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ABSTRACT

The Effect of Fasting Status and Anticoagulant Types on Blood Zinc Determination.

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Background: Zinc is one of the most important essential nutrients, it is Necessary for the activity of over 300 enzymes that aid in metabolism, digestion, synthesis of protein, RNA and DNA and help keep your Immune system strong. Zinc is second to iron as the most abundant trace element in the body.

The research objectives are to assess the influence of diet on zinc content in healthy individuals, as well as the effect of a variety of anticoagulants and thrombolytic agents. Additionally, to investigate the impact of a variety of variables such as hair loss, BMI, gender and temperature storage.

Methods: Blood samples were collected from forty-three healthy Individuals who visited the Al-Ahli Hospital and medical laboratory staff during March 2024 to May 2024. Participants were asked to complete a self-administered questionnaire that addressed healthy lifestyle characteristics. The sample processing was carried out following the manufacturer's instructions for the DIALAB® kit using a blood chemistry analyzer.

Results showed no significant correlation between fasting and non-fasting status ($p = 0.1092$), different anticoagulants (serum, heparin plasma, serum with clot activator; $p = 0.6833, 0.3357$), age ($p = 0.9578$), dietary supplement intake ($p = 0.9316$), or BMI ($p = 0.9724, 0.9655$). However,

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significant differences were observed between serum and EDTA plasma ($p = 0.0011$), hair loss ($p = 0.0139$), and gender ($p = 0.0135$).

In conclusion, this study confirms a significant correlation in zinc concentration between serum and EDTA plasma, hair loss, and gender. Additionally, confirms that the diet does not influence zinc concentration.

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