The benefits of regular aerobic exercise and the greater capacity for such in preventing or delaying hard cardio-related events in healthy subjects and in those with coronary artery disease (CAD) is well documented. Arthritis (joint pain, stiffness) and related musculoskeletal challenges can adversely affect exercise performance and capacity. Various published studies have reported the cardioprotective benefits of EPA/DHA omega-3 fatty acid intakes and their anti-inflammatory effects in those with various forms of arthritis. The goal of the present clinical trial was to evaluate the potential effect of EPA/DHA supplementation for maintaining physical function, alleviating pain and stiffness, and improving exercise duration in patients with stable CAD.

For this purpose, 291 patients (144 in the control group and 147 in the omega-3 group - average age of 63 years, 83 % males) with stable CAD (including a history of myocardial infarction and/or cardiovascular surgery) were randomized into two groups wherein either no omega-3 supplementation was applied (control group) or a daily intake of omega-3 fatty acid via supplementation was taken daily (4 soft gels providing a total of 1.9 grams EPA plus 1.5 grams DHA) for a period of one year. Biochemical measurements on blood samples, musculoskeletal pain and stiffness, exercise performance (treadmill testing) were determined at initiation and at the one-year follow-up. Other outcomes including the need for knee and hip replacements were recorded.
After one year, those patients in the control group (not receiving EPA/DHA omega-3 fatty acid supplementation) experienced a significant worsening from baseline entry of pain (by 11 %), of stiffness (by 16 %), and of physical function (by 12 %) while those receiving EPA/DHA supplementation exhibited no worsening in these three measures. While the two groups had no significant difference between them in the number of minutes of exercise per week at the beginning, there was a significantly greater increase in minutes/week in the omega-3 group after one year (by an average of 47 minutes- from 150 at baseline to 197 minutes/week at one year). The controls averaged only 135 minutes/week at one year. Interestingly, a much lower incidence of serious musculoskeletal events occurred in the EPA/DHA-supplemented group (5 events) as compared to the control group (14 events). Only one subject in the omega-3 group as compared to 11 in the control group had to undergo total knee or hip replacements due to progressive pain and/or arthritis.

Dr. Holub’s Comments:

The increase in exercise time with EPA/DHA supplementation in patients with CAD is of significant interest since increased amounts of exercise are inversely related to cardiovascular mortality and all-cause mortality. This increased duration of weekly exercise may be due to the preserved physical function and the alleviation of stiffness and pain. It is known that age-related declines in muscle mass and related physical function impair both exercise capacity and duration. With respect to joint symptoms and pain, numerous clinical trials have supported the anti-inflammatory impact of EPA/DHA supplementation in those with rheumatoid arthritis resulting in the lowering of morning stiffness, joint pain intensity, and the number of painful and/or tender joints. The likely biochemical mechanisms for such involve the ability of EPA/DHA supplementation to suppress the cellular generation of pro-inflammatory products (eg., leukotriene B4 in neutrophils) while being converted to E-series and D-series resolvins which mediate the resolution of inflammation and reduce pain.