To the editor:

Is the recommended daily iron intake for women too low?

The recommended daily allowance/intake (RDA/RDI) for iron in menstruating and nonmenstruating women in the United Kingdom is 14.8 mg and 8.7 mg, respectively, whereas in the United States, 18 mg and 8 mg are the general recommendations. The RDA/RDI levels are therefore considered sufficient to maintain the female iron balance; however, with 90% of menstruating and 34% of nonmenstruating United Kingdom women failing to attain these levels from their diet, supplementation is required.

Serum ferritin concentrations, in the absence of inflammation, provide a reliable estimate of a person’s iron status. Although a value of 69 µg/L indicates a 99% level of confidence for stainable bone marrow iron, Guyatt et al suggest that a serum ferritin concentration of 100 µg/L or higher ensures that a person is iron replete without the need to undertake bone marrow aspirates. In a study of more than 500 menstruating United Kingdom wartime servicewomen receiving a daily food ration providing 35 mg of iron, all had significant increases in hemoglobin concentrations 10 months later. In men and women given a daily iron supplement of 100 mg, increases in hemoglobin concentrations occurred only in females and the mean values between the sexes remained in a negative iron balance despite taking 3 times the RDA/RDI levels. It is noteworthy that this level of iron supplementation is 3 times higher than the United States/United Kingdom RDA/RDI recommendations. In menstruating women taking no iron (group III), we expected 10% capable of maintaining their serum ferritin concentration by diet alone; none were able to do so. In menstruating women taking Fe 24 mg/d, only 3 (25%) maintained their ferritin status. In those taking Fe 48 mg/d (group V), 80% maintained their serum ferritin concentrations; however, 20% remained in a negative iron balance despite taking 3 times the RDA/RDI levels.

The RDA/RDI recommendation for iron in women appears inadequate, and further study in a larger cohort of iron-replete women is urgently required.

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Conflict-of-interest disclosure: The authors declare no competing financial interests.

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Table 1. Fasting serum ferritin concentrations from 52 iron-replete* women basally and after 6 months of taking a daily iron supplement providing either 24 mg or 48 mg of iron or no supplementation

<table>
<thead>
<tr>
<th></th>
<th>Age, y</th>
<th>Baseline ferritin, µg/L</th>
<th>Ferritin at 6 mo, µg/L</th>
<th>Weekly change, µg/L</th>
<th>P</th>
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</thead>
<tbody>
<tr>
<td>Nonmenstruating women</td>
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<tr>
<td>No Fe/group I, n = 9</td>
<td>62 ± 8.4</td>
<td>193 ± 78</td>
<td>142 ± 67</td>
<td>−1.98 ± 1.00</td>
<td>&lt; .004</td>
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<tr>
<td>Fe 24 mg/group II, n = 11</td>
<td>58 ± 9.0</td>
<td>151 ± 67</td>
<td>146 ± 34</td>
<td>−0.18 ± 0.90</td>
<td>.765</td>
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<tr>
<td>Menstruating women</td>
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<tr>
<td>No Fe/group III, n = 10</td>
<td>40 ± 11.8</td>
<td>205 ± 48</td>
<td>147 ± 54</td>
<td>−2.26 ± 1.06</td>
<td>&lt; .002</td>
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<tr>
<td>Fe 24 mg/group IV, n = 12</td>
<td>41 ± 9.1</td>
<td>137 ± 35</td>
<td>112 ± 40</td>
<td>−0.96 ± 0.66</td>
<td>&lt; .001</td>
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<tr>
<td>Fe 48 mg/group V, n = 10</td>
<td>42 ± 8.2</td>
<td>156 ± 64</td>
<td>151 ± 45</td>
<td>−0.19 ± 1.16</td>
<td>.846</td>
</tr>
</tbody>
</table>

Within-group statistical analysis (Wilcoxon signed rank test). Values are expressed as mean ± standard deviation.

*Serum ferritin ≥ 100 µg/L and ESR ≤ 10 mm/h.
References


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