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## Eicosapentaenoic and docosahexaenoic acids daily intake among diabetic and nondiabetic subjects: relation to cardiovascular disease

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Cardiovascular disease (CVD) accounts for up to 80% of the mortality in persons with type 2 diabetes, with the age-adjusted relative risk of death due to CVD being 2 to 4 times higher than in the general population. There is considerable evidence that a diet enriched with *n*-3 fatty acids, specifically eicosapentaenoic acid (EPA, 20:5 *n*-3) and docosahexaenoic acid (DHA, 22:6 *n*-3), protects against anti-inflammatory process, atherosclerotic heart disease, myocardial infarction and sudden death. The aim of the study is to estimate and compare the mean daily intake of EPA and DHA polyunsaturated fatty acids in type 2 diabetic patients and nondiabetic subjects. The mean daily intakes of EPA and DHA were also compared with several dietary recommendations to prevent cardiovascular diseases. The study was performed in 150 Portuguese type 2 diabetic patients and 143 nondiabetic subjects. The study population was divided into three groups: group I-75 diabetics with angiopathy; group II-75 diabetics without angiopathy and group III-143 nondiabetic subjects. The statistical analysis was performed by one-way analysis of variance and Scheffe test. Nutrients intake were estimated from a food-frequency questionnaire previously validated for Portuguese adults with cardiovascular disease by the Epidemiology Department, Faculty of Medicine, University of Oporto. Group III had a lower mean EPA daily intake (96 mg/day) compared to the mean values obtained for groups I (115 mg/day) and II (114 mg/day). For DHA, groups I and II had the same mean daily intake (260 mg/day), which was higher than the mean value estimated for group III (216 mg/day). Statistical differences were achieved for EPA and DHA daily intakes between diabetic patients and nondiabetic patients. According to the recommendations of the French Food Safety Agency, American Dietetic Association and the International Society for the Study of Fatty Acids and Lipids, to prevent cardiovascular diseases, the sum of EPA+DHA daily intake should provide 500 mg/day. All groups in the study had a mean daily intake significantly different than the recommended value, but the prevalence of subjects with daily intakes lower than the recommended values was for each group, respectively: group I-75%, group II-79% and group III-93%. As recommended by the French Food Safety Agency, the mean daily intakes of DHA for all study groups were higher than 120 mg/day. The daily intake of EPA and DHA is similar between diabetics with and without angiopathy, but higher in diabetics compared to nondiabetic subjects. These results suggest that diabetic patients are more concern with the diet than nondiabetic subjects. The prevalence of EPA and DHA daily intake below the recommended values is very high in the study population. This fact is associated with a higher risk to develop cardiovascular disease and with a lower ability to protect against inflammatory process in diabetes.

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