ONLINE ISSN : 1880-1404
PRINT ISSN : 0916-717X

Biomedical Research on Trace Elements
Vol. 17 (2006) , No. 3 335-338

Differences in the Serum Zinc Level of Rural and Urban Residents in a City in the Central Part of Japan, Examined at Annual Community-Wide Health Examination

Shujiro Kubori[1)], Ryuhei Kurasawa[1)], Shinpei Okada[2)], Hiroharu Kamioka[3)], Miho Kogirima[4)], Shigeko Takano[5)] and Emiko Yamaura[5)]

1) Mimaki Onsen Clinic (former Kitamimaki Onsen Clinic)
2) Laboratory of Physical Education and Medicine
3) Tokyo University of Agriculture
4) Doshisha Women's College
5) Department of Health and Wellness, Tomi City

(Received: August 2, 2006)
(Accepted: September 3, 2006)

Abstract:
Zinc deficiency is becoming a subject of greater clinical interest than ever before, especially in an aging society. In 2002, many zinc deficient patients visited our clinic. To understand why so many were zinc deficient, we conducted surveys in 2003 and 2005, at our annual health examination, to study serum zinc (Zn) levels in local residents. We suspect that there are various local conditions that lower Zn level of these residents. We reported previously that a subject's Zn levels are affected by many factors, including the sampling time of day. So, we used only data taken from subjects whose blood sampled during morning hours in this paper. The data were analyzed to determine whether differences could be found in Zn levels of rural residents (in KI and NE areas) and urban residents (in TA, KA, and SH areas). The subjects come from two different studies: 308 from the 2003 Kitamimaki study and 1017 from the 2005 Tomi study. [SUMMARY] 1) Mean Zn levels of residents in KI (75.8μg/dl, the 2003 study) and NE (75.6μg/dl, 2005 study) were significantly lower than those found in urban areas, especially TA (78.3μg/dl) and KA (77.8μg/dl) in 2005. 2) Residents whose Zn was less than the lower limit of the standard Zn value were found in all age brackets. In NE (in the 2005 study) and KI (in 2003) rural areas, the percentage of

residents whose Zn levels were less than the lower limit were 14.5% and 15.3% respectively. These rates were significantly higher than those in TA and KA. 3) In KI, mean Zn level found in 2005 (78.0μg/dl) was significantly higher than the level found in 2003. These figures tell us that residents in rural areas may have lower Zn levels than those in urban areas and that rural persons in poor health, including those who are of advanced age or who have experienced long illness, might easily become zinc deficient. To prevent zinc deficiency, we should use educational approaches that encourage people to alter eating and cooking habits and to farm the land in ways that promote and sustain healthy soil.

Key words: serum zinc concentration, zinc deficiency, public health, eating habit change

To cite this article:

Shujiro Kubori, Ryuhei Kurasawa, Shinpei Okada, Hiroharu Kamioka, Miho Kogirima, Shigeko Takano and Emiko Yamaura, “Differences in the Serum Zinc Level of Rural and Urban Residents in a City in the Central Part of Japan, Examined at Annual Community-Wide Health Examination”, Biomedical Research on Trace Elements, Vol. **17**, pp.335-338 (2006) .

JOI JST.JSTAGE/brte/17.335