eTable 1. Baseline characteristics in our analysis compared with children who had missing data on pet ownership

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Dog ownership | | | |
|  | Subjects excluded in the study (n = 1939 unless otherwise shown) | Subjects included in the study (n = 1163 unless otherwise shown) | p-value\* |
| Parent's history of allergic disease (Yes) | | 869/1691 (51.4%) | 593/1159 (51.2%) | 0.91 |
| AD at 6 months (Yes) | | 196/1219 (16.1%) | 190/1080 (17.6%) | 0.33 |
| Sex (Boys) | | 931/1268 (54.3%) | 597/1163 (51.3%) | 0.12 |
| ETS during pregnancy (Yes) | | 811/1454 (55.8%) | 658/1109 (59.3%) | 0.07 |
| Delivery mode (C/sec) | | 632/1709 (37%) | 423/1158 (36.5%) | 0.09 |
| Use of antibiotics during pregnancy (Yes) | | 204/1461 (14.0%) | 133/1112 (12.0%) | 0.14 |
| Use of antibiotics within 1 year of age (Yes) | | 507/887 (57.2%) | 512/863 (59.3%) | 0.36 |
| Maternal age at birth | | 33.04 ± 3.46 | 33.08 ± 3.61 | 0.77 |
| Maternal education level† | low | 83/1752 (4.7%) | 68/1160 (5.9%) | 0.36 |
| medium | 1296/1752 (74.0%) | 840/1160 (72.4%) |
| high | 373/1752 (21.3%) | 252/1160 (21.7%) |
| Breastfeeding | | 1002/1254 (79.9%) | 827/1107 (74.7%) | <0.01 |
| Physician’s diagnosis of AD at 7 years of age | | 8/83 (9.6%) | 48/410 (11.7%) | 0.59 |

Values are frequency (%) or mean ± SD

ETS, Environmental tobacco smoke; AD, Atopic dermatitis

\* Chi-squared test for proportions, Student's *t*-test for means

† Categorized according to the Korean educational system: high school graduation, university/college, and graduate school graduation for low, medium, and high, respectively; the highest education level from the parents was recorded.

eTable 2.Association between dog ownership in early life and sensitization at ages 3 and 7

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sensitization | 3 years | | 7 years | |
| Dog | | Dog | |
|  | n/N | aOR\* | n/N (%) | aOR\* |
| (%) | (95% CI) | (95% CI) |
| Non-ownership | 9/999 | 1.00 (ref) | 18/409 | 1.00 (ref) |
| (0.90) | (4.4) |
| Ownership | 1/95 | 1.50 | 3/42 | 1.06 |
| (1.1) | (0.18–12.70) | (7.10) | (0.24–4.80) |

Values are frequency (%)

\*Adjusted for the level of education of the mother, parent's history of allergic disease, and breastfeeding

†P value < 0.05

eTable 3. Relationship between dog exposure in early life and lung function at age 7

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Non-ownership | | |  | Ownership | | p-value |
|  |  | N = 229 | | % |  | N = 18 | % |
| FVC (% of pred) | <80 | | 14 | 6.1 |  | 3 | 16..7 | 0.12 |
| ≥80 | | 215 | 93.9 |  | 15 | 83.3 |
| mean ± SD | | 95.80±14.56 |  |  | 88.46±24.79 |  | 0.05 |
| aOR  (95% CI) | | 1.00 (ref) |  |  | 3.70 (0.90–15.21) |  | 0.07 |
| FEV1 (% of pred) | <80 | | 20 | 8.7 |  | 5 | 27.8 | 0.02† |
| ≥80 | | 209 | 91.3 |  | 13 | 72.2 |
| mean ± SD | | 94.99 ± 15.36 |  |  | 86.40±24.43 |  | 0.03† |
| aOR  (95% CI) | | 1.00 (ref) |  |  | 4.38 (1.35–14.14) |  | 0.02† |
| MMEF (% of pred) | <80 | | 2 | 1.2 |  | 0 | 0 | 1 |
| ≥80 | | 162 | 98.8 |  | 15 | 100 |
| mean ± SD | | 103.30 ± 10.49 |  |  | 103.33 ± 9.45 |  | 0.99 |
| aOR  (95% CI) | | 1.00 (ref) |  |  | . |  | 0.99 |
| PEF (% of pred) | <80 | | 50 | 26.2 |  | 4 | 26.7 | 1 |
| ≥80 | | 141 | 73.8 |  | 11 | 73.3 |
| mean ± SD | | 96.01±26.56 |  |  | 83.13±30.21 |  | 0.08 |
| aOR  (95% CI) | | 1.00 (ref) |  |  | 0.94 (0.28–3.13) |  | 0.92 |

pred, predicted; FVC, forced vital capacity; FEV1, forced expiratory volume in one second; PEF, peak expiratory flow; MMEF, maximal midexpiratory flow

Values are mean ± SD

**†**P value < 0.05

eTable 4. Association between dog ownership and sensitization at age 3 and 7 according to the parental history of allergic disease.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sensitization | | Parental history of allergic disease | | | No parental history of allergic disease | | |
| Non-ownership | Ownership | p-value | Non-ownership | Ownership | p-value |
| 3 year | Atopy\* | 91/494 (18.6%) | 8/39 (20.5%) | 0.75 | 113/501(22.6%) | 14/56 (25.0%) | 0.48 |
| Dog | 5/494 (1.0%) | 0/39 (0%) | 1.00 | 4/501 (0.8%) | 1/56 (1.8%) | 0.42 |
| HDM | 77/494 (15.6%) | 5/39 (12.8%) | 0.65 | 90/501(18.0%) | 14/56 (25.0%) | 0.20 |
| 7 year | Atopy\* | 94/209 (45.0%) | 6/22 (27.3%) | 0.11 | 98/198 (49.5%) | 6/20 (30.0%) | 0.10 |
| Dog | 9/209 (4.3%) | 2/22 (9.1%) | 0.32 | 9/198 (4.5%) | 1/20 (5.0%) | 1.00 |
| HDM | 82/209 (39.2%) | 6/22 (27.3%) | 0.27 | 82/198 (41.4%) | 5/20 (25.0%) | 0.15 |

Values are frequency (%)

HDM, House dust mites

\*Atopy: exhibiting a positive response against at least one inhalant allergen on the skin prick test