**Supplemental Table 1.** Fatty Acids Concentrations in Red Blood Cell Phospholipids and Total Lipids in Included Studies *a*

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristics | Red blood cell phospholipids | Red blood cell total lipids | P value |
| No. of studies | 25 | 32 |  |
| No. of participants | 1294 | 1798 |  |
| Publication year | 1983-2012 | 1986-2013 |  |
| Age | 30 (18) | 43 (15) |  |
| Female sex, % | 51 | 52 |  |
| n-3 fatty acids concentrations %*b* |  |  |  |
| DHA | 4.29 (1.45) | 4.49 (1.26) | *0.59* |
| EPA  | 0.82 (0.53) | 0.72 (0.36) | *0.42* |
| DPA  | 2.06 (0.53) | 1.95 (0.57) | *0.57* |
| Total n-3 PUFAs  | 7.44 (2.40) | 7.64 (1.12) | *0.77* |

*a*Mean (SD) (all such values)

*b* n-3 fatty acids concentrations were expressed as %(wt/wt) of all fatty acids

**Supplemental Table 2.** Mean difference conversion factors between omega-3 fatty acids weight percentage in plasma and red blood cell

|  |  |  |  |
| --- | --- | --- | --- |
| Fatty Acids | From plasma phospholipids to RBC*a* |  | From plasma total lipids to RBC*b* |
|  | Estimate | 95% CI |  | Estimate | 95% CI |
| EPA | -0.17 | -0.23, -0.10 |  | -0.03 | -0.13, 0.07 |
| DHA | 0.63 | 0.44, 0.82 |  | 2.25 | 1.85, 2.64 |
| DPA | 1.19 | 1.07, 1.31 |  | 1.38 | 1.06, 1.71 |
| Total n-3 PUFAs | 1.40 | 1.04, 1.76 |  | 4.17 | 3.57, 4.78 |

*a* Conversion factors were derived from meta-analysis shown in supplement figure 1, 2, 3 and 4

*b* Conversion factors were derived from meta-analysis shown in supplement figure 5, 6, 7 and 8



 **Supplemental Figure 1.** Mean difference conversion factors between EPA in PPL and RBC. The black dot data markers represent WMDs; the horizontal lines represent 95% CIs, with the marker size reflecting the statistical weight of the study in the meta-analysis. The diamond data marker represents the WMDs and 95% CIs for the outcome of interest for all studies as a whole. This evaluation used the random-effects model.

MD: mean difference; PPL: plasma phospholipids; RBC: red blood cell; Refid: reference number of the study; WMD: weighted mean difference.



 **Supplemental Figure 2.** Mean difference conversion factors between DHA in PPL and RBC. The black dot data markers represent WMDs; the horizontal lines represent 95% CIs, with the marker size reflecting the statistical weight of the study in the meta-analysis. The diamond data marker represents the WMDs and 95% CIs for the outcome of interest for all studies as a whole. This evaluation used the random-effects model.

MD: mean difference; PPL: plasma phospholipids; RBC: red blood cell; Refid: reference number of the study; WMD: weighted mean difference.



 **Supplemental Figure 3.** Mean difference conversion factors between DPA in PPL and RBC. The black dot data markers represent WMDs; the horizontal lines represent 95% CIs, with the marker size reflecting the statistical weight of the study in the meta-analysis. The diamond data marker represents the WMDs and 95% CIs for the outcome of interest for all studies as a whole. This evaluation used the random-effects model.

MD: mean difference; PPL: plasma phospholipids; RBC: red blood cell; Refid: reference number of the study; WMD: weighted mean difference.



 **Supplemental Figure 4.** Mean difference conversion factors between Total n-3 PUFAs in PPL and RBC. The black dot data markers represent WMDs; the horizontal lines represent 95% CIs, with the marker size reflecting the statistical weight of the study in the meta-analysis. The diamond data marker represents the WMDs and 95% CIs for the outcome of interest for all studies as a whole. This evaluation used the random-effects model.

MD: mean difference; PPL: plasma phospholipids; RBC: red blood cell; Refid: reference number of the study; WMD: weighted mean difference.



 **Supplemental Figure 5.** Mean difference conversion factors between EPA in PTL and RBC. The black dot data markers represent WMDs; the horizontal lines represent 95% CIs, with the marker size reflecting the statistical weight of the study in the meta-analysis. The diamond data marker represents the WMDs and 95% CIs for the outcome of interest for all studies as a whole. This evaluation used the random-effects model.

MD: mean difference; PTL: plasma total pholipids; RBC: red blood cell; Refid: reference number of the study; WMD: weighted mean difference.



 **Supplemental Figure 6.** Mean difference conversion factors between DHA in PTL and RBC. The black dot data markers represent WMDs; the horizontal lines represent 95% CIs, with the marker size reflecting the statistical weight of the study in the meta-analysis. The diamond data marker represents the WMDs and 95% CIs for the outcome of interest for all studies as a whole. This evaluation used the random-effects model.

MD: mean difference; PTL: plasma total lipids; RBC: red blood cell; Refid: reference number of the study; WMD: weighted mean difference.



 **Supplemental Figure 7.** Mean difference conversion factors between DPA in PTL and RBC. The black dot data markers represent WMDs; the horizontal lines represent 95% CIs, with the marker size reflecting the statistical weight of the study in the meta-analysis. The diamond data marker represents the WMDs and 95% CIs for the outcome of interest for all studies as a whole. This evaluation used the random-effects model.

MD: mean difference; PTL: plasma total lipids; RBC: red blood cell; Refid: reference number of the study; WMD: weighted mean difference.



 **Supplemental Figure 8.** Mean difference conversion factors between Total n-3 PUFAs in PTL and RBC. The black dot data markers represent WMDs; the horizontal lines represent 95% CIs, with the marker size reflecting the statistical weight of the study in the meta-analysis. The diamond data marker represents the WMDs and 95% CIs for the outcome of interest for all studies as a whole. This evaluation used the random-effects model.

MD: mean difference; PTL: plasma total lipids; RBC: red blood cell; Refid: reference number of the study; WMD: weighted mean difference.