

## DEFERRIOXAMINE 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,<sup>1</sup> we measure serum iron directly by atomic absorption spectroscopy, and binding capacity is measured by addition of iron (500  $\mu\text{g}/\text{dL}$ ), 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 desferrioxamine infusion (where unbound iron binding capacity exceeds 500  $\mu\text{g}/\text{dL}$ ), higher concentrations of iron are needed in the assay of iron-binding capacity.

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### REFERENCE

1. Steinmetz W, Glick M, Oei T: Modified aca method for determination of iron chelated by deferoxamine and other chelators. *Clin Chem* 26:1593, 1980