



Microencapsulated Minerals

Iron deficiency: ANAEMIA

The main disorder in the world today



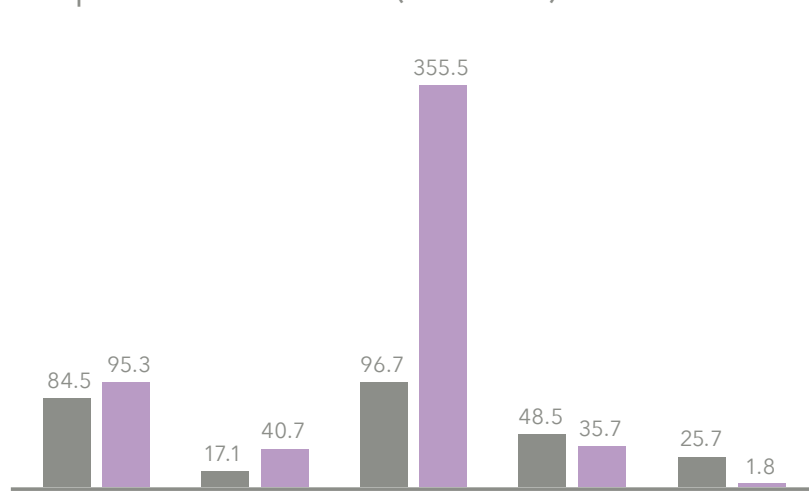
24.8%

of the population

Globally, anaemia affects 1.62 billion people, which corresponds to 24.8% of the population.

Highest prevalence

People with anaemia (millions)



Reference: WHO, 2014



Women of reproductive age (15 - 49 years)



Infants and young children (6 months - 3 years)

Tackling iron deficiency

One of the most effective recognized ways for the prevention of iron deficiency is food fortification.

However, iron fortification can be challenging due to the reactivity of iron species that often result in objectionable taste and discolouration as well as reduced bioavailability of the mineral.

The solution

LIPOFER™

microcapsules

Bioavailable and stable source of iron

Benefits



Processing

- 1 Protection of iron throughout processing of fortified foods
- 2 Controlled interactions with other components



Intake

- 3 Reduced metallic taste



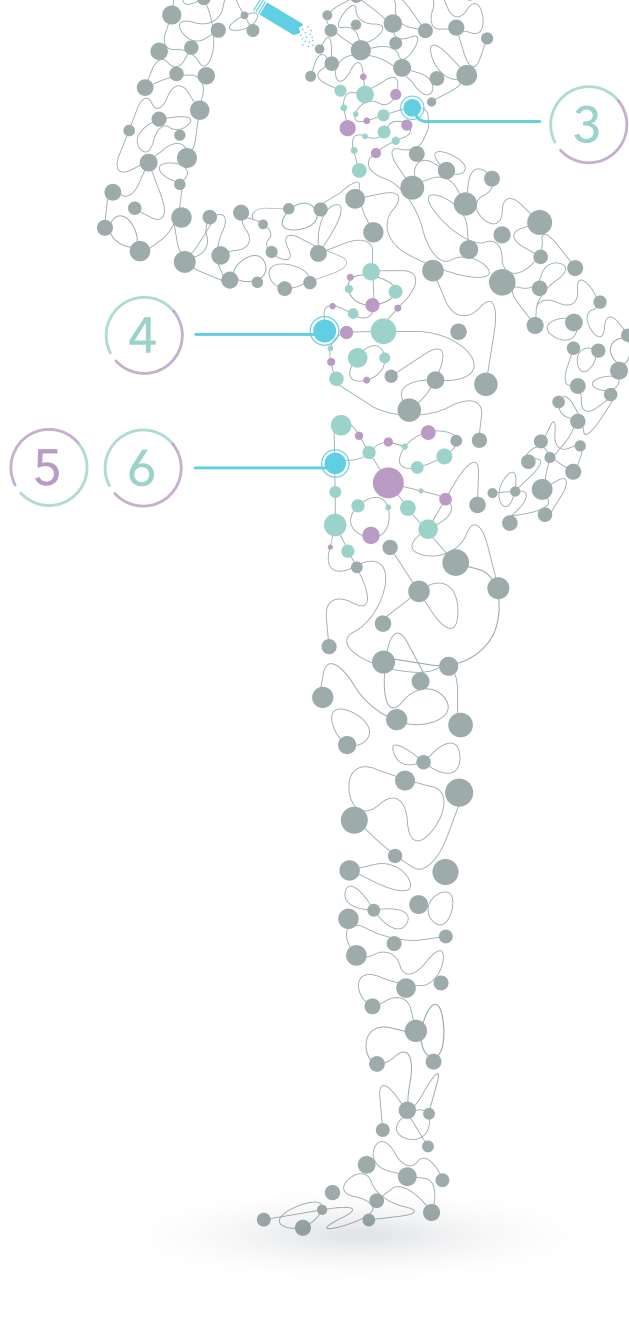
Digestion

- 4 No digestive tract irritation
- 5 No constipation



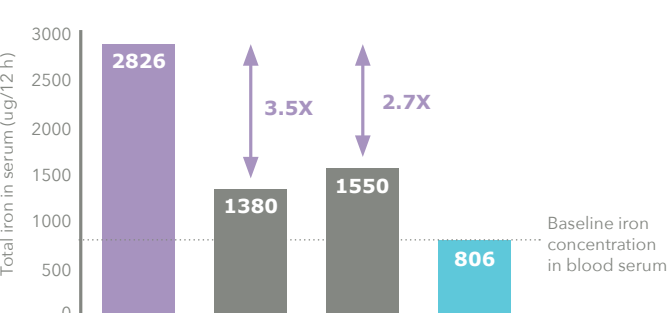
Absorption

- 6 Highly bioavailable iron



Efficacy

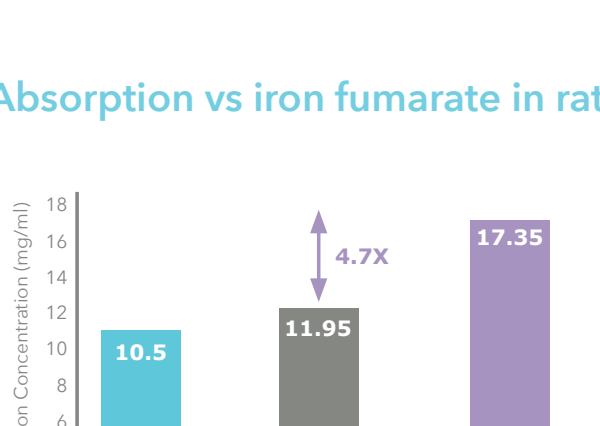
1. Absorption vs ferric pyrophosphate and ferrous sulfate in rats



LIPOFER™ microcapsules is a highly bioavailable source of iron

Results showed that LIPOFER™ microcapsules is 3.5X more bioavailable than Ferric pyrophosphate and 2.7X than Ferrous sulfate.

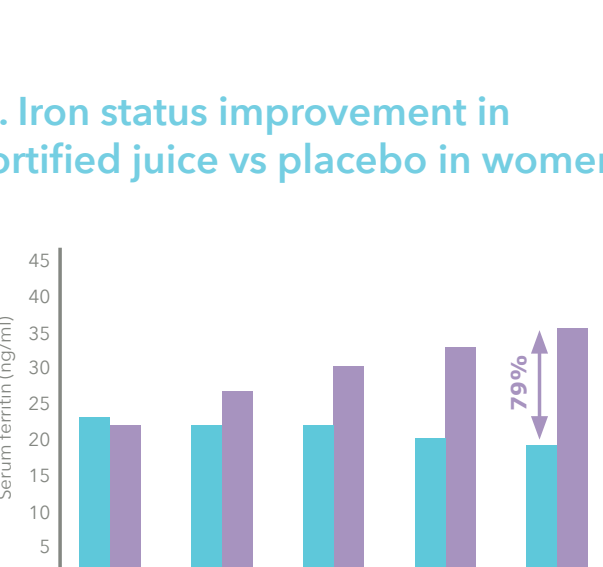
2. Absorption vs iron fumarate in rats



With LIPOFER™ microcapsules a higher increase in the iron absorption is observed

Iron absorption via LIPOFER™ microcapsules is 5 times higher than with traditional iron salts such as ferrous fumarate

3. Iron status improvement in fortified juice vs placebo in women



LIPOFER™ microcapsules fortified fruit juice consumption significantly improved the iron status

Ferritin was higher in the fortified group after 4 weeks and became about 80% higher after 16 weeks.

Benefits

- ✓ Reduces metallic taste
- ✓ Controls interactions with other components
- ✓ Water dispersible
- ✓ No digestive tract irritation

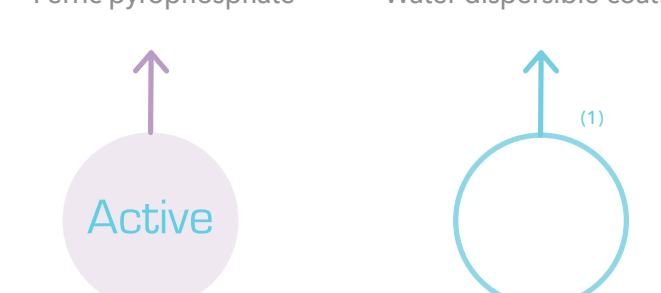
Mechanism of absorption

Lecithin may exchange with the membrane lipids or directly into the bilayer mucosa, thus leading to the increased lipid fluidity of mucosa (1).

LIPOFER™ microcapsules reach intestinal lumen without any side effects and enhance iron absorption.

Technology

Ferric pyrophosphate Water dispersible coating



Encapsulated Iron

Applications



Milk powder, dairy products and dietary supplements including drops and syrups.