



Wilson's disease monitored by NMR spectroscopy

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Wilson's disease is characterized by a blood serum deficiency of ceruloplasmin and a disturbance of copper metabolism. The initial presentation of this disease is variable, although often neurological and psychiatric symptoms are predominant. A correct early diagnosis of this disease is very important, because in the absence of treatment (chelation therapy) the disease is often fatal.

NMR relaxation measurements and EPR spectra of copper and ceruloplasmin solutions in water and patient blood serum (in the presence of a chelator) can be used for modeling copper metabolism. This model may then be used for fast estimation of copper concentration. Some of the results of our NMR relaxation and EPR investigations will be presented.