

## REVIEW

### THE IMPORTANCE OF MICROELEMENTS IN HUMAN BODY

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**Abstract:** *Microelements play a central role in metabolism and the maintenance of tissue function. In good health and with an adequate diet individuals will have optimal tissue levels. Trace elements are those minerals essential for normal function of the body found in quantities less than 5g. The following minerals are considered to be essential: chromium, cobalt, copper, fluoride, iodine, iron, selenium and zinc. An adequate intake of microelements is necessary to sustain metabolism and tissue function, but the excess supplements to individuals who do not need them may be harmful. Severe deficiency of trace elements may lead to a characteristic disease state which can be corrected only by supply of the deficiency micronutrient.*

**Keywords:** microelements, vitamins, chromium, cobalt, copper, fluoride.

DOI <https://doi.org/10.56082/annalsarscimed.2022.2.28>

#### ABREVIATIONS

CRP - C-reactive protein; DRI - dietary reference intake; EAR - estimated average requirement; ESPEN- European Society for Clinical Nutrition and Metabolism; GPX-3 - Glutathione peroxidase 3; MNs - micronutrients; RDA-Recommended Daily Allowances; TSH - thyroid stimulating hormone.

#### Introduction

Trace elements are essential for human body metabolism and components of nutrition in health and disease. Recent research has shown the importance of this micronutrients (MNs) in common pathologies with significant deficiencies impacting the outcome. Trace elements are less known than vitamins, so iodine, iron and vitamin A deficiencies are the world's most frequently deficiency [1].

Recent international and ESPEN recommendations that include MN information are therefore available for parenteral nutrition, chronic intestinal failure, inflammatory bowel diseases, liver diseases, surgery, cancer and intensive care unit population. Most patients with nutritional support present depleted MNs status and it is very important to provide adequate amounts of all micronutrients from the start of the nutrition. In many clinical situations MNs can be provided orally or enteral to correct the depletion or the deficiency and it may be in pill, tablet and liquid form. For the rapid correction of the deficiency and where absorption is poor, the parenteral route, intravenous or intramuscular, can be used [2], [3], [4].

The diagnosis is rarely addressed and needs searching laboratory sources. The rational interpretation of an abnormal laboratory result requires the integration of