

CHRONIC HEART FAILURE AND Iron Deficiency

Iron is needed to carry oxygen in your blood around your body giving you energy!



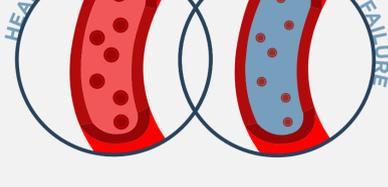
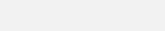
Iron plays an important role for your heart's general condition.^{1,2}

Iron is needed to help you to keep your heart muscle healthy and to maintain exercise capacity.¹



What is Chronic Heart Failure?

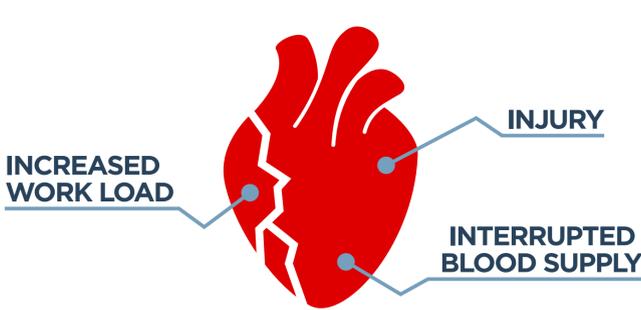
Chronic heart failure is when your heart is damaged or weakened and cannot pump enough blood around your body.²



This means that your tissues and organs may not get all the oxygen and nutrients they need.^{2,3}

Causes of Chronic Heart Failure

Chronic heart failure can be caused by any heart problem that reduces how well your heart can pump blood around your body. These can include an **interrupted blood supply**, an **injury to the heart muscle**, or an **increased workload** for the heart.⁴



Chronic heart failure can develop from these diseases:



Past heart attacks⁴



Coronary artery disease⁴



High blood pressure⁴



Heart valve disease⁴

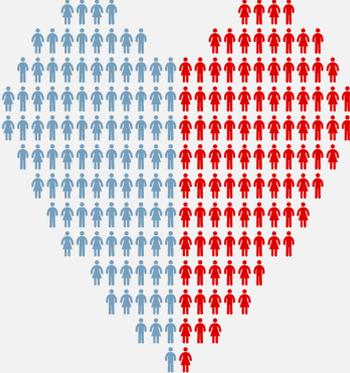


Heart disease/ inflammation⁴



Congenital heart defects⁴

Prevalence of Iron Deficiency and Heart Failure



6.5 MILLION people with **chronic heart failure**.⁵

About **50%** have some form of **iron deficiency, with and without anaemia**.⁶

Why are Chronic Heart Failure Patients More Prone to Iron Deficiency?

- Your **diet** might not be sufficient to cover your daily iron needs.⁸
- Functional changes in the gut** may cause less iron to be absorbed.⁷
- Your **medications** may also be causing your gut to bleed, which means you lose more iron than you lose!¹
- Drug interactions** may reduce the amount of iron you absorb.¹

Symptoms of Iron Deficiency in Chronic Heart Failure Patients

Heart failure symptoms vary. Some of them like **reduced physical function, impaired wellbeing** and **decreased quality of life** can be similar to iron deficiency.^{9,10,11}

- MENTAL FATIGUE**
Feeling mentally tired, irritable, dizzy or losing concentration quickly.^{12,13}
- RACING HEART**
The heart is 'beating too hard or too fast'¹²
- SHORTNESS OF BREATH**
Reduced physical capacity.^{13, 16}
- PHYSICAL FATIGUE/ EXHAUSTION**
Feeling physically tired.^{12,13}

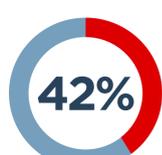
If you suffer from both Heart Failure and Iron Deficiency, you will likely ...



... suffer from a **13% reduced exercise capacity**.¹²



... have your **quality of life reduced by 19%**.¹³



... have an **increased risk of 42% to die**.¹²

... compared to a patient without iron deficiency.

Iron deficiency might point out you are in need of escalated care.¹⁰



Addressing IRON DEFICIENCY

at an **early stage** may lead to a ...



... **Sustainable improvement in exercise capacity and quality of life**.^{14, 15}



... **Reduced hospitalizations due to worsening heart failure**.¹⁵

1. Jankowska EA, von Haehling S, Anker SD, Macdougall IC. Iron deficiency and heart failure: diagnostic dilemmas and therapeutic perspectives. Eur Heart J. 2013 Mar;34(11):216-26. doi: 10.1093/eurheartj/ehs224. Epub 2012 Oct 25. 2. Butler J. An overview of chronic heart failure management. Nurs Times. 2012;108(14/15):16-20 3. What is Heart Failure? Available at www.heartfailurematters.org/en_GB/Understanding-heart-failure/What-causes-heart-failure. Last accessed: August 5th 2015 4. What Causes Heart Failure www.heartfailurematters.org/en_GB/Understanding-heart-failure/What-causes-heart-failure. Last accessed: July 29th 2015 5. Tendara M. Epidemiology, treatment and guidelines for the treatment of heart failure in Europe. Eur Heart J Suppl. 2005;7(Suppl J):J5-J9. doi:10.1093/eurheartj/sui056. 6. Klip IT, Comin-Colet J, Voors AA 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 7. McDonagh T, Macdougall IC. Iron therapy for the treatment of iron deficiency in chronic heart failure: intravenous or oral? Eur J Heart Fail. 2015 Mar;17(3):248-62. doi: 10.1002/ejhf.236. Epub 2015 Jan 30 8. Food and Nutrition Board. Dietary reference intakes for energy, carbohydrate, fiber, fat, fatty acids, cholesterol, protein, and amino acids. Washington (DC): National Academic Press; 2005 9. Jankowska EA, Rozentryt P, Witkowska A, et al. Iron deficiency: an ominous sign in patients with systolic chronic heart failure. Eur Heart J. 2010;31(15):1872-80. doi:10.1093/eurheartj/ehq158 10. Okonko DO, Mandal AK, Missouris CG, Poole-Wilson PA. Disordered iron homeostasis in chronic heart failure: Prevalence, predictors, and relation to anemia, exercise capacity, and survival. J. Am. Coll. Cardiol. 2011;58(12):41-1251. doi: 10.1016/j.jacc.2011.04.040 11. Chronic Heart Failure. National clinical guideline for diagnosis and management in primary and secondary care, NICE Clinical Guideline, 2010; No. 108; p.39-12. Jankowska E, Rozentryt P, Witkowska A, et al. Iron deficiency predicts impaired exercise capacity in patients with systolic chronic heart failure. J Card Fail. 2011;17(11):899-906. doi:10.1016/j.cardfail.2011.08.003 13. Comin-Colet J, Enriquez C, Gonzalez G, Torrens A et al. Iron deficiency is a key determinant of health-related quality of life in patients with chronic heart failure regardless of anemia status. Eur J Heart Fail. 2013 Oct;15(10):1164-72. doi:10.1093/eurjhf/ehf083. Epub 2013 May 22 14. Anker S, Comin-Colet J, Filippatos G, Willenheimer R et al. Ferric carboxymaltose in patients with heart failure and iron deficit. N Engl J Med. 2009 Dec 17;361(25):2436-48. doi: 10.1056/NEJMoa0908355. Epub 2009 Nov 17 15. Ponikowski P et al. Eur Heart J. Beneficial effects of long-term intravenous iron therapy with ferric carboxymaltose in patients with symptomatic heart failure and iron deficiency. 2014 Mar 14;36(11):657-68. doi: 10.1093/eurheartj/ehu385. Epub 2014 Aug 31. 16. Witte KK, Clark AL. Prog Cardiovasc Dis. Why does chronic heart failure cause breathlessness and fatigue? 2007 Mar-Apr;49(5):366-84 Last updated: 26. January 2017.