

A biomathematical model of human erythropoiesis and iron metabolism: supplemental figures

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Model behavior

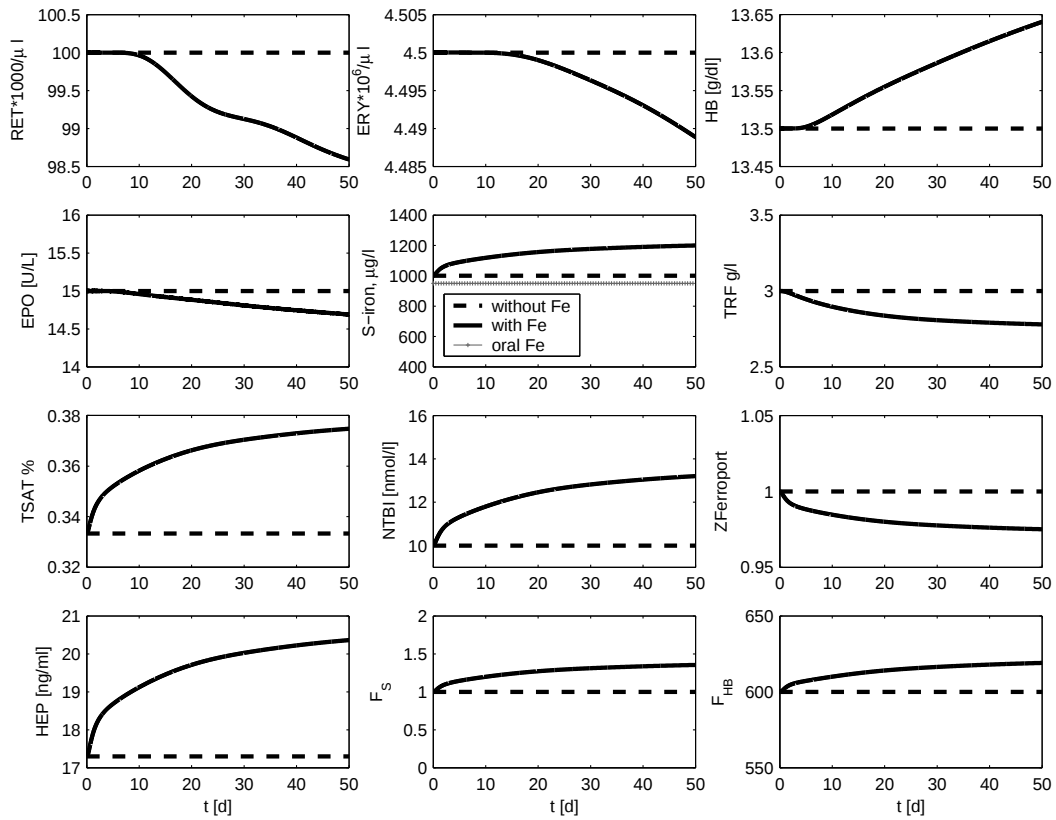


Figure S1: **Oral iron application.** Oral iron application (Fe 150 mg two times a day) in healthy individuals is simulated. The dashed lines show the steady state.

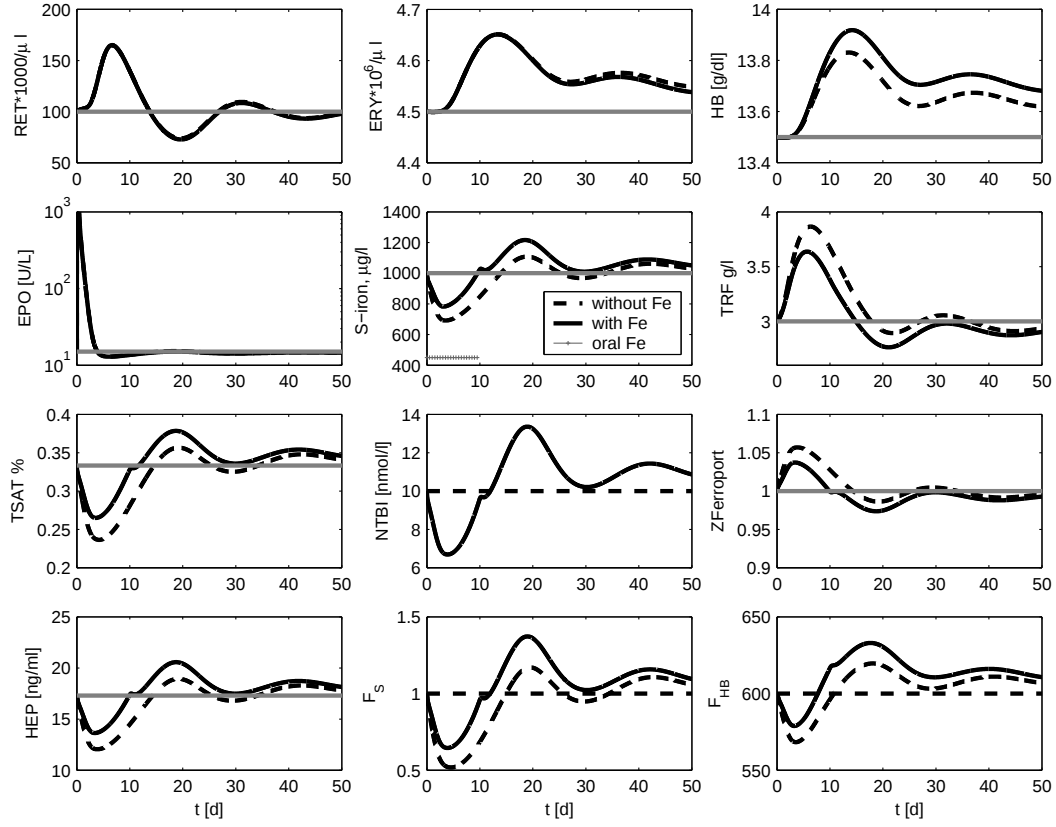


Figure S2: **Intravenous EPO injections with or without oral iron supplementation.** Simulation of intravenous injection of 200 IU/kg EPO on day 0 with 300 mg oral iron on day 0-9 (black lines) or intravenous injection of 200 IU/kg EPO on day 0 without iron supplementation (dashed lines) are simulated. Grey lines show steady state values.

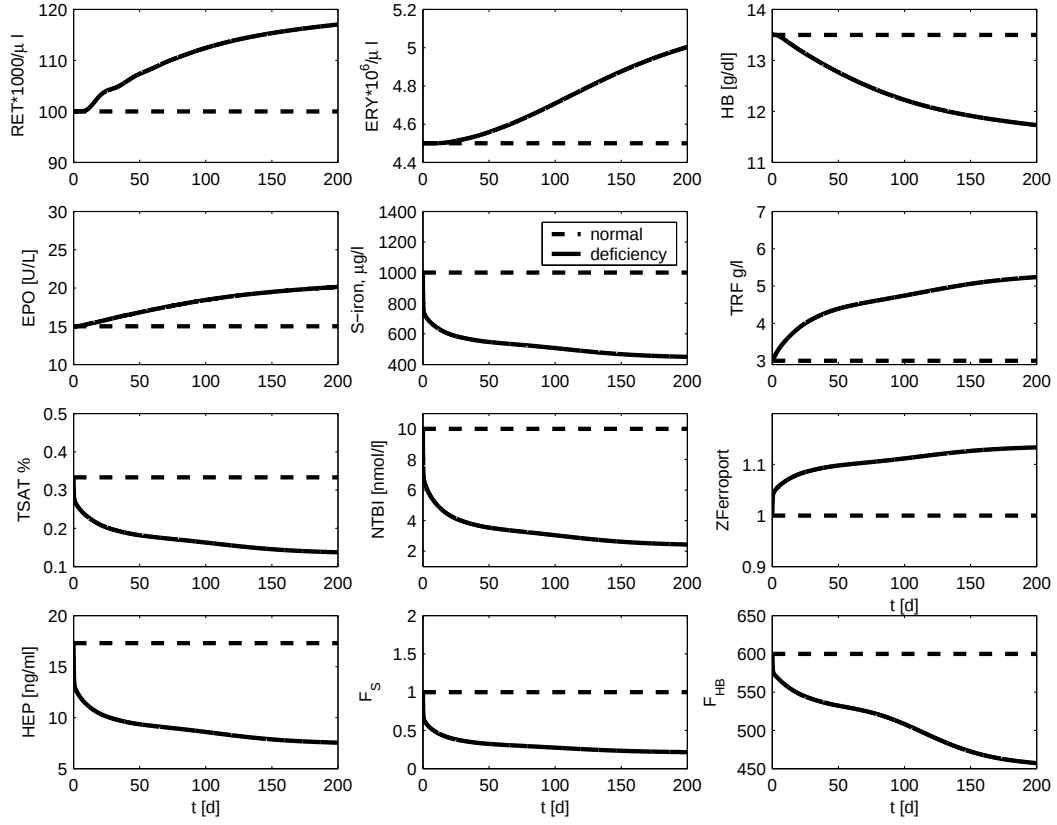


Figure S3: **Simulation of iron deficiency.** Iron malnutrition (only 50% of the required daily iron uptake is assumed) is simulated (black lines). Dashed lines show steady state values.

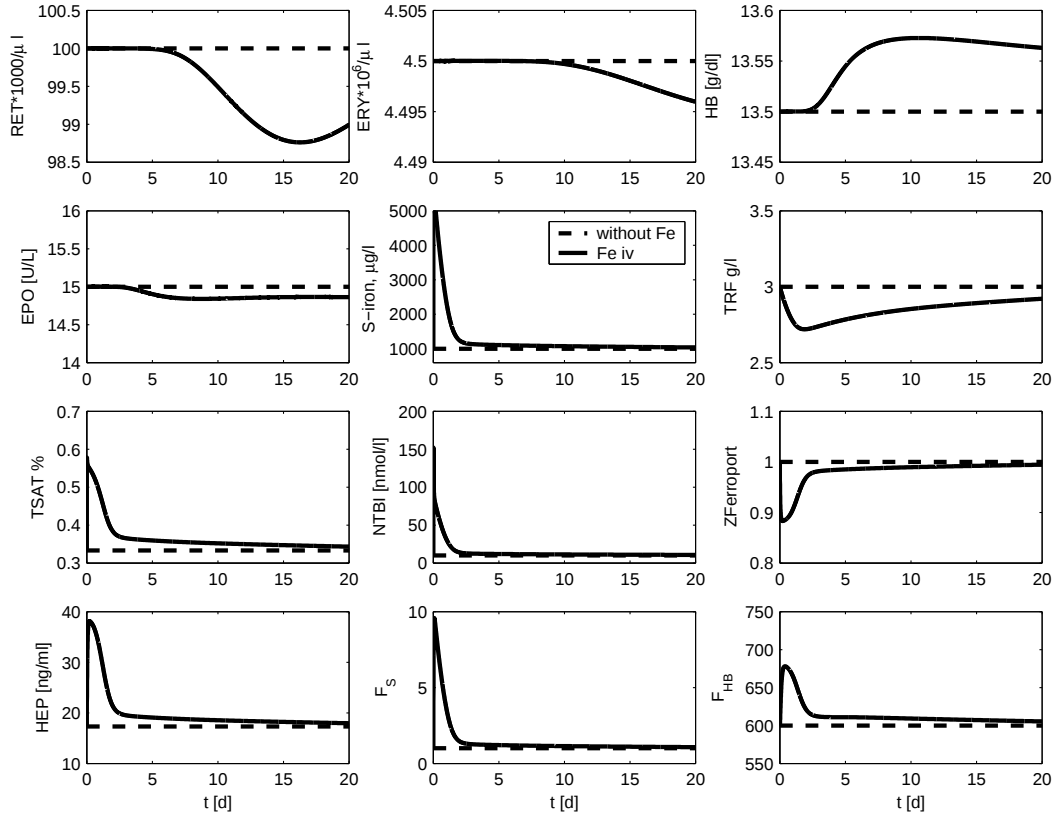


Figure S4: **Simulation of intravenous iron injection.** Intravenous iron injection of 100 mg on day 0 is simulated (black lines). The dashed lines show steady state values.

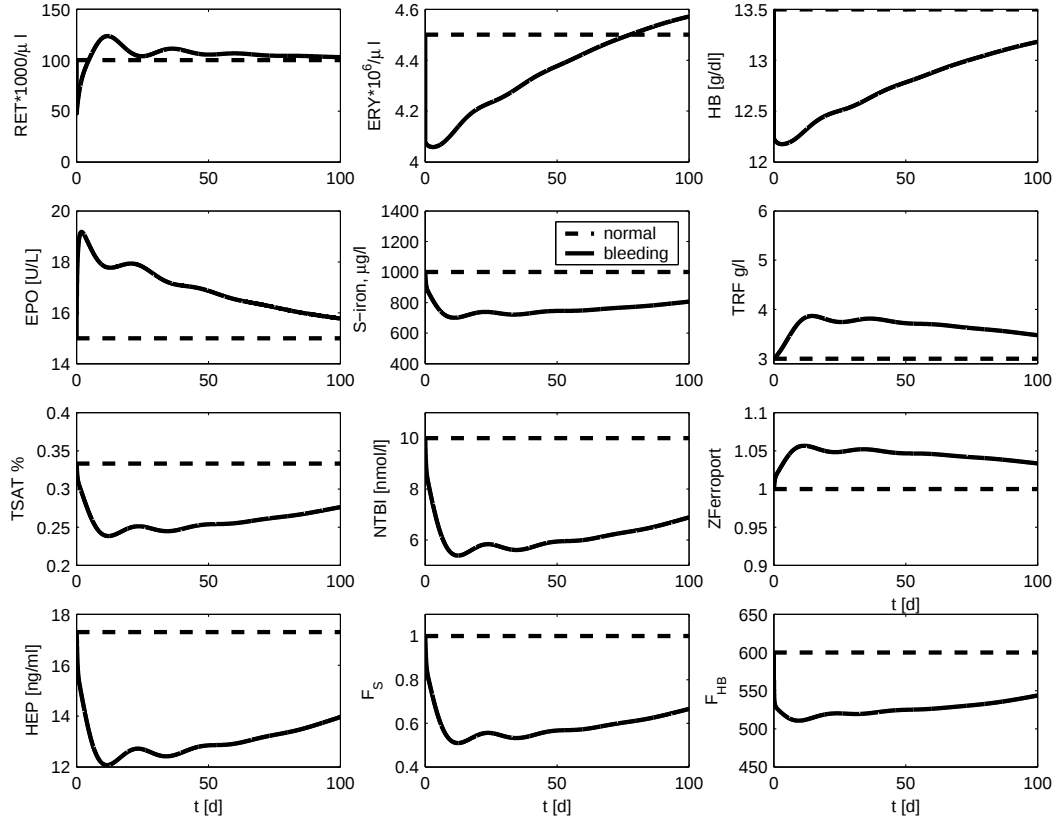


Figure S5: **Simulation of bleeding / phlebotomy.** A blood loss of about 10% is simulated (black lines). Dashed lines show steady state values.

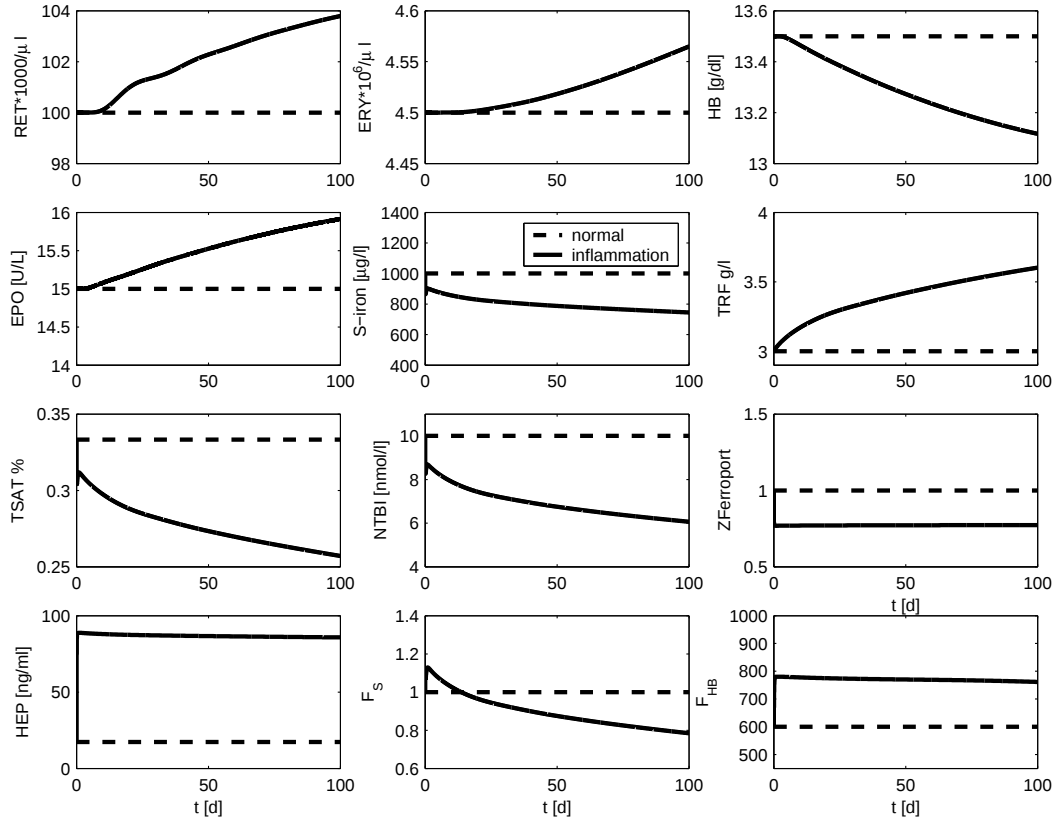


Figure S6: **Simulation of chronic inflammation.** An additional influx of hepcidin is simulated to mimic chronic inflammation (black lines). Dashed lines show the steady state levels.

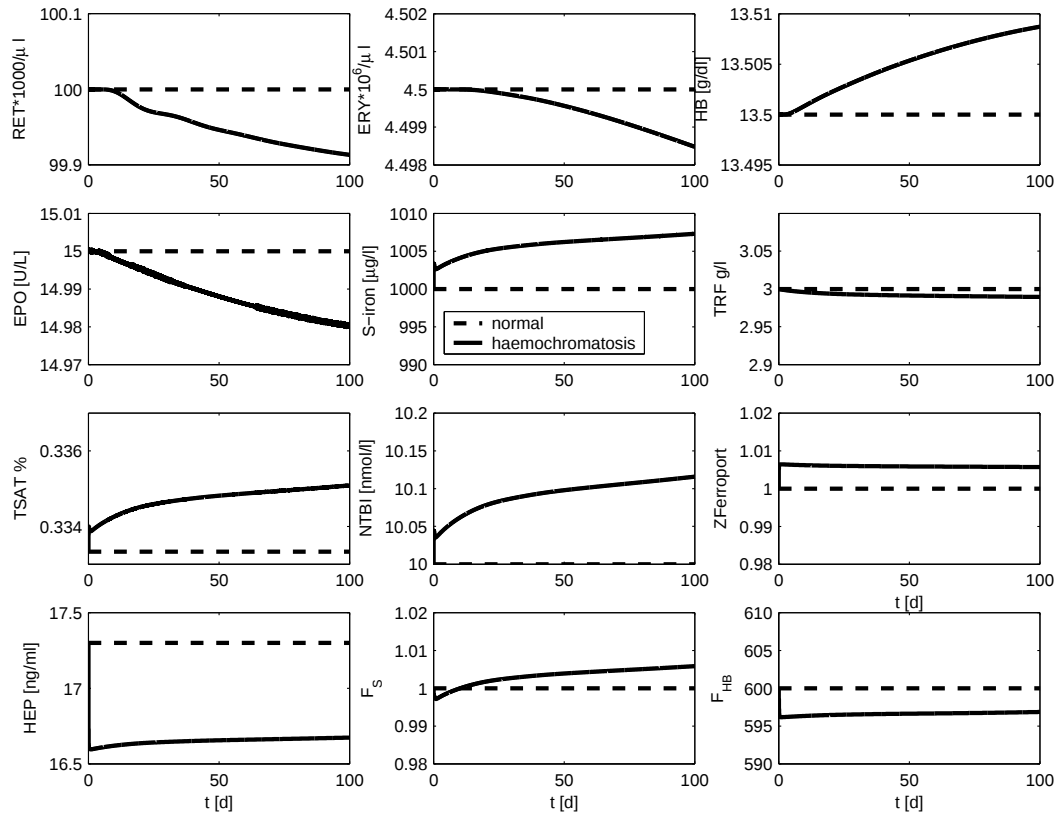


Figure S7: **Simulation of haemochromatosis.** An efflux of hepcidin is simulated to mimic haemochromatosis (black lines). Dashed lines show the steady state levels.

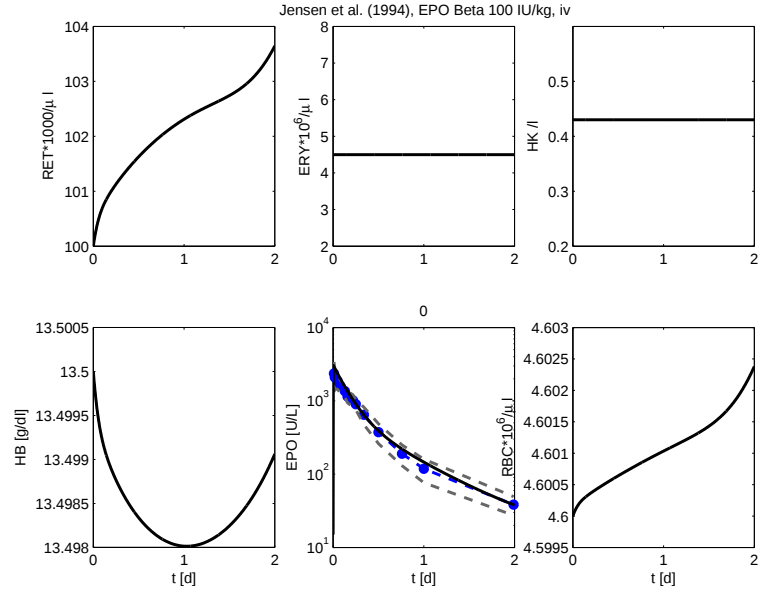


Figure S8: **Intravenous injection of EPO.** The data from [1] were included in the fitting procedure.

References

- [1] Jensen, J., Madsen, J., Jensen, L. & Pedersen, E. Reduction absorption and elimination of erythropoietin in uremia compared with healthy volunteers. *J Am Soc Nephrol* **5**, 177–185 (1994).