

# Three-Months Effect of EPA and DHA Supplementation on Red Blood Cell Fatty Acid Compositions and on Omega-3 Index in Patients with History of Cardiovascular Diseases: An Open Label Study

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## ABSTRACT

**Objective:** This study was conducted to measure the fatty acid content in RBCs of CVD patients with intake of EPA and DHA supplementation for three months.

**Design:** A qualitative, single arm clinical trial open label study.

**Setting:** Mohammad bin Khalifa Al Khalifa Cardiac Centre and University of Bahrain, Bahrain.

**Method:** A triplicate dose (three capsules) of omega-3 supplements containing 180mg EPA and 120mg DHA was given to the CVD patients for 3 months. Blood samples were collected from the patients and the fatty acid content was extracted, methylated, and analyzed using Gas Chromatography.

**Result:** The O3I percentage of composition at baseline (2.54%) was unchanged after supplement consumption (2.99). However, a significant increase in the total omega-3 levels from 4.31% to 5.23%, a significant decrease in omega-6/omega-3 ratio from 5.89% to 4.51%, and a significant decrease in the total omega-6 contents from 25.38% to 23.59% were found.

**Conclusion:** This study provided the first experimental data on the effect of omega-3 supplement consumption in CVD patients in Bahrain. This study suggests the importance of ensuring the adequate intake of EPA+DHA supplements based on individuals/population O3I to achieve the desired O3I>8%.

**Keywords:** EPA+DHA, fatty acids; fish oil; omega-3 index; supplements

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