Oxidative stress and metabolic pathologies: from an adipocentric point of view.

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Résumé en anglais	Oxidative stress plays a pathological role in the development of various diseases including diabetes, atherosclerosis, or cancer. Systemic oxidative stress results from an imbalance between oxidants derivatives production and antioxidants defenses. Reactive oxygen species (ROS) are generally considered to be detrimental for health. However, evidences have been provided that they can act as second messengers in adaptative responses to stress. Obesity represents a major risk factor for deleterious associated pathologies such as type 2 diabetes, liver, and coronary heart diseases. Many evidences regarding obesity-induced oxidative stress accumulated over the past few years based on established correlations of biomarkers or end-products of free-radical-mediated oxidative stress with body mass index. The hypothesis that oxidative stress plays a significant role in the development of metabolic disorders, especially insulin-resistance state, is supported by several studies where treatments reducing ROS production reverse metabolic alterations, notably through improvement of insulin sensitivity, hyperlipidemia, or hepatic steatosis. In this review, we will develop the mechanistic links between oxidative stress generated by adipose tissue in the context of obesity and its impact on metabolic complications development. We will also attempt to discuss potential therapeutic approaches targeting obesity-associated oxidative stress in order to prevent associated-metabolic complications.
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Liens
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