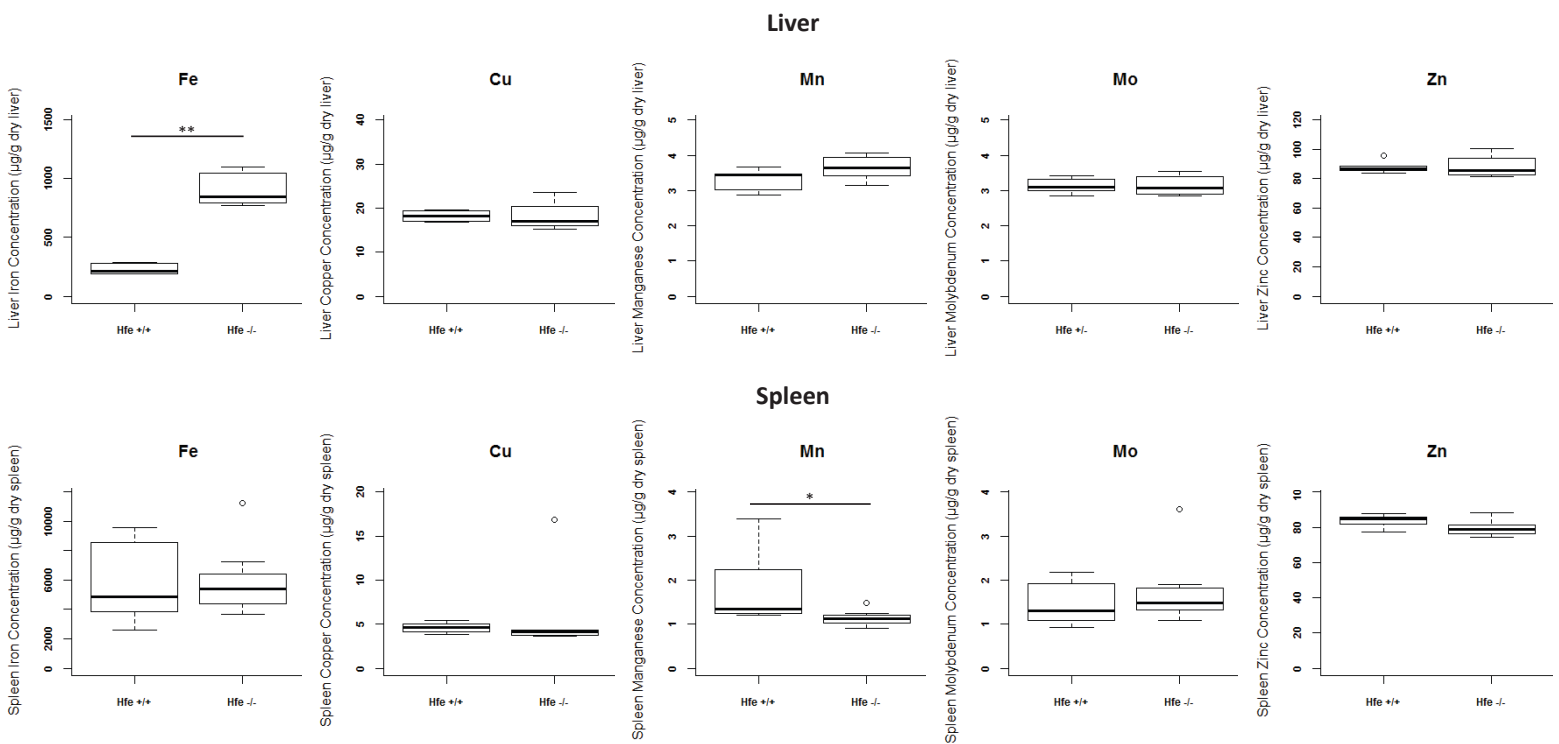


**Supplemental data S1. Relationships between spleen iron (Fe) and other spleen metals concentrations – copper (Cu), manganese (Mn), zinc (Zn) and molybdenum (Mo) – in primary and secondary iron overloads.**

Correlations between metals concentrations were studied using the Spearman test. Statistically significant correlations are represented by correlation coefficient (*Rho*) and p-value (*p*). Non statistically significant correlations are represented by *ns*.

		Spleen metals				
Condition		Cu	Mn	Mo	Zn	
Spleen Iron	<i>Hfe</i>	ns	ns	Rho = 0,99 p < 0,001	ns	
	Primary iron overload	<i>Bmp 6</i>	ns	Rho = 0,62 p = 0,004	Rho = 0,77 p < 0,001	ns
		<i>Hjv</i>	ns	ns	Rho = 0,85 p < 0,001	ns
	Secondary iron overload	<i>Carbonyl</i>	ns	Rho = 0,49 p = 0,03	Rho = 0,95 p < 0,001	ns
		<i>Dextran</i>	ns	Rho = 0,88 p < 0,001	Rho = 0,97 p < 0,001	ns



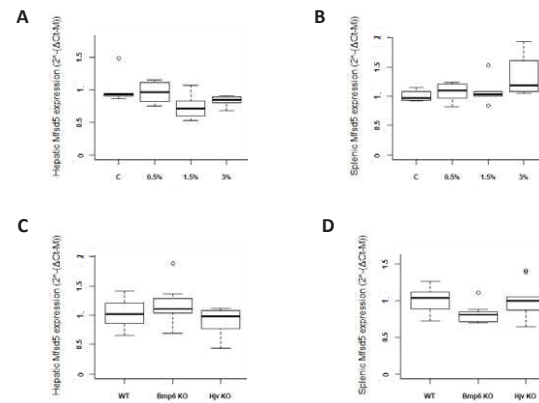
**Supplemental data S2. *Hfe*<sup>+/+</sup> and *Hfe*<sup>-/-</sup> mice: iron (Fe), copper (Cu), manganese (Mn), molybdenum (Mo) and zinc (Zn) concentrations in the liver (upper panel) and spleen (lower panel).**

The median is represented by a horizontal line within the boxes, the 25th and 75th percentiles are represented by the lower and upper lines of boxes, respectively, and the 10th and 90th percentiles are represented by horizontal lines located on either side of boxes. Statistically significant differences are presented as \*p<0.05 and \*\*p<0.01.

**Supplemental data S3. Relationships between liver iron (Fe) and other liver metals concentrations – copper (Cu), manganese (Mn), zinc (Zn) and molybdenum (Mo) – in primary and secondary iron overloads.**

Correlations between metals concentrations were studied using the Spearman test. Statistically significant correlations are represented by correlation coefficient (*Rho*) and p-value (*p*). Non statistically significant correlations are represented by *ns*.

		Liver metals				
Condition		Cu	Mn	Mo	Zn	
Liver Iron	<i>Hfe</i>	ns	ns	ns	ns	
	Primary iron overload	<i>Bmp 6</i>	ns	ns	ns	ns
		<i>Hjv</i>	Rho = - 0,63 p = 0,003	ns	ns	ns
	Secondary iron overload	<i>Carbonyl</i>	ns	ns	ns	ns
		<i>Dextran</i>	ns	ns	ns	Rho = - 0,6 p = 0,004



**Supplemental data S4. Hepatic and splenic *Mfsd5* expression in experimental models.**

Hepatic (A) and splenic (B) *Mfsd5* expression in carbonyl iron overloaded mice receiving iron added to a normal diet at different concentrations: 0.5% (n=6), 1.5% (n=6), 3% (n=6) and control mice (C; n=5). Hepatic (C) and splenic (D) *Mfsd5* expression in *Bmp6* KO mice (n=10), *Hjv* KO mice (n=10) and control mice (WT; n=10). Values of gene expression are expressed relatively to the control group's mean value (M) :  $2^{-\Delta(\Delta Ct-M)}$ . M corresponds to the delta Ct mean in the control group. The median is represented by a horizontal line within the boxes, the 25th and 75th percentiles are represented by the lower and upper lines of boxes, respectively, and the 10th and 90th percentiles are represented by horizontal lines located on either side of boxes.