Recent findings from VITAL

Although VITAL was designed to test whether vitamin D and omega-3 fatty acid supplements reduce the risk of total cancer and cardiovascular disease, VITAL researchers are examining the effect of these supplements on a variety of other outcomes. Recently published results are summarized here.

Advanced cancer. As reported in previous newsletters, the results of VITAL and other vitamin D trials, considered in aggregate, indicate that vitamin D supplementation does not lower the risk of developing cancer but does appear to reduce the risk of cancer-related death. In agreement with these findings, laboratory data suggest that vitamin D decreases tumor invasiveness and the likelihood of metastasis, and observational studies of cancer patients show that higher vitamin D blood levels at diagnosis are associated with longer survival. Moreover, some (though not all) observational studies of initially healthy individuals find that higher vitamin D blood levels measured months or years prior to a cancer diagnosis predict a reduced risk of cancer death. Now, in a new analysis, VITAL researchers, led by Dr. Paulette Chandler, report that vitamin D supplementation reduced the risk of advanced—metastatic or fatal—cancer by a significant 17% during the pill-taking phase of the study. Upon closer examination, the protective effect of vitamin D was most pronounced among those with a healthy body weight (body mass index [BMI] below 25; a BMI calculator is available at www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/english_bmi_calculator/bmi_calculator.html). Individuals with a healthy body weight assigned to supplemental vitamin D experienced a 38% reduction in risk of advanced cancer, whereas those with overweight (BMI 25-29.9) or obesity (BMI 30 or greater) did not derive a significant treatment benefit. “The reasons for this difference are unclear but may be due to reduced bioactivity of vitamin D in individuals with excess body weight,” noted VITAL Principal Investigator Dr. JoAnn Manson. The results were published online in JAMA Network Open on November 18, 2020.

Heart failure. Heart failure, which affects 6.2 million U.S. adults, is a progressive condition in which the heart does not pump enough blood to meet the body’s oxygen needs. VITAL researchers partnered with Harvard colleague Dr. Luc Djoussé to examine whether supplemental vitamin D and omega-3 fatty acids protect against being hospitalized for heart failure. The findings for omega-3 fatty acids, though not for vitamin D, suggest benefit. Although the omega-3 fatty acid intervention did not reduce the risk of a first hospitalization for heart failure, it did reduce the risk of subsequent hospitalizations for this condition by a significant 14% during the pill-taking phase of the study. This encouraging finding is supported by animal experiments and small, short-term clinical trials in patients with heart...
failure that suggest that omega-3 fatty acids favorably affect heart function and structure. VITAL is the first large omega-3 fatty acid trial in a general or ‘usual-risk’ population. “Additional research in such populations is needed to confirm VITAL’s promising findings for omega-3s and heart failure,” said Dr. Djoussé. Reference: Djoussé L, et al. Circulation 2020 Mar 3; 141:784-786.

**Other outcomes.** In VITAL, neither vitamin D nor omega-3 fatty acids reduced chronic knee pain, nor did these supplements improve kidney function in participants with diabetes. Additionally, no benefits or risks were found for vitamin D in relation to depression, falls, or colorectal polyps. References: Please see the VITAL publications list at www.vitalstudy.org.

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**FINDINGS cont’d from page 1** —

We’d like to hear from you!

Please share your thoughts about participating in VITAL and contributing to scientific knowledge about the role of vitamin D and omega-3 fatty acid supplementation in human health. We also welcome your photos and stories. We will feature a sampling of responses in future newsletters. Please write to us at vitalstudy@partners.org or the postal address in the box to the left.