



Carotenoids and walking disability among older women

Semba RD., Varadhan R., Bartali B., Ferrucci L., Ricks MO., Blaum C., & Fried LP. (2006). Low serum carotenoids and development of severe walking disability among older women living in the community: the Women's Health and Aging Study I. *Age Ageing*, 36(1): 62-67.

What is the importance of understanding low serum carotenoids levels and its relationship to the progression of disability in older women?

Disability is common with age. This is especially problematic for women as they tend to have a longer life span than men. Understanding the cause of disability may possibly help reduce future disabilities among older adults. It has been found that low serum carotenoids levels are associated with poor muscle strength which therefore could affect the prevalence of disability.

What was done?

Participants in the WHAS I, a study that evaluated physical disability in two or more domains were eligible for the study. Participants were deemed as having a walking disability if they were unable to walk or had a walking speed of < 0.4 m/s. Blood samples were taken for serum nutrient levels at baseline. Analyses for carotenoids were done by high performance liquid chromatography. The blood samples were taken at a non-fasting state from 9 a.m. to 2 p.m. Group-time Cox proportional hazards models were used to determine the relationship between carotenoid levels and the severity of disability.

What was found?

Of the 753 women that participated in the blood drawing, 150 had a severe walking disability while 554 did not have a walking disability at baseline and had at least one follow-up visit. 49 did not have a walking disability at baseline and did not have any follow-up visits. Participants whose total carotenoid levels were in the lowest quartile range had a rate of severe walking disability of 13.8 per 100 person-years while those whose total carotenoid levels were in the top three quartiles had a severe walking disability rate of 10.9 per 100 person-years.

Importance of this Research:

Due to the prevalence of disability becoming so common, understanding the relationship between carotenoid concentration and the prevalence of disability may be important in decreasing the occurrence of disability among aging women.

Applying what was found

Carotenoid levels are associated with disability. Although this study has not determined 'cause and effect' of this relationship, encouraging older adults to consume more fruits and vegetables high in carotenoids is appropriate. Supplementation in pill form is unwarranted, and may be harmful as identified in prior research.

Written by Janis Law, 2010