**eTable 1. Risk factors at birth for childhood asthma in the original BAMSE birth cohort in Stockholm, as well as for children with questionnaire data on symptoms over 12 years and specific IgE from blood test at 8 years**

|  |  |  |  |
| --- | --- | --- | --- |
| **Covariates** | **Original cohort**  **n (%)**  **(N = 4089)** | **Questionnaire data on symptoms over 12 yrsa n (%) (N=3633)** | **Blood test for specific IgE**  **at 8 yrsb n (%) (N=2378)** |
| Socioeconomic status of parents:  Blue-collar workers  White-collar workers  Other | 695 (17.1)  3323 (81.6)  54 (1.3) | 601 (16.2)  2992 (82.8)  40 (1.0) | 358 (15.1)  1994 (83.8)  26 (1.1) |
| Year the house was built: |  |  |  |
| Before 1940 | 1270 (31.1) | 1134 (31.6) | 769 (32.3) |
| 1940–1975 | 1701 (41.6) | 1523 (41.7) | 973 (40.9) |
| After 1975 | 1115 (27.3) | 976 (26.7) | 636 (26.8) |
| Heredity:  No parental allergy or asthma  One parent with allergy or asthma  Both parents with allergy or asthma | 2841 (70.5)  1066 (26.4)  125 (3.1) | 2540 (69.7)  977 (27.1)  116 (3.2) | 1614 (67.9)  686 (28.8)  78 (3.3) |
| Municipality:  Stockholm  Järfälla  Solna  Sundbyberg | 1205 (29.6)  1173 (28.8)  1074 (26.4)  619 (15.2) | 1077 (30.0)  1067 (29.2)  958 (26.2)  531 (14.6) | 719 (30.2)  703 (29.6)  599 (25.2)  357 (15.0) |
| a Reported symptoms at a minimum 3 out of 5 time occasions  b Including only children with questionnaire data | | | |

**eTable 2. Associations between exposure to PM10 and NOx from road traffic, and prevalent or incident asthma, and wheeze during the first 12 years of life among children in the BAMSE birth cohort in Stockholm**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **N=3633** | **NOx** | | | **PM10** | | |
|  | **Asthma**  **ORa (95% CI)** | **Wheeze ( ≥1 epis)**  **ORa (95% CI)** | **Wheeze ( ≥3 epis)**  **ORa (95% CI)** | **Asthma**  **ORa (95% CI)** | **Wheeze ( ≥1 epis)**  **ORa (95% CI)** | **Wheeze ( ≥3 epis)**  **ORa (95% CI)** |
| 1. **Air pollution exposure during the first year of life and prevalent asthma and wheeze** | | | | | | |
| **Overall effect** | 1.18 (0.75 – 1.84) | 1.12 (0.84 – 1.49) | 1.10 (0.73 – 1.66) | 1.26 (0.73 – 2.16) | 1.15 (0.81 – 1.63) | 1.14 (0.70 – 1.86) |
| **1 year** | 0.90 (0.47 – 1.71) | 1.22 (0.87 – 1.70) | 1.20 (0.74 – 1.95) | 0.81 (0.39 – 1.66) | 1.23 (0.82 – 1.83) | 1.13 (0.64 – 2.01) |
| **2 years** | 0.77 (0.43 – 1.40) | 1.03 (0.74 – 1.44) | 0.97 (0.60 – 1.55) | 0.86 (0.45 – 1.65) | 1.07 (0.73 – 1.59) | 1.02 (0.59 – 1.75) |
| **4 years** | 1.04 (0.61 – 1.77) | 1.06 (0.75 – 1.49) | 1.09 (0.62 – 1.90) | 1.01 (0.54 – 1.87) | 1.03 (0.68 – 1.54) | 1.08 (0.57 – 2.04) |
| **8 years** | 1.35 (0.80 – 2.27) | 1.09 (0.74 – 1.61) | 1.06 (0.57 – 1.98) | 1.51 (0.82 – 2.78) | 1.12 (0.72 – 1.75) | 1.17 (0.59 – 2.33) |
| **12 years** | **1.66 (1.01 – 2.72)** | 1.19 (0.81 – 1.77) | 1.30 (0.76 – 2.21) | **1.96 (1.08 – 3.53)** | 1.29 (0.82 – 2.02) | * 1. (0.78 – 2.63) |
| 1. **Air pollution exposure during the first year of life and incident asthma and wheeze** | | | | | | |
| **Overall effect** | 1.21 (0.79 – 1.84) | 1.06 (0.80 – 1.41) | 1.13 (0.76 – 1.67) | 1.34 (0.80 – 2.23) | 1.07 (0.76 – 1.52) | 1.12 (0.69 – 1.80) |
| **1 year** | 0.85 (0.44 – 1.62) | 1.09 (0.77 – 1.52) | 1.11 (0.68 – 1.80) | 0.79 (0.39 – 1.62) | 1.06 (0.71 – 1.58) | 1.00 (0.56 – 1.77) |
| **2 years** | 0.96 (0.51 – 1.80) | 1.09 (0.75 – 1.57) | 1.09 (0.67 – 1.79) | 1.14 (0.57 – 2.25) | 1.11 (0.72 – 1.70) | 1.13 (0.64 – 1.99) |
| **4 years** | 1.48 (0.85 – 2.57) | 0.95 (0.59 – 1.52) | 1.13 (0.54 – 2.39) | 1.59 (0.83 – 3.05) | 0.97 (0.58 – 1.62) | 1.13 (0.50 – 2.56) |
| **8 years** | 1.07 (0.53 – 2.14) | 0.96 (0.51 – 1.78) | 0.85 (0.34 – 2.10) | 1.30 (0.61 – 2.74) | 0.98 (0.51 – 1.92) | 0.98 (0.39 – 2.47) |
| **12 years** | **1.87 (1.01 – 3.44)** | 1.21 (0.64 – 2.29) | 1.46 (0.75 – 2.83) | **2.39 (1.18 – 4.86)** | 1.37 (0.68 – 2.75) | 1.57 (0.74 – 3.32) |

**eTable 2**. **Continued**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **N=3477** | **NOx** | | | **PM10** | | |
|  | **Asthma** | **Wheeze ( ≥ 1 epis)** | **Wheeze ( ≥ 3 epis)** | **Asthma** | **Wheeze ( ≥ 1 epis)** | **Wheeze ( ≥ 3 epis)** |
| 1. **Air pollution exposure during since the previous follow-up and prevalent asthma and wheeze** | | | | | | |
| **Overall effect** | 0.72 (0.45 – 1.14) | 1.07 (0.82 – 1.39) | 1.04 (0.71 – 1.52) | 0.89 (0.63 – 1.25) | 1.03 (0.81 – 1.30) | 0.94 (0.67 – 1.33) |
| **1 year** | 0.82 (0.47 – 1.44) | 1.16 (0.87 – 1.55) | 1.15 (0.75 – 1.76) | 0.74 (0.41 – 1.33) | 1.18 (0.86 – 1.62) | 1.07 (0.67 – 1.71) |
| **2 years** | 0.65 (0.37 – 1.14) | 0.98 (0.72 – 1.33) | 0.97 (0.62 – 1.51) | 0.77 (0.46 – 1.29) | 1.06 (0.77 – 1.44) | 1.02 (0.66 – 1.58) |
| **4 years** | 0.65 (0.33 – 1.28) | 1.00 (0.65 – 1.55) | 0.86 (0.40 – 1.86) | 0.75 (0.46 – 1.24) | 1.01 (0.72 – 1.42) | 1.01 (0.57 – 1.79) |
| **8 years** | 0.73 (0.30 – 1.82) | 0.76 (0.39 – 1.51) | 0.41 (0.11 – 1.46) | 0.90 (0.52 – 1.55) | 0.86 (0.57 – 1.30) | 0.65 (0.32 – 1.34) |
| **12 years** | 0.86 (0.26 – 2.91) | 0.74 (0.28 – 1.96) | 0.48 (0.11 – 2.03) | 1.02 (0.68 – 1.54) | 0.93 (0.67 – 1.30) | 0.84 (0.53 – 1.35) |
| 1. **Air pollution exposure during since the previous follow-up and incident asthma and wheeze** | | | | | | |
| **Overall effect** | 0.83 (0.51 – 1.34) | 1.02 (0.76– 1.35) | 1.06 (0.71 – 1.58) | 0.93 (0.63 – 1.39) | 0.98 (0.73 – 1.30) | 0.99 (0.67 – 1.45) |
| **1 year** | 0.79 (0.43 – 1.47) | 1.05 (0.76 – 1.45) | 1.08 (0.68 – 1.70) | 0.87 (0.26 – 2.85) | 1.02 (0.71 – 1.46) | 0.98 (0.59 – 1.62) |
| **2 years** | 0.80 (0.40 – 1.59) | 1.01 (0.68 – 1.50) | 1.11 (0.66 – 1.85) | 0.90 (0.47 – 1.72) | 1.05 (0.70 – 1.57) | 1.17 (0.70 – 1.97) |
| **4 years** | 1.12 (0.49 – 2.54) | 0.92 (0.47 – 1.80) | 0.79 (0.25 – 2.54) | 1.15 (0.60 – 2.18) | 1.00 (0.59 – 1.70) | 0.97 (0.41 – 2.29) |
| **8 years** | 0.49 (0.11 – 2.14) | 0.44 (0.11 – 1.66) | 0.37 (0.10 – 2.53) | 0.82 (0.36 – 1.89) | 0.61 (0.28 – 1.32) | 0.73 (0.25 – 2.08) |
| **12 years** | 1.10 (0.17 – 6.97) | 0.95 (0.15 – 6.13) | 0.83 (0.11 – 6.23) | 1.08 (0.58 – 2.02) | 0.91 (0.48 – 1.73) | 0.86 (0.43 – 1.71) |

aAdjusted for municipality, SES, year the house was built, heredity. Odds ratios are calculated for a difference in the air pollution level from the 5th to 95th percentile, corresponding to 46.8 µg/m3 for NOx, and 7.2 µg/m3 for PM10