

## ABSTRACT

The changes in dietary pattern of Japanese population might affect the overall health condition. Imbalance intake of N3 and N6 leads to several cardiovascular problems such as atherosclerosis that can be measured by the thickness of carotid intima-media. Thus, the aim of this study was to examine the association between intakes of N3, N6 and N6/ N3 ratio and carotid intima-media thickness (IMT) among 30 to 85 years old Japanese men and women. This cross-sectional study was a secondary data analysis of Toon Health Study. This study analyzed data of 1179 women and 579 men aged 30-84 years old. Fatty acid and the other nutrients and food group intakes were assessed by using FFQ. Maximum and mean IMT values were measured using ultrasound by physicians. The other measurements including fasting serum lipids, smoking, drinking, physical activity, menopause and medications were also collected. We calculated the multivariable-adjusted mean values of maximum and mean IMTs according to quartiles of fatty acid intakes using by analysis of covariance, tested the linear trend using by regression model. An inverse association was found between the N3 intake (%energy) and both maximum and mean IMT values. The multivariable-adjusted value for maximum IMT for the lowest and the highest were 0.85 and 0.82 ( $\rho$  for trend= 0.02, and those of mean IMT were 0.72 and 0.69 ( $\rho$  for trend= 0.03), respectively. The significant inverse association remained after adjusted for serum lipids. On the other hand, no statistically significant associations of N6 and N6/ N3 ratio with IMTs were found.

In conclusion, higher intake of N3 fatty acid was associated with lower IMT, whereas intake of N6 and the ratio of N6/ N3 was found to have no significant association with IMT.