

# Molecular mechanism underlying age-associated adipose tissue atrophy

**Takayoshi Suganami**

*Research Institute of Environmental Medicine, Nagoya University*

Although its role as an endocrine organ that produces adipokines (adipose tissue-derived hormones) has been the focus of recent attention, the primary function of adipose tissue is to store excessive energy as triglyceride. Thus, its functional failure leads to ectopic lipid accumulation in non-adipose tissue, thereby causing abnormal systemic glucose metabolism. In this regard, Japanese people are characterized by a body fat distribution that is low in subcutaneous adipose tissue and relatively high in ectopic fat, and they have the same risk of diabetes as Western people despite having a lower body mass index (BMI) than Western people. In the elderly, subcutaneous adipose tissue becomes atrophic and fibrotic, which is not only a cosmetic feature of aging, but is also closely related to the excessive accumulation of ectopic fat and the pathogenesis of various aging-related diseases. In this study, we focused on atrophy of subcutaneous adipose tissue and identified gene expression changes common to atrophy of subcutaneous adipose tissue through RNA-seq analysis of aged mice and a Cachexia model. For the next step, we would like to further investigate the molecular mechanism and develop a new method to improve metabolism by preventing and improving atrophy of subcutaneous adipose tissue.