

Membrane effects of the n-3 fish oil fatty acids, which prevent fatal ventricular arrhythmias.

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Fish oil fatty acids are known to exert beneficial effects on the heart and vascular systems. We have studied the membrane effects on ion channel conductance by the n-3 fish oil fatty acids that account for these beneficial effects. We have confirmed that these fatty acids prevent fatal cardiac arrhythmias in a reliable dog model of sudden cardiac death. This finding was followed by experiments indicating that the n-3 fatty acids electrically stabilize heart cells and do so largely through modulation of the fast voltage-dependent Na(+) currents and the L-type Ca(2+) channels in a manner, which makes the heart cells resistant to arrhythmias. Others and we have demonstrated that these membrane effects on the heart can prevent fatal cardiac arrhythmias in humans.

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