socioeconomic status, No. (%) ^b		
Most disadvantaged	359 (25.8)	377 (26.3)
Disadvantaged	214 (15.4)	224 (15.6)
Middle	302 (21.7)	308 (21.5)
Advantaged	259 (18.6)	263 (18.4)
Most advantaged	255 (18.4)	261 (18.2)
Female infant, No. (%) ^c	712 (43.6)	734 (43.7)
Male infant, No. (%) ^c	921 (56.4)	945 (56.3)
Twin pregnancy, No. (%)	248 (17.9)	250 (17.4)
Previous preterm birth (<37 weeks gestation), No. (%)	264 (39.6)	277 (39.9)
Previous perinatal death (≥ 20 weeks gestation), No. (%)	58 (8.7)	61 (8.8)
Main reasons at risk for preterm birth		
Preterm labor, No. (%)	379 (27.3)	389 (27.1)
Preterm prelabor rupture of membranes, No. (%)	377 (27.1)	389 (27.1)
Fetal compromise, No. (%)	247 (17.8)	258 (18.0)
Pre-eclampsia, No. (%)	144 (10.4)	146 (10.2)
Antepartum hemorrhage, No. (%)	132 (9.5)	139 (9.7)
Other, No. (%)	110 (7.9)	112 (7.8)

Abbreviations: SD, standard deviation; IQR, interquartile range.

^a Ethnicity as reported by the participant at study entry.

^b Derived from Australian socio-economic index for areas (SEIFA), Australia 2011¹ and New Zealand Socioeconomic Deprivation Profile (NZDep)².

^c Calculated amongst infants.

eTable 2. Child Behaviour Check List scores at two years corrected age (secondary childhood outcome)

Outcome	Magnesium sulfate	Placebo	MD/RD (95% CI)	RR (95% CI)	Adjusted ^a MD/RR (95% CI)	Adjusted ^a P value
Child behaviour check list scores, median (IQR) [n] ^b						
Anxious	3.0 (1.0, 5.0) [n=402]	3.0 (1.0, 5.0) [n=391]	0.37 (-0.06 to 0.80)		0.39 (-0.02 to 0.81)	.06
Withdrawn	2.0 (1.0, 4.0) [n=402]	2.0 (0.0, 3.0) [n=389]	0.50 (0.07 to 0.94)		0.52 (0.08 to 0.95)	.02
Sleeping	2.0 (0.5, 4.0) [n=404]	2.0 (0.0, 4.0) [n=391]	0.21 (-0.17 to 0.58)		0.23 (-0.14 to 0.61)	.22
Somatic	2.0 (2.0, 3.0) [n=398]	2.0 (0.0, 3.0) [n=387]	0.16 (-0.16 to 0.49)		0.18 (-0.14 to 0.51)	.26
Aggressive	7.0 (3.0, 10.0) [n=400]	6.0 (3.0, 9.0) [n=386]	0.83 (0.05 to 1.61)		0.86 (0.09 to 1.62)	.03
Destructive	4.0 (2.0, 6.0) [406]	3.0 (2.0, 6.0) [390]	0.30 (-0.14 to 0.74)		0.30 (-0.13 to 0.74)	.17
Other	6.0 (3.0, 11.0) [n=389]	6.0 (3.0, 9.0) [n=385]	1.02 (0.23 to 1.81)		1.03 (0.27 to 1.80)	.01
Total	27.0 (15.0, 42.0) [n=389]	25.0 (15.0, 37.0) [n=379]	3.43 (0.51 to 6.36)		3.61 (0.75 to 6.47)	.01
Child behaviour check list scores within clinical range (> 97.5 th percentile)						
Anxiety ^c	33/402 (8.2%)	15/391 (3.8%)	4.37 (1.08 to 7.66)	2.14 (1.18 to 3.88)	2.14 (1.18 to 3.87)	.01
Withdrawal	76/402 (19%)	50/389 (13%)	6.05 (0.98 to 11.1)	1.47 (1.06 to 2.04)	1.47 (1.06 to 2.03)	.02
Sleeping problem ^d	21/404 (5.2%)	8/391 (2.1%)	3.15 (0.57 to 5.73)	2.54 (1.14 to 5.67)	2.53 (1.14 to 5.62)	.02
Somatic problem ^c	25/398 (6.3%)	24/387 (6.2%)	0.08 (-3.30 to 3.46)	1.01 (0.59 to 1.74)	1.05 (0.61 to 1.80)	.87
Aggressive behaviour	9/400 (2.3%)	2/386 (0.5%)	1.73 (0.11 to 3.35)	N/E	N/E	.06 ^e
Destructive behaviour	1/406 (0.3%)	1/390 (0.3%)	-0.01 (-0.71 to 0.69)	N/E	N/E	>.99 ^e
Other	8/389 (2.0%)	1/385 (0.3%)	1.75 (0.28 to 3.22)	N/E	N/E	.04 ^e
Total ^d	40/389 (10%)	24/379 (6.3%)	3.95 (0.06 to 7.84)	1.62 (1.00 to 2.64)	1.66 (1.03 to 2.68)	.04

The Child Behaviour Checklist is used to detect behavioural and emotional problems in children, with higher scores indicating more behaviour problems.³

Abbreviations: MD: mean difference; RD: risk difference in percent; RR: relative risk; IQR: interquartile range; NE: Not estimable.

Values are number (%) and treatment effects are relative risks (95% CI), unless otherwise indicated. Analysis accounted for clustering effect within participant.

^a: adjusted for hospital, gestational age at entry, plurality, baby sex, language spoken at home and socioeconomic status.

^b: values are median (IQR) [number], and treatment effects are mean difference (95% CI).

^c: adjusted for gestational age at entry, plurality, baby sex, and socioeconomic status.

^d: adjusted for gestational age at entry, plurality, baby sex.

^e: P value for Fisher's exact test.

eTable 3. Body size at two years corrected age (secondary childhood outcome)

Outcomes	Magnesium sulfate	Placebo	MD/RD (95% CI)	Adjusted ^a MD/RR (95% CI)	Adjusted ^a P value
Weight					
Weight (kg), mean (SD) [n] ^b	12.9 (2.1) [n=668]	12.9 (2.0) [n=662]	0.01 (-0.23 to 0.25)	0.04 (-0.18 to 0.27)	.71
Weight z-score, mean (SD) [n] ^{b c}	0.31 (1.17) [n=668]	0.28 (1.14) [n=662]	0.03 (-0.10 to 0.16)	0.04 (-0.09 to 0.17)	.54
Height					
Height (cm), mean (SD) [n] ^b	88.2 (5.1) [n=658]	88.4 (5.1) [n=647]	-0.09 (-0.69 to 0.51)	-0.08 (-0.66 to 0.49)	.77
Height z-score, mean (SD) [n] ^{b c}	-0.08 (1.27) [n=658]	-0.13 (1.17) [n=647]	0.05 (-0.10 to 0.19)	0.03 (-0.11 to 0.17)	.66
Head circumference					
Head circumference (cm), mean (SD) [n] ^b	49.0 (1.9) [n=636]	49.0 (1.9) [n=629]	-0.06 (-0.28 to 0.16)	-0.01 (-0.22 to 0.20)	.92
Head circumference z-score, mean (SD) [n] ^{b c}	0.68 (1.25) [n=636]	0.67 (1.28) [n=629]	0.00 (-0.15 to 0.15)	0.02 (-0.13 to 0.17)	.81

Abbreviations: MD: mean difference; RD: risk difference in percent; RR: relative risk; NE: Not estimable.

Values are number (%) and treatment effects are relative risks (95% CI), unless otherwise indicated. Analysis accounted for clustering effect within participant.

^a: adjusted for hospital, gestational age at entry, plurality, baby sex, language spoken at home and socioeconomic status.

^b: values are mean (SD), and treatment effects are mean difference (95% CI)

^c: z-scores estimated using the UK-WHO growth reference.⁴

eTable 4. Blood pressure at two years corrected age (secondary childhood outcome)

Outcome	Magnesium sulfate	Placebo	MD/RD (95% CI)	RR (95% CI)	Adjusted ^a MD/RR (95% CI)	Adjusted ^a P value
Systolic blood pressure						
Systolic BP (mmHg), mean (SD) [n] ^b	97.46 (11.07) [n=340]	97.40 (9.96) [n=339]	0.08 (-1.54 to 1.71)		-0.11 (-1.69 to 1.46)	.89
Systolic BP z score, mean (SD) [n] ^{b c}	0.81 (1.06) [n=340]	0.81 (0.96) [n=339]	-0.00 (-0.16 to 0.15)		-0.02 (-0.18 to 0.13)	.77
Systolic hypertension, No. (%) ^d	76/340 (22%)	75/339 (22%)	0.22 (-6.16 to 6.61)	1.01 (0.76 to 1.35)	1.00 (0.75 to 1.33)	1.00
Diastolic blood pressure						
Diastolic BP (mmHg), mean (SD) [n] ^b	57.92 (10.19) [n=338]	58.85 (10.02) [n=336]	-0.60 (-2.18 to 0.99)		-0.72 (-2.15 to 0.72)	.33
Diastolic BP z score, mean (SD) [n] ^{b c}	1.22 (0.95) [n=338]	1.30 (0.89) [n=336]	-0.06 (-0.20 to 0.09)		-0.06 (-0.19 to 0.07)	.39
Diastolic hypertension, No. (%) ^d	123/338 (36%)	124/336 (37%)	0.14 (-7.36 to 7.65)	1.00 (0.82 to 1.23)	1.03 (0.85 to 1.24)	.77
Hypertension, No. (%) ^d	148/338 (44%)	150/336 (45%)	-0.55 (-8.21 to 7.11)	0.99 (0.83 to 1.17)	0.99 (0.84 to 1.17)	.90

Abbreviations: MD: mean difference; RD: risk difference in percent; RR: relative risk.

Values are number (%) and treatment effects are relative risks (95% CI), unless otherwise indicated. Analysis accounted for clustering effect within participant.

^a: adjusted for hospital, gestational age at entry, plurality, baby sex, language spoken at home and socioeconomic status.

^b: values are mean (SD) [number], and treatment effects are mean difference (95% CI).

^c: score estimated using blood pressure reference.⁵

^d: hypertension defined as z-score of systolic blood pressure > 95th percentile using blood pressure nomograms.⁵

eTable 5. Infant weight, length and head circumference at birth and at discharge after birth

Outcome	Magnesium sulfate	Placebo	MD/RD (95% CI)	Adjusted ^a MD/RR (95% CI)	Adjusted ^a P value
Body size at birth, mean (SD) ^b					
Weight (g) (858/821)	1797 (464)	1774 (467)	22.16 (-25.09 to 69.40)	28.92 (-12.34 to 70.18)	.17
Length (cm) (791/768)	42.4 (3.4)	42.1 (3.4)	0.28 (-0.08 to 0.63)	0.32 (0.01 to 0.63)	.045
Head circumference (cm) (837/805)	29.7 (2.1)	29.6 (2.0)	0.07 (-0.14 to 0.28)	0.09 (-0.10 to 0.28)	.34
Birth z-scores, mean (SD) ^{b,c}					
Weight	0.10 (1.11)	0.07 (1.14)	0.02 (-0.09 to 0.13)	0.03 (-0.08 to 0.14)	.55
Length	-0.07 (1.15)	-0.13 (1.13)	0.06 (-0.06 to 0.18)	0.07 (-0.04 to 0.18)	.24
Head circumference	-0.11 (1.13)	-0.10 (1.09)	-0.00 (-0.12 to 0.11)	-0.00 (-0.11 to 0.11)	.98
Body size at discharge, mean (SD) ^b					
Weight (g) (849/816)	2551 (473)	2576 (511)	-20.90 (-71.00 to 29.21)	-11.88 (-60.13 to 36.38)	.63
Length (cm) (751/734)	46.2 (3.6)	46.2 (3.6)	-0.07 (-0.46 to 0.31)	-0.00 (-0.36 to 0.35)	.98
Head circumference (cm) (817/775)	33.2 (9.1)	32.9 (2.1)	0.34 (-0.31 to 1.00)	0.29 (-0.24 to 0.83)	.29
Discharge z-scores, mean (SD) ^{b,c}					
Weight	-0.98 (1.02)	-1.03 (1.06)	0.05 (-0.05 to 0.16)	0.07 (-0.03 to 0.17)	.19
Length	-0.90 (1.57)	-0.92 (1.62)	-0.01 (-0.18 to 0.17)	0.04 (-0.13 to 0.20)	.67
Head circumference	-0.06 (6.19)	-0.36 (1.38)	0.30 (-0.14 to 0.74)	0.28 (-0.08 to 0.64)	.13

Abbreviations: MD: mean difference; RD: risk difference in percent; RR: relative risk; NE: Not estimable.

Values are mean (standard deviation) and treatment effects are relative risks (95% CI), unless otherwise indicated. Analysis accounted for clustering effect within participant.

^a: adjusted for hospital, gestational age at entry and plurality.

^b: values are mean (standard deviation), and treatment effects are differences in means (95% CI).

^c: z-scores estimated using the UK-WHO growth reference.⁴

eReferences

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