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Why Eating Breakfast Is Essential for Losing Weight and Preventing Disease

Three new studies show that the simple act of regularly eating breakfast may lower your risk of overweight, diabetes, and heart disease. The reason, according to some of the researchers, may be that our circadian rhythm influences how our bodies process food.

Daniela Jakubowicz, MD, of Tel Aviv University, Israel, and her colleagues asked 93 overweight or obese women – all of whom had been diagnosed with metabolic syndrome – to eat a 1,400-calorie-a-day diet for 12 weeks. Some of the women consumed half of those calories at breakfast, while others consumed them at dinner.

Women eating the big breakfast lost an average of 18 pounds and three inches from their waistline, while the big dinner eaters lost only about seven pounds and an inch and one-half from their waist.

All of the women had improvements in their blood sugar and insulin levels, but those who ate the bigger breakfast had more significant improvements, including less insulin resistance. In addition, the big breakfast eaters saw their average triglyceride levels decrease by 33 percent, whereas triglyceride levels increased by almost 15 percent in the big dinner group.

In a separate study, Frank B. Hu, MD, PhD, of the Harvard School of Public Health and his colleagues analyzed the breakfast habits of 46,289 women participating in the Nurses Health Study. After six years of follow up, 1,560 of the women were diagnosed with type 2 diabetes.

Women who consumed breakfast irregularly were 20 percent more likely to develop diabetes, compared with women who ate breakfast every day. In addition, women who routinely ate three meals each day were 16 percent less likely to develop diabetes, whereas those who ate only one or two meals daily were 13 percent more likely to develop the disease.

In another Harvard study, Leah E. Cahill, PhD, and her colleagues analyzed the relationship between

skipping breakfast and the risk of coronary heart disease in a group of 26,902 men, ages 45 to 82 years of age when the study began. During 16 years of follow up, men who skipped breakfast had a 27 percent higher risk of coronary heart disease, compared with men who did eat breakfast.

In addition, men who ate late at night had a 55 percent higher risk of coronary heart disease.

References: Jakubowicz D, Barnea M, Wainstein J, et al. High caloric intake at breakfast vs dinner differentially influences weight loss of overweight and obese women. *Obesity*, 2013; epub ahead of print. Mekary RA, Giovannucci E, Cahill L, et al. Eating patterns and type 2 diabetes risk in older women: breakfast consumption and eating frequency. *American Journal of Clinical Nutrition*, 2013;98:436-443. Cahill LE, Chiuve SE, Mekary RA, et al. Prospective study of breakfast eating and incidence coronary heart disease in a cohort of male US health professionals. *Circulation*, 2013;128:337-343. □

Perspectives Make Time for Breakfast

One of the most significant dietary changes over the past several decades is the decline in people who eat a “good” breakfast.

Back in college (longer ago than I care to admit), I remember noticing a couple of people having soft drinks for breakfast – basically a sugary solution. It seemed so bizarre at the time. Now it’s common. Next, nutritional paranoia about eggs led to a significant reduction in the number of people eating a protein-centric breakfast. These days, family and work pressures and the resulting time crunch lead people to either skip breakfast or eat the equivalent of dessert (doughnut, sweet roll) for breakfast.

Countless studies have shown that breakfast really is the most important meal of the day. And yet a lot of people say they are simply not hungry at breakfast time. Sometimes the reason is that elevated blood sugar from a late meal the night before suppresses appetite.

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Other times people wrongly believe they can reduce their daily calorie intake and lose weight by skipping breakfast. But that's a fallacy. A study several years ago found that people who skipped breakfast actually consumed 400 calories more over the subsequent 36 hours.

The lesson is clear: Make the time for breakfast, whether it's eggs or a bowl of gluten-free cereal, along with with fresh fruit. You'll feel better and have more energy on day one. –*JC*

Low Vitamin D Levels May Be a Factor in Physical Disabilities

Low levels of vitamin D are associated with poorer physical health and a greater likelihood of physical disabilities, according to a study by Dutch researchers.

Natasja M. van Schoor, PhD, of Vrije University, Amsterdam, and her colleagues studied two groups of people – 725 men and women ages 55 to 65 years and 1,237 men and women over age 65. The researchers measured whether the subjects could walk up and down a flight of stairs, put on their clothes, cut their toenails, or walk outside for five minutes without assistance.

After adjusting for the subjects' age, history of physical activity, and chronic disease, they found that vitamin D deficiency (blood levels less than 20 ng/ml) was associated with a higher number of disabilities, compared with people who had normal levels of vitamin D (30 ng/ml or higher).

The link between “functional limits” was evident after a shorter follow-up time in older people than it was in younger people.

Reference: Sohl E, van Schoor NM, de Jongh RT, et al. Vitamin D status is associated with functional limitations and functional decline in older individuals. *Journal of Clinical Endocrinology and Metabolism*, 2013: epub ahead of print. □

Drinking Large Amounts of Coffee May Boost Risk of Death

Coffee consumption has been linked to a lower risk of type 2 diabetes, but drinking too much could reduce your life expectancy.

Junxiu Liu, MD, of the University of South Carolina, Columbia, and her colleagues analyzed data from a study of 43,727 men and women. During an average 17-year follow up, 2,512 of the subjects died.

People under age 55 who consumed 28 or more cups of each week – the equivalent of four cups daily – had a greater risk of death from any cause. Men

under age 55 were 56 percent more likely to die if they consumed a lot of coffee, and women were twice as likely to die from any cause.

A cup of coffee in the study was defined as four to six ounces.

Reference: Liu J, Sui X, Lavie CJ, et al. Association of coffee consumption with all-cause and cardiovascular disease mortality. *Mayo Clinic Proceedings*, 2013: doi 10.1016/j.mayocp.2013.06.020 □

For Cancer-Related Fatigue, Ginseng May Provide a Boost

Taking supplemental ginseng may provide an energy boost for cancer patients who feel fatigued.

Debra L. Barton, PhD, of the Mayo Clinic, Rochester, Minnesota, and her colleagues studied 364 cancer patients, some of whom were still undergoing treatment.

The patients were given either four 500 mg capsules daily of Wisconsin Ginseng, a type of American ginseng (*Panax quinquefolius*) or placebos for eight weeks. The ginseng capsules contained ground up dried root, providing 3 percent ginsenosides, and both the ginseng and placebos were donated by the Ginseng Board of Wisconsin.

After eight weeks, people taking ginseng had twice the improvement in fatigue compared with those taking placebos.

Patients who were concurrently undergoing either chemotherapy or radiation treatments had more significant improvements after both four and eight weeks of taking ginseng supplements.

“Better results in those receiving cancer treatment may indicate that ginseng may be a better preventive agent than treatment intervention...” wrote the researchers.

Reference: Barton DL, Liu H, Dakhil SR, et al. Wisconsin ginseng (*Panax quinquefolius*) to improve cancer-related fatigue: a randomized, double-blind trial, N07C2. *Journal of the National Cancer Institute*, 2013;105:1230-1238. □

Some Types of Fruit May Lower the Risk of Type 2 Diabetes

Consuming certain types of fruit might reduce the risk of developing type 2 diabetes – but in a recent study, the only clear winner was blueberries, a high-antioxidant fruit that other studies have shown to have significant health benefits.

Qi Sun, MD, ScD, and his colleagues at the Harvard School of Public Health, analyzed data from 151,209 women and 36,173 men. Consuming three servings weekly of blueberries, grapes, raisins, or pears was associated with a 7 percent lower risk of

diabetes. However, blueberries led the pack with a 26 percent lower risk of diabetes.

In contrast, people who consumed strawberries, canteloupe, or fruit juices had a slightly higher risk of type 2 diabetes.

Editor's note: This study may show some of the risks of scientific "reductionism," the idea that something is no more than the sum of its parts. Considerable evidence points to the benefits of eating a diverse selection of fruits and vegetables. With the exception of blueberries, the benefits or risks of different fruits were marginal.

Reference: Muraki I, Imamura F, Manson JE, et al. Fruit consumption and risk of type 2 diabetes: results from three prospective longitudinal cohort studies. *BMJ*, 2013;347:10.1136/bmj.f5001 □

Supplemental Vitamin C Lifts Moods of Hospitalized Patients

A study of 140 hospitalized patients has found that 79-85 percent of them had low levels of vitamin D and three fourths of them had abnormally low levels of vitamin C. In fact, about half of the patients could have been classified as having scurvy.

L. John Hoffer, MD, PhD, of McGill University, Montreal, and his colleagues gave the patients either 500 mg of vitamin C twice daily or 5,000 IU of vitamin D once daily for eight days. Both vitamins have been found in other studies to enhance mood.

The patients' moods and feelings of distress were measured using three different tests. Patients receiving vitamin C had a rapid normalization of their blood levels of the vitamin. They also benefited from a statistically significant 71 percent reduction in mood disturbances and a 51 percent reduction in psychological stress.

In contrast, vitamin D levels increased after eight days, but not into the normal range – and had insignificant effects of mood and feelings of distress during this time.

Reference: Wang Y, Liu XJ, Robitaille L, et al. Effects of vitamin C and vitamin D administration on mood and distress in acutely hospitalized patients. *American Journal of Clinical Nutrition*, 2013;98:705-711. □

Excess Copper May Contribute to the Risk of Alzheimer's Disease

In the early 1970s, Carl C. Pfeiffer, MD, PhD, was the first physician to raise the alarm about the dangers of excess copper. In one of his case histories, he related the story of a "haunted house," in which all of the occupants eventually developed hallucinations. Pfeiffer traced the problem to copper

pipes and soft water, which leached the copper from the pipes and into drinking water. The antidote, as Pfeiffer noted, was taking zinc supplements, which counterbalance copper.

Copper, of course, is an essential dietary mineral, but new research now shows that too much can increase the risk of Alzheimer's disease, according to a new study by researchers at the University of Rochester Medical Center in Rochester, New York.

Rashid Deane, PhD, and his colleagues conducted studies in laboratory mice and human brain endothelial cells. In some of the experiments, they fed mice very small amounts of copper – equivalent to one-tenth of the Environmental Protection Agency's water quality standards for copper.

Deane found that excess copper caused a breakdown in the blood-brain barrier. As a result, copper indirectly prevented the removal of, and increased the accumulation of, amyloid beta protein in the brain. Excess amyloid beta protein is widely considered a biochemical cause of Alzheimer's disease.

Reference: Singh I, Sagare AP, Coma M, et al. Low levels of copper disrupt brain amyloid-B homeostasis by altering its production and clearance. *Proceedings of the National Academy of Sciences of the USA*, 2013: doi 10.1073/pnas.1302212110. □

Intravenous Fish Oils Help Children with Rare Disorder

Pediatric intestinal failure is a relatively rare disease most often caused by an abnormally short or dysfunctional bowel. Children with the disorder are fed intravenously until their intestine recovers and is able to absorb food. The principal type of intravenous nutrition uses a base of soybean oil, but the soybean oil increases the risk of intestinal failure-associated liver disease, which can result in death.

Now, a study conducted at the David Geffen School of Medicine at the University of California, Los Angeles, has shown that substituting fish oils (primarily omega-3s) can lead to significant improvements compared with soybean oil (primarily omega-6s).

Kara L. Calkins, MD, and her colleagues used intravenous fish oils to treat ten pediatric patients, ages two weeks to 18 years, with intestinal failure-associated liver disease. Calkins compared their progress with 20 children who had previously received soybean oil. The primary outcome was the time to reverse cholestasis, in which bile cannot flow from the liver to the duodenum.

The children received approximately 227 mg of fish oils per pound of body weight (500 mg per

Quick Reviews of Recent Research

• Mulberry leaf extract may help blood sugar

Korean researchers asked 50 healthy subjects to drink a 75-gram maltose solution and then take various dosages of mulberry leaf. The two highest doses – 1.5 and 5 grams of mulberry leaf led to lower post-prandial blood sugar levels in the subjects. Mulberry leaf contains fiber and flavonoids, both of which might slow the absorption of food and therefore moderate an increase in blood sugar.

Chung HI. *Journal of Functional Foods*, 2013;5:1502-1506.

• Soft drinks boost cardiometabolic risk

Australian researchers analyzed data collected on 1,433 boys and girls ranging from age 14 to 17 years. Sugary soft drink consumption was based on a questionnaire and compared with weight and various markers of diabetes and heart disease risk. The average soft drink consumption was 1.3 servings daily. Girls who consumed more than this amount had increases in body mass index (BMI), weight, and overall cardiometabolic risk. Both boys and girls consuming the most soft drinks had increases in triglycerides, and boys showed a decrease in the “good” high-density lipoprotein (HDL) cholesterol.

Ambrosini GL. *American Journal of Clinical Nutrition*, 2013;98:327-334.

• Tart cherry juice may improve sleep

Tart cherry juice – made from Montmorency cherries – appears to improve sleep. Researchers from the United Kingdom, South Africa, and the United States tested the effects of tart cherry juice on 10 healthy men and 10 healthy women whose average age was 27 years. The subjects consumed 30 ml of tart cherry juice concentrate mixed or placebo in a glass of water each morning and evening for seven days. People consuming the cherry juice slept an average additional 34 minutes each night, while

sleep time decreased in the placebo group. Tart cherry juice contains small amounts of melatonin, which might explain the improvement in sleep time.

Howatson G. *European Journal of Nutrition*, 2013;51: 909-916.

• Supplements may protect bone from chemo

Methotrexate, a drug used both to treat some types of cancer and rheumatoid arthritis, can have deleterious effects on skeletal bone, including osteoporosis and fractures. Australian researchers tested the effects of methotrexate along with fish oils or genistein (a soy extract), or a combination of fish oils and genistein, on laboratory mice. As expected, methotrexate led to changes that damaged bone.

However, fish oils and genistein, by themselves or in combination, prevented bone loss.

Nadhanan RR. *PLoS One*, 2013;8: doi 10.1371/journal.pone.0071592.

• Antioxidants linked to lower cataract risk

Some nutrients have been associated with a lower risk of eye diseases. Chinese researchers analyzed 13 published studies, including 18,999 subjects, to determine the role of antioxidants in reducing cataract risk. Lutein was associated with a 25 percent reduction in cataract risk, and zeaxanthin was related to a 30 percent reduction. In addition, vitamin E was associated with a 25 percent reduction in risk, and alpha-carotene a 28 percent reduction.

Cui YH. *American Journal of Clinical Nutrition*, 2013; 98:778-786.

• Vitamin D may impact leukemia risk

European researchers analyzed the relationship between blood cancers and vitamin D levels in 1,127 patients and the same number of control subjects. People with high blood levels of vitamin D had a 60 percent lower risk of developing chronic lymphocytic leukemia.

Luczynska A. *American Journal of Clinical Nutrition*, 2013;98:827-838.

Intravenous Fish Oils...

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kilogram of body weight) daily for two days, followed by 454 mg per pound (1,000 mg per kilogram of body weight) daily for the next 24 weeks. A 50-pound child would have received a little more than 11 grams of fish oils for two days, followed by almost 23 grams daily for 24 weeks.

Calkins calculated that 75 percent of children getting fish oils would have a complete resolution of cholestasis after 17 weeks, compared with only 6 percent of those who had received soybean oil.

Reference: Calkins KL, Dunn JC, Shew SB, et al. Pediatric intestinal failure-associated liver disease is reversed with 6 months of intravenous fish oil. *Journal of Parenteral and Enteral Nutrition*, 2013: epub ahead of print. □

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