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ASSESSMENT OF DIETARY INTAKE OF IRON IN SERBIAN ADULT BY CONSUMPTION OF DIFFERENT MEAT PRODUCTS

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Meat products have played very important role of the Serbian diet. Traditional products from Serbia, such as different types of dry sausage, cooked and/or smoked sausages, bacon, canned meat etc. are widely available in all market chains in the Balkan region. These foods are widely consumed due to their acceptable price, desirable taste, high nutritional value and large variety of products. For most Serbian people foods of animal origin are primary sources of protein and nutrients such as vitamin B12, omega-3 fatty acids and bioavailable forms of essential elements. Iron is an essential element for almost all living organisms as it participates in a wide variety of metabolic processes. Inadequate iron intake and iron deficiency are recognized as a public health problem that affects around 2 billion people around the world.

This study provides original analytical data on the levels of iron (Fe) in different types of meat products which are commonly consumed in Serbia. On the other hand, this study was undertaken to estimate the contribution of different meat products consumption to the daily intake of iron. A total 137 meat products were collected in Serbian market during six months (January 2023 - June 2023). Samples were classified in 4 groups (dry fermented sausages, cooked sausages, bacon and canned meat). The levels of iron were determined by inductively coupled plasma mass spectrometry (ICP-MS). The following mean values were found (expressed as mean \pm standard deviation, ($\mu\text{g/g}$)): dry fermented sausages: 22.7 ± 11.5 ; boiled sausages: 19.3 ± 9.4 ; bacon: 13.4 ± 10.7 ; canned meat: 10.0 ± 3.4 . The levels of Fe in dry fermented sausage samples were statistically higher than the mean level measured in bacon and canned meat samples ($p < 0.05$). Also, the levels in cooked sausages were statistically higher than the mean level measured in canned meat samples ($p < 0.05$). The estimated daily dietary intake (EDI) of Fe was calculated using data of Fe levels obtained in this study as well as data of dietary intake of estimated meat products from the European Food Safety Authority (EFSA) database. The obtained results showed that boiled sausages have the highest contribution in EDI for iron ($227.8 \mu\text{g/day}$) while bacon has the lowest ($53.6 \mu\text{g/day}$). The results for EDI are expressed as % of the Recommended Dietary Allowance (RDA) for adults (male: 8 mg/day ; female: 18 mg/day). Analyzed meat products from this study provide in total only 6.70% and 2.98% for men and women respectively of the RDA for Fe. It can be concluded that estimated meat products cannot be valuable source of Fe for Serbian adult populations.

Keywords: daily intake, iron, meat products, Serbian population

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