



Nutrition for Family Living

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Whole Grains and Heart Disease

The U.S. Dietary Guidelines for Americans and the Food Guide Pyramid recommend a diet containing 6 to 11 servings of grains daily, as one way to help protect against certain diseases, including heart disease. While the guidelines emphasize the consumption of whole grains, they do not specify how many of those 6-11 servings should be whole grains.

What is it about whole grains that seems to protect against heart disease?

- Antioxidants found in whole grains, like Vitamin E and selenium (a mineral)
- Fiber, and its ability to slow glucose absorption and lower blood levels of cholesterol and triglycerides
- Folate and vitamins B-6 and B-12, and their role in controlling harmful levels of the amino acid, homocysteine

A recent study published in the American Journal of Clinical Nutrition (1999; 70: 412-9) suggests that the benefit of whole grains to heart health may be due to other factors as well. The researchers collected data from approximately 75,000 female nurses for 10 years, and compared whole grain intake with incidence of heart attacks (fatal and nonfatal).

Women who ate 2.5 servings of whole grains per day had a 30% lower risk of heart disease than women who ate less than 1 (an average of 0.13 to be exact) serving of whole grains per day. This was true even when researchers controlled for the benefits of whole grains listed above.

What does this mean? The American Dietetic Association's Position Statement on the health implications of dietary fiber (JADA 1996) recommends at least 2 to 3 servings of whole grains as part of the daily 6 to 11 servings of grains. This recommendation is supported by the research summarized here, and its companion editorial (American Journal of Clinical Nutrition 1999; 70: 307-8).

Here are some examples of whole grain foods:

Whole grain breads	Whole grain cereals (including oatmeal)		
Popcorn	Brown rice	Wheat germ	Bran
Bulgar	Kasha	Couscous	



Breastfeeding and Cognitive Development

In the August 1999 issue of “Nutrition for Family Living,” we summarized a study which showed that 5 and 6 year olds who had been exclusively breastfed as infants were less likely to be obese than children who had not been breastfed. In this issue of “Nutrition for Family Living,” we are describing a recently published meta-analysis of studies about another potential advantage of breastfeeding – increased intelligence.

Individual studies have shown that children who have been breastfed score higher on tests of cognitive function than do non-breastfed children, but some researchers attribute these differences to factors such as parental income or education level. A meta-analysis published in the *American Journal of Clinical Nutrition* (AJCN 1999; 70: 525-35) analyzed results from 11 studies of breastfeeding and cognition, and adjusted for confounding factors like the child’s gender; the mother’s age, intelligence, and education; socioeconomic status; and birth weight. Cognitive function was measured using a variety of tools and children were tested between infancy and adolescence.

Here is what researchers found:

- Breastfeeding was associated with small but significantly higher (5.32 points) cognitive development scores, compared with formula feeding. When adjustments were made for confounding factors, the advantage dropped to an average 3.16-point higher score. Although the magnitude of the difference lessened, the difference was still significant.
- This cognitive benefit was manifested as early as 6 months of age and continued at least through age 15 (researchers did not have reliable measures of cognitive development past age 15).
- The longer children were breastfed, the greater cognitive benefit they received.
- Low birth weight (LBW) infants benefited from breastfeeding more than normal weight (NW) infants did, although both groups showed a significant benefit from breastfeeding. Breastfed LBW infants showed an average 5.18-point higher cognitive function than their formula-fed LBW counterparts, and breastfed NW infants showed an average 2.66-point higher cognitive function than their non-breastfed, NW counterparts.

What are the practical advantages of a 3 to 5 point higher cognitive score? The authors of the paper state that the advantages are controversial, but that an increase of 3 points could elevate an individual from the 50th to the 58th percentile of the population and “...would potentially be associated with higher educational achievement, occupational achievement, and social adjustment.”

The current interest in parenting practices that may promote infant brain development make these findings highly relevant to some Family Living Programs. We must carefully point out, however, that this meta-analysis is based on observational studies rather than true experimental evidence. Therefore it provides strong evidence but does not prove that breastfeeding itself causes babies to be smarter.



One More Reason to Support Breastfeeding: Economics

In the May-August 1999 issue of *Food Review* [22(2): 31-35], the USDA's Economic Research Service announces that it "...intends to comprehensively assess the economic benefits of breastfeeding, (because this is) information that is critical to performing cost-benefit analyses of breastfeeding promotion and support efforts."

While it is difficult to accurately quantify the economic benefits of breastfeeding, the article in *Food Review* discusses estimates that have been made. Following are some examples:

- One study found that feeding infant formula costs approximately \$260-\$400 more per year than breastfeeding.
- The Federal General Accounting Office estimates that a 10% increase in breastfeeding rates among WIC participants would save the WIC program almost \$408,000.
- Other possible economic benefits stem from studies that have shown health benefits associated with breastfeeding. These health benefits may lead to lower medical costs and less workdays lost for mothers to attend to sick infants.

For more information about the possible economic benefits of breastfeeding, as well as some history about breastfeeding trends, go to:

<http://www.econ.ag.gov:80/epubs/pdf/foodrevw/may99/contents.htm#eight>

Click on "Breastfeeding: Health and Economic Issues" to get to the article.



Food Stamp Participants' Food Security and Nutrient Availability

Between June 1996 and January 1997, USDA's Food and Nutrition Service conducted the National Food Stamp Program Survey to assess how well the program is serving its clients. The survey examined the food security of Food Stamp Program (FSP) participants, in terms of adequacy of the food available to them and their risk of hunger.

Following are some of the principal findings in the report (The full report can be found at <http://www.fns.usda.gov/oane/MENU/Published/FSP/FILES/nutrient.pdf>):

- Nationally, 50% of FSP participants experience some level of food insecurity: 28% of FSP participants were classified as food insecure without hunger, 17% were food insecure with moderate hunger, and 5% were food insecure with severe hunger.
- Almost all respondents who experienced food insecurity cited "not enough money for food" as the main reason for their own food insecurity. The second most common reason was "too hard to get to the store," followed by "not able to cook or eat because of health problems" (a third of these respondents were elderly); "no working stove," and "no working refrigerator."
- Among those who were food insecure, the most common coping mechanism for not having enough money for food was putting off bills, followed in order by borrowing food or money, using emergency food sources, and using soup kitchens.
- There were only very weak associations between food security and measures of access to a supermarket. The strongest relationship was between access to a car and food security, with those having greater access also reporting greater food security. There was not a definite correlation between food security and proximity to a grocery store; however, 89% of FSP participants surveyed reported that there was a supermarket within four miles of their home, and 71% reported being satisfied with their shopping situation. Of those surveyed, 72% lived in urban areas.
- While the **average** levels of nutrients available to respondents exceeded RDAs, there were still significant percentages of households that did not meet RDAs (based on a 7-day food use survey). For example, just 69% and 79% of households met the RDA for iron and folate, respectively.
- Surprisingly, the survey found a positive correlation between food insecurity and nutrient availability; in other words, those who were food **insecure** reported **higher** nutrient availability than those who were food **secure**. A possible explanation for this may be that families who experience temporary food shortages tend to eat greater quantities of food when food is available (ie: at the beginning of the month).

What does this mean? This report indicates that food stamp benefits are associated with improved nutrient intake, but that there is still some level of food insecurity among half of all FSP participants, with a fifth of participants experiencing hunger. There is a complicated relationship between food insecurity and nutrient intake that may involve a tendency to overeat when food is readily available. The authors suggest that nutrition education should help participants manage their food resources to more evenly meet food and nutrition needs throughout the month.

For more information on FSP households, see the October 1999 Nutrition for Family Living