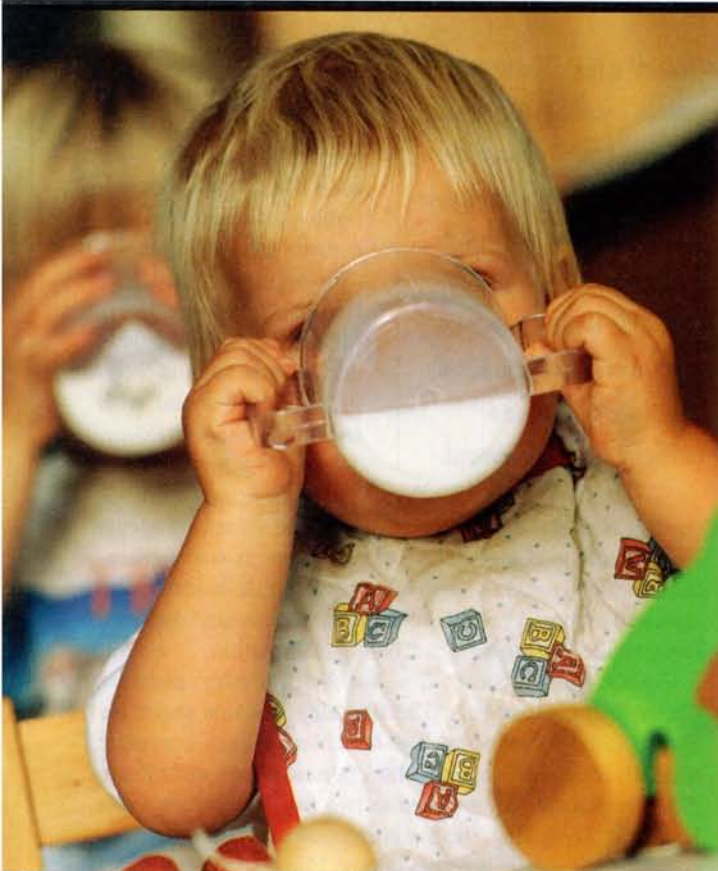


Ironing Out Fortification Wrinkles

Marcia A. Wade, Technical Editor



Iron deficiency may soon be a problem of the past, and it has nothing to do with an increase in low-carb meat eaters. Acquiring adequate iron intake always has been a difficult mission. Globally, three out of every four people are affected by iron deficiency, and the World Health Organization reports it as the world's primary nutritional disorder. This epidemic is worsened in that even those who do consume sufficient levels of iron often do not absorb it efficiently into their blood stream.

However, iron supplementation is not a simple matter. Such supplements can cause constipation and stomach irritation by ionizing the stomach lining. Consequently, this cuts down on the absorption of other vitamins and minerals.

Insoluble iron sources, like ferrous sulfate, are more bioavailable and less inclined to produce these adverse affects. Unfortunately, insoluble iron reacts with ingredients in food products, causing instability initiated by pH, heat and oxidation. Acting as a pro-oxidant, iron presents a significant formulation challenge that is discernible by precipitation and an unappealing "iron" flavor and color.

"There are other iron fortifications that may not precipitate or cause color changes; however, they often still lead to irritation or have a low bioavailability," says Scott Smith, vice pres-

Children are the most visible victims of iron deficiency. Disease resistance, learning ability, work capacity and mental concentration all are reduced by iron deficiency.

ident at Taiyo International Inc. (Minneapolis). "SunActive® Fe was developed to address all of these issues." SunActive Fe is composed of micronized ferric pyrophosphate (average particle size 0.3µm), which is stabilized and protected using unique emulsifiers. Products with SunActive Fe will list maltodextrin, ferric pyrophosphate, polyglycerol esters and hydrolyzed lecithin as ingredients on its label. "SunActive is unique in that we have taken a previously poorly bioavailable salt with excellent organoleptic properties and significantly improved its bioavailability," adds Smith.

SunActive Fe's bioavailability has been confirmed in several clinical trials including (most recently) a study in Switzerland that found SunActive Fe to have the same bioavailability as ferrous sulfate in adult women. "SunActive has become a focus of fortification institutes around the world for third world fortification."

Although the FDA's RDI suggests 18mg per day for ages over four, the National Academies of Science recommends iron intakes for the following specific categories: Men and post-menopausal women, 8mg daily; pre-menopausal women, 18mg daily; and pregnant women, 27mg daily. Foods and beverages generally contain 10% of the RDI, or 1.8mg of iron per serving.

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Depending on dosage, SunActive appears clear to slightly translucent in solutions. Before SunActive, iron was not suitable for dairy-based products. "Previously, if you added traditional iron fortifiers into milk or yogurt, the product would change color, precipitate out and create off flavors," explains Bill Driessen, technical sales director at Taiyo. "Now, it can be added to milk, drinkable yogurts, soymilk and other foods and beverages." SunActive has no unpleasant iron flavor or color change, does not react adversely with other ingredients, is mild on the stomach and has an increased bioavailability. **PF**

For more information:

Taiyo International Inc., Bill Driessen

763-398-3003 • billd@taiyoint.com • www.taiyokagaku.com