**Comparison of** **current World Health Organization guidelines with physiologically based serum ferritin thresholds for iron deficiency in healthy young children and non-pregnant women using data from the Third National Health and Nutrition Examination Survey**

Zuguo Mei

**Supplemental Table 1.** Age-specific serum ferritin (SF, µg/L) concentration thresholds (95% confidence interval in parentheses) identified by hemoglobin and erythrocyte zinc protoporphyrin using restricted cubic spline (RCS) regression with 5 knots in a healthy sample1 of United Sates children aged 12–59 months participating in the Third National Health and Nutrition Examination Survey (1988–1994)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **12-23 mos**2(n**=**494**)** | **24-59 mos**2(n**=**2122**)** | **p value**3(12-23 vs 24-59 mos) |
| **Hemoglobin (Hb)** |  |  |  |
| SF corresponding to median Hb plateau point | 13.1(10.5, 16.4) | 23.5 (19.4, 28.3) | 0.0088 |
| RCS Model Adjusted R2, % | 6.4 | 2.2 |  |
|  |  |  |  |
| **Erythrocyte zinc protoporphyrin (eZnPP)** |  |  |  |
| SF corresponding to median eZnPP minima point | 14.5(11.5, 23.8)  | 19.4 (18.6, 20.2)  | 0.0737 |
| RCS Model Adjusted R2, % | 17.3 | 13.5 |  |

1Unweighted n and analyses. The following exclusions apply to define a healthy sample: children with infection.

2All plateau and minima estimates and their 95% confidence interval (CI) were obtained from 5000 bootstrap replicates. All CIs have been corrected for bias using the bias corrected acceleration (BCa) approach (20).

3p-values indicates significant differences in effect sizes at p < 0.05. Test for heterogeneity from 2-sided random effect meta-analysis with Cochrane’s Q at 1df.

**Supplemental Table 2.** Age-specific serum ferritin (SF, µg/L) concentration thresholds (95% confidence interval in parentheses) identified by hemoglobin and erythrocyte zinc protoporphyrin using restricted cubic spline (RCS) regression with 5 knots in a healthy sample1 of United Sates non-pregnant women aged 15–49 years participating in the Third National Health and Nutrition Examination Survey (1988–1994)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **15-19 y**2**(n=**810**)** | **20-49 y**2**(n=**3829**)** | **p value**3(15-19 vs 20-49y) |
| **Hemoglobin (Hb)** |  |  |  |
| SF corresponding to median Hb plateau point | 21.5 (18.2, 25.0) | 26.4 (24.8, 29.0) | 0.035 |
| RCS Model Adjusted R2, % | 16.1 | 22.4 |  |
|  |  |  |  |
| **Erythrocyte zinc protoporphyrin (eZnPP)** |  |  |  |
| SF corresponding to median eZnPP minima point | 18.6 (15.2, 20.1) | 23.6 (22.8, 24.7) | < .0001 |
| RCS Model Adjusted R2, % | 25.3 | 23.8 |  |

1Unweighted n and analyses.

SF geometric means did not statistically differ between women aged 20-34 y and 35-49 y (Table 1) thus we combined the two groups for the RCS analysis. The following exclusions apply to define a healthy sample: non-pregnant women with infection, inflammation and liver disease.

2All plateau and minima estimates and their 95% confidence interval (CI), were obtained from 5000 bootstrap replicates. All CIs have been corrected for bias using the bias corrected acceleration (BCa) approach (20).

3p-values indicates significant differences in effect sizes at p < 0.05. Test for heterogeneity from 2-sided random effect meta-analysis with Cochrane’s Q at 1df.