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## PAPER OF THE MONTH • MARCH 2012



### Prem Ponka, MD, PhD

Senior Investigator, Lady Davis Institute  
Professor, Departments of Physiology and Medicine,  
McGill University

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#### MECHANISMS OF DISEASE

## Iron Overload in Human Disease

Robert E. Fleming, M.D., and Prem Ponka, M.D., Ph.D.

**I**RON-OVERLOAD DISORDERS ARE TYPICALLY INSIDIOUS, CAUSING PROGRESSIVE and sometimes irreversible end-organ injury before clinical symptoms develop. With a high index of suspicion, however, the consequences of iron toxicity can be attenuated or prevented. Some iron-overload disorders are quite common (e.g., *HFE*-associated hereditary hemochromatosis and  $\beta$ -thalassemia), whereas others are exceedingly rare. An understanding of the pathophysiology of these disorders is helpful in directing the workup and in identifying scenarios that merit consideration of the less common diagnoses. Since many of the molecular participants in iron metabolism have been characterized only in the past several years, we first review the current understanding of iron metabolism and then discuss specific iron-overload diseases.

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