



Title	Association between Dietary Manganese Intake and Mortality from Cardiovascular Disease in Japanese Population: The Japan Collaborative Cohort Study
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Citation	大阪大学, 2022, 博士論文
Version Type	
URL	<a href="https://hdl.handle.net/11094/87855">https://hdl.handle.net/11094/87855</a>
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論 文 内 容 の 要 旨  
Synopsis of Thesis

氏 名 Name	Ouyang Meishuo
論文題名 Title	Association between Dietary Manganese Intake and Mortality from Cardiovascular Disease in Japanese Population: The Japan Collaborative Cohort Study (JACC Studyにおけるマンガン摂取と心血管疾患死亡の関連)
<p>論文内容の要旨</p> <p>〔目 的(Purpose)〕</p> <p>Manganese (Mn) is an essential element in the human body, and it has a significant impact on cardiovascular risk factors. However, to the best of our knowledge, no research has been conducted on the association between Mn and cardiovascular disease (CVD). This study thus examined the association between dietary Mn intake and CVD mortality in the general Japanese population.</p> <p>〔方法ならびに成績(Methods/Results)〕</p> <p>Methods: The CVD mortality among 58,782 participants from the Japan Collaborative Cohort Study (JACC) aged 40–79 years was determined during a median follow-up period of 16.5 years. The Mn intake was estimated using a food frequency questionnaire at the baseline (1989–1990), and multivariate-adjusted hazard ratios (HRs) for mortality were computed according to quintiles of energy-adjusted Mn intake.</p> <p>Results: During the follow-up period, a total of 3408 CVD deaths were recorded. Participants in the highest quintile of Mn intake had a lower risk of mortality from total stroke (HR:95% CI, 0.76: 0.64–0.90), ischemic stroke (HR: 0.77, 0.61–0.97), ischemic heart disease (HR: 0.76, 0.58–0.98), and total CVD (HR: 0.86, 0.76–0.96) compared with those in the lowest quintile. The reduced risk of mortality from intraparenchymal hemorrhage with high Mn intake was observed among women (HR: 0.60, 0.37–0.96) but not men (HR: 0.93, 0.59–1.47). The observed associations were more robust in postmenopausal than in premenopausal women.</p> <p>〔総 括(Conclusion)〕</p> <p>Conclusion: Our study is the first to show the prospective association between dietary Mn intake and reduced risk of mortality from CVD in the Japanese population. Dietary Mn intake was associated with a reduced risk of mortality from total stroke, ischemic stroke, CHD, and total CVD. However, evidence of the impact of dietary Mn on cardiovascular health is still limited, and more research is required to determine the effect of Mn on human health and lead to its RDA and UL.</p>	

論文審査の結果の要旨及び担当者

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論文審査の結果の要旨

This doctoral thesis is the first to show the prospective association between dietary Mn intake and reduced risk of mortality from CVD in the Japanese population. During the follow-up period (16.5 years on average), 3408 CVD deaths were recorded. Participants with more Mn intake compared with others have lower risks of mortality from total stroke (HR: 0.76, 95% CI: 0.64–0.90), ischemic stroke (HR: 0.77, 95% CI: 0.61–0.97), ischemic heart disease (HR: 0.76, 95% CI: 0.58–0.98), and total CVD (HR: 0.86, 95% CI: 0.76–0.96) after adjusting for age, sex, residential area, body mass index, smoking status, frequency of sports activity, alcohol consumption, hours of walking, education years, past-history of hypertension and diabetes, intake of total energy, sodium, saturated fatty acid, and vitamin E. In the sex-specific analysis, the reduced risk of mortality from intraparenchymal hemorrhage with higher Mn intake was observed only among women (HR: 0.60, 95% CI: 0.37–0.96). Furthermore, higher dietary Mn intake is a more visibly protective factor among postmenopausal women than premenopausal women in total stroke (HR: 0.64, 95% CI: 0.48–0.84), ischemic stroke (HR: 0.54, 95% CI: 0.37–0.80), and total CVD (HR: 0.79, 95% CI: 0.66–0.95). The findings reported in this thesis shed new light on the impact of the long-term dietary Mn on cardiovascular health among the general population. This research is worth being granted a doctoral degree(medicine).