Mascitelli on iron and disease

Luca Mascitelli, a doctor and Italian army officer, has written a ton of interesting papers and letters on the relationship between high iron stores and disease. This post is to highlight some of them. In most cases I’ve been able to read only the abstracts, due to paywalls wanting me to mortgage my house to read a paper.

Explaining sex difference in coronary heart disease: is it time to shift from the oestrogen hypothesis to the iron hypothesis? Abstract:

We suggest that lower body iron stores, and not the loss of ovarian function, explain the differences between men and women, and between fertile and menopausal women in the development of coronary heart disease.

Yes, that’s the entire abstract, but in any case, the iron hypothesis makes far more sense than anything about estrogen.

Inhibition of Iron Absorption by Coffee and the Reduced Risk of Type 2 Diabetes Mellitus

I need to post an image here, since this is a letter to the editor and this is the only complete text. The upshot: coffee has known beneficial effects on health, and much or even all of these may be due to the fact that coffee hinders the absorption of iron from food.
Aspirin-associated iron loss as an anticancer mechanism

A consensus view has emerged favoring an anticancer effect of long-term aspirin use. Aspirin-induced loss of stored iron from chronic gastrointestinal bleeding is proposed as a mechanism underlying this beneficial effect. In iron depletion, less iron may be available for carcinogenesis through free-radical mediated mechanisms and for promotion of tumor growth. Low-dose aspirin increases gastrointestinal losses of transfused radiolabeled autologous red cells. Observational studies report lower serum ferritin values with regular aspirin use. A protective effect of induced iron reduction against cancer mortality has been confirmed in a recent trial (FeAST) with subjects randomized to iron reduction or observation. Serum ferritin reductions in the FeAST trial were within conventionally normal reference ranges and were quantitatively similar to ferritin reductions in observational studies in regular aspirin users. Delayed anticancer effects of aspirin are compatible with the proposed mechanism, as continual microbleeding has a gradual cumulative effect on stored iron.

High Iron Stores and the Relationship between Metabolic Syndrome and Proteinuria (letter to the editor).

Iron, type 2 diabetes mellitus, and Alzheimer’s disease (letter to the editor, PDF)
Is the Beneficial Antioxidant Effect of Olive Oil Mediated by Interaction of its Phenolic Constituents and Iron?

We suggest that the beneficial antioxidant action of olive oil is mediated by interactions of olive oil-derived polyphenols and iron. A plausible mechanism for this interaction is related to a reduction of iron absorption induced by polyphenols.

Might some of the beneficial effects of the Mediterranean diet on non-alcoholic fatty liver disease be mediated by reduced iron stores?

Ryan and colleagues [1] found that a Mediterranean diet pattern reduced liver steatosis and improved insulin sensitivity in an insulin resistant population with non-alcoholic fatty liver disease (NAFLD), compared to current dietary advice. We suggest that lower body iron stores induced by components of the Mediterranean diet may be involved in this beneficial effect. In this setting, it has been proposed that the balance between the average bio-availability of dietary iron and the overall effects of inhibitors and enhancers of iron absorption may lead to lower iron stores in people consuming a Mediterranean dietary pattern [2].

Iron, hepcidin, and increased atherosclerosis in systemic lupus erythematosus

Iron, γ-Glutamyltransferase, and Atherosclerosis

Turgut and colleagues (1) proposed that an increase in serum levels of γ-glutamyltransferase (GGT), even within its normal range, may represent a promising biohumoral predictor for atherosclerosis, and supplementary GGT determination to conventional testing may have potential implications for screening individuals at increased cardiovascular risk who may benefit from prophylactic measures and require enhanced therapeutic effort. We agree and further suggest that the pathogenic role of GGT in atherosclerosis may be related to elevated body iron stores.

There are actually quite a few more from Mascitelli, but I’ll leave it at that. The point is, excess iron is likely involved in a lot of disease processes where it’s not suspected, and very few people are discussing this.