

BRTE

BIOMEDICAL RESEARCH ON TRACE ELEMENTS
Japan Society for Biomedical Research on Trace Elements

[Available Issues](#) | [Japanese](#)

Author: Keyword: [ADVANCED](#)



[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1880-1404

PRINT ISSN : 0916-717X

Biomedical Research on Trace Elements

Vol. 19 (2008) , No. 1 97-100

[\[PDF \(171K\)\]](#) [\[References\]](#)

The Serum Levels of Calcium and Trace Elements in Low Birth Weight Infants

Chie Fujisawa¹⁾, Aya Iura¹⁾²⁾, Hisayashi Ohta²⁾, Fumiya Kaga¹⁾, Katsutoshi Shiga¹⁾ and Hiroko Kodama¹⁾

1) Department of Pediatrics, Teikyo University School of Medicine

2) Kitasato University School of Allied Health Sciences Faculty of Hygienic Technology
Environmental and Industrial Health

(Received: August 28, 2007)

(Accepted: March 1, 2008)

Abstract:

Purpose: Very low birth weight infants have high nutritional needs because nutrient storage in their bodies is very limited and their growth is rapid. Because they differ from full-term infants, their need for minerals and trace elements may also differ. During the neonatal stage, commercial supplements to breast milk and milk-based formulas have been used to feed very low birth weight infants. However, whether the trace element concentrations of these products are appropriate for very low birth weight infants is uncertain. In this study, we analyze the concentrations of trace elements in the serum of low birth weight infants and the breast milk of their mothers. **Methods:** Serum samples from eleven low birth weight infants, 708 to 1768 g birth weight, were collected until 30 weeks after the birth, and breast milk samples were also collected on 1 to 5 times. Calcium, magnesium, and essential trace elements(iron, zinc, copper, selenium, rubidium)in the serum and breast milk were measured by plasma-mass spectrometry(ICP-MS). **Results and conclusions:** Concentrations of iron, zinc, copper, selenium, and rubidium were significantly lower in the serum of low birth weight infants as compared to full-term infants. Serum calcium and magnesium concentrations did not differ from those of full-term infants. Although iron, zinc, and selenium concentrations were decreased during the weeks after one's birth, individual differences were large. Trace element concentrations in the breast milk of mothers of very low birth weight infants did not differ from those in the breast milk of mothers of full-term infants, and no correlations with concentrations in the serum of very low birth weight infants were observed. These findings suggest that very low birth weight infants may be deficient in

iron, zinc, copper, selenium, and rubidium. They may need additional sources of these trace elements.

Key words: low birth weight infants, trace element

[\[PDF \(171K\)\]](#) [\[References\]](#)

Download Meta of Article [\[Help\]](#)

[RIS](#)

[BibTeX](#)

To cite this article:

Chie Fujisawa, Aya Iura, Hisayashi Ohta, Fumiya Kaga, Katsutoshi Shiga and Hiroko Kodama, "The Serum Levels of Calcium and Trace Elements in Low Birth Weight Infants", Biomedical Research on Trace Elements, Vol. **19**, pp.97-100 (2008) .

JOI JST.JSTAGE/brte/19.97

Copyright (c) 2008 by Japan Society for Biomedical Research on Trace Elements



[Japan Science and Technology Information Aggregator, Electronic](#)

