IRON UP! Fighting together for an iron strong generation

Iron Biotics enhances *in vitro* iron bioavailability and supports a favorable infant gut microbiome

Iron contributes to the normal **growth & development** of children[1-3]

- Oxygen transport
- Energy & growth
- Cognitive function
- Immune function

4-6 months

At 4-6 months

of age, the infant's iron stores start to **deplete**[4]

Making dietary intake more important:

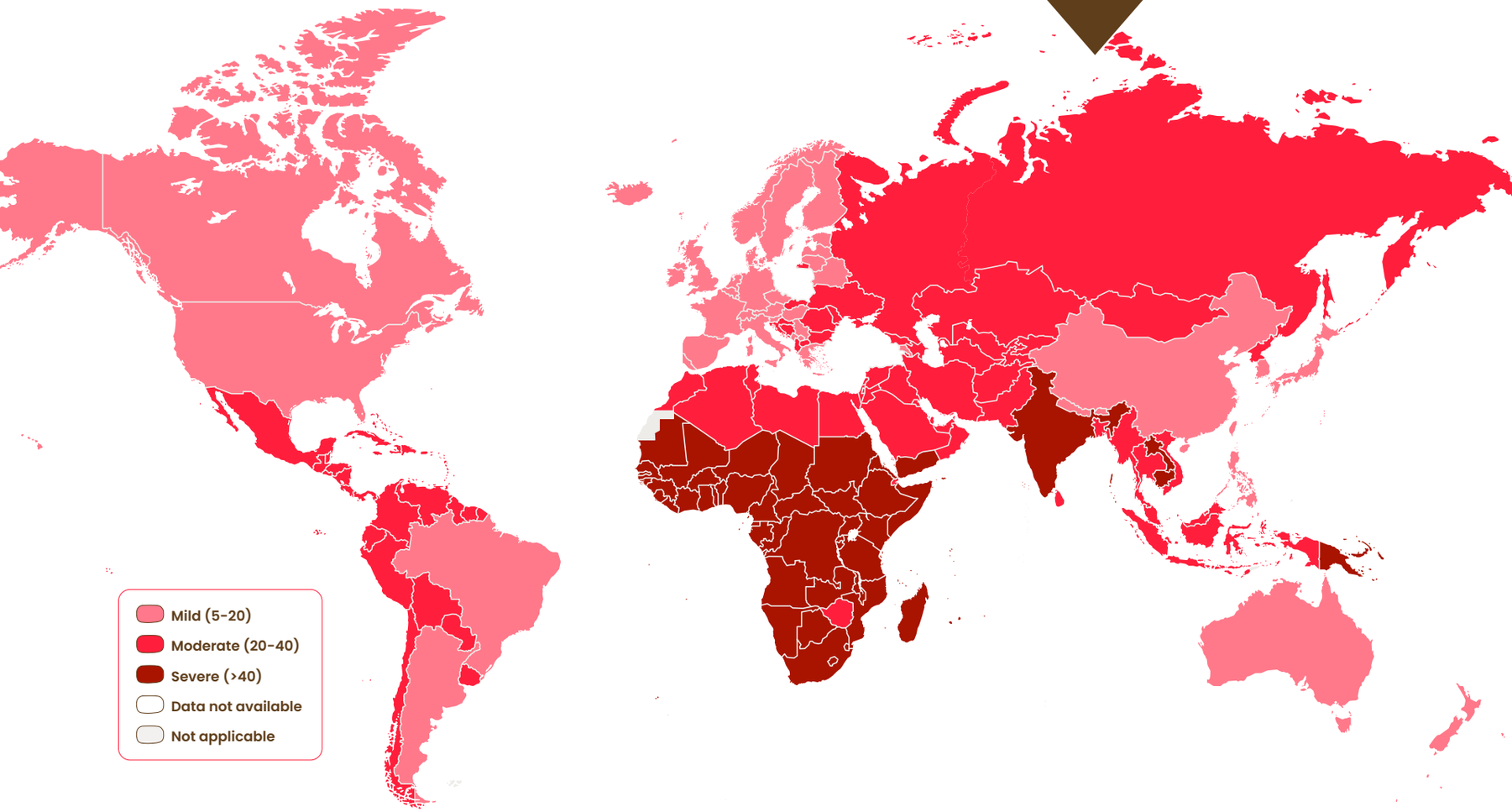
7-12 months	1-3 years	4-8 years
11mg	7mg	10mg

Iron Dietary Allowance in mg/day[5]

Iron deficiency can result in anemia, a public health concern[8,9]

1 of 3
preschool children has anemia **globally**[10]

Prevalence of anemia in children aged 6-59 months[8]



Iron Deficiency Anemia is impacting the whole body[6,7]

- Growth **retardation**
- Long-lasting **poor neuro-development**
- Fatigue & motor skill **dysfunctioning**
- High risk of **infections**
- Poor **quality of life**

Iron Deficiency Anemia could be prevented by:

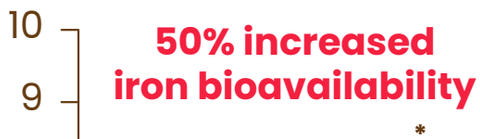
- Sufficient iron intake[11]
- Increasing iron absorption via dietary iron enhancers
  - Prebiotic fibers[12,13]
  - Vitamin C[14,15]

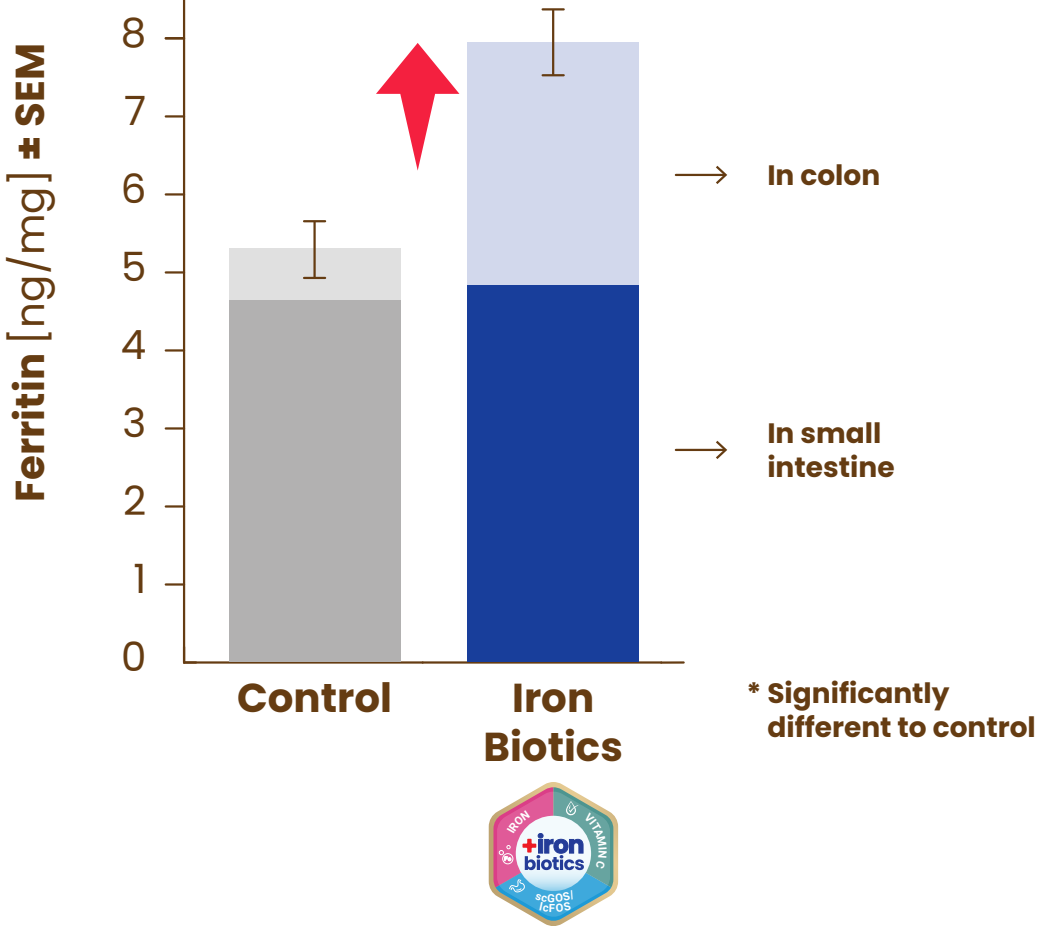
Iron Biotics is the combination of iron, vitamin C and the prebiotic fibers scGOS/lcFOS (9:1) developed to increase iron bioavailability and to preserve iron status during early life

The Ferric Study

The iron bioavailability of Iron Biotics across the gut was studied *in vitro*[16]

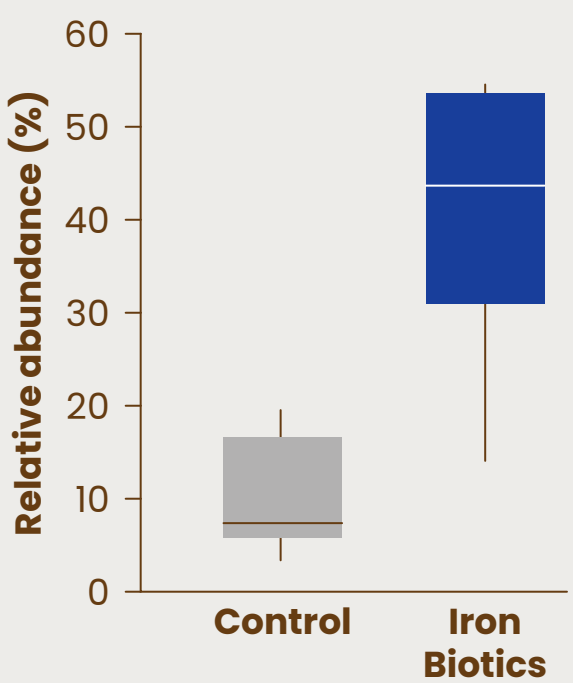
Ferric Study results[16]



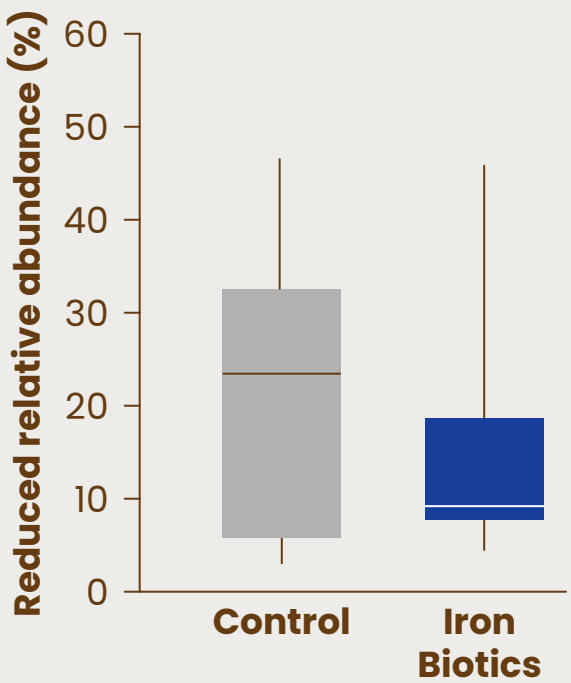


Iron Biotics – Follow on formula with scGOS/lcFOS (8g/L, 9:1), iron and vitamin C.
Control – same formula without scGOS/lcFOS

Increased relative abundance of *Bifidobacteriacea*

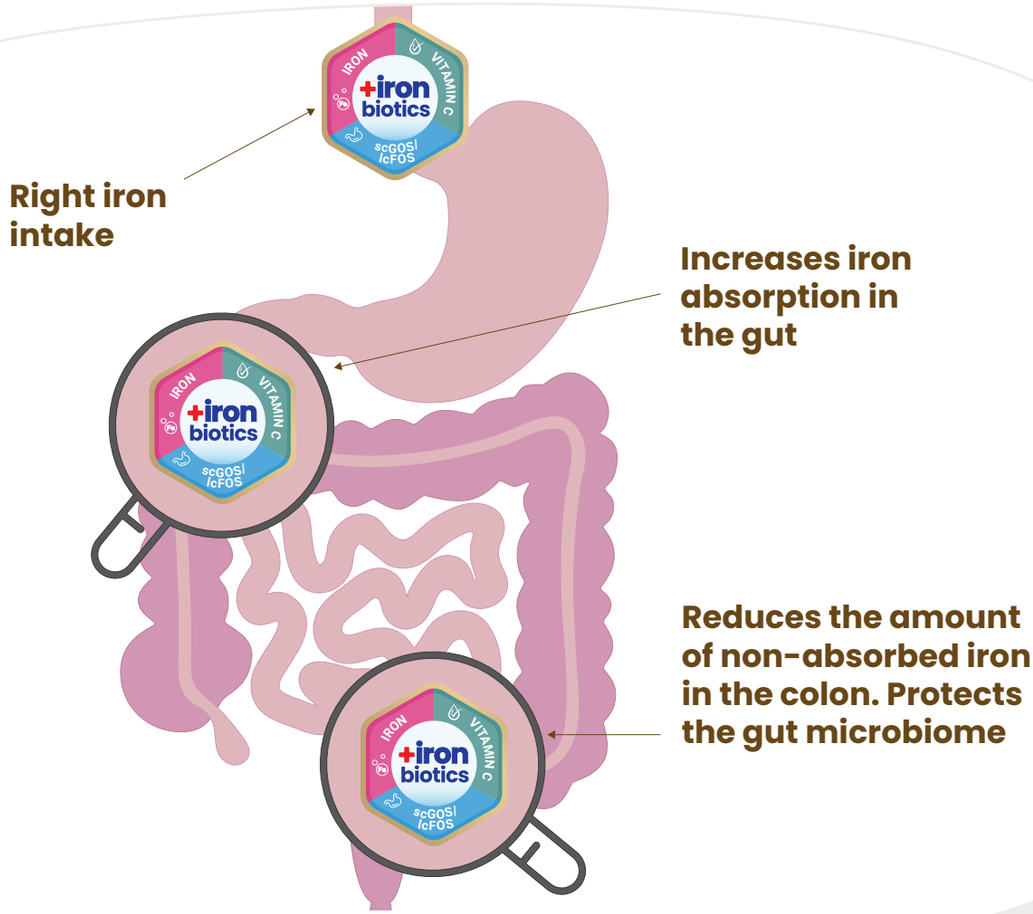


Reduced relative abundance of *Enterobacteriaceae*



Ferric Study conclusion

Iron Biotics improves the iron bioavailability and suggested to support a favorable gut microbiome as demonstrated in this *in vitro* study[16]



References

1. Armitage AE et al. Pharmaceuticals (Basel) 2019: Apr 16;12(2):59.
2. Pivina L et al. Journal of molecular neuroscience 2019: 68(1), 110.
3. Gombart AF et al. Nutrients 2020: Jan 16;12(1):236.
4. Domellöf, M et al. J Pediatr Gastroenterol Nutr 2014: 58(1): p. 119-129.
5. National Institutes of Health. Iron: Fact Sheet for Health Professionals. Available at: https://ods.od.nih.gov/factsheets/ Iron-HealthProfessional/. Accessed December 2023.
6. Angeles IT et al. Am J Clin Nutr 1993;58:339–42.
7. Aukett MA et al. Arch Dis Child 1986; 61:849–57.
8. Stevens GA et al. Lancet Glob Health 2022: 10(11): p.e1590-e1599.
9. Han X et al. eClinicalMedicine 2022;44:101299.
10. Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2019 (GBD 2019) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2020. Available at: https://vizhub.healthdata.org/gbd-results/. Accessed April 2024.
11. Bailey RL et al. Ann Nutr Metab 2015;66(Suppl 2):22–33.
12. Paganini D et al. Am J Clin Nutr 2017: Oct;106(4):1020-1031.
13. Mikulic N et al. Am J Clin Nutr. 2024 Feb;119(2):456-469.
14. Teucher B et al. Int J Vitam Nutr Res 2004:74(6): 403–419.
15. Christides T et al. Eur J of Nutr 2018: 57(2), 669-678.
16. Thomassen GG et al. J. Agric. Food Chem. 2026.

IRON UP! Fighting together for an iron strong generation