

THE RISK OF Iron Deficiency

IRON DEFICIENCY IS THE MOST COMMON NUTRIENT DEFICIENCY
IN THE WORLD¹

**4 TO 5
BILLION**

Up to 4 to 5 billion people may suffer from iron deficiency.²



Although prevalences can vary across communities, iron deficiency anaemia affects approximately 15% of the world population.³

**111
MILLION**

In the high developed countries, 9.1% of the population is affected resulting in 111 million affected people.⁴

Causes of Iron Deficiency

- 1 LACK OF IRON IN DIET**
e.g. Vegan and vegetarian diets⁵
- 2 BLOOD LOSS**
e.g. Menstruation, peptic ulcer⁵⁻⁸
- 3 MALABSORPTION**
e.g. Coeliac disease⁹
- 4 INCREASED NEEDS**
e.g. Growth spurts and pregnancy¹⁰
- 5 INFLAMMATION**
e.g. Inflammatory bowel disease¹¹

Symptoms and Comorbidities

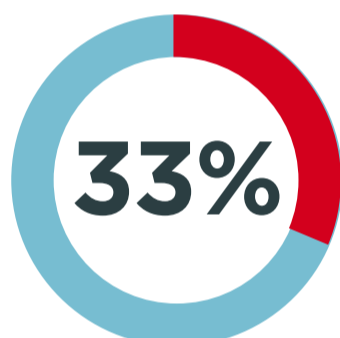
- MENTAL FATIGUE**
Feeling mentally tired, irritable, dizzy or losing concentration quickly^{12,13}
- MOUTH ULCERS**
Sore, white patches on the inside of mouth or sore, red, flaky cracks at one or both sides of mouth^{14,17}
- INFECTION**
May cause more infections than usual, such as coughs and colds¹⁵
- SHORTNESS OF BREATH**
Reduced physical capacity^{16,17}
- CRAVING NON-FOOD**
Cravings to eat ice or non-food items such as clay, dirt, ash, and starch^{17,18}
- RESTLESS LEGS**
A disturbing need to move legs even when resting¹⁹
- HAIR LOSS**
Losing clumps of hair or more hair than normal²⁰
- HEADACHES**
Repeated headaches²¹
- SORE TONGUE**
Affects the surface of the tongue making it feel sore or give dry mouth²²
- PALENESS**
Most noticeable on the face, nails, inner mouth, and lining of eyes^{17,23}
- PHYSICAL FATIGUE/ EXHAUSTION**
Feeling physically tired^{12,13}
- BRITTLE NAILS**
Chip and crack easily²⁴
- COLD INTOLERANCE**
Cold hands and/or feet may mean that there is not enough oxygen being delivered in the blood^{25,26}

Women Are at Greater Risk of Iron Deficiency



Menstruating women are at greater risk²⁷

Iron deficiency without anaemia affects up to 33% of menstruating women in Europe²⁸



Pregnant women are at greater risk¹⁰

90% of women do not get enough iron during pregnancy²⁹



Chronic Conditions Increase the Risk of Iron Deficiency

About 50% of heart failure patients have iron deficiency, with and without anaemia.³⁰



Overall 50% of people who have had bariatric surgery are iron deficient within one year of surgery.³¹

Up to half of people of CKD stages 2-5 have iron deficiency.³²



10-15% prevalence IDA in patients with coeliac disease.³³

32-60% of patients with cancer suffer from iron deficiency.³⁴



36-76% of people with IBD experience iron deficiency with and without anaemia.³⁵

1 in 10 women suffer from heavy menstrual bleeding.⁶



Up to 76% of surgery patients suffer from anaemia.³⁶



Vifor Pharma, a company of the Galenica Group, is a world leader in the discovery, development, manufacturing and marketing of pharmaceutical products for the treatment of iron deficiency. The company also offers a diversified portfolio of prescription medicines as well as over-the-counter (OTC) products. Vifor Pharma, headquartered in Zurich, Switzerland, has an increasingly global presence and a broad network of affiliates and partners around the world. For more information about Vifor Pharma and its parent company Galenica, please visit www.viforpharma.com and www.galenica.com or contact us at communications@viforpharma.com

1. World Health Organization (WHO). Micronutrient deficiencies/iron deficiency anaemia. Available at <http://www.who.int/nutrition/topics/ida/en/>. Last accessed: 10 November 2014 2. Unicef http://www.unicef.org/nutrition/23964_iron.html Last accessed: 10 November 2014 3. Vos T Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010 Lancet. 2012 Dec 15;380(9859):2163–96. doi: 10.1016/S0140-6736(12)61729-4. McLean E, Cogswell M, Egli I, Wojdyla D, de Benoist B. Worldwide prevalence of anaemia, WHO Vitamin and Mineral Nutrition Information System, 1993–2005. Public Health Nutr. 2009;12(4):444–54. doi:10.1017/S1368980008002401. 5. Waldmann A, Koschizke JW, Leitzmann C, Hahn A, Doan Q V, Blumenthal P, Dubois RW. A systematic review evaluating health-related quality of life, work impairment, and health-care costs and utilization in abnormal uterine bleeding. Value Health. 2007;10(3):183–94. doi:10.1016/j.jval.2007.00168-7. Yip R, Parvanta I, Cogswell ME, McDonnell SM, Bowman BA, Grummer-Strawn ML, Trowbridge FL Centers for Disease Control and Prevention. Recommendations to Prevent and Control Iron Deficiency in the United States. MMWR 1998; 47(No. RR-3) 8. Goodnough LT. Iron deficiency syndromes and iron-restricted erythropoiesis Transfusion. 2012 Jul;52(7):1584–92. doi: 10.1111/j.1537-2995.2011.03495.x 9. Halfdanarson TR, Litzow MR, Murray J a. Hematologic manifestations of celiac disease. 2007;109(2):412–21. doi:10.1182/2006-07-031104. 10. Milman N. Prepartum anaemia: prevention and treatment. Ann Hematol. 2008;87(12):949–59. doi:10.1007/s00277-008-0518-4. 8. 11. Stein J, Dignass A. Management of iron deficiency anemia in inflammatory bowel disease—a practical approach. Ann Gastroenterol. 2012;26:1–10. 12. Favrat B, Balck K, Breyman C, Hedenus M, Keller T, et al. Evaluation of a Single Dose of Ferric Carboxymaltose in Fatigued, Iron-Deficient Women—PREFER a Randomized, Placebo-Controlled Study. PLoS ONE 2014 9(4): e94217. doi:10.1371/journal.pone.0094217 13. Patterson AJ, Brown WJ, Powers JR, Roberts DCK Iron deficiency, general health and fatigue: Results from the Australian Longitudinal Study on Women's Health Quality of Life Research 2000 9: 4913497 14. Scully C. ABC of oral health: Mouth ulcers and other causes of orofacial soreness and pain. BMJ.2000;321(7254):162–165. doi:10.1136/bmj.321.7254.162. 15. Dhur A, Galan P, Herberg S Comparative Biochemistry and Physiology Part A: Physiology Volume 94, Issue 1, 1989, Pages 11–19 DOI: 10.1016/0300-9629(89)90776-7 16. McDermid J, Lønnerdal B. Iron. Adv Nutr. 2012;(1):532–533. doi:10.3945/an.112.002261 17. Clark SF Iron deficiency anemia.Nutr Clin Pract. 2008 Apr-May;23(2):128–41. doi: 10.1177/0884533608314536. 18. Lacey EP Broadening the perspective of pica: literature review. Public Health Rep. 1990;105(1):29–35. 19. Sun ER, Chen CA, Ho G, Earley CJ, Allen RP. Iron and The Restless Legs Syndrome. Sleep. 1998;21(4):381–387. 20. Trost LB, Bergfeld WF, Calogeras E. The diagnosis and treatment of iron deficiency and its potential relationship to hair loss. J Am Acad Dermatol. 2006;54(5):824–44. 21. Huch R, Schaefer R Iron deficiency and iron deficiency anemia 2006 Georg Thieme Verlag 22. Osaki T, Ueta E, Arisawa K, Kitamura Y, Matsugi N. The pathophysiology of glossal pain in patients with iron deficiency and anemia. Am J Med Sci. 1999;318(5):324–9. 23. Stoltzfus R, Edward-Raj A. Clinical pallor is useful to detect severe anemia in populations where anemia is prevalent and severe. J Nutr. 1999;129(May):1675–1681. 24. Cashman MW, Sloan SB. Nutrition and nail disease. Clin Dermatol. 2010;28(4):420–5. 25. Miller JL. Iron deficiency anemia: a common and curable disease Cold Spring Harb Perspect Med. 2013 Jul 1;3(7). pii: a011866. doi: 10.1101/cshperspect.a011866. 26. World Health Organization. Iron deficiency anemia. Assessment, prevention and control: A guide for programme managers.; 2001:1–114. 27. Zimmermann M, Hurrell R. Nutritional iron deficiency. Lancet. 2007;370:511–520. 28. Herberg S, Preziosi P, Galan P. Iron deficiency in Europe. Public Health Nutr. 2007;10(2b). doi:10.1079/PHN2001139. 29. Scholl TO. Maternal iron status: relation to fetal growth, length of gestation, and iron endowment of the neonate. Nutr. Rev. 2011;69 Suppl 1:523–9 25. 30. Klip IT, Comin-Colet J, Voors A a, et al. Iron deficiency in chronic heart failure: an international pooled analysis. Am Heart J. 2013;165(4):575–582.e3. doi:10.1016/j.ahj.2013.01.017. 31. Jáuregui-Lobera I. Iron deficiency and bariatric surgery. Nutrients. 2013;5(5):1595–608. doi:10.3390/nu5051595. 32. Mehdi U, Toto RD. Anemia, diabetes, and chronic kidney disease. Diabetes Care. 2009;32(7):1320–6. doi:10.2337/dc08-0779. 33. Presutti RJ, Cangemi JR, Cassidy HD, Hill D a. Celiac disease. Am Fam Physician. 2007;76(12):1795–802 34. Aapro M, Österberg a, Gascón P, Ludwig H, Beguin Y. Prevalence and management of cancer-related anaemia, iron deficiency and the specific role of iv. iron. Ann Oncol. 2012;23(8):1954–62. doi:10.1093/annonc/mds112 35. Goldberg ND. Iron deficiency anemia in patients with inflammatory bowel disease. Clin Exp Gastroenterol. 2013;6:161–70. doi:10.2147/CEG.S43493 36. Shander A, Knight K, Thurer R, Adamson J, Spence R. Prevalence and outcomes of anemia in surgery: a systematic review of the literature. Am J Med 2004; 116 (Suppl 7A):S85–69S. Last updated: 24. November, 2014