**Supplementary Material**

Table 1: Main characteristics of subjects participating in the clinical stage of the GEIRD study, according to their participation in the nutritional protocol (with or without EPIC FFQ) and to their case-control status (Controls, CA = current asthma, PA = past asthma, CB = chronic bronchitis, AR = atopic rhinitis, NAR = non-atopic rhinitis).

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|  | **Controls** **EPIC\*** (n=397) | **Controls**†(n=415) | **P-value** |
| **Age at the clinical visit, years** (mean, SD) | 51.9 (12.0) | 49.7 (12.9) | **0.013** |
| **Gender** (% Male) | 48.36 | 51.33 | 0.399 |
| **Smoking habits** (%) |  |  | 0.138 |
| Non-smoker | 53.79 | 50.36 |  |
| Ex-smoker | 32.58 | 30.84 |  |
| Current smoker | 13.64 | 18.8 |  |
| **Drinking habits** (% Current drinker) | 35.1 | 38.98 | 0.253 |
| **Total alcohol** (g/day) |  |  | 0.497 |
| Abstainers | 64.03 | 61.39 |  |
| Ex-drinkers | 1.53 | 0.99 |  |
| <5 | 6.63 | 8.91 |  |
| mag-15 | 17.6 | 18.56 |  |
| 15-30 | 6.12 | 7.67 |  |
| 30-120 | 4.08 | 2.48 |  |
| **BMI, kg/m2** (median, 1st quartile, 3rd quartile) | 25.0 (22.4;27.7) | 24.9 (21.7;28.0) | 0.906 |
| **Physical activity** (%) |  |  | 0.458 |
| Heavy | 5.79 | 7.95 |  |
| Moderate | 36.27 | 34.46 |  |
| Light | 57.93 | 57.59 |  |
| **Education level** (% High) | 75.95 | 73.79 | 0.479 |
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|  | **CA** **EPIC\*** (n=159) | **CA**† (n=441) | **P-value** |
| **Age at the clinical visit, years** (mean, SD) | 50.5 (12.6) | 45.2 (11.8) | **<0.001** |
| **Gender** (% Male) | 49.69 | 50.79 | 0.811 |
| **Smoking habits** (%) |  |  | 0.411 |
| Non-smoker | 50.31 | 45 |  |
| Ex-smoker | 27.67 | 28.18 |  |
| Current smoker | 22.01 | 26.82 |  |
| **Drinking habits** (% Current drinker) | 47.17 | 40.55 | 0.148 |
| **Total alcohol** (g/day) |  |  | 0.25 |
| Abstainers | 52.2 | 58.92 |  |
| Ex-drinkers | 0.63 | 2.35 |  |
| <5 | 14.47 | 9.15 |  |
| mag-15 | 16.98 | 15.02 |  |
| 15-30 | 10.06 | 10.33 |  |
| 30-120 | 5.66 | 4.23 |  |
| **BMI, kg/m2** (median, 1st quartile, 3rd quartile) | 24.8 (22.0;27.6) | 24.7 (22.0;27.8) | 0.737 |
| **Physical activity** (%) |  |  | 0.712 |
| Heavy | 4.4 | 5.9 |  |
| Moderate | 35.22 | 32.88 |  |
| Light | 60.38 | 61.22 |  |
| **Education level** (% High) | 75.95 | 79.26 | 0.386 |
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|  | **PA EPIC**\* (n=78) | **PA**†(n=193) | **P-value** |
| **Age at the clinical visit, years** (mean, SD) | 45.2 (11.3) | 45.1 (10.4) | 0.958 |
| **Gender** (% Male) | 44.87 | 48.44 | 0.595 |
| **Smoking habits** (%) |  |  | 0.773 |
| Non-smoker | 57.14 | 52.36 |  |
| Ex-smoker | 27.27 | 29.84 |  |
| Current smoker | 15.58 | 17.8 |  |
| **Drinking habits** (% Current drinker) | 37.18 | 36.65 | 0.935 |
| **Total alcohol** (g/day) |  |  | 0.722 |
| Abstainers | 62.82 | 62.9 |  |
| Ex-drinkers | 0 | 2.15 |  |
| <5 | 10.26 | 9.14 |  |
| mag-15 | 17.95 | 13.98 |  |
| 15-30 | 6.41 | 7.53 |  |
| 30-120 | 2.56 | 4.3 |  |
| **BMI, kg/m2** (median, 1st quartile, 3rd quartile) | 23.9 (21.9;27.0) | 24.4 (21.8;27.6) | 0.61 |
| **Physical activity** (%) |  |  | 0.728 |
| Heavy | 6.41 | 5.76 |  |
| Moderate | 32.05 | 37.17 |  |
| Light | 61.54 | 57.07 |  |
| **Education level** (% High) | 87.18 | 87.23 | 0.99 |
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|  | **CB** **EPIC\*** (n=47) | **CB**† (n=75) | **P-value** |
| **Age at the clinical visit, years** (mean, SD) | 49.1 (13.7) | 50.9 (12.8) | 0.459 |
| **Gender** (% Male) | 55.32 | 48 | 0.431 |
| **Smoking habits** (%) |  |  | 0.936 |
| Non-smoker | 44.68 | 41.33 |  |
| Ex-smoker | 21.28 | 22.67 |  |
| Current smoker | 34.04 | 36 |  |
| **Drinking habits** (% Current drinker) | 57.45 | 48.65 | 0.345 |
| **Total alcohol** (g/day) |  |  | 0.744 |
| Abstainers | 41.3 | 45.95 |  |
| Ex-drinkers | 2.17 | 5.41 |  |
| <5 | 10.87 | 14.86 |  |
| mag-15 | 19.57 | 16.22 |  |
| 15-30 | 13.04 | 10.81 |  |
| 30-120 | 13.04 | 6.76 |  |
| **BMI, kg/m2** (median, 1st quartile, 3rd quartile) | 25.5 (22.1;28.6) | 24.6 (21.8;27.1) | 0.63 |
| **Physical activity** (%) |  |  | 0.169 |
| Heavy | 10.64 | 2.67 |  |
| Moderate | 27.66 | 26.67 |  |
| Light | 61.7 | 70.67 |  |
| **Education level** (% High) | 70.21 | 66.22 | 0.647 |
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|  | **AR** **EPIC\*** (n=167) | **AR**† (n=240) | **P-value** |
| **Age at the clinical visit, years** (mean, SD) | 49.7 (12.5) | 46.9 (12.7) | **0.031** |
| **Gender** (% Male) | 52.69 | 52.5 | 0.969 |
| **Smoking habits** (%) |  |  | 0.843 |
| Non-smoker | 57.49 | 55.46 |  |
| Ex-smoker | 26.35 | 28.99 |  |
| Current smoker | 16.17 | 15.55 |  |
| **Drinking habits** (% Current drinker) | 40.72 | 39.58 | 0.818 |
| **Total alcohol** (g/day) |  |  | 0.217 |
| Abstainers | 59.51 | 61.02 |  |
| Ex-drinkers | 1.23 | 0.42 |  |
| <5 | 5.52 | 11.44 |  |
| mag-15 | 15.95 | 14.83 |  |
| 15-30 | 13.5 | 8.47 |  |
| 30-120 | 4.29 | 3.81 |  |
| **BMI, kg/m2** (median, 1st quartile, 3rd quartile) | 24.3 (22.6;27.2) | 24.0 (21.8;26.7) | 0.2 |
| **Physical activity** (%) |  |  | 0.255 |
| Heavy | 8.98 | 5.44 |  |
| Moderate | 41.32 | 38.49 |  |
| Light | 49.7 | 56.07 |  |
| **Education level** (% High) | 78.44 | 83.19 | 0.228 |
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|  | **NAR** **EPIC\*** (n=142) | **NAR**† (n=168) | **P-value** |
| **Age at the clinical visit, years** (mean, SD) | 52.3 (12.0) | 52.6 (14.1) | 0.822 |
| **Gender** (% Male) | 44.37 | 41.67 | 0.632 |
| **Smoking habits** (%) |  |  | 0.855 |
| Non-smoker | 43.66 | 45.24 |  |
| Ex-smoker | 34.51 | 31.55 |  |
| Current smoker | 21.83 | 23.21 |  |
| **Drinking habits** (% Current drinker) | 41.13 | 30.95 | 0.063 |
| **Total alcohol** (g/day) |  |  | 0.168 |
| Abstainers | 56.74 | 66.87 |  |
| Ex-drinkers | 2.13 | 3.01 |  |
| <5 | 13.48 | 9.64 |  |
| mag-15 | 13.48 | 14.46 |  |
| 15-30 | 10.64 | 4.22 |  |
| 30-120 | 3.55 | 1.81 |  |
| **BMI, kg/m2** (median, 1st quartile, 3rd quartile) | 24.6 (22.2;28.0) | 24.6 (22.0;27.3) | 0.281 |
| **Physical activity** (%) |  |  | 0.092 |
| Heavy | 6.34 | 4.76 |  |
| Moderate | 42.25 | 31.55 |  |
| Light | 51.41 | 63.69 |  |
| **Education level** (% High) | 68.79 | 77.98 | 0.068 |

\*: Subjects who filled EPIC Food Frequency Questionnaire;

†: Subjects who did not fill EPIC Food Frequency Questionnaire

Table 2: List of the 65 food from the European Prospective Investigation into Cancer and Nutrition Food Frequency Questionnaire Food Frequency Questionnaire (EPIC FFQ) considered for the estimation of flavonoids intake.

|  |  |
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| 1 | Stuffed Pastas |
| 2 | Vegetal soup |
| 3 | Legume soup |
| 4 | Sliced ​​pizza |
| 5 | Pizza |
| 6 | Home-made pizza |
| 7 | Tomatoes (in season) |
| 8 | Tomatoes (out of season) |
| 9 | Green salad |
| 10 | Raw peppers |
| 11 | Onions |
| 12 | Artichokes and celeries |
| 13 | Raw carrots |
| 14 | Potatoes |
| 15 | Baked beans |
| 16 | Peas |
| 17 | Cooked onions |
| 18 | Cooked carrots |
| 19 | Broccoli |
| 20 | Brussels sprouts |
| 21 | Cauliflower |
| 22 | Turnip tops |
| 23 | Cabbage |
| 24 | Black cabbage |
| 25 | Spinach |
| 26 | Eggplant |
| 27 | Beet |
| 28 | Mayonnaise and Russian salad |
| 29 | Apple |
| 30 | Pear |
| 31 | Banana |
| 32 | Kiwi |
| 33 | Orange and Grapefruit |
| 34 | Tangerine |
| 35 | Grape |
| 36 | Peach |
| 37 | Apricot |
| 38 | Plum |
| 39 | Strawberry |
| 40 | Melon |
| 41 | Fruit salad |
| 42 | Dried fruits |
| 43 | Nuts |
| 44 | Red wine |
| 45 | White wine |
| 46 | Aperitifs and fortified wines |
| 47 | Beer |
| 48 | Orange juice |
| 49 | Fruit juice |
| 50 | Cappuccino |
| 51 | Coffee with whole milk |
| 52 | Coffee with low-fat milk |
| 53 | Decaffeinated coffee |
| 54 | Coffee (Espresso) |
| 55 | Coffee (Moka pot) |
| 56 | Other types of coffee |
| 57 | Tea |
| 58 | Yogurt with fruits |
| 59 | Marmalade |
| 60 | Spreadable chocolate |
| 61 | Dairy desserts |
| 62 | Chocolate |
| 63 | Ice cream (in summer season) |
| 64 | Ice cream (in winter season) |
| 65 | Honey |