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Brain

Nutrients improve cognition and memory

Good choline levels reduce chances for Alzheimer's

A growing number of studies suggest a balanced diet supports cognition in aging. Choline is an essential nutrient which the body produces, but not in quantities sufficient to serve the nervous system and motor neurons that activate muscles. In one study, doctors measured the diets of 3,224 men and women, average age 55, who were free of dementia and stroke at the start of the study.

Participants took cognitive tests three to four times over the average 16 years of follow-up and periodically reported their diets on food questionnaires. Doctors also interviewed family members over the study period. Overall, those who got no more than 215 mg of choline per day were significantly more likely to develop dementia or Alzheimer's disease (AD) compared to those who got at least 371 to 385 mg of choline per day. The cognitive benefits did not persist beyond 517 mg of choline per day.

Probiotics improved memory in older adults

In this study, 78 participants over age 65 with early memory decline took a placebo or 5 billion colony forming units of the probiotic lactobacillus plantarum per day. Before the study and



after 12 weeks, doctors tested various aspects of memory function.

By the end of the study, those in the probiotics group saw visual memory scores improve 2.4 percent, while the placebo group declined 3.9 percent. Verbal memory scores remained stable for probiotics, while declining 2.8 percent for placebo. Overall, combined memory function scores improved 1.6 percent for probiotics, while declining 3.3 percent for placebo.

Levels of inflammatory gut bacteria also declined in the probiotics group, leading doctors to theorize that *L. plantarum* suppressed intestinal inflammation and neuroinflammation through the gut-brain axis, improving memory function.

REFERENCE: AMERICAN JOURNAL OF CLINICAL NUTRITION; NOVEMBER 2022, VOL. 116, NO. 5, 1201-7

FEBRUARY'S

Healthy Insight

Vitamin C for Gout

Gout is a type of arthritis with sudden acute joint pain, most often in the big toe. It is caused by a buildup of uric acid, a compound found in kidney stones. The body produces uric acid, and many foods including meat and seafood contain it.

This study included 14,641 male doctors, 6.5 percent who began with a diagnosis of gout. All participants took a placebo or 500 mg of vitamin C per day. There were eight new gout diagnoses per 1,000-person-years for those taking vitamin C compared to 9.1 for placebo, a modest but statistically significant 12 percent decrease for vitamin C.

REFERENCE: AMERICAN JOURNAL OF CLINICAL NUTRITION; SEPTEMBER 2022, VOL. 116, NO. 3, 812-19

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Kids

Nutrients support mental and physical health in children

Probiotics with prebiotics relieved constipation

Constipation is common in children, usually due to changes in diet, insufficient fiber, or fluids. Some constipation may be because children want to avoid painful passage of hard stool, because they do not want to interrupt play, or because they are embarrassed. Probiotics and prebiotics combine to form “synbiotics.”

In this study, 64 children, aged 3 to 17, with no more than four bowel movements per week took a placebo or a combination of oligosaccharide prebiotics and multiple lactobacillus and bifidobacterium probiotics strains totaling 6.2 grams per day.

After 84 days, compared to placebo, 15.5 percent more kids taking synbiotics saw one more weekly bowel movement

(WBM); 62.5 percent more kids on synbiotics saw two more WBM, and twice as many kids on synbiotics saw three more WBM.

Pycnogenol better than drugs in ADHD

This study involved 88 children, aged 6 to 12, with ADHD, who took a placebo, the stimulant medication methylphenidate, or Pycnogenol®. Children weighing less than 66 pounds took 20 mg of either treatment per day. Those weighing more took 30 mg of methylphenidate or 40 mg of Pycnogenol.

After 10 weeks, parents and teachers reported an average 35 percent decrease in hyperactivity, impulsivity, and inattention for both treatments while these behaviors increased 1 percent for

placebo. Pycnogenol took slightly longer to reduce inattention, but this was offset by five times more reported adverse effects for methylphenidate, including loss of appetite and unwanted weight loss.

REFERENCE: PEDIATRIC RESEARCH; NOVEMBER 2022, ARTICLE NO. S41390



Metabolism

Vitamin D preserves heart and circulatory health

Vitamin D and metabolic syndrome

More than one-third of U.S. adults suffer from metabolic syndrome (MetS), with factors including obesity,



imbalanced lipids, high blood pressure and sugar, and insulin resistance. Several recent studies have found vitamin D may help prevent heart and circulatory issues as well as type 2 diabetes.

In this study, doctors measured vitamin D levels in 8,639 adults, aged at least 20, from a representative sample of U.S. races and ethnicities. Overall, those in the lowest group—with no more vitamin D than 56 nanomoles per liter of blood (nmol/L) or 22.4 nanograms per milliliter (ng/ml)—were more likely to have metabolic syndrome, compared to those whose vitamin D levels were at least 77.9 nmol/L, or 31.16 ng/ml. By race and ethnicity, Hispanics were 48 percent more likely to develop MetS; non-Hispanic Black were 56 percent more likely, and non-Hispanic White were 124 percent more likely.

Vitamin D, heart, and circulation in type 2 diabetes

This study included 12,103 participants with type 2 diabetes who did not have heart or circulatory disease. Doctors measured vitamin D levels and followed up for an average of 11.2 years, during which time 29.2 percent had a heart or circulatory event.

Those whose vitamin D levels fell below 25 nmol/L or 10 ng/ml were at least 25 percent more likely to have had an event compared to those whose vitamin D levels were at least 75 nmol/L or 30 ng/ml. Doctors concluded maintaining adequate vitamin D levels may help prevent heart and circulatory complications in type 2 diabetes.

REFERENCE: AMERICAN JOURNAL OF CLINICAL NUTRITION; NOVEMBER 2022, VOL. 116, NO. 5, 1400-8

Exercise & Resistance

Nutrients protect muscle, preserve immunity

Carbohydrate-protein reduces muscle damage

This trial aimed to determine the best way to increase endurance and reduce muscle damage. In the study, 10 recreationally active male runners took a 60-minute running test at 70 percent of maximum oxygen capacity, immediately followed by an unlimited endurance running test to exhaustion at 80 percent



oxygen capacity. Each participant completed these two tests three times, resting for seven days in between tests.

Participants either took maltodextrin carbohydrate before the first and second phases; took whey protein isolate then carbohydrate; or took carbohydrate then protein. It didn't matter if runners took protein before or during exercise: either way reduced inflammation more than carbohydrate alone. While carbohydrate with protein reduced post-exercise muscle damage, endurance capacity did not change.

Spirulina boosted immunity in athletes

High intensity training and exercise can reduce the number of white blood cells—leukocytes and monocytes—that

are responsible for the immune response and tissue repair. Spirulina contains compounds that modulate the immune response.

In this study, 39 college football players took a placebo or 1 gram of spirulina three times per day during eight weeks of intense training. After eight weeks, the placebo group saw a significant decrease in the number of leukocytes and in the ratio of monocytes to leukocytes, likely reducing the athletes' resistance to pathogen infection. The spirulina group retained the same level of leukocytes, and the ratio of monocytes to leukocytes, as at the start of the study, likely protecting immunity and resistance to infection.

REFERENCE: JOURNAL OF THE INTERNATIONAL SOCIETY OF SPORTS NUTRITION; OCTOBER 2022, 623-7

FEBRUARY'S

Ahead of the Curve

Early-Stage Discoveries: Vitamin B12, Folic Acid, Berberine, Rhodiola

Good results in the lab can lead to larger human trials. Here are some of the most promising recent findings.

Vitamin B12 and folic acid for NASH

Non-alcoholic steatohepatitis (NASH) is liver inflammation and damage from excess fat in the liver. There are no medical treatments, but there is a link to high levels of the inflammatory factor, homocysteine. In the lab, doctors discovered that homocysteine attached to a protein in the liver called syntaxin-17, preventing it from transporting and digesting fat and inducing fatty liver and NASH.

Supplementing with vitamin B12 and folic acid increased syntaxin-17 levels in the liver, increasing fat metabolism and slowing NASH.

Berberine suppressed lung cancer cells

Berberine is a plant compound that comes from barberry and goldenseal. In the lab, doctors introduced berberine into lung cancer cell cultures, which suppressed production of inflammatory factors known as reactive oxygen species, reducing cell damage. Doctors said berberine appears to stimulate tumor-suppressing genes and subdue proteins that promote cancer cell multiplication and migration. To make this determination, the researchers measured mRNA levels of tumor-associated genes, and cellular levels of protein expression to identify the potential mechanism of action for berberine.

Rhodiola lowered fasting blood sugar in type 2 diabetes

The lining of healthy intestinal walls allows nutrients from food to pass through into the bloodstream while preventing harmful substances such as bacteria from getting through. In the lab, rhodiola lowered fasting blood sugar levels and increased the response to insulin in mice with type 2 diabetes. Explaining the findings, doctors said rhodiola acts by promoting beneficial changes in the gut microbiome, increasing intestinal wall barrier integrity and reducing inflammatory molecules that pass through into circulation.

REFERENCE: JOURNAL OF HEPATOLOGY; 2022, VOL. 77, No. 5, 1246-55

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Oral Health

Collagen reduces gum inflammation, bleeding

Hydrolyzed collagen peptides speed healing

Even after a professional dental cleaning to control plaque, inflammation can persist, with gums that bleed on probing. In this study, 39 people with chronic mild to moderate gum inflammation—known as gingivitis—who were receiving regular supportive care after dental cleanings, and who had at least 10 natural teeth, took a placebo or 5 grams of collagen peptide per day.

After three months, the collagen group had 3 percent bleeding sites on probing compared to 10.4 percent at the start of the study, a 71.2 percent decrease. Those in the placebo group had 9.4 percent bleeding sites on

probing compared to 14.2 percent at the start of the study, a 33.8 percent decrease.

Discussing the findings, doctors said, “Collagen appears to disrupt bacteria that promote periodontal disease through systemic immune modulation, with a beneficial impact on plaque control and inflammation.”

REFERENCE: NUTRIENTS; OCTOBER 2022, Vol. 14, No. 21, 4473



Your Good News!

We're dedicated to discovering the benefits of good nutrition and healthy lifestyle, and hope this issue of Natural Insights for Well Being® informs and inspires you to take an active role in your health. Please ask us to assist you with any natural products you would like to know more about.

These articles provide nutritional information only and do not replace professional medical advice.

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