

# Adipose tissue macrophages as a therapeutic target in obesity-associated diseases

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## Abstract

Obesity is an increasing problem in developed and developing countries. Individuals with obesity have a higher risk of several diseases, such as cardiovascular disease, increased risk of insulin resistance, type 2 diabetes, infertility, degenerative disorders, and also certain types of cancer. Adipose tissue (AT) is considered an extremely active endocrine organ, and the expansion of AT is accompanied by the infiltration of different types of immune cells, which induces a state of low-grade, chronic inflammation and metabolic dysregulation. Even though the exact mechanism of this low-grade inflammation is not fully understood, there is clear evidence that AT-infiltrating macrophages (ATMs) play a significant role in the pro-inflammatory state and dysregulated metabolism. ATMs represent the most abundant class of leukocytes in AT, constituting 5% of the cells in AT in individuals with normal weight. However, this percentage dramatically increases up to 50% in individuals with obesity, suggesting an important role of ATMs in obesity and its associated complications. In this review, we discuss current knowledge of the function of ATMs during steady-state and obesity and analyze its contribution to different obesity-associated diseases, highlighting the potential therapeutic target of ATMs in these pathological conditions.

## Author keywords

adipose tissue

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