



Effects of vegetarianism on bone mineral density

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ABSTRACT

Statement of the Problem: Vegetarianism is an increasing trend in Western world and among other reasons that influence calcium level probably one cause of osteoporosis. Aim of this cross-sectional study was to evaluate the impact of vegetarianism to bone mineral density (BMD) and blood vitamin D and calcium level, considering other influencing factors as age and gender. **Methodology & Theoretical Orientation:** Altogether 171 subjects were recruited to study: 103 adult omnivores (O; $n=81$; $n=22$) and 68 vegetarians (V; $n=51$; $n=17$) who did not eaten meat at least past two years. Total and regional (lumbar spine - L1L4; femoral neck - FN) BMD was measured with dual-energy X-ray absorptiometry. Calcium concentration was determined by BS-120 chemistry analyzer and vitamin D by ELISA. The t-test, univariate and multiple linear regression analysis were done. **Findings:** Results showed that V had considerably lower L1L4 ($p=.045$) and FN ($p=.019$) BMD, that was more different in men group; but in general women's BMD in comparing to men was lower (total BMD $p<0.001$). Results of univariate linear regression analysis show, that age and gender also had an effect on BMD; FNBMD: V vs O coef-.045; $p=.028$, female vs male coef-.08; $p<.001$; total BMD: female vs male coef-.094, $p<0.001$; older vs younger coef.002, $p=.004$; L1L4BMD older vs younger coef.002; $p=.038$. After adjustment for age and gender the situation stay quite same. Calcium levels were mostly in recommended level (2,02-2,60 mmol/l) in both groups, but significantly higher in O group ($p=.026$). Vitamin D level was not differing in groups, but were below the recommended level in 43.5% and 35,1% of V and O participants, respectively. **Conclusion & Significance:** V had lower FNBMD, even vegetarianism was found to have a positive effect on calcium concentration.

BIOGRAPHY

Anna-Liisa Tamm (PhD) is the docent and head of Physiotherapy and Environmental Health Department at Tartu Health Care College (Estonia). She has studied several health issues (including vegetarianism, coffee consumption, bone health, physical activity) and she has also a patent "Mechanotherapeutic Device and Measurement Method" (for children with genu valgum). She has organized several conferences in recent years (for example International Student Conference "Health in Our Hands").

Publication

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