

## KSN 2017 Abstract

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### Differential relationship between body fat distribution and all-cause mortality

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**Objectives** : The significance of directly measured body fat on all-cause mortality has been studied sparsely.

**Methods** : Among 36656 participants who had abdominal CT scan with serum creatinine measurement as a part of health check-ups at a single University-affiliated Healthcare Center during 2007-2015, 32,593 participants for whom had data regarding on vital status on May 2016 were included. The main factor was fat areas measured by CT and the primary outcome was all-cause mortality.

**Results** : During mean 68.4 months` follow-up, there were 253 deaths. Increased total fat area and subcutaneous fat area (SFA) were associated with decreased all-cause mortality, whereas increased visceral fat area and visceral-to-subcutaneous fat area ratio (VSR) were related to increased all-cause mortality. In comparison of predictive power with body mass index (BMI), SFA and VSR showed larger area under the curve (AUC) than that of BMI. In survival analysis using Kaplan-Meier survival curve and Cox proportional hazard regression, increased SFA was associated with decreased hazard of all-cause death, whereas increased VSR was associated with increased hazard of all-cause death. This was particularly evident in metabolically less deranged subgroups. Among participants without metabolic syndrome, increased SFA was associated with decreased rates of high blood pressure, hyperglycemia, hypertriglyceridemia, decreased kidney function and proteinuria, whereas increased VSR was related to increased rates of high blood pressure, hyperglycemia, hypertriglyceridemia, decreased kidney function and proteinuria.

**Conclusions** : Both SFA and VSR were strong and independent predictors of all-cause death. This can imply that location of fat deposits may be more important than the actual amount of body fat. Future study needs to be followed.

**Keywords** : mortality, body fat distribution