HAEMOGLOBIN AND FERRITIN CONCENTRATION IN FIRST-TIME BLOOD DONORS

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BACKGROUND / AIM
In our Centre for Donor Haemoglobin and Iron, our primary task is to prevent iron deficiency and with that low haemoglobin concentration caused by iron deficiency, amongst our blood donors. Therefore, it would be interesting to see the starting point of our donor population, and to investigate the haemoglobin (Hb) and ferritin concentration of first-time donors, before they gave their first unit of whole blood.

METHODS
Healthy women and men aged 17 – 60 years are eligible as first-time blood donors in Denmark. In all first-time donors we measured full blood count (FBC) and ferritin concentration (ferritin). FBC was measured on Sysmex XE 2100 D, and ferritin was measured on an EDTA sample, also used for testing for viral markers, on Ortho Vitros 3600 or 5600. The results were transferred electronically to our donor IT system Blodflödet and evaluated by our Donor-Haemoglobin-and-Iron-Resource-Team, which is staff with special training in haematology. For the donor population, Hb is given as mean, while ferritin and age is given as median.

RESULTS
During the 6 months October 2013 through March 2014, 2753 first-time donors (1631 (59%) women and 1122 (41%) men), were registered. Most (75%) first-time donors were younger than 30 years of age, and the age was 24 years.

FEMALE DONORS (Table 1)
Age: 23 years
Haemoglobin (Fig 1 and 2): For female first-time donors Hb was 8.61mM / 13.88g/dL and ferritin was 47.4µg/L and in 433 (27%) ferritin was low (<30µg/L) or very low (<15µg/L) in 90% (6%). Of the 433 female first-time donors with ferritin <30µg/L, the Hb was normal (>7.8mM / 12.5g/dL) in 389 (90%) and low in 44 (10%). In 1036 (64%) ferritin was <60µg/L and they will be offered iron supplementation with future donations.

FERRITIN
β

SUMMARY/CONCLUSIONS
First-time donors were young, with 75% younger than 30 years and the female/male ratio was 59/41. Of all 2753 first-time donors 1119 (41%) had ferritin <60µg/L and they will be offered iron supplementation at future donations.

The male first-time donors neither had low Hb nor low ferritin, even with a significantly lower ferritin in young donors.

Female first-time donors both had low Hb (in 4.4% Hb<7.8mM / 12.5g/dL) and low iron stores (in 27% F<30µg/L), with significantly lower ferritin in young donors.

IN ALL, while all first-time donors are highly appreciated, the donors in the age group 20-39 are the least likely to have either low haemoglobin or low ferritin.

TABLE 1

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>All (n=1631)</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>17-20</td>
<td>9.45 13.73</td>
<td>4.9 7.3</td>
<td>4.5 7.0</td>
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<tr>
<td>20-30</td>
<td>9.55 13.88</td>
<td>4.8 7.3</td>
<td>4.5 7.0</td>
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<tr>
<td>30-40</td>
<td>9.65 13.95</td>
<td>4.8 7.3</td>
<td>4.5 7.0</td>
</tr>
<tr>
<td>40-50</td>
<td>9.75 14.00</td>
<td>4.8 7.3</td>
<td>4.5 7.0</td>
</tr>
</tbody>
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