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Omega-3 Polyunsaturated Fatty Acids and Cardiovascular Diseases

Carl J. Lavie, MD,* Richard V. Milani, MD,* Mandeep R. Mehra, MD,† Hector O. Ventura, MD*New Orleans, Louisiana; and Baltimore, Maryland

Omega-3 polyunsaturated fatty acid (ω -3 PUFA) therapy continues to show great promise in primary and, particularly in secondary prevention of cardiovascular (CV) diseases. The most compelling evidence for CV benefits of ω -3 PUFA comes from 4 controlled trials of nearly 40,000 participants randomized to receive eicosapentaenoic acid (EPA) with or without docosahexaenoic acid (DHA) in studies of patients in primary prevention, after myocardial infarction, and most recently, with heart failure (HF). We discuss the evidence from retrospective epidemiologic studies and from large randomized controlled trials showing the benefits of ω -3 PUFA, specifically EPA and DHA, in primary and secondary CV prevention and provide insight into potential mechanisms of these observed benefits. The target EPA + DHA consumption should be at least 500 mg/day for individuals without underlying overt CV disease and at least 800 to 1,000 mg/day for individuals with known coronary heart disease and HF. Further studies are needed to determine optimal dosing and the relative ratio of DHA and EPA ω -3 PUFA that provides maximal cardio protection in those at risk of CV disease as well in the treatment of atherosclerotic, arrhythmic and primary myocardial disorders. (J Am Coll Cardiol 2009;54:585–94) © 2009 by the American College of Cardiology Foundation

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