



Nutrition for Family Living

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June, 2002 Topics

To answer your question: vitamins to improve memory?

Adolescent eating patterns and diabetes risk

Resources: DASH diet websites

To answer your question: vitamins to improve memory?

Q: Knowing that Vitamin B12 is good for memory, I decided to start taking a supplement because of a family history of Alzheimers. I purchased a bottle of Vitamin B12 at Sam's Club. I just recently read that 2.4 mcg (micrograms) would be enough and 6 mcg is okay. I looked at my bottle and each pill is 1000 mcg. Do you think I should discontinue these, cut them in half, or is it okay for me to take this big amount at a time? Thank you for any help.

A: From Amy Rettammel:

I can certainly understand your desire to do what you can to prevent Alzheimers. The research on the link between B vitamins and dementia isn't at a stage where we can claim a preventive role, let alone know how much would be preventive. The latest information I've seen was in the April, 2002 Tuft's University Health and Nutrition Letter, and that was about folic acid and dementia, not B12 (although the proposed mechanism has to do with homocysteine level, which is affected by both B12 and folic acid). The article, which was a summary of a research study, did not go so far as to recommend supplementation, but rather B-vitamin rich foods like green leafy vegetables, dry beans, grains, milk, meat, and fortified breads and cereals.

That said, the Institute of Medicine's Dietary Reference Intakes report for B vitamins doesn't list a tolerable upper intake level for B12, noting that high levels are probably not harmful. However, the RDA for adults over 50 is 2.4 mcg, much much less than the 1,000 mcg in your supplements. For now you could try taking one of those pills per week, until you run out. In general, single supplements aren't such a good idea. For most people, a multivitamin with no more than 100% the RDA should provide plenty of vitamin B12 (and that doesn't include the B12 you're getting from food...).

The October, 2001 issue of the Tufts newsletter has some suggestions for protecting your memory as you age. They recommend adequate mental and physical exercise, minimizing stress, and the following tips related to nutrition:

-- **Eat more fruits and vegetables that are rich in antioxidants.** Antioxidants help protect against free radicals, by-products of normal cell metabolism that can break down cell membranes anywhere in the body. In the brain, this type of damage can prevent nerve cells from working properly. Antioxidant-rich fruits and vegetables are generally darker or more brightly colored.

-- **Manage your diabetes, heart disease or hypertension as directed by your doctor. Follow the recommendations in the dietary guidelines to minimize your risk of developing these conditions.** Any condition that disrupts blood flow to the brain disrupts brain function, and thus memory. Diabetes and heart disease interfere with blood flow, and vascular diseases, including hypertension, also contribute to risk of stroke.



Adolescent eating patterns and diabetes risk

Adolescent eating habits leave much to be desired, especially when compared with the Healthy People 2010 Objectives. The prevalence of obesity in adolescents and children is increasing, and with it, the prevalence of type 2 diabetes. Three recent studies give more evidence for the importance of our efforts to promote healthy eating habits and physical activity among youth.

Adolescent eating patterns and Healthy People 2010

A comprehensive study of adolescent eating patterns and weight concerns was conducted with 4,746 urban adolescents aged 11-18 from the Minneapolis/St Paul area. The objective was to assess the prevalence of obesity in this population and examine the eating behaviors targeted in Healthy People 2010.

This study showed that:

- 12.5% of girls and 16.6% of boys were obese (greater than the 95th percentile BMI for age). The Year 2010 target = 5%.
- 29.5% of girls and 42.5% of boys consumed at least 1300 mg calcium per day. The Year 2010 target = 75%.
- 46.4% of girls and 45.3% of boys ate at least 2 servings of fruit per day. The Year 2010 target = 75%.
- 13.2% of girls and 11.1% of boys ate at least 3 servings of vegetables per day. The Year 2010 target = 50%.

Large differences in overweight status, fat consumption, fruit, vegetable and grain consumption, and calcium intake were found among economic, racial and ethnic groups. Calcium intake was lowest among Asian American girls and boys. Fruit and vegetable intake was lowest among white girls and boys. Boys and girls of lower socioeconomic status were more likely to be overweight, consume less calcium, eat fewer fruits and vegetables and more dietary fat.

This study points out that as a group, adolescents have a long way to go before meeting the objectives of Healthy People 2010. The results suggest that there may be different factors influencing dietary patterns for boys and girls, teens from different racial groups, and teens of different socioeconomic status. Whenever possible, educators should tailor their messages to the needs of the particular group of adolescents they will be teaching.

Type 2 Diabetes Risk in Children and Teens

Type 2 diabetes in children is closely tied to obesity, a sedentary lifestyle, and a family history of diabetes. The prevalence of type 2 diabetes in children and adolescents is increasing as the prevalence of obesity increases. A recent study looked at glucose tolerance (blood sugar levels after eating) in 167 obese children and teens (BMI >95th percentile for age). Approximately 25% of the sample had impaired glucose tolerance, which is a precursor of diabetes. There were no differences among racial groups.

Researchers were surprised at the high rates in this population. Educators' efforts to encourage physical activity and healthy eating habits can help children and adolescents maintain a healthy weight, a major factor in preventing diabetes.



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Dairy Consumption and Insulin Resistance in Young Adults

Insulin resistance syndrome (IRS) includes several conditions that are risk factors for type 2 diabetes: obesity, impaired glucose intolerance, hypertension, and dyslipidemia (high blood cholesterol). This study looked at the possible relationship between consuming dairy products and the development of IRS.

A sample of 3,157 black or white adults aged 18-30 years residing in four cities (Birmingham, AL, Chicago, IL, Minneapolis, MN and Oakland, CA) were surveyed in 1985-86 and again in 1995-96. The study showed that in overweight participants, those who ate the most dairy products had lower rates of all the components of IRS. The more dairy products an overweight participant consumed, the less their chances of developing IRS. This held true for both blacks and whites, and for men and women. Among participants who were normal weight at baseline, there was no relationship between dairy intake and IRS.

Other results to note:

- Dairy intake, and intake of reduced fat dairy products, was higher in whites than blacks.
- Overweight participants consumed fewer dairy products than normal weight participants.
- People with the highest dairy consumption were more likely to be white, more likely to be female, ate more fruits, vegetables and grains, and drank fewer sugar-sweetened soft drinks.
- Overweight blacks were four times as likely to develop IRS during the ten years of the study than normal weight blacks. Overweight whites were five times as likely to develop IRS during the ten years of the study than normal weight whites.

This study does not prove that consuming dairy products prevents insulin resistance. Researchers do not know why this association appeared, but suggest that it might indicate healthier lifestyle or eating habits in general or perhaps could be related to the positive effects of calcium, magnesium and phosphorus on heart disease risk, as seen in other studies. Relative to the number of participants in the study, the number of overweight participants who ate the most dairy products was fairly small (116 out of 923).

Implications for Extension educators: There is still much room for improvement in most young adults' consumption of dairy products. Educators can stress the importance of dairy products for everyone, regardless of weight, and that for some, the benefits may extend beyond the effects of calcium on bone density. Teens and young adults make many of their own decisions about diet and physical activity habits. Successful educators will target their message to the specific group they're addressing to improve their chances of success. Teens who adopt healthy eating habits and get recommended amounts of physical activity can manage their weight now and reduce their risk of diabetes later in life.

References:

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Resources: DASH web site

The February, 2001 issue of Nutrition for Family Living included an article about the DASH diet. The DASH studies are supported by the National Heart, Lung and Blood Institute of the National Institutes of Health. The first DASH study was reported in April of 1997 and found that people with normal or slightly elevated blood pressure saw their blood pressure decrease substantially after 8 weeks of a low-fat diet which included far more fruits, vegetables, and low-fat dairy products than the usual American diet. The sodium content of that diet was only slightly less than average, around 3000 milligrams. Even among people with normal blood pressure, their blood pressure decreased when they followed this diet.

Continued research supports the DASH diet as a first step in blood pressure management. Additional benefits come from a version of the diet that limits sodium even further. The DASH diet fits well with the Dietary Guidelines for Americans which recommend choosing a variety of fruits and vegetables daily, eating plenty of foods that are good sources of calcium, and choosing and preparing foods with less salt.

The following website is a collaborative effort of the General Clinical Research Center at Oregon Health and Science University, Oregon Dairy Council, and the American Heart Association-Oregon Affiliate. It's an easy place for consumers to get recipes and menu ideas which apply the DASH principles, understandable information about hypertension and the DASH research, and additional information through science-based links. We will be adding it to Extension's Nutrition Resources Webography, which can be found at:

<http://www.library.wisc.edu/libraries/Steenbock/services/nutritio.htm>. To go directly to the site, go to: www.oregondairyCouncil.org/dash. The National Institutes of Health also has information on the DASH diet at <http://www.nhlbi.nih.gov/health/public/heart/hbp/dash/index.htm>.