

Understanding Iron, Copper and Vitamin A (Retinol) - Joe Mercola podcast

70% of Iron is in the hemoglobin (Red Blood Cells)
12.5 is a good number for women in blood work
14.5 - 15.5 for men

Serum Iron - is less than 1% of iron in the body 100 is the number for women (Serum Iron)
120 for men (Serum Iron)

Only 24mg of Iron is needed to get the job done
95% of iron is recycled iron
- it is the recycling iron 200 Billion red blood cells get turned over every day.

Serum Ferritin - there are 4 kinds of ferritin in the body

1. Heavy chain ferritin - this is the ferritin that is inside the cells - it is associated with the kidneys and the liver. It is dependent on copper for transport from the liver to the parts of the body that need it.
2. Light Chain ferritin - this is focused in the liver and the spleen.
3. Serum ferritin is located outside of the red blood cell in the blood.
4. Ferritin in the blood is iron poor - it is the yellowish color when you spin the blood - the red blood cells clump up at the bottom of the vial and the ferritin is on the top.
5. Rising ferritin is a sign of inflammation > 150 in females and > 300 in males is a red flag.
6. Low ferritin is a metabolic breakdown in the spleen - a possible sign of a parasitic infection.

Copper and Retinol (Vitamin A) serve as iron transporters

Blood donation is the way to lower iron stores. Less Iron = Less Oxidative Stress

Hepcidin - a transporter
Is copper doing its job in iron recycling

Iron might be low in the blood but high in the tissues
You can now measure iron status in the liver and the brain with an MRI

The ideal blood donation level for a male over 50 is 4x a year
250mg of iron is reduced in the body by a blood donation

We accumulate 1mg of iron a day so this = to 365mg a year
Multiply your age by 365 = the amount of accumulated iron you have in your body

35 = 12,775mg
40 = 14,600mg
45 = 16,425mg
50 = 18,250mg
60 = 21,900mg
65 = 23,725mg
70 = 25,550mg
75 = 27,275mg

So donating blood 4x a year reduces it by 1,000mg - 365mg = 635mg a year

Look at these markers when you are looking at iron
Hemoglobin
Serum Iron

Serum Ferritin - it should be between 20 and 50 is the sweet spot - when its high there could be problems in the liver. When it gets below 20 -

TBIC - high and low ferritin - look for parasites in the spleen - iron dysregulation - this is where Low ferritin doesn't mean low iron per say - its a lack of bioavailable copper
The liver and spleen are intensely copper dependent. The spleen recycles iron.

Serum ceruloplasmin -

Robert Hodges 1978 study - he measures in his study Vitamin A (retinol) and copper

When retinol is introduced it changed the bio-availability of iron

Iron status is reflected by the availability of copper in the body.

Women live longer than men by several years - and they have lower iron stores because of years of menstruation.

Iron donation = greater longevity in individuals

Lower iron in our body is lower oxidative stress

Serum iron divided by transferrin. It should be closer to 20% the lower your risk of cancer.

The hidden factor in cancer is the iron accumulation in cancer cells.

IP-6 lowers iron but it is like a straw but donating blood is like a fire hose - IP-6 takes beneficial minerals out also.

Most people benefit from Copper supplementation (except in cancer - my comment and Donald Yance's too)

When we are born we get a 6:1 ratio of iron to copper from our mother 70mg of copper to 450mg of iron - how do we get back to this ratio

Retinol is Vitamin A - it is not Beta-Carotene

Retinol Palmitate is not the same

Stellate stars are the cells that store Retinol Palmitate in the liver - Retinil - converted to Retinol

- he thinks copper is the key for the transport

.333 ceruloplasmin to iron. Ideal ceruloplasmin should be 30

Retinol is actually an alcohol - it takes 12 beta carotene to = to 1 retinol

Symptoms of vitamin A toxicity in the liver are similar to iron toxicity

How do we get more retinol in our diet - grass fed ghee - heavy cream grass fed - cod liver oil - free range eggs - chickens eating out in the wild - the closer the yolk is to orange the better - you want orange yolks.

Copper supplementation - Copper BisGlycinate form is excellent - 2 to 3 mg

Cocoa is an excellent food source of copper

Best food sources of copper: Oysters, Lobster, Crab, Shrimp and Fish, organ meats, seeds and nuts - cashews and sunflower seeds are highest, beans - chick peas and lentils, kale, Swiss chard and spinach, potato skins, avocados, shiitake mushrooms, sun-dried tomatoes, quinoa, buckwheat, spirulina, quinoa and especially dark chocolate