Reference:

Effects of Omega-3 Fatty Acids on Resting Heart Rate, Heart Rate Recovery After Exercise, and Heart Rate Variability in Men With Healed Myocardial Infarctions and Depressed Ejection Fractions


Mid America Heart Institute, Saint Luke’s Hospital, Kansas City, Missouri, USA; University of Missouri-Kansas City School of Medicine, Kansas City, Missouri, USA.

Summary:

In this clinical trial, the authors evaluated the potential effects of consuming a daily supplement of omega-3 fatty acid derived from fish oil (providing 225 mg of EPA plus 585 mg of DHA per day over a 4 month period) in patients with a previous history of a myocardial infarction (heart attack) and sub-normal cardiac functioning (having depressed ejection fractions). Relative to controls receiving placebo, DHA/EPA supplementation resulted in a significant decrease in resting heart rates (from an average of 73 down to 68 beats/min) and improved the one-minute heart rate recovery (HRR) after termination of a fixed exercise stress test. The net decrease in the measured heart rate at 1 minute post-exercise as compared to that at peak exercise was improved by 5 beats/min in the EPA/DHA group which showed a net reduction of 32 beats/min as compared to only 27 beats/min in the control (placebo) group. These results confirm previous studies in the literature showing a moderate reduction in resting heart rate with DHA/EPA supplementation and extend our current knowledge by showing a significant improvement (reduction) in the HRR. The authors suggest that the improved HRR following exercise with omega-3 fatty acid supplementation may be mediated by an increase in vagal activity (the vagal nerves influence the heart rate such that an overall slowing of the heart rate is enhanced with the frequency of vagal stimulation). Furthermore, the authors suggest that their findings may in part explain the observed decrease in
Dr. Holub's Comments:

This study is of particular interest for two particularly important findings. Firstly, confirmation of the overall potential for DHA/EPA omega-3 supplementation to moderately reduce the resting heart rate (in confirmation of previous studies) since those with higher resting heart rates have been significantly linked to increased cardiovascular events and mortality. Secondly, recent studies have clearly indicated that those with higher heart rate recoveries following fairly intense exercise (such as in an exercise stress test) are at lower risk of long-term cardiac-related mortality. Thus, an improvement of both of these risk factors, resting heart rate and heart rate recovery (HRR), with DHA/EPA supplementation is of particular interest in the potential prevention and management of cardiovascular disease-related mortality.