

References

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E. T. Bulya¹, F. O. Adepoju¹, C. I. Bulya², E. E. N. Saputri³

*¹Institute of Chemical Engineering, Ural Federal University,
Yekaterinburg, Russia,*

*²Tourism and Hospitality Management,
Cyprus International University, Nicosia, TRNC,*

*³European and Global Studies, University of Padova,
nuellabulya@gmail.com*

THE EFFECT OF IRON OVERLOAD CONSUMED FROM FOOD*

Keywords: iron overload, food iron, forms of iron, effect of iron.

Plants are a fundamental source of iron in our diets. Iron can be consumed from the food directly or indirectly from vegetables and staple food crops through animal provender (an agricultural foodstuff). Moreover, iron is the fourth most abundant element in the earth's crust and an essential component of almost all biological systems. Humans need iron to produce energy, transport oxygen, and is useful in cellular proliferation, and elimination of pathogens [1, 2]. In this regard, it is necessary to monitor iron overload from food consumed by individuals whom may tend to suffer from hemochromatosis, a hereditary disorder which causes the body to absorb too much iron from food [3, 4]. Food Iron are basically in two forms, and these are heme iron and Non-heme iron. The heme iron is found in meat products (10–15% of daily dietary iron intake in populations that eat meat) and the non-heme iron is found in both plant foods and animal food sources, including meat [5].

Although, to a greater extent, most people consume a sufficient amount of iron to meet their physiological needs. However, absorption is limited owing to the effects

of dietary components, especially phytates and polyphenols in cereal and legume-based diets. Biomarkers of bioavailability, therefore, have considerable practical importance for the design of intervention strategies aimed at improving iron nutrition. Heme iron is virtually always well absorbed; whereas, most food iron is present as non-heme forms. Bioavailability is markedly affected by meal composition. Several indirect methods for estimating bioavailability has been developed over the past half-century and calibrated against human isotopic absorption studies [6]. Thus, it is essential to create awareness on the excessive intake of iron from food.

The purpose of this review paper is to uncover the effect of iron overload from food, identify various forms of iron in food, the importance of estimating iron intake, types of iron overload and iron bioavailability. To sum up, studies on the effect of iron overload are limited and this study is a topic that should not be overlooked been that most individuals are liable to suffer from hemochromatosis due to lack of information.

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E. T. Bulya, T. V. Glukhareva, F. O. Adepoju

*Institute of Chemical Engineering, Ural Federal University,
620078, Yekaterinburg, Russia, Mira St., 28,
nuellabulya@gmail.com*

GROWTH REGULATORS AS VITAL COMPONENTS FOR CULTIVATING HAIRY ROOTS OF CHICORY (*CHCORIUM INTYBUS*)*

Keywords: hairy roots, culture, agrobacterium, medicinal, Chicory.