**Supplementary information**

**Children’s erythrocyte fatty acids are associated with the risk of islet autoimmunity**

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Supplementary information Table 1. Erythrocyte fatty acid status in children in TEDDY nested case-control study

Supplementary information Table 2. The risk of multiple islet autoimmunity associated with erythrocyte fatty acid status in TEDDY nested case-control study.

Supplementary information Table 3. The risk of IAA first autoimmunity associated with erythrocyte fatty acid status in TEDDY nested case-control study.

Supplementary information Table 4. The risk of GADA first autoimmunity associated with erythrocyte fatty acid status in TEDDY nested case-control study.

**Supplementary information Table 1.** Erythrocyte fatty acid status in children in TEDDY nested case-control study.

|  |  |  |  |
| --- | --- | --- | --- |
|  | 3 months | 6 months | Mean over 1-6 years |
| Relative mean percentage of total fatty acids in erythrocytes ± SD | Casesn=292 | Controlsn=732 | Casesn=295 | Controlsn=815 | Casesn=286 | Controlsn=826 |
| *SFA* |  |  |  |  |  |  |
| Myristic acid 14:0 | 0.33 **±** 0.09 | 0.34 **±** 0.09 | 0.30 **±** 0.10 | 0.30 **±** 0.10 | 0.29 **±** 0.08 | 0.29 **±** 0.08 |
| Pentadecanoic acid 15:0 | 0.12 **±** 0.07 | 0.12 **±** 0.04 | 0.11 **±** 0.04 | 0.11 **±** 0.05 | 0.14 **±**0.04 | 0.15 **±** 0.05 |
| Palmitic acid 16:0 | 21.46 **±** 2.23 | 21.28 **±** 2.05 | 21.69 **±** 1.96 | 21.35 **±** 1.91 | 21.85 **±** 1.53 | 21.80 **±** 1.67 |
| Heptadecanoic acid 17:0 | 0.33 **±** 0.10 | 0.33 **±** 0.08 | 0.30 **±** 0.09 | 0.30 **±** 0.08 | 0.34 **±** 0.07 | 0.34 **±** 0.07 |
| iso-heptadecanoic acid i17:0 | 0.07 **±** 0.04 | 0.07 **±** 0.03 | 0.07 **±** 0.03 | 0.07 **±** 0.03 | 0.10 **±** 0.04 | 0.10 **±** 0.04 |
| Stearic acid 18:0 | 13.19 **±** 1.83 | 13.09 **±** 1.66 | 12.59 **±** 1.46 | 12.57 **±** 1.49 | 12.33 **±** 1.39 | 12.20 **±** 1.30 |
| Eicosanoid acid 20:0 | 0.35 **±** 0.10 | 0.35 **±** 0.08 | 0.33 **±** 0.09 | 0.33 **±** 0.08 | 0.27 **±** 0.05 | 0.27 **±** 0.05 |
| Docosanoic acid 22:0  | 0.81 **±** 0.25 | 0.81 **±** 0.22 | 0.83 **±** 0.24 | 0.82 **±** 0.22 | 0.84 **±** 0.21 | 0.85 **±** 0.20 |
| Tetracosanic acid 24:0 | 2.14 **±** 0.59 | 2.11 **±** 0.57 | 2.17 **±** 0.64 | 2.14 **±** 0.60 | 2.23 **±** 0.58 | 2.21 **±** 0.52 |
| *MUFA* |  |  |  |  |  |  |
| Palmitoleic acid 16:1*n-7* | 0.24 **±** 0.11 | 0.24 **±** 0.10 | 0.22 **±** 0.09 | 0.23 **±** 0.10 | 0.24 **±** 0.09 | 0.25 **±** 0.09 |
| Cis vaccenic acid 18:1*n-7* | 1.63 **±** 0.38 | 1.63 **±** 0.33 | 1.48 **±** 0.30 | 1.48 **±** 0.28 | 1.44 **±** 0.18 | 1.44 **±** 0.18 |
| Oleic acid 18:1*n-9* | 15.40 **±** 2.99 | 15.16 **±** 2.86 | 15.53 **±** 2.32 | 15.50 **±** 2.50 | 15.17 **±** 1.95 | 15.27 **±** 2.05 |
| 11-eicosenoic acid 20:1*n-9* | 0.41 **±** 0.28 | 0.41 **±** 0.25 | 0.37 **±** 0.19 | 0.37 **±** 0.19 | 0.37 ± 0.13 | 0.37 ± 0.14 |
| Nervonic acid 24:1*n-9* | 2.66 **±** 0.77 | 2.63 **±** 0.71 | 2.66 **±** 0.82 | 2.60 **±** 0.73 | 2.74 ± 0.71 | 2.68 ± 0.69 |
| *n-6 PUFA* |  |  |  |  |  |  |
| LA 18:2*n-6* | 8.63 **±** 1.59 | 8.74 **±** 1.52 | 9.75 **±** 1.63 | 9.76 **±** 1.63 | 10.43 ± 1.45 | 10.36 ± 1.46 |
| DGLA 20:3*n-6* | 1.39 **±** 0.36 | 1.41 **±** 0.34 | 1.17 **±** 0.30 | 1.20 **±** 0.31 | 1.31 ± 0.32 | 1.32 ± 0.31 |
| AA 20:4*n-6* | 12.38 **±** 2.67 | 12.59 **±** 2.63 | 12.16 **±** 2.38 | 12.37 **±** 2.37 | 12.19 ±2.02 | 12.25 ± 2.10 |
| Adrenic acid 22:4*n-6* | 3.11 **±** 0.74 | 3.09 **±** 0.67 | 2.93 **±** 0.67 | 2.91 **±** 0.70 | 3.19 ± 0.73 | 3.15 ± 0.73 |
| *n-3 PUFA* |  |  |  |  |  |  |
| ALA 18:3*n-3* | 0.09 **±** 0.04 | 0.09 **±** 0.03 | 0.11 **±** 0.04 | 0.11 **±** 0.04 | 0.14 ± 0.05 | 0.15 ± 0.05 |
| EPA 20:5*n-3* | 0.42 **±** 0.27 | 0.47 **±** 0.30 | 0.43 **±** 0.25 | 0.47 **±** 0.29 | 0.47 ± 0.26 | 0.51 ± 0.29 |
| DPA 22:5*n-3* | 1.61 **±** 0.50 | 1.71 **±** 0.49 | 1.67 **±** 0.53 | 1.75 **±** 0.54 | 1.86 ± 0.49 | 1.90 ± 0.50 |
| DHA 22:6*n-3* | 5.23 **±** 1.31 | 5.29 **±** 1.37 | 4.97 **±** 1.31 | 5.02 **±** 1.27 | 3.93 ± 0.99 | 3.99 ± 1.08 |
| *Other* |  |  |  |  |  |  |
| CLA 18:2*n-7* ct/tc10,12 | 0.08 **±** 0.05 | 0.08 **±** 0.04 | 0.07 **±** 0.04 | 0.07 **±** 0.04 | 0.08 ± 0.04 | 0.09 ± 0.04 |
| DMA16 | 2.94 **±** 0.49 | 2.95 **±** 0.47 | 3.06 **±** 0.45 | 3.07 **±** 0.46 | 2.88 ± 0.41 | 2.89 ± 0.39 |
| DMA18 | 4.95 **±** 0.75 | 5.01 **±** 0.70 | 5.03 **±** 0.66 | 5.09 **±** 0.69 | 5.17 ± 0.59 | 5.18 ± 0.60 |

**Supplementary information Table 2.** The risk of multiple islet autoimmunity associated with erythrocyte fatty acid status in TEDDY nested case-control study.

|  |  |
| --- | --- |
|  | Multiple islet autoimmunity, Cases n=233  |
|  | 3 months | 6 months | Mean over 1-6 years |
| Relative proportion (%) of total fatty acids in erythrocyte membrane  | OR (95% CI)a | p-value | OR (95% CI)a | p-value | OR (95% CI)a | p-value |
| *SFA* |  |  |  |  |  |  |
| Myristic acid 14:0 | 0.53 (0.23-1.25) | 0.146 | 1.26 (0.64-2.47) | 0.512 | 0.52 (0.18-1.47) | 0.215 |
| Pentadecanoic acid 15:0 | 1.00 (0.49-2.03) | 0.988 | 1.31 (0.61-2.86) | 0.489 | 0.46 (0.19-1.11) | 0.085 |
| Palmitic acid 16:0 | 0.90 (0.26-3.14) | 0.864 | 2.83 (0.78-10.25) | 0.113 | 3.49 (0.61-19.92) | 0.160 |
| Heptadecanoic acid 17:0 | 1.70 (0.52-5.57) | 0.383 | 1.64 (0.64-4.47) | 0.287 | 1.52 (0.36-6.47) | 0.569 |
| iso-heptadecanoic acid i17:0 | 1.14 (0.81-1.61) | 0.455 | 0.97 (0.70-1.34) | 0.841 | 0.72 (0.43-1.20) | 0.209 |
| Stearic acid 18:0 | 1.30 (0.30-5.57) | 0.723 | 3.30 (0.73-15.05) | 0.123 | **6.16 (1.37-27.76)** | **0.018** |
| Eicosanoid acid 20:0 | 1.12 (0.57-2.20) | 0.740 | 1.09 (0.50-2.34) | 0.833 | 1.32 (0.49-3.54) | 0.583 |
| Docosanoic acid 22:0  | 0.83 (0.37-1.86) | 0.643 | 1.10 (0.48-2.50) | 0.830 | 1.08 (0.41-2.83) | 0.874 |
| Tetracosanic acid 24:0 | 1.09 (0.49-2.44) | 0.839 | 1.36 (0.63-2.91) | 0.432 | 1.71 (0.67-4.32) | 0.260 |
| *MUFA* |  |  |  |  |  |  |
| Palmitoleic acid 16:1*n-7* | 1.06 (0.58-1.96) | 0.844 | 1.01 (0.55-1.86) | 0.967 | 0.77 (0.34-1.75) | 0.527 |
| Cis vaccenic acid 18:1*n-7* | 2.94 (0.86-10.03) | 0.086 | 3.23 (0.92-11.33) | 0.068 | **8.01 (1.47-43.55)** | **0.016** |
| Oleic acid 18:1*n-9* | 1.21 (0.50-2.90) | 0.676 | 0.93 (0.35-2.45) | 0.878 | 2.14 (0.59-7.73) | 0.244 |
| 11-eicosenoic acid 20:1*n-9* | 1.11 (0.67-1.84) | 0.689 | 1.00 (0.59-1.69) | 0.984 | 1.71 (0.78-3.74) | 0.182 |
| Nervonic acid 24:1*n-9* | 0.59 (0.29-1.23) | 0.159 | 1.10 (0.54-2.21) | 0.801 | 1.99 (0.84-4.74) | 0.120 |
| *n-6 PUFA* |  |  |  |  |  |  |
| LA 18:2*n-6* | 0.72 (0.31-1.68) | 0.452 | 1.19 (0.51-2.80) | 0.693 | 2.23 (0.71-7.04) | 0.172 |
| DGLA 20:3*n-6* | 1.07 (0.49-2.30) | 0.873 | 0.67 (0.31-1.44) | 0.305 | 1.09 (0.48-2.51) | 0.832 |
| AA 20:4*n-6* | 1.20 (0.46-3.14) | 0.708 | 0.89 (0.37-2.13) | 0.794 | 1.31 (0.45-3.80) | 0.617 |
| Adrenic acid 22:4*n-6* | 1.50 (0.61-3.68) | 0.381 | 1.26 (0.63-2.53) | 0.507 | 2.09 (0.75-5.84) | 0.159 |
| *n-3 PUFA* |  |  |  |  |  |  |
| ALA 18:3*n-3* | 0.70 (0.40-1.21) | 0.197 | 0.67 (0.39-1.17) | 0.162 | 0.74 (0.39-1.43) | 0.375 |
| EPA 20:5*n-3* | 0.77 (0.51-1.16) | 0.215 | 0.80 (0.54-1.18) | 0.259 | 0.65 (0.40-1.06) | 0.083 |
| DPA 22:5*n-3* |  0.63 (0.29-1.37) | 0. 243 | 0.76 (0.40-1.45) | 0.401 | 0.79 (0.33-1.90) | 0.602 |
| DHA 22:6*n-3* | 1.33 (0.59-2.97) | 0.495 | 1.16 (0.59-2.29) | 0.663 | 1.11 (0.54-2.30) | 0.783 |
| *Other* |  |  |  |  |  |  |
| CLA 18:2*n-7* ct/tc10,12 | 1.13 (0.79-1.61) | 0.520 | 0.93 (0.66-1.29) | 0.649 | 0.61 (0.37-1.01) | 0.052 |
| DMA16 | 1.91 (0.60-6.11) | 0.274 | 0.97 (0.34-2.77) | 0.955 | 1.48 (0.42-5.24) | 0.543 |
| DMA18 | 1.20 (0.32-4.47) | 0.788 | 0.87 (0.26-2.91) | 0.818 | **6.41 (1.15-35.74)** | **0.034** |
| Ratio *n-6:n-3* PUFA | 0.93 (0.74-1.16) | 0.498 | 0.99 (0.82-1.19) | 0.927 | 1.15 (0.92-1.43) | 0.210 |

aConditional logistic regression analysis with centered log-ratio transformed variables (except for the ratio of sum n-6 and sum n-3) was adjusted for HLA genotype DR3/4, ancestry (PC1 and PC2) and weight z-score.

**Supplementary information Table 3.** The risk of IAA first autoimmunity associated with erythrocyte fatty acid status in TEDDY nested case-control study.

|  |  |
| --- | --- |
|  | IAA first autoimmunity, Cases n=193  |
|  | 3 months | 6 months | Mean over 1-6 years |
| Relative proportion (%) of total fatty acids in erythrocyte membrane  | OR (95% CI)a | p-value | OR (95% CI)a | p-value | OR (95% CI)a | p-value |
| *SFA* |  |  |  |  |  |  |
| Myristic acid 14:0 | 0.69 (0.28-1.69) | 0.415 | 0.71 (0.33-1.52) | 0.382 | 0.95 (0.33-2.72) | 0.922 |
| Pentadecanoic acid 15:0 | 1.08 (0.48-2.41) | 0.855 | 0.65 (0.30-1.39) | 0.266 | 0.57 (0.21-1.57) | 0.277 |
| Palmitic acid 16:0 | 1.17 (0.30-4.60) | 0.818 | 2.20 (0.53-9.16) | 0.279 | 3.89 (0.53-28.72) | 0.183 |
| Heptadecanoic acid 17:0 | 1.24 (0.39-3.95) | 0.714 | 0.85 (0.30-2.41) | 0.764 | 0.97 (0.21-4.55) | 0.966 |
| iso-heptadecanoic acid i17:0 | 1.00 (0.69-1.46) | 0.991 | 0.87 (0.61-1.22) | 0.415 | 0.74 (0.41-1.33) | 0.312 |
| Stearic acid 18:0 | 2.28 (0.50-10.43) | 0.290 | 1.04 (0.21-5.18) | 0.964 | 4.35 (0.82-22.99) | 0.084 |
| Eicosanoid acid 20:0 | 1.45 (0.67-3.12) | 0.342 | 0.81 (0.35-1.86) | 0.617 | 1.43 (0.47-4.34) | 0.526 |
| Docosanoic acid 22:0  | 1.18 (0.56-2.48) | 0.658 | 0.92 (0.40-2.14) | 0.853 | 0.97 (0.32-2.90) | 0.952 |
| Tetracosanic acid 24:0 | 1.59 (0.69-3.65) | 0.273 | 1.22 (0.55-2.69) | 0.621 | 1.37 (0.47-4.00) | 0.568 |
| *MUFA* |  |  |  |  |  |  |
| Palmitoleic acid 16:1*n-7* | 1.20-0.65-2.22 | 0.557 | 0.95 (0.50-1.82) | 0.883 | 0.83 (0.32-2.16) | 0.705 |
| Cis vaccenic acid 18:1*n-7* | 1.85 (0.48-7.10) | 0.368 | 1.17 (0.29-4.79) | 0.828 | 4.05 (0.56-29.24) | 0.166 |
| Oleic acid 18:1*n-9* | 1.89 (0.71-5.03) | 0.201 | 1.71 (0.57-5.09) | 0.339 | 3.62 (0.80-16.38) | 0.095 |
| 11-eicosenoic acid 20:1*n-9* | 1.20 (0.71-2.02) | 0.503 | 1.21 (0.65-2.25) | 0.550 | 1.43 (0.60-3.44) | 0.423 |
| Nervonic acid 24:1*n-9* | 1.27 (0.60-2.68) | 0.532 | 1.34 (0.65-2.73) | 0.426 | 1.83 (0.69-4.82) | 0.225 |
| *n-6 PUFA* |  |  |  |  |  |  |
| LA 18:2*n-6* | 0.69 (0.28-1.69) | 0.411 | 2.01 (0.83-4.88) | 0.121 | 3.02 (0.79-11.57) | 0.107 |
| DGLA 20:3*n-6* | 1.15 (0.51-2.60) | 0.743 | 1.02 (0.46-2.27) | 0.962 | 1.16 (0.43-3.17) | 0.767 |
| AA 20:4*n-6* | 1.00 (0.39-2.59) | 0.999 | 1.29 (0.51-3.26) | 0.593 | 1.28 (0.41-3.99) | 0.669 |
| Adrenic acid 22:4*n-6* | 1.23 (0.53-2.88) | 0.633 | 2.09 (0.94-4.63) | 0.071 | 2.83 (1.00-8.03) | 0.051 |
| *n-3 PUFA* |  |  |  |  |  |  |
| ALA 18:3*n-3* | 0.93 (0.51-1.68) | 0.797 | 1.04 (0.59-1.83) | 0.889 | 1.09 (0.60-1.98) | 0.783 |
| EPA 20:5*n-3* | 0.71 (0.47-1.07) | 0.105 | 0.89 (0.58-1.37) | 0.604 | 0.60 (0.35-1.01) | 0.056 |
| DPA 22:5*n-3* | **0.45 (0.22-0.93)** | **0.031** | 1.00 (0.50-1.98) | 0.990 | 0.76 (0.30-1.94) | 0.563 |
| DHA 22:6*n-3* | 1.08 (0.55-2.14) | 0.822 | 0.63 (0.30-1.34) | 0.230 | 0.64 (0.28-1.48) | 0.293 |
| *Other* |  |  |  |  |  |  |
| CLA 18:2*n-7* ct/tc10,12 | 0.98 (0.67-1.44) | 0.925 | 0.83 (0.58-1.21) | 0.333 | 0.63 (0.38-1.05) | 0.074 |
| DMA16 | 0.73 (0.29-1.86) | 0.513 | 2.54 (0.81-7.97) | 0.110 | 1.75 (0.42-7.29) | 0.443 |
| DMA18 | 0.62 (0.21-1.79) | 0.376 | 1.96 (0.50-7.59) | 0.333 | 3.19 (0.48-21.10) | 0.230 |
| Ratio *n-6:n-3* PUFA | 1.00 (0.90-1.12) | 0.967 | **1.24 (1.01-1.53)** | **0.038** | **1.41 (1.09-1.84)** | **0.010** |

aConditional logistic regression analysis with centered log-ratio transformed variables (except for the ratio of sum n-6 and sum n-3) was adjusted for HLA genotype DR3/4, ancestry (PC1 and PC2) and weight z-score.

**Supplementary information Table 4.** The risk of GADA first autoimmunity associated with erythrocyte fatty acid status in TEDDY nested case-control study.

|  |  |
| --- | --- |
|  | GADA first autoimmunity, Cases n=131  |
|  | 3 months | 6 months | Mean over 1-6 years |
| Relative proportion (%) of total fatty acids in erythrocyte membrane  | OR (95% CI)a | p-value | OR (95% CI)a | p-value | OR (95% CI)a | p-value |
| *SFA* |  |  |  |  |  |  |
| Myristic acid 14:0 | 1.20 (0.42-3.45) | 0.740 | **2.81 (1.09-7.19)** | **0.032** | 1.52 (0.41-5.66) | 0.530 |
| Pentadecanoic acid 15:0 | 1.92 (0.65-5.64) | 0.239 | 1.80 (0.55-5.82) | 0.329 | 0.79 (0.24-2.61) | 0.703 |
| Palmitic acid 16:0 | 3.67 (0.63-21.50) | 0.149 | 2.98 (0.60-14.80) | 0.183 | 1.02 (0.09-10.99) | 0.990 |
| Heptadecanoic acid 17:0 | 4.20 (0.73-24.10) | 0.107 | 3.35 (0.65-17.20) | 0.148 | 0.82 (0.14-4.66) | 0.819 |
| iso-heptadecanoic acid i17:0 | 1.07 (0.66-1.74) | 0.798 | 0.98 (0.64-1.51) | 0.934 | 0.74 (0.36-1.54) | 0.425 |
| Stearic acid 18:0 | 1.56 (0.19-12.46) | 0.678 | 2.39 (0.33-17.52) | 0.392 | 4.27 (0.58-31.25) | 0.153 |
| Eicosanoid acid 20:0 | 0.84 (0.25-2.75) | 0.767 | 1.73 (0.59-5.06) | 0.316 | 1.49 (0.40-5.57) | 0.555 |
| Docosanoic acid 22:0  | 0.95 (0.30-3.01) | 0.934 | 1.87 (0.57-6.12) | 0.304 | 1.46 (0.42-5.07) | 0.555 |
| Tetracosanic acid 24:0 | 1.18 (0.40-3.46) | 0.765 | 1.65 (0.56-4.88) | 0.369 | 1.81 (0.56-5.91) | 0.323 |
| *MUFA* |  |  |  |  |  |  |
| Palmitoleic acid 16:1*n-7* | 1.27 (0.48-3.37) | 0.634 | 1.31 (0.52-3.30) | 0.561 | 0.43 (0.14-1.37) | 0.153 |
| Cis vaccenic acid 18:1*n-7* | 0.92 (0.21-4.01) | 0.914 | 1.30 (0.20-8.30) | 0.783 | 0.38 (0.08-1.94) | 0.245 |
| Oleic acid 18:1*n-9* | 3.03 (0.74-12.39) | 0.123 | 1.18 (0.32-4.43) | 0.801 | 0.48 (0.07-3.31) | 0.456 |
| 11-eicosenoic acid 20:1*n-9* | 1.22 (0.55-2.71) | 0.627 | 0.89 (0.42-1.86) | 0.750 | 1.16 (0.32-4.15) | 0.825 |
| Nervonic acid 24:1*n-9* | 1.29 (0.49-3.40) | 0.608 | 1.88 (0.71-4.99) | 0.203 | 2.49 (0.77-8.04) | 0.128 |
| *n-6 PUFA* |  |  |  |  |  |  |
| LA 18:2*n-6* | 0.68 (0.21-2.22) | 0.519 | 0.46 (0.13-1.60) | 0.219 | 1.26 (0.32-5.02) | 0.742 |
| DGLA 20:3*n-6* | 0.60 (0.20-1.77) | 0.354 | 0.60 (0.22-1.67) | 0.328 | 1.12 (0.38-3.20) | 0.852 |
| AA 20:4*n-6* | 0.37 (0.10-1.41) | 0.144 | **0.26 (0.08-0.90)** | **0.033** | 0.99 (0.28-3.45) | 0.982 |
| Adrenic acid 22:4*n-6* | 0.33 (0.09-1.29) | 0.111 | **0.29 (0.10-0.91)** | **0.033** | 0.97 (0.29-3.22) | 0.960 |
| *n-3 PUFA* |  |  |  |  |  |  |
| ALA 18:3*n-3* | 0.94 (0.45-1.98) | 0.872 | 0.80 (0.42-1.52) | 0.488 | 1.09 (0.46-2.57) | 0.843 |
| EPA 20:5*n-3* | 0.95 (0.50-1.81) | 0.882 | 0.97 (0.57-1.64) | 0.905 | 0.96 (0.53-1.76) | 0.903 |
| DPA 22:5*n-3* | 0.52 (0.18-1.47) | 0.215 | 0.54 (0.24-1.23) | 0.143 | 1.05 (0.33-3.30) | 0.934 |
| DHA 22:6*n-3* | 0.97 (0.30-3.20) | 0.962 | 1.11 (0.45-2.73) | 0.818 | 1.04 (0.41-2.63) | 0.934 |
| *Other* |  |  |  |  |  |  |
| CLA 18:2*n-7* ct/tc10,12 | 0.96 (0.58-1.57) | 0.867 | 1.11 (0.71-1.73) | 0.662 | 0.92 (0.51-1.67) | 0.783 |
| DMA16 | 0.55 (0.10-2.88) | 0.475 | 0.25 (0.05-1.20) | 0.084 | 0.59 (0.12-2.91) | 0.517 |
| DMA18 | 0.40 (0.06-2.53) | 0.330 | 0.16 (0.02-1.18) | 0.072 | 0.57 (0.08-4.14) | 0.576 |
| Ratio *n-6:n-3* PUFA | 0.88 (0.62-1.25) | 0.480 | 0.84 (0.63-1.12) | 0.229 | 1.05 (0.79-1.41) | 0.722 |

aConditional logistic regression analysis with centered log-ratio transformed variables (except for the ratio of sum n-6 and sum n-3) was adjusted for HLA genotype DR3/4, ancestry (PC1 and PC2) and weight z-score.