DESFERRIOXAMINE PROVOCATIVE TEST: METHODOLOGY FOR ESTIMATING IRON AND TOTAL IRON BINDING CAPACITY

To the Editor:

In our report entitled “Treatment of Cooley’s Anemia” (Blood 76:435, 1990), we described a desferrioxamine provocation test in which we measure serum iron and iron binding capacity following an infusion of the chelator. In the report, we failed to state clearly that we do not use standard colorimetric tests to make these measurements. The mild reducing agents used in most colorimetric assays do not allow dissociation of iron from the ferrioxamine complex, resulting in an underestimation of iron concentration. While suitable modifications of standard assays are available, we measure serum iron directly by atomic absorption spectroscopy, and binding capacity is measured by addition of iron (500 μg/dL), removal of excess by addition of magnesium carbonate to the serum, and repeated atomic absorption measurement of total iron. Finally, in cases of low iron burden or very high-dose deferrioxamine infusion (where unbound iron binding capacity exceeds 500 μg/dL), higher concentrations of iron are needed in the assay of iron-binding capacity.

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REFERENCE

Desferrioxamine provocative test: methodology for estimating iron and total iron binding capacity [letter; comment]

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