



Nutrition for Family Living

Susan Nitzke, Nutrition Specialist; susan.nitzke@ces.uwex.edu
Sherry Tanumihardjo, Nutrition Specialist; sherry.tan@ces.uwex.edu
Amy Rettammel, Outreach Specialist; arettamm@facstaff.wisc.edu
Betsy Kelley, Outreach Specialist; kelley@nutrisci.wisc.edu

June, 2001 Topics

Lifestyle changes to prevent diabetes
New Cholesterol Guidelines
Breastfeeding and Rickets
To answer your question...
Dietary Guidelines Powerpoint slide show

Lifestyle changes to prevent diabetes

The incidence of type 2 diabetes is increasing worldwide. Type 2 diabetes results from the interaction between genetic factors and behavioral and environmental factors. The genetic basis has not yet been identified, but there is strong evidence that modifiable risk factors, like obesity and physical inactivity, are important contributors to developing the disease.

Impaired glucose tolerance is an intermediate category between normal glucose tolerance and full-fledged diabetes. People with impaired glucose tolerance are at greater risk of developing diabetes and are an important target group for interventions. A Finnish study investigated whether diabetes could be prevented by interventions to change the lifestyles of high-risk subjects with impaired glucose tolerance.

522 middle-aged, overweight subjects were assigned to intervention or control groups. The intervention group received individualized counseling about losing weight, eating less fat, eating more fiber, and increasing physical activity. The mean duration of follow-up was 3.2 years. Subjects in the intervention group lost more weight and kept it off. The incidence of diabetes in the intervention group was substantially reduced and was associated with changes in lifestyle.

The authors comment that the more comprehensive the lifestyle changes, the more subjects' risk was reduced. In this study, even a small weight loss made a difference in diabetes risk. Increased physical activity reduced risk as well, whether or not it was accompanied by weight loss. The lifestyle changes in this study also reduced other cardiovascular disease risk factors.

Extension educators can be encouraged that educating people about nutrition and physical activity really can help reduce their risk of developing diabetes.

Tuomilehto J et al. Prevention of type 2 diabetes mellitus by changes in lifestyle among subjects with impaired glucose tolerance. *N Engl J Med* 2001;344:1343-50.



New cholesterol guidelines

The National Cholesterol Education Program (NCEP), part of the National Institutes of Health, has issued major new clinical practice guidelines for the prevention and management of high cholesterol in adults. These guidelines will be used by physicians to identify people with high cholesterol and to recommend treatment with diet and medication. Experts believe that aggressive treatment to lower LDL cholesterol can substantially reduce both the short-term and long-term risk of heart disease.

Key changes in the new guidelines include:

- More aggressive treatment to lower cholesterol and better identification of those at risk of heart attack.
- Use of a lipoprotein profile as the first test for high cholesterol.
- A new level at which low HDL becomes a major heart disease risk factor.
- A new set of “Therapeutic Lifestyle Changes” with more power to improve cholesterol levels.
- More focus on a cluster of risk factors known as “the metabolic syndrome.”
- Increased attention to treating high triglycerides in the blood.

The “Therapeutic Lifestyle Changes” (TLC) are the most relevant part of the guidelines for Extension educators. The new TLC diet recommends that people with high cholesterol get less than 7% of calories from saturated fat and less than 200 mg of dietary cholesterol per day. These recommendations are stricter than the Dietary Guidelines for Americans, which recommend no more than 10% of calories from saturated fat and 300 mg of cholesterol per day. Like the Dietary Guidelines, the TLC diet allows up to 35% of calories from total fat as long as most of it is from unsaturated fat, which doesn’t raise cholesterol levels. The TLC diet also recommends soluble fiber and foods with plant stanols and sterols, such as Benecol, to boost the diet’s cholesterol-lowering power. The guidelines stress the need for weight control and physical activity, both of which improve many heart disease risk factors.

People with high blood cholesterol should discuss the specifics of their diet and weight management program with their doctor or dietitian. Extension educators can reinforce the NCEP guidelines by recommending foods low in saturated fat, such as fat free or 1% dairy products, lean meats, fish, skinless poultry, whole grain foods, and fruits and vegetables. The NCEP recommends soft margarines (liquid or tub) that are low in saturated fat and contain little or no trans fat (another type of fat that raise cholesterol levels). They recommend limiting foods high in cholesterol such as liver and other organ meats, egg yolks, and full-fat dairy products. Good sources of soluble fiber include oats, certain fruits (such as oranges and pears) and vegetables (such as Brussels sprouts and carrots), and dried peas and beans.

For more information about lowering cholesterol and lowering heart disease risk:

NHLBI Health Information Center, PO Box 30105, Bethesda, MD 20824-0105 or visit their web site:

www.nhlbi.nih.gov and click on “ATP III Cholesterol Guidelines” under “Highlights”

www.nutrition.gov, www.fitness.gov



Breastfeeding and rickets

Recent diagnosis of nutritional rickets in infants and young children in the United States has prompted increased attention to this disease of bone malformation. Rickets has been uncommon in this country for decades due to routine vitamin D fortification of cow's milk and infant formula. An article in the April 2001 issue of the journal *Pediatrics* describes the results of an investigation into hospitalization records in Georgia. The diagnoses of two Georgia toddlers (17 and 22 months) with nutritional rickets and protein-energy malnutrition, respectively, prompted the investigation by the Georgia Division of Public Health and the U.S. Centers for Disease Control and Prevention. Investigators examined hospital discharge records of children ages 6 months to 5 years in Georgia for the period January 1997 to June 1999.

The investigation turned up 5 additional cases of vitamin D-deficient rickets and 3 additional cases of protein-energy malnutrition. These findings came on the heels of another article published in the *Journal of Pediatrics*, August 2000, in which a review of medical records at two medical centers in North Carolina between 1990 and 1999 turned up thirty infants and children with nutritional rickets. In both studies, all patients were African American infants and children who had been breastfed.

These recent cases have been in the news, and may raise questions among your pregnant and breastfeeding clients. Following is a review of factors relevant to Vitamin D and bone formation, as well as some information regarding the status of current and future recommendations.

Sunlight

- One way to get adequate Vitamin D is through sunlight. Ultraviolet light activates Vitamin D in human skin.

Dietary Vitamin D

- Another way to get adequate Vitamin D is through foods; however, few foods naturally contain vitamin D (egg yolks, fish liver oils, fatty fish, shrimp, chicken liver). Other dietary sources of vitamin D contain the vitamin only because they are fortified (fortified cow's milk and breakfast cereals, and commercial infant formulas). Typically, infant cereals, cheese, and commercial yogurts are not fortified with vitamin D.
- Breast milk contains vitamin D in amounts adequate for most infants for the first six months. The current American Academy of Pediatrics Policy Statement, *Breastfeeding and the Use of Human Milk*, provides this guidance to physicians: "Exclusive breastfeeding is ideal nutrition and sufficient to support optimal growth and development for approximately the first 6 months after birth... Vitamin D and iron may need to be given before 6 months of age in selected groups of infants (vitamin D for infants whose mothers are vitamin D-deficient or those infants not exposed to adequate sunlight; iron for those who have low iron stores or anemia.)"
- Be aware that there are some parents who wean their older infants and toddlers to cow's milk alternatives (like soy milk or rice milk) rather than to fortified cow's milk. This can be a problem if the milk alternative is not fortified with calcium and vitamin D, and if the amount of protein (and fat for children 1 and 2 years old) is not similar to that of cow's milk. The first paragraph of the *Pediatrics* article (above) referred to two Georgia toddlers (17 and 22 months) who were diagnosed with nutritional rickets and protein-energy malnutrition, respectively, which prompted the CDC investigation to look for other children with similar nutritional deficiencies. The substitution of unfortified soy milk in the 17-month old and the



Nutrition for Family Living June, 2001

substitution of a rice beverage in the 22-month old, in place of fortified cow's milk, probably contributed to the deficiencies in these children.

What Does This Mean?

First of all, the most important thing to remember is that “human milk is the preferred feeding for all infants, including premature and sick newborns, with rare exceptions”(*AAP Policy Statement*).

As nutrition educators, the most important things we can do are:

- Continue to teach that breastfeeding is the optimal feeding choice for infants.
- Continue to teach pregnant women about the importance of eating a balanced diet that includes at least 2 servings from the milk group daily. If she uses a cow's milk alternative, help her to read the product label for calcium and vitamin D fortification. Advise her to check with her physician or a registered dietitian to ensure that her choices are nutritionally adequate.
- Advise parents of older infants that when it comes time to wean their child from breast milk or formula, they should give the child fortified cow's milk or a comparable alternative.
- Help parents who want to wean their older infants/toddlers onto a cow's milk alternative to read the product label for calcium and vitamin D fortification as well as protein content. Advise them to check with their child's physician or a registered dietitian to ensure that their choice is nutritionally adequate.

As a result of the CDC investigation, the FDA is now requesting that physicians finding malnutrition associated with the use of alternative milk beverages report their findings to the FDA's Medwatch system. Also, the American Academy of Pediatrics is examining current recommendations on vitamin D and breastfeeding. We'll keep you posted.

For further information, attend the compressed video program on maternal and child health to be held in July. For further reading, see:

- American Academy of Pediatrics Policy Statement, *Breastfeeding and the Use of Human Milk*, December 1997. <http://www.aap.org/policy/re9729.html>
- CDC's March 29th press release at http://www.cdc.gov/nccdphp/dnpa/pr-nutritional_deficit.htm
- Carvalho et al. Severe Nutritional Deficiencies in Toddlers Resulting From Health Food Milk Alternatives. *Pediatrics* April 2001. <http://www.pediatrics.org/cgi/content/full/107/4/e46>
- Tomashek et al. Nutritional Rickets in Georgia. *Pediatrics* April 2001. <http://www.pediatrics.org/cgi/content/full/107/4/e45>
- Kreiter et al. Nutritional Rickets in African American breast-fed infants. *Journal of Pediatrics* August 2000. Full text can be accessed for a fee from <http://www.harcourthealth.com/scripts/om.dll/serve?action=searchDB&searchDBfor=home&iid=PD> (can view the abstract online free of charge)



Nutrition for Family Living June, 2001

To answer your question...

Q: I was checking out the Dietary Supplements bulletin and the section on stress and supplements caught my attention. Stress physiology is an interest of mine and I wonder if there is any new research on supplements and stress?

---Jan Lewis

A: As you read in the bulletin, “The nutritional impact of acute emotional stress is not well understood. However, to the best of our scientific understanding, vitamin and mineral needs do not increase as a result of the mental stress that most people experience as part of their daily lives. Exams, weddings, a crabby boss, or unpaid bills may make you feel uneasy, but they have not been proven to increase most people’s nutrient needs.” The American Dietetic Association adds that physical stress to the body, such as surgery or a broken bone, may increase a person’s nutrient needs but that is best determined by their physician or a registered dietitian.

So what about multivitamins that are promoted as “stress formula” with extra B vitamins and Vitamin C? A medline search for research on the B Vitamins and Vitamin C and stress turned up no recently published studies in this area. To date, there is no good scientific evidence that the body needs more of these vitamins when it is stressed or that these vitamins will reduce stress.

What about herbal preparations to reduce stress? You may have noticed drinks, bars, and other products marketed as “relaxing” or “stress busting.” Once again, there is little or no scientific evidence that these products do what they say they will do. They probably won’t *harm* anyone, but if a person chooses to purchase them, it should be because they enjoy the product rather than because they expect the ingredients to produce the promoted effect.

For more information:

Dietary Supplement bulletin <http://www1.uwex.edu/ces/pubs/pdf/NCR582.PDF>

American Dietetic Assoc. comments on stress and nutrition
<http://www.eatright.org/erm/erm010499.html>

Q: Does the phosphorus in soft drinks leach calcium out of the bones?

---Karen Schmidt

A: At high levels of intake, phosphorus does change the way the body manages calcium balance, but the net effect on bones is minimal. This assumes a healthy adult with normal kidney function. Phosphorus is a different issue for people with impaired kidney function.

A typical can of soda contains 26-76 mg of phosphorus, while the average American consumes 1430-1520 mg of phosphorus per day from the diet. Unless a person is consuming many, many cans of soda per day, they are not getting a significant amount of phosphorus from this source. The greatest concern is that phosphorus-containing soft drinks may replace calcium-containing beverages in the diet. If over the long term a person’s calcium intake is very low, and their phosphorus intake is very high, there may be cause for concern about their bone density.



Nutrition for Family Living June, 2001

Dietary Guidelines Powerpoint slide show

Now available from the CNPP website: a powerpoint slide show explaining the Dietary Guidelines for a consumer audience. Ready to download and go, it even includes a script for the presenter!

Go to www.usda.gov/cnpp then click on “Dietary Guidelines for Americans 2000” then “An Introduction to the Dietary Guidelines.”