**Supplemental Table 1** Spearman's rank correlation coefficients between dietary and serum omega-3 PUFAs among controls

|  |  |
| --- | --- |
| **Serum omega-3PUFAs (% of total FAs)** | **Energy-adjusted dietary omega-3 PUFA intakes** |
| 18:3 omega-3 (ALA) | 22:5 omega-3 (DPA) | 20:5 omega-3 (EPA) | 22:6 omega-3 (DHA) |
| 18:3 n-3 (ALA) | 0.091 | 0.073 | 0.014 | 0.022 |
| 20:5 n-3 (EPA) | 0.067 | 0.174\*\* | 0.353\*\*\* | 0.383\*\*\* |
| 22:5 n-3 (DPA) | 0.082 | 0.324\*\*\* | 0.393\*\*\* | 0.418\*\*\* |
| 22:6 n-3 (DHA) | 0.082 | 0.369\*\*\* | 0.399\*\*\* | 0.476\*\*\* |

Abbreviations: FA= fatty acid; PUFA = polyunsaturated fatty acid; ALA = alpha-linolenic acid; EPA = eicosapentaenoic acid; DPA = docosapentaenoic acid; DHA = docosahexaenoic acid; omega-3 PUFAs = omega-3 polyunsaturated fatty acids.

\**P* < 0.05, \*\* *P* < 0.01, \*\*\* *P* < 0.001.

**Supplemental Table 2** Beta and standard errors for association between dietary and serum omega-3 PUFA and PCOS by phenotypes a

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **PCOM+HA+OD (n=111)** |  | **PCOM+HA (n=94)** |  | **PCOM +OD (n=70)** |  | **HA+OD (n=50)** | **p for interaction** |
| **Beta (se)** | **p** |  | **Beta (se)** | **p** |  | **Beta (se)** | **p** |  | **Beta (se)** | **p** |
| **Dietary omega-3 PUFA intakes** |  |  |  |  |  |  |  |  |  |  |  |  |
| Total omega-3 PUFAs (g/day) | -0.090 (0.085) | 0.290 |  | -0.084 (0.092) | 0.361 |  | -0.087 (0.097) | 0.370 |  | -0.068 (0.106) | 0.521 | 0.541 |
| Long-chain omega-3 PUFAs (mg/day) | -0.215 (0.100) | **0.032** |  | -0.197 (0.104) | 0.058 |  | -0.165 (0.107) | 0.123 |  | -0.147 (0.110) | 0.169 | 0.154 |
| 18:3 n-3 (ALA) (g/day) | -0.011 (0.090) | 0.903 |  | -0.010 (0.101) | 0.921 |  | -0.009 (0.107) | 0.933 |  | -0.007 (0.119) | 0.953 | 0.991 |
| 20:5 n-3 (EPA) (mg/day) | -0.160 (0.106) | 0.131 |  | -0.141 (0.108) | 0.192 |  | -0.139 (0.114) | 0.223 |  | -0.137 (0.117) | 0.242 | 0.812 |
| 22:5 n-3 (DPA) (mg/day) | -0.082 (0.078) | 0.293 |  | -0.071 (0.087) | 0.414 |  | -0.069 (0.091) | 0.448 |  | -0.060 (0.097) | 0.536 | 0.724 |
| 22:6 n-3 (DHA) (mg/day) | -0.178 (0.104) | 0.087 |  | -0.151 (0.108) | 0.162 |  | -0.141 (0.114) | 0.216 |  | -0.132 (0.119) | 0.267 | 0.855 |
| **Serum phospholipid omega-3 PUFAs, %** |  |  |  |  |  |  |  |  |  |  |  |  |
| Total omega-3 PUFAs | -0.229 (0.092) | **0.013** |  | -0.211 (0.100) | **0.035** |  | -0.201 (0.103) | 0.051 |  | -0.185 (0.106) | 0.081 | 0.137 |
| Long-chain omega-3 PUFAs | -0.235 (0.091) | **0.010** |  | -0.220 (0.101) | **0.029** |  | -0.209 (0.103) | **0.042** |  | -0.195 (0.105) | 0.063 | 0.098 |
| 18:3 n-3 (ALA) | -0.086 (0.110) | 0.434 |  | -0.075 (0.119) | 0.529 |  | -0.055 (0.122) | 0.652 |  | -0.054 (0.124) | 0.663 | 0.624 |
| 20:5 n-3 (EPA) | -0.201 (0.101) | **0.047** |  | -0.190 (0.105) | 0.070 |  | -0.171 (0.109) | 0.117 |  | -0.169 (0.114) | 0.138 | 0.210 |
| 22:5 n-3 (DPA) | -0.171 (0.091) | 0.060 |  | -0.128 (0.099) | 0.196 |  | -0.119 (0.102) | 0.243 |  | -0.121 (0.109) | 0.267 | 0.428 |
| 22:6 n-3 (DHA) | -0.214 (0.084) | **0.011** |  | -0.205 (0.088) | **0.020** |  | -0.188 (0.090) | **0.037** |  | -0.181 (0.104) | 0.082 | 0.138 |

Abbreviations: BMI = body mass index; WHR = waist hip ratio; SD = standard deviation; IQR = interquartile range; PCOM = polycystic ovarian morphology; HA = hyperandrogenism; OD = ovulatory dysfunction; ALA = alpha-linolenic acid; EPA = eicosapentaenoic acid; DPA = docosapentaenoic acid; DHA = docosahexaenoic acid.

a Conditional logistic regression was used to calculate the beta regression coefficients.

The regression model was adjusted for age, BMI, WHR, age at menarche, education, current smokers, current alcohol drinkers, use of fish oil supplements, physical activity, SBP, DBP, fasting glucose, and total energy intake.