

Special Issue

The Role of Body Iron: Inconspicuous When Healthy, Up to Fatal When Leaving Homeostasis

Message from the Guest Editor

Iron is omnipresent in Nature, and can bind oxygen and sulfur. Due to their interchangeable redox reaction the bivalent and trivalent ions, which are relevant in aqueous solution, iron is involved in biologically essential electron transfer reactions. The “naked” hydrolyzed ions are toxic and are bound in proteins in the majority of cases by the co-factor porphyrin (e.g., in hemoglobin) or in oxy-hydroxy clusters (e.g., in the iron storage protein ferritin). Iron is taken up from nutrition and is made bio-available in specific pathways. These pathways are complex and tightly regulated. Pathological symptoms, which can lead to severe diseases, can occur when this iron homeostasis is no longer maintained. It is the task of diagnosis and therapy to find the defective steps in the cascade of iron metabolism and to develop therapeutic methods for “troubleshooting”, which can span from acute interventions to prevention in chronic cases.

Guest Editor

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