

**Students' Corner**  
**Letter to the Editor**

**Role of Omega-3 fatty acids in improving health**

Madam, A growing body of clinical evidence is increasingly favouring the role of omega-3 polyunsaturated fatty acids (n-3 PUFAs) in different disease conditions. These fatty acids are believed to aid the anti-inflammatory defenses by altering the biochemical properties of the cell membrane, modifying cellular functions, decreasing the activity of cyclooxygenase-2 enzyme and reducing the activity of free radicals.<sup>1</sup> Reducing inflammation and its battery of mediators lies at the core of the therapeutic effects exerted by these fatty acids.

Omega-3 fatty acids can be divided into the long-chain variety such as eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) and the intermediate chain variety such as alpha-linolenic acid (ALA). EPA and DHA

exist in fish while vegetable oils are the sources for ALA.<sup>1,2</sup>

n-3 PUFAs have been found to be helpful in ameliorating a number of disease states including cardiovascular, psychiatric and neoplastic diseases.<sup>2-4</sup> In addition, trials have been conducted to ascertain the effects of these fatty acids in other rheumatological and endocrinologic diseases as well with a generally favourable trend of results. Figure-1 shows some of the reported beneficial effects of n-3 PUFAs.

However, no clinical trials have been conducted in our part of the world to ascertain the beneficial effects of n-3 PUFAs. Secondly, no local recommendations exist to guide our physicians in their prescribing practices of these agents. There is thus a gap in the knowledge and prescribing practices of physicians in Pakistan with regards to n-3 PUFAs in view of the recommended practice of prescription of these fatty acids by many Western health bodies. This was evident in the results of a cross-sectional survey carried out in Karachi among cardiologists with regards to the secondary prevention of heart disease and omega-3 fatty acid prescribing behaviours.<sup>5</sup>

Myriad studies, both laboratory and clinical based, are being carried out in the current decade on the emerging role of n-3 PUFAs in improving health and curtailing disease. Meta-analysis of this exponentially growing information is important for deriving accurate conclusions. Also, how we translate this research into improving our clinical practice in Pakistan is the question of the hour. There is a need to formulate local guidelines regarding the prescription of these fatty acids; the same then need to be disseminated widely among the physicians.

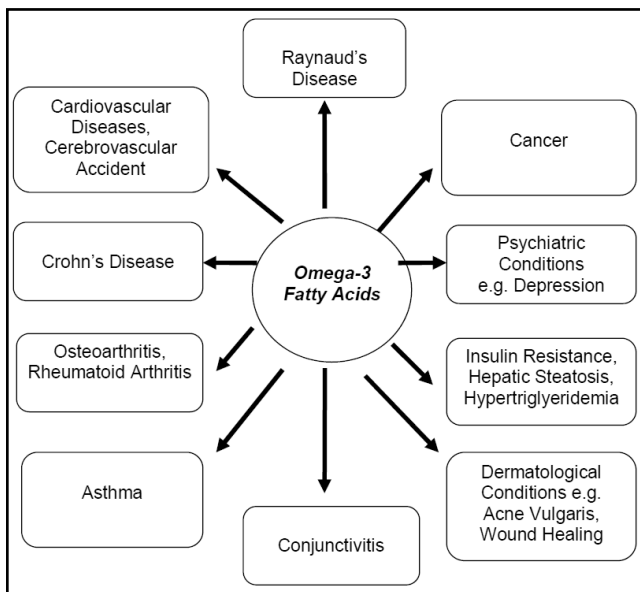


Figure-1: Omega-3 Fatty Acids Affect A Number of Disease States

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## References

1. Pauwels EK, Kostkiewicz M. Fatty acid facts, Part III: Cardiovascular disease, or, a fish diet is noy fishy. *Drug News Perspect* 2008; 21: 552-61.
  2. Tziomalos K, Athyros VG, Karagiannis A, Mikhailidis DP. Omega-3 fatty acids: how can they be used in secondary prevention? *Curr Atheroscler Rep* 2008; 10: 510-7.
  3. Montgomery P, Richardson AJ. Omega-3 fatty acids for bipolar disorder. *Cochrane Database Syst Rev* 2008; (2):CD005169.
  4. Berquin IM, Edwards IJ, Chen YQ. Multi-targeted therapy of cancer by omega-3 fatty acids. *Cancer Lett* 2008; 269: 363-77.
  5. Gowani SA, Shoukat S, Taqui AM, Hanif HM, Ravasia WF, Qadri Z, et al. Secondary prevention of heart disease-knowledge among cardiologists and omega-3 (omega-3) fatty acid prescribing behaviors in Karachi, Pakistan. *BMC Cardiovasc Disord* 2009; 9:4.
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