

[Abstract](#) ▾[Full text links](#)

*Int J Obes (Lond)*. 2008 Dec;32 Suppl 7:S83-92. doi: 10.1038/ijo.2008.243.

## The role of fat topology in the risk of disease.

Matsuzawa Y<sup>1</sup>.

### [+ Author information](#)

### Abstract

Clustering of multiple risk factors such as impaired glucose metabolism, lipid disorders and hypertension has been shown to be the major background of atherosclerotic diseases, and disease entities such as the metabolic syndrome represent a highly atherogenic state. Although these common risks may generally co-exist by accident in one individual, clustering of multiple risk factors in the metabolic syndrome does not occur by accident, and there should be a key player for the syndrome. In 1983, we reported the method for fat analysis using computed tomography scan, which enables us to analyze intra-abdominal visceral adiposity as well as subcutaneous fat. Visceral fat accumulation has been shown to cause impaired glucose metabolism, lipid disorders, and hypertension, and therefore it is considered to be a key player in the metabolic syndrome. To clarify the mechanism by which visceral fat accumulation causes a variety of metabolic and vascular diseases, we studied the molecular characteristics of adipose tissue and adipocytes by investigating expressed genes in visceral and subcutaneous adipocytes and revealed that adipocytes, especially visceral adipocytes, secrete a variety of bioactive substances, the so-called adipocytokines. We showed that visceral fat accumulation causes abnormalities in adipocytokine secretion, such as hypersecretion of plasminogen activator inhibitor 1, which is related to thrombogenic vascular diseases. More importantly, we discovered an important benign adipocytokine named **adiponectin, which protects against the development of diabetes mellitus, hypertension, inflammation, and atherosclerotic vascular diseases. Plasma levels of adiponectin decreased in individuals with visceral fat accumulation, and hypoadiponectinemia caused by visceral fat accumulation might be one of the major causes of metabolic syndrome.**

PMID: 19136997 [PubMed - indexed for MEDLINE]



[Publication Types, MeSH Terms, Substances](#) ▾

[LinkOut - more resources](#) ▾

[PubMed Commons](#)

[PubMed Commons home](#)

0 comments

[How to join PubMed Commons](#)