Disease Markers

# Special Issue on
# Moving beyond n-3 Polyunsaturated Fatty Acids in Health and Disease

## CALL FOR PAPERS

Fatty acids not only are fundamental constituents of cell structure and energy-bearing fuel for cell metabolism, but also can modulate cellular functions through various pathways by acting as bioactive mediators directly or by means of second messengers. Taking into account all these considerations, it is not surprising that alterations in fatty acid profile have been linked with the delicate balance between health and disease. The relationship of long-chain n-3 polyunsaturated fatty acids (PUFA) and *trans*-fatty acids with human diseases, in particular cardiovascular diseases, has been extensively examined. Already in 2002, the American Heart Association recommended n-3 PUFA for patients with ischemic heart disease and subjects with hypertriglyceridemia as well, since, for several years, the Food and Drug Administration has been taking actions aiming at reducing *trans*-fatty acids in food supply.

On the other hand, data on other fatty acids have been sparse and not conclusive so far. Importantly, a thorough description of the associations of the whole fatty acids profile with intermediate and clinical phenotypes would help provide a more comprehensive understanding of the pathophysiological roles of all the fatty acids.

It is also worth noting that fatty acid profile reflects both dietary intake and endogenous metabolism. Genes codifying enzymes involved in the synthesis of fatty acids (e.g., FADS → desaturases and ELOVL → elongases) have been identified by genome-wide association studies as important determinants of fatty acid levels, but their association with clinical phenotypes remains often weak and controversial. Such results address the complex architecture of the genetic-environmental interaction that represents the ground of biological effects related to fatty acid pathways.

We invite authors to contribute both original research and review articles, exploring the "dark side of the moon" of fatty acids and investigating the possible associations with diseases and the potential pathophysiological roles of fatty acids different from n-3 PUFA or *trans*-fatty acids. Studies evaluating gene variants modulating fatty acid profile will be also welcomed.

Potential topics include, but are not limited to:

- Associations of non-n-3 PUFA and non-*trans*-fatty acids with complex clinical phenotypes (e.g., ischemic heart disease, cancer, and metabolic disorders like diabetes or nonalcoholic fatty liver disease), as well as with intermediate laboratory phenotypes (e.g., plasma lipids and inflammatory markers), in humans or animal models
- Effects of fatty acid-specific dietary interventions, different from n-3 PUFA supplementation, on clinical and intermediate phenotypes
- Functional characterization of non-n-3 PUFA and non-*trans*-fatty acids in pathophysiology
- Genetic determinants of fatty acid profile (e.g., FADS and ELOVL) and their association with clinical and intermediate phenotypes

Authors can submit their manuscripts via the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/dm/fahd/.

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**Manuscript Due**
Friday, 18 March 2016

**First Round of Reviews**
Friday, 10 June 2016

**Publication Date**
Friday, 5 August 2016