

Special Issue on

Nutrients and Diet: A Relationship between Oxidative Stress, Aging, Obesity, and Related Noncommunicable Diseases

CALL FOR PAPERS

The significant increase in the prevalence of obesity currently observed in the world is directly associated with an increased risk of developing noncommunicable diseases such as diabetes, cardiovascular disease, nonalcoholic fatty liver disease, inflammatory diseases (autoimmune diseases), cancer, and even neurodegenerative diseases.

In this context, obesity and related chronic diseases are not only limited to developed countries or to the adult population. In the last 20 years the greatest increase of the incidence of these diseases has been observed in developing countries and in the young population. In this regard, nutrients, diet chemical composition, and food preparation play a relevant and direct role in regulation of various metabolic and molecular pathways. The main factors that favor this incidence increase are (i) an excessive consumption of fat (especially saturated fat) and refined carbohydrates (fructose and sucrose) and (ii) a deficit in the consumption of fruits and vegetables (sources of natural antioxidants), dietary fiber, and polyunsaturated fatty acids n-3. These conditions would directly favor the development of (i) nutritional oxidative stress, (ii) obesity, (iii) obesity related noncommunicable diseases such as diabetes and cardiovascular disease, and (iv) cellular aging.

Recent basic clinical and epidemiological research has demonstrated the importance of preventing diet-induced oxidative stress as a way to reduce the risk of developing obesity and their associated chronic diseases, as well as cellular aging. Solid evidence establishes a relevant role of certain nutrients and/or bioactive compounds present in the diet as protective agents against nutritional oxidative stress at the molecular level. These effects are able to regulate (i) energy metabolism, (ii) various molecular pathways, (iii) gene expression, and (iv) cellular and organic aging. Specifically, nutritional oxidative stress, as well as lipotoxicity and glycototoxicity that accompany it, directly favors the development of a proinflammatory tissue state, which, together with the activation of various redox-sensitive pathways, generate a change in the activity of certain transcription factors and in gene expression, for example, by affecting cell viability.

The proposed special issue will be devoted to reviewing in depth how nutrients (micro and macro) and diet are related to oxidative stress, obesity, and cellular aging. The emphasis will be on the molecular aspects that allow projecting future interventions in the prevention and/or treatment of these conditions and diseases.

Potential topics include but are not limited to the following:

- ▶ Oxidative stress in obesity related to cellular aging
- ▶ Oxidative stress, obesity, and cellular aging regulation by diet and nutrients
- ▶ Different nutrients (micro and macro) and bioactive compound (antioxidants) that regulate oxidative stress response in obesity
- ▶ Oxidative stress in obesity and related noncommunicable diseases
- ▶ Interaction between diet and oxidative stress in obesity and related noncommunicable diseases

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/omcl/nudi/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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