Supplementary material to the manuscript:

Virus, allergic sensitisation and cortisol in infant bronchiolitis and risk of early asthma Jon Olav Gjengstø Hunderi, MD^{a,b,c}, Leif Bjarte Rolfsjord, MD^{c,d}, Karin C. Lødrup Carlsen, MD Dr.med^{b,c}, René Holst, MSc PhD^e, Egil Bakkeheim, MD PhD^b, Teresa Løvold Berents MD PhD^{c,e}, Kai-Håkon Carlsen, MD Dr.med^{b,c}, Håvard Ove Skjerven, MD PhD^{b,c}

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A study performed within ORAACLE (the Oslo Research Group of Asthma and Allergy in Childhood; the Lung and Environment).

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SUBJECTS AND METHODS

Methods

Educational level was categorized into 1- no school completed, 2- primary school completed, 3- secondary school completed, 4- higher education, up to three years and 5 higher education, more than three years.

Nasopharyngeal aspirates were collected using standardized procedure performed by trained paediatric nurses at study inclusion, using a tracheal suction set, and immediately frozen at -20°C.

Table S1 The Clinical Score used in the study (1), Kristjansson et.al.

	Score 0	Score 1	Score 2
Respiratory rate (breaths/min)	<40	40-60	>60
Respiratory Chest recessions	none	Moderate	Severe. As 1+ rib and
		Costodiaphragmatic	jugular retractions
Auscultatory breath sounds	Vesicular	Wheeze, rales/ronchi	Faint ± severe wheeze
		Tales/Toneni	and rhonci
Skin colour	Normal	Pallor	Cyanosis
General Condition	Not affected	Moderately affected	Severely affected

The clinical score was completed by doctors at inclusion and daily during hospital stay. A

clinical core ≥four of ten was required for study inclusion. The score is identical to that used

in a study of acute bronchiolitis by Kristjansson et al (1).

years follow-up n= 110 (27.2)At birthMale sex n (%) Male sex n (%)181/294 (61.6) (61.6)59/110 (53.6) (53.6)0.15 (54.6)Gestational age (GA) weeks (SD) Born at GA<37 weeks, n (%)		Attending two-	No two- years	р
n= 294 (72.8)n= 110 (27.2)At birthMale sex n (%)181/294 (61.6)59/110 (53.6)0.15Gestational age (GA) weeks (SD)38.6 (3.3)38.8 (2.8)0.54Born at GA<37 weeks, n (%)		years follow-up	follow-up	
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Male sex n (%) 181/294 (61.6) 59/110 (53.6) 0.15 Gestational age (GA) weeks (SD) 38.6 (3.3) 38.8 (2.8) 0.54 Born at GA-37 weeks, n (%) 46/294 (15.6) 14/110 (12.7) 0.46 Birth weight, grams (SD) 3424 (641) 3450 (615) 0.74 At enrolment Age, days (range) 124.6 (7,363) 134.6 (10,364) 0.31 Weight, grams (SD) 6442 (1847) 6692 (1942) 0.23 Eczema n (%) 29/271 (10.7) 11/103 (10.7) 1 One previous episode of wheeze 69/260 (26.5) 29/102 (28.4) 0.72 Length of hospital stay, hours (SD) 80.3 (66.0) 80.0 (70.9) 0.97 Need of supportive treatment, n (%) 152/294 (51.7) 52/110 (47.3) 0.43 Virus detected during acute bronchiolitis RSV, n (%) 219/266 (82.3) 81/97 (83.5) 0.79 HRV A or B, n (%) 28/266 (10.5) 7/97 (7.2) 0.34 HRV C, n (%) 65/266 (24.4) 22/97 (22.7) 0.73 RSV, high genomic load, n (%) 14/5/266 (54.5) 55/97 (56.7) 0.71 HRV A or B, n (%) 22/271 (8.1) <t< td=""><td>At birth</td><td></td><td></td><td></td></t<>	At birth			
Gestational age (GA) weeks (SD) 38.6 (3.3) 38.8 (2.8) 0.54 Born at GA<37 weeks, n (%)	Male sex n (%)	181/294 (61.6)	59/110 (53.6)	0.15
Born at GA<37 weeks, n (%) 46/294 (15.6) 14/110 (12.7) 0.46 Birth weight, grams (SD) 3424 (641) 3450 (615) 0.74 At enrolment Age, days (range) 124.6 (7,363) 134.6 (10,364) 0.31 Weight, grams (SD) 6442 (1847) 6682 (1942) 0.23 Eczema n (%) 29/271 (10.7) 11/103 (10.7) 1 One previous episode of wheeze 69/260 (26.5) 29/102 (28.4) 0.72 Length of hospital stay, hours (SD) 80.3 (66.0) 80.0 (70.9) 0.97 Need of supportive treatment, n (%) 152/294 (51.7) 52/110 (47.3) 0.43 Virus detected during acute bronchiolitis RSV, n (%) 219/266 (82.3) 81/97 (83.5) 0.79 HRV A or B, n (%) 28/266 (10.5) 7/97 (7.2) 0.34 HRV C, n (%) 65/266 (24.4) 22/97 (22.7) 0.73 RSV, high genomic load, n (%) 145/266 (54.5) 55/97 (56.7) 0.71 HRV A or B, n (%) 170/266 (63.9) 54/97 (55.7) 0.15 Allergic sensitisation, n (%) 20/271 (7.4) 8/97 (8.2) 0.78	Gestational age (GA) weeks (SD)	38.6 (3.3)	38.8 (2.8)	0.54
Birth weight, grams (SD) 3424 (641) 3450 (615) 0.74 At enrolment Age, days (range) 124.6 (7,363) 134.6 (10, 364) 0.31 Weight, grams (SD) 6442 (1847) 6692 (1942) 0.23 Eczema n (%) $29/271$ (10.7) $11/103$ (10.7) 1 One previous episode of wheeze $69/260$ (26.5) $29/102$ (28.4) 0.72 Length of hospital stay, hours (SD) 80.3 (66.0) 80.0 (70.9) 0.97 Need of supportive treatment, n (%) $152/294$ (51.7) $52/110$ (47.3) 0.43 Virus detected during acute bronchiolits RSV, n (%) $219/266$ (82.3) $81/97$ (83.5) 0.79 HRV, n (%) $93/266$ (35.0) 2997 (29.9) 0.37 HRV A or B, n (%) $28/266$ (10.5) $7/97$ (7.2) 0.38 MBV promic load, n (%) $145/266$ (54.5) $55/97$ (56.7) 0.71 HRV, high genomic load, n (%) $16/266$ (6.0) $7/97$ (7.2) 0.68 More than 1 virus, n (%) $20/271$ (7.4) $9/97$ (8.2) 0.78 Any food sensitisation, n	Born at GA<37 weeks, n (%)	46/294 (15.6)	14/110 (12.7)	0.46
At enrolment Age, days (range) 124.6 (7,363) 134.6 (10, 364) 0.31 Weight, grams (SD) 6442 (1847) 6692 (1942) 0.23 Eczema n (%) 29/271 (10.7) 11/103 (10.7) 1 One previous episode of wheeze 69/260 (26.5) 29/102 (28.4) 0.72 Length of hospital stay, hours (SD) 80.3 (66.0) 80.0 (70.9) 0.97 Need of supportive treatment, n (%) 152/294 (51.7) 52/110 (47.3) 0.43 Virus detected during acute bronchiolitis RSV, n (%) 219/266 (82.3) 81/97 (83.5) 0.79 HRV A or B, n (%) 28/266 (10.5) 7/97 (7.2) 0.33 HRV A or B, n (%) 28/266 (60.5) 59/97 (56.7) 0.71 HRV, n (%) 93/266 (63.9) 54/97 (55.7) 0.15 Allergic sensitisation, n (%) 170/266 (63.9) 54/97 (55.7) 0.15 Allergic sensitisation, n (%) 22/271 (8.1) 9/97 (9.3) 0.72 Any food sensitisation, n (%) 22/271 (8.1) 9/97 (2.2) 0.68 May inhalant sensitisation, n (%) 5/267 (1.9) 2/97 (2.1) <td>Birth weight, grams (SD)</td> <td>3424 (641)</td> <td>3450 (615)</td> <td>0.74</td>	Birth weight, grams (SD)	3424 (641)	3450 (615)	0.74
Age, days (range)124.6 (7,363)134.6 (10, 364)0.31Weight, grams (SD)6442 (1847)6692 (1942)0.23Eczema n (%)29/271 (10.7)11/103 (10.7)1One previous episode of wheeze69/ 260 (26.5)29/102 (28.4)0.72Length of hospital stay, hours (SD)80.3 (66.0)80.0 (70.9)0.97Need of supportive treatment, n (%)152/294 (51.7)52/110 (47.3)0.43Virus detected during acute bronchiolitisRSV, n (%)219/266 (82.3)81/97 (83.5)0.79HRV A or B, n (%)28/266 (10.5)79/97 (29.9)0.37HRV A or B, n (%)28/266 (10.5)79/97 (7.2)0.34HRV A or B, n (%)145/266 (54.5)55/97 (56.7)0.71HRV, n (%)145/266 (6.0)7/97 (7.2)0.68More than 1 virus, n (%)170/266 (63.9)54/97 (55.7)0.15Allergic sensitisation, n (%)22/271 (8.1)9/97 (9.3)0.72Any sensitisation, n (%)22/271 (8.1)9/97 (9.3)0.72Any food sensitisation, n (%)22/271 (8.1)9/97 (4.1)0.58Cow's milk sensitisation, n (%)3/271 (1.9)2/97 (4.1)0.95Polysensitisation, n (%)3/271 (1.1)1/97 (1.0)0.46Maternal Education ^a (SD)3.99 (0.98)3.47 (0.98)<0.001	At enrolment			
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Eczema n (%) 29/271 (10.7) 11/103 (10.7) 1 One previous episode of wheeze 69/260 (26.5) 29/102 (28.4) 0.72 Length of hospital stay, hours (SD) 80.3 (66.0) 80.0 (70.9) 0.97 Need of supportive treatment, n (%) 152/294 (51.7) 52/110 (47.3) 0.43 Virus detected during acute bronchiolitis RSV, n (%) 219/266 (82.3) 81/97 (83.5) 0.79 HRV A or B, n (%) 28/266 (10.5) 7/97 (7.2) 0.34 HRV C, n (%) 93/266 (54.5) 55/97 (56.7) 0.71 HRV, high genomic load, n (%) 145/266 (64.4) 22/97 (22.7) 0.73 RSV, high genomic load, n (%) 16/266 (6.0) 7/97 (7.2) 0.68 More than 1 virus, n (%) 170/266 (63.9) 54/97 (55.7) 0.15 Allergic sensitisation, n (%) 22/271 (8.1) 9/97 (9.3) 0.72 Any sensitisation, n (%) 22/271 (7.4) 8/97 (8.2) 0.78 Any inhalant sensitisation, n (%) 5/267 (1.9) 2/97 (2.1) 0.91 Egg sensitisation, n (%) 3/271 (1.1) 1/97 (1.0) <t< td=""><td>Weight, grams (SD)</td><td>6442 (1847)</td><td>6692 (1942)</td><td>0.23</td></t<>	Weight, grams (SD)	6442 (1847)	6692 (1942)	0.23
$\begin{array}{c cccc} & \text{One previous episode of wheeze} & 69/260 (26.5) & 29/102 (28.4) & 0.72 \\ & \text{Length of hospital stay, hours (SD)} & 80.3 (66.0) & 80.0 (70.9) & 0.97 \\ & \text{Need of supportive treatment, n (%)} & 152/294 (51.7) & 52/110 (47.3) & 0.43 \\ \hline & \text{Virus detected during acute bronchiolitis} & \\ & \text{RSV, n (%)} & 219/266 (82.3) & 81/97 (83.5) & 0.79 \\ & \text{HRV, n (%)} & 93/266 (35.0) & 29/97 (29.9) & 0.37 \\ & \text{HRV A or B, n (%)} & 28/266 (10.5) & 7/97 (7.2) & 0.34 \\ & \text{HRV A or B, n (%)} & 65/266 (24.4) & 22/97 (22.7) & 0.73 \\ & \text{RSV, high genomic load, n (%)} & 145/266 (54.5) & 55/97 (56.7) & 0.71 \\ & \text{HRV, high genomic load, n (%)} & 145/266 (66.0) & 7/97 (7.2) & 0.68 \\ & \text{More than 1 virus, n (%)} & 170/266 (63.9) & 54/97 (55.7) & 0.15 \\ \hline & \text{Allergic sensitisation, n (%)} & 22/271 (8.1) & 9/97 (9.3) & 0.72 \\ & \text{Any food sensitisation, n (%)} & 22/271 (7.4) & 8/97 (8.2) & 0.78 \\ & \text{Any inhalant sensitisation, n (%)} & 52/267 (1.9) & 2/97 (2.1) & 0.91 \\ & \text{Egg sensitisation, n (%)} & 3/271 (1.4) & 1/97 (1.0) & 0.95 \\ & \text{Polysensitisation, n (%)} & 3/271 (1.1) & 1/97 (1.0) & 0.46 \\ \hline & \text{Cortisol geometric mean, mmol/l (95% CI)} & 42.0 (32.9, 53.7) & 35.2 (30.9, 10.0) \\ \hline \\ \hline \\ \hline \\ Parental education & Maternal Educationa (SD) & 3.99 (0.98) & 3.47 (0.98) & <0.001 \\ & Paternal Educationa (SD) & 3.99 (0.98) & 3.47 (0.98) & <0.001 \\ & Paternal Educationa (SD) & 3.85 (1.0) & 3.57 (0.92) & 0.019 \\ \hline \\ $	Eczema n (%)	29/271 (10.7́)	11/103 (10.7)	1
Length of hospital stay, hours (SD) Need of supportive treatment, n (%) Virus detected during acute bronchiolitis RSV, n (%) PRSV, high genomic load, n (%) PRSV, high genomi	One previous episode of wheeze	69/ 260 (26.5)	29/ 102 (28.4)	0.72
Need of supportive treatment, n (%) 152/294 (51.7) 52/110 (47.3) 0.43 Virus detected during acute bronchiolitis RSV, n (%) 219/266 (82.3) 81/97 (83.5) 0.79 HRV, n (%) 93/266 (35.0) 29/97 (29.9) 0.37 HRV A or B, n (%) 28/266 (10.5) 7/97 (7.2) 0.34 HRV C, n (%) 65/266 (24.4) 22/97 (22.7) 0.73 RSV, high genomic load, n (%) 145/266 (54.5) 55/97 (56.7) 0.71 HRV, high genomic load, n (%) 16/266 (6.0) 7/97 (7.2) 0.68 More than 1 virus, n (%) 170/266 (63.9) 54/97 (55.7) 0.15 Allergic sensitisation, n (gé) 20/271 (7.4) 8/97 (8.2) 0.78 Any sensitisation, n (%) 20/271 (7.4) 8/97 (8.2) 0.78 Any inhalant sensitisation, n (%) 8/271 (3.0) 4/97 (4.1) 0.58 Cow's milk sensitisation, n (%) 3/271 (1.1) 1/97 (1.0) 0.46 Cortisol geometric mean, mmol/l (95% CI) 42.0 (32.9, 53.7) 35.2 (30.9, 10.0) 0.019 Parental education Maternal Education ^a (SD) 3.99 (0.98) 3.47 (0.98) <0.001	Length of hospital stay, hours (SD)	80.3 (66.0)	80.0 (70.9)	0.97
Virus detected during acute bronchiolitis RSV, n (%) 219/266 (82.3) 81/97 (83.5) 0.79 HRV, n (%) 93/266 (35.0) 29/97 (29.9) 0.37 HRV A or B, n (%) 28/266 (10.5) 7/97 (7.2) 0.34 HRV C, n (%) 65/266 (24.4) 22/97 (22.7) 0.73 RSV, high genomic load, n (%) 145/266 (54.5) 55/97 (56.7) 0.71 HRV, high genomic load, n (%) 16/266 (6.0) 7/97 (7.2) 0.68 More than 1 virus, n (%) 170/ 266 (63.9) 54/97 (55.7) 0.15 Allergic sensitisation, IgE ≥ 0.35 Any sensitisation, n (%) 22/271 (8.1) 9/97 (9.3) 0.72 Any food sensitisation, n (%) 22/271 (7.4) 8/97 (8.2) 0.78 Any inhalant sensitisation, n (%) 5/267 (1.9) 2/97 (2.1) 0.91 Egg sensitisation, n (%) 8/271 (3.0) 4/97 (4.1) 0.58 Cow's milk sensitisation, n (%) 13/271 (4.8) 4/97 (4.1) 0.79 Peanut sensitisation, n (%) 3/271 (1.1) 1/97 (1.0) 0.95 Polysensitisation, n (%) 6/268 (2.2) 1/97 (1.0) 0.46 Cortisol geometric mean, mmol/l (95% CI) 42.0 (32.9, 53.7) 35.2 (30.9, 10.0) Parental education Maternal Education ^a (SD) 3.99 (0.98) 3.47 (0.98) <0.001 Paternal Education ^a (SD) 3.85 (1.0) 3.57 (0.92) 0.019 Parental allergic diseases Any n (%) 128/258 (49.6) 46/99 (46.5) 0.59 Maternal Asthma, n (%) 31/235 (13.2) 12/90 (13.3) 0.65 Paternal Asthma, n (%) 31/235 (13.2) 12/90 (13.3) 0.97 Maternal Asthma, n (%) 31/235 (13.2) 12/90 (13.3) 0.97	Need of supportive treatment, n (%)	152/294 (51.7)	52/110 (47.3)	0.43
$\begin{array}{c} \text{RSV, n (\%)} & 219/266 (82.3) & 81/97 (83.5) & 0.79 \\ \text{HRV, n (\%)} & 93/266 (35.0) & 29/97 (29.9) & 0.37 \\ \text{HRV A or B, n (\%)} & 28/266 (10.5) & 7/97 (7.2) & 0.34 \\ \text{HRV C, n (\%)} & 65/266 (24.4) & 22/97 (22.7) & 0.73 \\ \text{RSV, high genomic load, n (\%)} & 145/266 (54.5) & 55/97 (56.7) & 0.71 \\ \text{HRV, high genomic load, n (\%)} & 16/266 (6.0) & 7/97 (7.2) & 0.68 \\ \text{More than 1 virus, n (\%)} & 170/ 266 (63.9) & 54/97 (55.7) & 0.15 \\ \hline \text{Allergic sensitisation, lgE } 0.35 \\ \text{Any sensitisation, n (\%)} & 22/271 (8.1) & 9/97 (9.3) & 0.72 \\ \text{Any food sensitisation, n (\%)} & 20/271 (7.4) & 8/97 (8.2) & 0.78 \\ \text{Any inhalant sensitisation, n (\%)} & 5/267 (1.9) & 2/97 (2.1) & 0.91 \\ \text{Egg sensitisation, n (\%)} & 8/271 (3.0) & 4/97 (4.1) & 0.58 \\ \text{Cow's milk sensitisation, n (\%)} & 3/271 (1.1) & 1/97 (1.0) & 0.95 \\ \text{Polysensitisation, n (\%)} & 3/271 (1.1) & 1/97 (1.0) & 0.46 \\ \hline \text{Cortisol geometric mean, mmol/l (95% Cl)} & 42.0 (32.9, 53.7) & 35.2 (30.9, 10.0) \\ \hline \textbf{Parental education} \\ \hline \textbf{Maternal Education}^a (SD) & 3.99 (0.98) & 3.47 (0.98) & <0.001 \\ \hline \textbf{Paternal Education}^a (SD) & 3.85 (1.0) & 3.57 (0.92) & 0.019 \\ \hline \textbf{Paternal Asthma, n (\%)} & 31/235 (13.2) & 12/90 (13.3) & 0.65 \\ \hline \textbf{Paternal Asthma, n (\%)} & 31/235 (13.2) & 12/90 (13.3) & 0.97 \\ \hline \textbf{Maternal Asthma, n (\%)} & 31/235 (13.2) & 20/98 (20.4) & 0.36 \\ \hline \textbf{Maternal Rhinoconjunctivitis, n (\%)} & 31/235 (13.2) & 20/98 (20.4) & 0.36 \\ \hline \end{taternal Rhinoconjunctivity; n (\%)} & 42/258 (49.6) & 46/99 (46.5) & 0.59 \\ \hline \textbf{Maternal Asthma, n (\%)} & 31/235 (13.2) & 20/98 (20.4) & 0.36 \\ \hline \end{taternal Rhinoconjunctivity; n (\%)} & 31/235 (13.2) & 20/98 (20.4) & 0.36 \\ \hline \end{taternal Rhinoconjunctivity; n (\%)} & 42/258 (49.6) & 46/99 (46.5) & 0.59 \\ \hline \end{taternal Rhinoconjunctivity; n (\%)} & 31/235 (13.2) & 20/98 (20.4) & 0.36 \\ \hline \end{taternal Rhinoconjunctivity; n (\%)} & 31/235 (13.2) & 20/98 (20.4) & 0.36 \\ \hline \end{taternal Rhinoconjunctivity; n (\%)} & 31/235 (13.2) & 20/98 (20.4) & 0.36 \\ \hline \end{taternal Rhinoconjunctivex} & 10.50 \\ \hline \$	Virus detected during acute bronchiolitis		()	
$\begin{array}{c cccc} & HRV, n\ (\%) & 93/266\ (35.0) & 29/97\ (29.9) & 0.37 \\ HRV A or B, n\ (\%) & 28/266\ (10.5) & 7/97\ (7.2) & 0.34 \\ HRV C, n\ (\%) & 65/266\ (24.4) & 22/97\ (22.7) & 0.73 \\ RSV, high genomic load, n\ (\%) & 145/266\ (54.5) & 55/97\ (56.7) & 0.71 \\ HRV, high genomic load, n\ (\%) & 16/266\ (6.0) & 7/97\ (7.2) & 0.68 \\ More than 1 virus, n\ (\%) & 170/266\ (63.9) & 54/97\ (55.7) & 0.15 \\ \hline \textbf{Allergic sensitisation, ngE \geq 0.35 \\ Any sensitisation, n\ (\%) & 22/271\ (8.1) & 9/97\ (9.3) & 0.72 \\ Any food sensitisation, n\ (\%) & 20/271\ (7.4) & 8/97\ (8.2) & 0.78 \\ Any inhalant sensitisation, n\ (\%) & 20/271\ (7.4) & 8/97\ (8.2) & 0.78 \\ Any inhalant sensitisation, n\ (\%) & 5/267\ (1.9) & 2/97\ (2.1) & 0.91 \\ Egg sensitisation, n\ (\%) & 3/271\ (4.8) & 4/97\ (4.1) & 0.58 \\ Cow's milk sensitisation, n\ (\%) & 3/271\ (4.8) & 4/97\ (4.1) & 0.79 \\ Peanut sensitisation, n\ (\%) & 3/271\ (1.1) & 1/97\ (1.0) & 0.95 \\ Polysensitisation, n\ (\%) & 6/268\ (2.2) & 1/97\ (1.0) & 0.46 \\ \hline Cortisol geometric mean, mmol/l\ (95\%\ Cl) & 42.0\ (32.9,\ 53.7) & 35.2\ (30.9,\ 10.0) \\\hline Parental education \\ \hline Maternal Educationa\ (SD) & 3.99\ (0.98) & 3.47\ (0.98)\ <0.001 \\ Paternal Educationa\ (SD) & 3.85\ (1.0) & 3.57\ (0.92)\ 0.019 \\\hline Parental allergic diseases \\ \hline Maternal Asthma, n\ (\%) & 31/235\ (13.2)\ 12/90\ (13.3)\ 0.97 \\\hline Maternal Rhinoconjunctivitis, n\ (\%) & 31/235\ (13.2)\ 20/98\ (20.4)\ 0.36 \\\hline \end{array}$	RSV, n (%)	219/266 (82.3)	81/97 (83.5)	0.79
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	HRV, n (%)	93/266 (35.0)	29/97 (29.9)	0.37
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	HRV A or B, n (%)	28/266 (10.5)	7/97 (7.2)	0.34
RSV, high genomic load, n (%) 145/266 (54.5) 55/97 (56.7) 0.71 HRV, high genomic load, n (%) 16/266 (6.0) 7/97 (7.2) 0.68 More than 1 virus, n (%) 170/ 266 (63.9) 54/97 (55.7) 0.15 Allergic sensitisation, lgE ≥ 0.35	HRV C. n (%)	65/266 (24.4)	22/97 (22.7)	0.73
HRV, high genomic load, n (%) 16/266 (6.0) 7/97 (7.2) 0.68 More than 1 virus, n (%) 170/ 266 (63.9) 54/97 (55.7) 0.15 Allergic sensitisation, lgE \geq 0.35 Any sensitisation, n (%) 22/271 (8.1) 9/97 (9.3) 0.72 Any food sensitisation, n (%) 20/271 (7.4) 8/97 (8.2) 0.78 Any inhalant sensitisation, n (%) 5/267 (1.9) 2/97 (2.1) 0.91 Egg sensitisation, n (%) 8/271 (3.0) 4/97 (4.1) 0.58 Cow's milk sensitisation, n (%) 13/271 (4.8) 4/97 (4.1) 0.79 Peanut sensitisation, n (%) 3/271 (1.1) 1/97 (1.0) 0.95 Polysensitisation, n (%) 6/268 (2.2) 1/97 (1.0) 0.46 Cortisol geometric mean, mmol/l (95% Cl) 42.0 (32.9, 53.7) 35.2 (30.9, 10.0) Parental education Maternal Education ⁸ (SD) 3.99 (0.98) 3.47 (0.98) <0.001 Paternal Education ⁸ (SD) 3.85 (1.0) 3.57 (0.92) 0.019 Parental allergic diseases Any n (%) 128/258 (49.6) 46/99 (46.5) 0.59 Maternal Asthma, n (%) 36/ 235 (15.3) 12/90 (13.3) 0.97 Maternal Asthma, n (%) 31/235 (13.2) 12/90 (13.3) 0.97 Maternal Rbinoconjunutivitis, n (%) 42/258 (16.3) 20/98 (20.4) 0.36	RSV, high genomic load, n (%)	145/266 (54.5)	55/97 (56.7)	0.71
More than 1 virus, n (%) More than 1 virus, n (%)170/ 266 (63.9) $54/97 (55.7)$ 0.15Allergic sensitisation, lgE ≥ 0.35 Any sensitisation, n (%) $22/271 (8.1)$ $9/97 (9.3)$ 0.72Any food sensitisation, n (%) $20/271 (7.4)$ $8/97 (8.2)$ 0.78Any inhalant sensitisation, n (%) $20/271 (7.4)$ $8/97 (8.2)$ 0.78Egg sensitisation, n (%) $5/267 (1.9)$ $2/97 (2.1)$ 0.91Egg sensitisation, n (%) $8/271 (3.0)$ $4/97 (4.1)$ 0.58Cow's milk sensitisation, n (%) $3/271 (1.1)$ $1/97 (1.0)$ 0.95Peanut sensitisation, n (%) $3/271 (1.1)$ $1/97 (1.0)$ 0.46Cortisol geometric mean, mmol/l (95% Cl) $42.0 (32.9, 53.7)$ $35.2 (30.9, 10.0)$ Parental education Paternal Education ^a (SD) $3.99 (0.98)$ $3.47 (0.98)$ <0.001 Parental allergic diseases $3.85 (1.0)$ $3.57 (0.92)$ 0.019 Maternal Asthma, n (%) $36/235 (15.3)$ $12/90 (13.3)$ 0.65 Maternal Asthma, n (%) $31/235 (13.2)$ $12/90 (13.3)$ 0.97 Maternal Rhinoconjunutivitis, n (%) $42/258 (46.3)$ $20/98 (20.4)$ 0.36	HRV, high genomic load, n (%)	16/266 (6.0)	7/97 (7.2)	0.68
Allergic sensitisation, IgE ≥ 0.35 Any sensitisation, n (%) 22/271 (8.1) 9/97 (9.3) 0.72 Any food sensitisation, n (%) 20/271 (7.4) 8/97 (8.2) 0.78 Any inhalant sensitisation, n (%) 5/267 (1.9) 2/97 (2.1) 0.91 Egg sensitisation, n (%) 8/271 (3.0) 4/97 (4.1) 0.58 Cow's milk sensitisation, n (%) 3/271 (1.1) 1/97 (1.0) 0.95 Peanut sensitisation, n (%) 3/271 (1.1) 1/97 (1.0) 0.95 Polysensitisation, n (%) 6/268 (2.2) 1/97 (1.0) 0.46 Cortisol geometric mean, mmol/l (95% Cl) 42.0 (32.9, 53.7) 35.2 (30.9, 10.0) Parental education Maternal Education ^a (SD) 3.99 (0.98) 3.47 (0.98) <0.001	More than 1 virus, n (%)	170/ 266 (63.9)	54/97 (55.7)	0.15
Any sensitisation, n (%) $22/271$ (8.1) $9/97$ (9.3) 0.72 Any food sensitisation, n (%) $20/271$ (7.4) $8/97$ (8.2) 0.78 Any inhalant sensitisation, n (%) $5/267$ (1.9) $2/97$ (2.1) 0.91 Egg sensitisation, n (%) $8/271$ (3.0) $4/97$ (4.1) 0.58 Cow's milk sensitisation, n (%) $13/271$ (4.8) $4/97$ (4.1) 0.79 Peanut sensitisation, n (%) $3/271$ (1.1) $1/97$ (1.0) 0.95 Polysensitisation, n (%) $6/268$ (2.2) $1/97$ (1.0) 0.46 Cortisol geometric mean, mmol/l (95% Cl) 42.0 (32.9, 53.7) 35.2 (30.9, 10.0)Parental educationMaternal Education ^a (SD) 3.99 (0.98) 3.47 (0.98) <0.001 Paternal Education ^a (SD) 3.99 (0.98) 3.57 (0.92) 0.019 Paternal Education ^a (SD) 3.92 (15.3) $12/90$ (13.3) 0.65 Maternal Asthma, n (%) $36/235$ (15.3) $12/90$ (13.3) 0.97 Maternal Asthma, n (%) $31/235$ (13.2) $12/90$ (13.3) 0.97	Allergic sensitisation, IgE ≥ 0.35			
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Any inhalant sensitisation, n (%) $5/267$ (1.9) $2/97$ (2.1) 0.91 Egg sensitisation, n (%) $8/271$ (3.0) $4/97$ (4.1) 0.58 Cow's milk sensitisation, n (%) $13/271$ (4.8) $4/97$ (4.1) 0.79 Peanut sensitisation, n (%) $3/271$ (1.1) $1/97$ (1.0) 0.95 Polysensitisation, n (%) $6/268$ (2.2) $1/97$ (1.0) 0.46 Cortisol geometric mean, mmol/l (95% CI) 42.0 (32.9, 53.7) 35.2 (30.9, 10.0)Parental educationMaternal Education ^a (SD) 3.99 (0.98) 3.47 (0.98)Parental education 3.85 (1.0) 3.57 (0.92) 0.019 Parental allergic diseasesMaternal Asthma, n (%) $36/235$ (15.3) $12/90$ (13.3) 0.65 Paternal Asthma, n (%) $31/235$ (13.2) $12/90$ (13.3) 0.97 Maternal Rhinoconjungtivitis, n (%) $42/258$ (16.3) $20/98$ (20.4) 0.36	Any food sensitisation, n (%)	20/271 (7.4)	8/97 (8.2)	0.78
Egg sensitisation, n (%) $8/271 (3.0)$ $4/97 (4.1)$ 0.58 Cow's milk sensitisation, n (%) $13/271 (4.8)$ $4/97 (4.1)$ 0.79 Peanut sensitisation, n (%) $3/271 (1.1)$ $1/97 (1.0)$ 0.95 Polysensitisation, n (%) $6/268 (2.2)$ $1/97 (1.0)$ 0.46 Cortisol geometric mean, mmol/l (95% Cl) $42.0 (32.9, 53.7)$ $35.2 (30.9, 10.0)$ Parental educationMaternal Education ^a (SD) $3.99 (0.98)$ $3.47 (0.98)$ <0.001 Parental educationAny n (%) $128/258 (49.6)$ $46/99 (46.5)$ 0.59 Maternal Asthma, n (%) $31/235 (13.2)$ $12/90 (13.3)$ 0.97 Maternal Asthma, n (%) $31/235 (13.2)$ $12/90 (13.3)$ 0.97	Any inhalant sensitisation, n (%)	5/267 (1.9) [´]	2/97 (2.1)	0.91
Cow's milk sensitisation, n (%) $13/271(4.8)$ $4/97(4.1)$ 0.79 Peanut sensitisation, n (%) $3/271(1.1)$ $1/97(1.0)$ 0.95 Polysensitisation, n (%) $6/268(2.2)$ $1/97(1.0)$ 0.46 Cortisol geometric mean, mmol/l (95% CI) $42.0(32.9, 53.7)$ $35.2(30.9, 10.0)$ Parental educationMaternal Education ^a (SD) $3.99(0.98)$ $3.47(0.98)$ <0.001 Parental allergic diseasesAny n (%) $128/258(49.6)$ $46/99(46.5)$ 0.59 Maternal Asthma, n (%) $36/235(15.3)$ $12/90(13.3)$ 0.65 Paternal Asthma, n (%) $31/235(13.2)$ $12/90(13.3)$ 0.97 Maternal Rhinoconiungtivitis, n (%) $42/258(16.3)$ $20/98(20.4)$ 0.36	Egg sensitisation, n (%)	8/271 (3.0)	4/97 (4.1)	0.58
Peanut sensitisation, n (%) Polysensitisation, n (%) $3/271$ (1.1) $1/97$ (1.0) 0.95 0.46Cortisol geometric mean, mmol/l (95% CI) 42.0 (32.9 , 53.7) 35.2 (30.9 , 10.0)Parental education Maternal Education ^a (SD) 3.99 (0.98) 3.47 (0.98) <0.001 0.019Parental allergic diseasesAny n (%) $128/258$ (49.6) $46/99$ (46.5) 0.59 0.019Maternal Asthma, n (%) $31/235$ (13.2) $12/90$ (13.3) 0.97 0.97Maternal Rhinoconjungtivitis, n (%) $42/258$ (16.3) $20/98$ (20.4) 0.36	Cow's milk sensitisation, n (%)	13/271 (4.8)	4/97 (4.1)	0.79
Polysensitisation, n (%) 6/268 (2.2) 1/97 (1.0) 0.46 Cortisol geometric mean, mmol/l (95% CI) 42.0 (32.9, 53.7) 35.2 (30.9, 10.0) Parental education Maternal Education ^a (SD) 3.99 (0.98) 3.47 (0.98) <0.001	Peanut sensitisation, n (%)	3/271 (1.1)	1/97 (1.0)	0.95
Cortisol geometric mean, mmol/l (95% CI)42.0 (32.9, 53.7)35.2 (30.9, 10.0)Parental educationMaternal Education ^a (SD) $3.99 (0.98)$ $3.47 (0.98)$ <0.001Paternal Education ^a (SD) $3.85 (1.0)$ $3.57 (0.92)$ 0.019Parental allergic diseasesAny n (%) $128/258 (49.6)$ $46/99 (46.5)$ 0.59 Maternal Asthma, n (%) $36/235 (15.3)$ $12/90 (13.3)$ 0.65 Paternal Asthma, n (%) $31/235 (13.2)$ $12/90 (13.3)$ 0.97	Polysensitisation, n (%)	6/268 (2.2)	1/97 (1.0)	0.46
Cortisol geometric mean, mmol/l (95% CI) 42.0 (32.9, 53.7) 35.2 (30.9, 10.0) Parental education Maternal Education ^a (SD) 3.99 (0.98) 3.47 (0.98) <0.001	•			
Maternal Education ^a (SD) 3.99 (0.98) 3.47 (0.98) <0.001 Paternal Education ^a (SD) 3.85 (1.0) 3.57 (0.92) 0.019 Parental allergic diseases Any n (%) 128/258 (49.6) 46/99 (46.5) 0.59 Maternal Asthma, n (%) 36/ 235 (15.3) 12/90 (13.3) 0.65 Paternal Asthma, n (%) 31/235 (13.2) 12/90 (13.3) 0.97 Maternal Rhinoconjungtivitis, n (%) 42/258 (16.3) 20/98 (20.4) 0.36	Cortisol geometric mean, mmol/l (95% CI)	42.0 (32.9, 53.7)	35.2 (30.9, 10.0)	
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Maternal Education ^a (SD) 3.99 (0.98) 3.47 (0.98) <0.001 Paternal Education ^a (SD) 3.85 (1.0) 3.57 (0.92) 0.019 Parental allergic diseases Any n (%) 128/258 (49.6) 46/99 (46.5) 0.59 Maternal Asthma, n (%) 36/ 235 (15.3) 12/90 (13.3) 0.65 Paternal Asthma, n (%) 31/235 (13.2) 12/90 (13.3) 0.97 Maternal Rhinoconjungtivitis, n (%) 42/258 (16.3) 20/98 (20.4) 0.36	Parental education			
Paternal Education ^a (SD) 3.85 (1.0) 3.57 (0.92) 0.019 Parental allergic diseases Any n (%) 128/258 (49.6) 46/99 (46.5) 0.59 Maternal Asthma, n (%) 36/235 (15.3) 12/90 (13.3) 0.65 Paternal Asthma, n (%) 31/235 (13.2) 12/90 (13.3) 0.97 Maternal Rhinoconjungtivitis, n (%) 42/258 (16.3) 20/98 (20.4) 0.36	Maternal Education ^a (SD)	3.99 (0.98)	3.47 (0.98)	<0.001
Maternal Asthma, n (%) 128/258 (49.6) 46/99 (46.5) 0.59 Maternal Asthma, n (%) 36/235 (15.3) 12/90 (13.3) 0.65 Paternal Asthma, n (%) 31/235 (13.2) 12/90 (13.3) 0.97 Maternal Rhinoconjungtivitis, n (%) 42/258 (16.3) 20/98 (20.4) 0.36	Paternal Education ^a (SD)	3.85 (1.0)	3.57 (0.92)	0.019
Any n (%)128/258 (49.6)46/99 (46.5)0.59Maternal Asthma, n (%)36/ 235 (15.3)12/90 (13.3)0.65Paternal Asthma, n (%)31/235 (13.2)12/90 (13.3)0.97Maternal Rhinoconjungtivitis, n (%)42/258 (16.3)20/98 (20.4)0.36	Parental allergic diseases			
Maternal Asthma, n (%) 36/235 (15.3) 12/90 (13.3) 0.65 Paternal Asthma, n (%) 31/235 (13.2) 12/90 (13.3) 0.97 Maternal Rhinoconjungtivitis, n (%) 42/258 (16.3) 20/98 (20.4) 0.36	Any n (%)	128/258 (49.6)	46/99 (46.5)	0.59
Paternal Asthma, n (%) 31/235 (13.2) 12/90 (13.3) 0.97 Maternal Rhinoconjungtivitis, n (%) 42/258 (16.3) 20/98 (20.4) 0.36	Maternal Asthma, n (%)	36/ 235 (15.3)	12/90 (13.3)	0.65
Maternal Rhinoconiungtivitis, n (%) 42/258 (16.3) 20/98 (20.4) 0.36	Paternal Asthma, n (%)	31/235 (13.2)	12/90 (13.3)	0.97
	Maternal Rhinoconjungtivitis, n (%)	42/258 (16.3)	20/98 (20.4)	0.36
Paternal Rhinoconjungtivitis, n (%) 56/258 (21.7) 14/98 (14.3) 0.12	Paternal Rhinoconjungtivitis, n (%)	56/258 (21.7)	14/98 (14.3)	0.12
Maternal eczema, n (%) 31/263 (11.8) 9/98 (9.2) 0.48	Maternal eczema, n (%)	31/263 (11.8)	9/98 (9.2)	0.48
Paternal eczema, n (%) 25/263 (9.5) 4/ 98 (4.1) 0.092	Paternal eczema, n (%)	25/263 (9.5)	4/98 (4.1)	0.092
Environment	Environment	. ,	. ,	
Smoking at home n (%) 38/253 (15.0) 20/88 (22.7) 0.097	Smoking at home n (%)	38/253 (15.0)	20/88 (22.7)	0.097

Table S2 Background Characteristics of the 404 infants hospitalised with acute bronchiolitis, comparing those attending two- years follow-up and those who did not.

^a Education was categorised from 1 (no school completed) to 5 (higher education, more than

three years)

Table S3 The distribution of low sensitisation defined by IgE 0.10- 0.34 kU/l before one year of age, of the 294 infants hospitalised with bronchiolitis and attending two- year follow up, shown for those with and without recurrent wheeze.

	Recurrent	No recurrent	р
	wheeze	wheeze	
	n= 143 (48.6)	n= 151 (51.4)	
Low Allergic sensitisation			
Any sensitisation, n (%)	18/130 (13.8)	17/141 (12.1)	0.66
Any food sensitisation, n (%)	18/130 (13.8)	17/141 (12.1)	0.66
Any inhalant sensitisation, n (%)	15/129 (11.6)	14/138 (10.1)	0.70
Egg sensitisation, n (%)	18/130 (13.8)	17/141 (12.1)	0.66
Cow's milk sensitisation, n (%)	15/130 (11.5)	16/141 (11.3)	0.96
Peanut sensitisation, n (%)	15/130 11.5)	15/141 (10.6)	0.81

Fig S1

The figure shows the distribution of the viruses analysed in 266 infants hospitalized with bronchiolitis disease (RSV 53%, HRV and RSV 29.3%, HRV 5.6%, other viruses 3.4%, no virus detected 8.6%)



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