

# The Nutrition Reporter™

© Jack Challem February 2011 Vol 22 No 2



The independent newsletter that reports vitamin, mineral, and food therapies

## New Benefits of Omega-3 Fish Oils: Increasing Muscle, Reducing Body Fat

Maintaining a relatively healthy ratio of lean muscle tissue to body fat – and a body mass index (BMI) under 25 – can lower your long-term risk of diabetes, heart disease, and other health problems. Eating healthy foods, keeping portion sizes small, avoiding junk foods, and exercising can all contribute to a healthy BMI.

But can consuming fat, even healthy fats, increase muscle and reduce body fat? Apparently yes, according to two recent studies of people.

Bettina Mittendorfer, PhD, of the Washington University School of Medicine, St. Louis, Missouri, and her colleagues gave either daily fish oil capsules or placebos to 16 healthy older men and women for eight weeks. The fish oils added up to 4 grams daily, including 1.8 grams of eicosapentaenoic acid (EPA) and 1.5 grams of docosahexaenoic acid (DHA).

During this time, the fish oil capsules led to an increase in the rate of protein synthesis in muscle – important, Mittendorfer wrote, because it might help prevent or treat age-related muscle loss.

“Loss of muscle mass with aging is a major public health concern because it impairs physical function, which reduces quality of life and may lead to frailty and premature death,” she explained.

The production of lean muscle typically decreases in the elderly because of “anabolic resistance,” often in spite of a diet high in protein.

In the other study, Eric E. Noreen, PhD, of Gettysburg College, Pennsylvania, and his colleagues asked 44 men and women to take either 4 grams of fish oils (consisting of 1,600 mg of EPA and 800 IU of DHA) or placebos daily for six weeks.

By the end of the study, subjects had a notable increase in lean muscle. Their body fat decreased by about 1 pound, and their percentage of body fat declined by about 0.4 percent.

Citing other research, Noreen wrote that EPA and DHA can reduce the activity of fat-promoting genes, as well as increase the burning of body fat.

Noreen reported one other benefit from the fish oils. People taking them had a decrease in cortisol levels (measured in saliva). Cortisol is a stress hormone, and high levels increase the risk of heart disease and death.

References: Smith GI, Atherton P, Reeds DN, et al. Dietary omega-3 fatty acid supplementation increases the rate of muscle protein synthesis in older adults: a randomized controlled study. *American Journal of Clinical Nutrition*, 2010; doi 10.3945/ajcn.110.005611. Noreen EE, Sass, MJ, Crowe ML, et al. Effects of supplemental fish oil on resting metabolic rate, body composition, and salivary cortisol in healthy adults. *Journal of the International Society of Sports Medicine*, 2010;7:31. Note: you can calculate your own BMI at [www.nhlbisupport.com/bmi/](http://www.nhlbisupport.com/bmi/) □

### Perspectives

#### Do You Get Enough Vitamin D?

The U.S. National Institute of Medicine (IOM) recently recommended a slight increase in the recommended daily allowance for vitamin D. But the committee cautioned against taking large amounts of vitamin D and calcium, and it wrote that large amounts of vitamin D daily was potentially harmful.

The IOM committee consisted of bone doctors and none of the recognized experts on vitamin D. It was a politically “safe” recommendation for the committee members, but one that is medically harmful to nearly everyone else.

Taking 600 IU of vitamin D daily might help you protect your bones, compared let’s say to no vitamin D at all. However, the research is overwhelming that much larger amounts – 2,000 to 5,000 IU and above daily – can reduce your long-term risk of multiple types of cancer, heart disease, depression, diabetes, flu and other infections, and, yes, osteoporosis.

In my opinion, the IOM committee is guilty of malpractice. It’s members have reversed the Hippocratic Oath from “first do no harm” to “first do harm.” Shame on them. Keep taking your D. –JC

More research summaries on next page

## **Taking Multivitamins Appears to Reduce Risk of Heart Attack**

Taking a daily multivitamin supplement, especially in combination with other types of nutritional supplements, appears to significantly reduce the risk of a heart attack.

Alicja Wolk, Dr. Med. Sc., of the Karolinska Institute, Sweden, and her colleagues tracked the health of 31,671 women with no history of cardiovascular disease and 2,262 women with heart disease. The women ranged from 49 to 83 years of age and were all living in Sweden.

During an average of 10 years of follow up, 932 women in the first group and 269 women in the second group had suffered a heart attack.

Overall, women taking a low-potency multivitamin, roughly equivalent to the recommended daily allowance, were about 27 percent less likely to have a heart attack. Those who took a multivitamin along with some other type of supplement had a 30 percent lower risk of a heart attack.

Women who had taken a multivitamin for longer periods seemed to benefit more. Those who had taken a multivitamin for more than five years were 41 percent less likely to have a heart attack.

Reference: Rautiainen S, Akesson A, Levitan EB, et al. Multivitamin use and the risk of myocardial infarction: a population-based cohort of Swedish women. *American Journal of Clinical Nutrition*, 2010; doi 10.3945/ajcn.2010.29371. □

## **Abundant Magnesium Reduces Risk of Sudden Cardiac Death**

Maintaining relative large reserves of magnesium may help prevent sudden cardiac death (SCD). SCD accounts for about half of all deaths from coronary heart disease – literally with people dropping dead. More than half of the people who suffer SCD have no signs of heart disease. Often, erratic heartbeats known as arrhythmias, play a role in SCD.

Christine M. Albert, MD, MPH, of the Harvard Medical School, and her colleagues investigated the relationship between SCD and magnesium, largely because the mineral has been shown to reduce arrhythmias. Albert compared 99 cases of SCD and 291 similar people who did not suffer SCD. The subjects were drawn from a larger study of 88,375 nurses, whose eating habits and magnesium levels were regularly assessed over 26 years.

Women who had the highest dietary intake of magnesium were 37 percent less likely to suffer SCD. Meanwhile, those with the highest blood levels of magnesium were 77 percent less likely to experience SCD.

“If the observed association is causal, interventions directed at increasing dietary or plasma [blood] magnesium might lower the risk of SCD,” wrote Albert.

Reference: Chiuve SE, Korngold EC, Januzzi JL, et al. Plasma and dietary magnesium and risk of sudden cardiac death in women. *American Journal of Clinical Nutrition*, 2010; doi 3945/ajcn.110.002253. □

## **Skipping Breakfast Increases Risk of Overweight, Prediabetes**

People who skip breakfast as children and adults are more likely to become overweight and develop several risk factors for prediabetes and heart disease.

Alison J. Venn, PhD, of the Menzies Research Institute, Australia, and her colleagues analyzed dietary and health data first collected from nine to 15-year olds in 1985. During follow up between 2004 and 2006, when the subjects were 26 to 36 years old, they obtained updated dietary information.

People who skipped breakfast as both children and adults had waistlines that were on average almost two inches greater, compared with people who consistently ate breakfasts. In addition, the breakfast skippers had higher fasting levels of insulin (a sign of insulin resistance, a form of prediabetes), higher total cholesterol levels, and high LDL cholesterol levels.

Venn cited other research indicating that people who skip breakfast tend to have other unhealthy dietary and lifestyle habits, such as eating a poorer diet and engaging in less physical activity.

Reference: Smith KJ, Gall SL, McNaughton SA, et al. Skipping breakfast: longitudinal associations with cardiometabolic risk factors in the childhood determinants of adult health study. *American Journal of Clinical Nutrition*, 2010L doi.3945/ajcn.2010.30101. □

## **Vitamins Give Women Better Odds Fighting Breast Cancer**

A study of women with invasive breast cancer has found that taking modest amounts of vitamin supplements improves the chances of survival and reduces the odds of breast cancer recurrence.

Xiao-Ou Shu, MD, of Vanderbilt University, Nashville, and her colleagues studied 4,877 women, ages 20 to 75 years, who were living in Shanghai, China. The women were treated with surgery, as well as with chemo and/or radiation.

Overall, women who took multivitamins, vitamin C, or vitamin E supplements were more likely to live longer and experience fewer recurrences of cancer. Taking any of these vitamins was associated with an 18 percent lower risk of death and a 22 percent

reduced risk of cancer recurrence during four years of follow up. The benefits were observed whether the women took the supplements during chemotherapy or whether they stopped taking them during chemotherapy. However, no benefits were seen among women taking vitamins who also underwent radiation therapy.

The benefits seemed to increase with the duration of supplementation. Women who took vitamin C for more than three months had a 44 percent lower risk of death and a 38 percent decrease in risk of recurrence. The benefits of vitamin E supplements were similar.

“Our results do not support the current recommendation that breast cancer patients should avoid use of vitamin supplements,” wrote Shu.

Reference: Nechuta S, Lu W, Chen Z, et al. Vitamin supplement use during breast cancer treatment and survival: a prospective cohort study. *Cancer Epidemiology, Biomarkers and Prevention*, 2011; 10.1158/1055-9965.EPI-10-1072. □

## Modest Increases in Protein and Fiber Helps Lead to Weight Loss

Increasing the consumption of both protein and fiber – both of which help stabilize blood sugar – leads to greater weight loss and other improvements, compared with a standard low-fat, high-carbohydrate diet.

Lisa Te Morenga, PhD, of the University of Otago, New Zealand, and her colleagues asked 89 overweight or obese women, ages 18 to 65 years, to follow one of two diets for 10 weeks. One diet was a traditional high-carbohydrate, low-fat, low-protein (20 percent of total calories) regimen, whereas the other had slightly larger amounts of protein (30 percent of total calories) and much more fiber (35 grams daily). Women on the high-protein, high-fiber diet were *not* asked to restrict their calories.

By the end of the study, women eating the high-protein, high-fiber diet lost substantially more weight and body fat, compared with those following the more traditional diet. The high-protein, high-fiber group lost an average of almost three pounds of weight, two pounds of body fat, and a pound and one-half of fat around the belly. They had no loss in lean muscle tissue.

In addition, the high-protein, high-fiber diet led to reductions in total cholesterol and low-density lipoprotein (LDL) cholesterol.

Reference: Morenga LT, Williams S, Brown, R, et al. Effect of a relatively high-protein, high-fiber diet on body composition and metabolic risk factors in overweight women. *European Journal of Clinical Nutrition*, 2010;64:1323-1331. □

## Distracted While Eating? You Probably End Up Eating More

Nearly everyone multitasks, and if you try to focus on tasks when you’re eating, you’re likely to eat more food and not realize it. The consequence: Probably gaining more weight than you’d like.

Jeffrey M. Brunstrom, PhD, of the University of Bristol, United Kingdom, and his colleagues asked 22 people to eat identical meals for lunch. Some of the people were asked to play computer solitaire during lunch and others were not. Thirty minutes later, all of the subjects were asked to “taste test” cookies and then to recall what they ate for lunch.

The people who had played computer solitaire had more difficulty remembering what they ate for lunch, and they described themselves as feeling less full. They also ate twice as many cookies compared with people who did not have any distractions during lunch.

Brunstrom noted that other studies have also found that distractions lead to increased food intake – such as when snacking while watching television, or using a smart phone while eating. His study was unique in that it showed that distractions do interfere with the ability to remember what a person has eaten.

Reference: Oldham-Cooper RE, Hardman CA, Nicoll CE, et al. Playing a computer game during lunch affects fullness, memory for lunch, and later snack intake. *American Journal of Clinical Nutrition*, 2010; doi 10.3945/ajcn.110.004580. □

## Amino Acid Supplements Can Help People with COPD

A study of 32 patients with severe chronic obstructive pulmonary disease (COPD) and sarcopenia (i.e., age-related muscle mass) has found that daily amino acid supplements can lead to significant physical and cognitive improvements.

Roberto W. Dal Negro, MD, of Orlandi Hospital, Verona, Italy, and his colleagues asked 25 men and seven women with severe COPD and secondary sarcopenia to take either 4 grams of essential amino acids or placebos twice daily for 12 weeks. The supplements provided the eight essential dietary amino acids, which are the building blocks of protein.

“Chronic obstructive pulmonary disease is often associated with substantial weight loss and reduced skeletal mass and function ... Weight loss and muscle wasting contribute to a reduction in physical performance and can lead to disability,” Dal Negro wrote.

The subjects’ health was assessed at the beginning of the study and again after four and 12 weeks.

Continues on next page

## Quick Reviews of Recent Research

### • Living longer comes at a price – disability

Most people want to live longer, but greater life expectancy increases the odds of disease and physical disability. Researchers from the University of Southern California, Los Angeles, analyzed data showing increases in life expectancy over the past 10 years. However, the prevalence of serious diseases, such as cancer, cardiovascular diseases, and diabetes, increased as people got older. In addition, the prevalence of physical disability grew as well. The researchers noted that while people lived longer, it wasn't because they were free of disease. Rather, they lived longer with disease or disability.

Crimmins EM. *Journal of Gerontology: Social Sciences*, 2010;10.1093/geronb/gbq088.

### • Fried fish may be culprit in "stroke belt"

Researchers at Emory University, Atlanta, Georgia, analyzed dietary habits and the risk of stroke nationwide in a study of 21,675 people. Overall, people consumed the same number of servings of fish each week. However, people in the "stroke belt," in the South were one-third more likely to eat fried fish, which destroys or displaces the healthy fats normally found in fish. The researchers attributed part of the risk of stroke in the South to consumption of fried fish.

Nahab F. *Neurology*, 2010: epub ahead of print.

### • Low vitamin D levels in orthopedic patients

Patients about to undergo orthopedic surgery commonly have marginally deficient or seriously deficient levels of vitamin D, a nutrient needed for healthy bones. Physicians at the Hospital for Special Surgery in New York City measured vitamin D levels in 723 patients scheduled for various types of

orthopedic surgery, including sports injuries, trauma, and hip and knee surgery. Overall, 43 percent of the patients had borderline deficiencies and, of those, 40 percent were classified as being deficient. Men were more likely than women to have low vitamin D levels, and people with darker skin tones (e.g., Blacks and Hispanics) were 5.5 more likely than others to have low vitamin D levels.

Bogunovic L. *Journal of Bone and Joint Surgery*, 2010; 93:2300-2304.

### • Coffee and tea reduce brain cancer risk

Researchers at the Imperial College, London, and other institutions analyzed the relationship between coffee and tea consumption and the risk of two types of brain cancer, glioma and meningioma. The subjects were drawn from nine European nations, and over eight years of follow up, the researchers noted a significant protective effect among people consuming 3.38 ounces (100 milliliters) or more coffee and/or tea daily. The researchers speculated that antioxidants in coffee and tea might help protect against some types of brain cancer.

Michaud DS. *American Journal of Clinical Nutrition*, 2010;92:1145-1150.

### • Yoga improves mood, GABA levels

Adopting 12 weeks of yoga practice does a better job of improving mood, compared with walking, according to a study by researchers at the Boston University School of Medicine. Nineteen subjects were asked to practice yoga and 15 were asked to walk three times weekly for 12 weeks. People practicing yoga had greater improvements in mood, less anxiety, and higher brain levels of gamma amino butyric acid (GABA), a calming anti-anxiety neurotransmitter.

Street CC. *Journal of Alternative and Complementary Medicine*, 2010;16:1145-1152.

## Amino Acids and COPD...

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People taking the amino acid supplements had progressive improvements during the course of the study. They gained an average of 13 pounds of body weight and eight pounds of fat-free (muscle) mass. Other tests indicated an increase in energy-generating biochemical pathways and improvements in physical activity.

The amino acid supplements also led to improvements in cognitive function. None of these changes occurred among people taking placebos.

Reference: Dal Negro RW, Aquilani R, Bertacco S, et al. Comprehensive effects of supplemented essential amino acids in patients with severe chronic obstructive pulmonary disease and sarcopenia. *Monaldi Archives for Chest Disease*, 2010;73: 25-33. □

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### The Nutrition Reporter™

Post Office Box 30246 • Tucson AZ 85751-0246 USA

Editor and Publisher: Jack ChalleM

Copy Editor: Mary E. Larsen

### Medical and Scientific Advisors

Ronald E. Hunninghake, MD Wichita, Kansas • Ralph K. Campbell, MD Polson, Montana

Peter Langsjoen, MD Tyler, Texas • Marcus Laux, ND San Francisco, Calif.

James A. Duke, PhD Fulton, Maryland