

Special Issue on **Relevance of Fatty Acid Profile, Nutraceutical Intervention, and Oxidative Stress in Spermatogenesis**

CALL FOR PAPERS

The characteristics and performance of the sperm plasma membrane are strongly determined by its own fatty acid profile. In mammals, testicular cells and spermatozoa are characterized by a high proportion of polyunsaturated fatty acids (PUFAs).

It has been known that PUFAs represent the main target of the free radical insult which leads to oxidative lipid deterioration. For this reason, the study of the lipid profile is relevant for sperm function and has been proposed as a potential marker of semen quality. Unlike other oxidative stress biomarkers, isoprostanoids (isoprostanes and neuroprostanes), which are a large family of compounds derived from nonenzymatic oxidation of PUFAs, provide unique information on their precursor PUFAs.

The sperm count in Western countries is progressively decreasing and in the next 30 years dramatic increases in infertility rates are expected. Many factors, such as chronic health problems, lifestyle, and stress, can cause male fertility reduction. The dietetic habits also play a significant role. Western diet is unbalanced in terms of PUFAs from n-6 and n-3 series (10-20:1 vs 4:1) and this improper dietary profile determines relevant modifications on reproductive tissues, modulating their oxidative status and therefore male infertility.

In humans, diet is difficult to standardize and research is mainly focused on the effect of dietary changes on male reproduction traits using in vitro approach that does not take into account the dietary effect on spermatogenesis. Animal model of reproductive functions may be particularly interesting for studying sperm alterations due to infection/inflammation.

The proposal welcomes original research and review article which may help clarify the role of lipid component in male infertility involving oxidative stress, whether and how dietary lipid affects sperm lipid membrane composition, which in turn is relevant for sperm functionality. New knowledge could assist in the development of personalized nutraceutical treatments for improve male reproductive efficiency.

Potential topics include but are not limited to the following:

- ▶ Relevance of fatty acid profile in spermatogenesis and sperm cells
- ▶ Oxidative fatty acid alterations and related effects on male infertility
- ▶ Role of isoprostanoid in sperm quality
- ▶ Regulation of lipid metabolism in spermatogenesis
- ▶ Interplay between dietary habits and male infertility
- ▶ Interplay of antioxidant dietary habits and male infertility
- ▶ Use of animal models to investigate lipid relevance in spermatogenesis

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

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

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