Influence of serum iron test results on the diagnosis of iron deficiency in children: a retrospective observational study

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Table 1. Associations between normal iron test results and iron deficiency diagnosis for the iron deplete population (serum ferritin <15 µg/L). Odds ratios present the binary association between the indicated variable and iron deficiency diagnosis. Adjusted odds ratios present the multivariate association between iron result and diagnosis, with all co-variates included in the model.

Odds Ratio (95% CI ; p-value)	
Normal serum iron result	0.46 (0.41-0.53; <0.001)
Adjusted Odds Ratio (95% CI ; p-value)	
Normal serum iron result	0.77 (0.59-0.998;0.048)
Female sex	1.39 (1.09-1.78; 0.009)
Increasing age	1.01 (0.99-1.03; 0.257)
Anaemia	1.15 (0.93-1.43; 0.187)
Low MCV	1.23 (0.93-1.63; 0.148)
Low MCH	1.19 (0.92-1.54; 0.175)
Low MCHC	0.78 (0.62-0.97; 0.029)
High RDW	1.24 (0.94-1.64; 0.124)
Low TSAT	1.05 (0.82-1.34; 0.696)
Increasing serum ferritin value	0.91 (0.88-0.93; <0.001)

MCV: mean corpuscular volume; MCH: mean corpuscular haemoglobin; MCHC: mean corpuscular haemoglobin concentration; RDW: red cell distribution width; TSAT: transferrin saturation

Table 2. Associations between normal iron test results and iron deficiency diagnosis for the iron deplete population (serum ferritin <20 µg/L). Odds ratios present the binary association between the indicated variable and iron deficiency diagnosis. Adjusted odds ratios present the multivariate association between iron result and diagnosis, with all co-variates included in the model.

Odds Ratio (95% CI ; p-value)	
Normal serum iron result	0.42 (0.37-0.47; <0.001)
Adjusted Odds Ratio (95% CI ; p-value)	
Normal serum iron result	0.77 (0.61-0.99; 0.038)
Female sex	1.31 (1.07-1.61; 0.01)
Increasing age	1.02 (1-1.03; 0.059)
Anaemia	1.20 (0.99-1.44; 0.063)
Low MCV	1.32 (1.01-1.72; 0.04)
Low MCH	1.14 (0.90-1.43; 0.268)
Low MCHC	0.81 (0.66-1.00; 0.05)
High RDW	1.18 (0.91-1.54; 0.219)
Low TSAT	1.01 (0.81-1.26; 0.945)
Increasing serum ferritin value	0.91 (0.89-0.92; <0.001)

MCV: mean corpuscular volume; MCH: mean corpuscular haemoglobin; MCHC: mean corpuscular haemoglobin concentration; RDW: red cell distribution width; TSAT: transferrin saturation

Table 3. Associations between low iron test results and iron deficiency diagnosis for the iron replete population (serum ferritin >50 µg/L). Odds ratios present the binary association between the indicated variable and iron deficiency diagnosis. Adjusted odds ratios present the multivariate association between iron result and diagnosis, with all co-variates included in the model.

Odds Ratio (95% CI ; p-value)	
Low serum iron result	4.47 (3.66-5.45; <0.001)
Adjusted Odds Ratio (95% CI ; p-value)	
Low serum iron result	2.56 (1.51-4.36; 0.001)
Female sex	1.65 (1.29-2.12; <0.001)
Increasing age	1.05 (1.02-1.08; 0.001)
Anaemia	2.24 (1.56-3.22; <0.001)
Low MCV	0.58 (0.18-1.83; 0.354)
Low MCH	0.99 (0.51-1.94; 0.984)
Low MCHC	0.78 (0.44-1.36; 0.377)
High RDW	2.33 (0.92-5.95; 0.076)
Low TSAT	1.90 (1.12-3.21; 0.017)
Increasing serum ferritin value	1.004 (1.002-1.01; <0.001)

MCV: mean corpuscular volume; MCH: mean corpuscular haemoglobin; MCHC: mean corpuscular haemoglobin concentration; RDW: red cell distribution width; TSAT: transferrin saturation

Table 4. Associations between low iron test results and iron deficiency diagnosis for the iron replete population (serum ferritin >100 µg/L). Odds ratios present the binary association between the indicated variable and iron deficiency diagnosis. Adjusted odds ratios present the multivariate association between iron result and diagnosis, with all co-variates included in the model.

Odds Ratio (95% CI ; p-value)	
Low serum iron result	2.58 (1.86-3.58; <0.001)
Adjusted Odds Ratio (95% CI ; p-value)	
Low serum iron result	1.60 (0.64-3.99; 0.318)
Female sex	1.60 (1.08-2.38; 0.019)
Increasing age	1.02 (0.98-1.07; 0.344)
Anaemia	2.15 (1.18-3.91; 0.012)
Low MCV	0.31 (0.04-2.53; 0.274)
Low MCH	0.99 (0.26-3.83; 0.989)
Low MCHC	0.76 (0.27-2.11; 0.6)
High RDW	3.63 (0.99-13.22; 0.051)
Low TSAT	1.75 (0.71-4.34; 0.227)
Increasing serum ferritin value	1.002 (1.0001-1.004; 0.04)

MCV: mean corpuscular volume; MCH: mean corpuscular haemoglobin; MCHC: mean corpuscular haemoglobin concentration; RDW: red cell distribution width; TSAT: transferrin saturation