



# Nutrition for Family Living

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## March, 2005 Topics

The School Breakfast Program  
Parental Attitudes Toward Soft Drink Vending Machines in High Schools  
Fatty Acids 101: The Alpha and Omega

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## The School Breakfast Program

By Heather Harvey

March 7-11, 2005 is National School Breakfast Week. This week is meant to promote the School Breakfast Program, a federally assisted meal program that operates in schools across the country. The program began in 1966 as a pilot and has been a permanent program since 1975. Participating schools include public, private, elementary, middle and high schools as well as urban and rural schools. Whether or not a school participates in the School Breakfast Program is left up to the individual school or school district to decide. While at the federal level the USDA Food and Nutrition Service funds the program, the Wisconsin Department of Public Instruction administers the program at the state level. Nationally, almost 8.7 million students in over 78,000 schools participate in the School Breakfast Program.

The School Breakfast Program operates in a manner similar to the School Lunch Program. Any child is able to purchase breakfast, if it is available in their school. For those students at or below 130% of the federal poverty level, their meal is free. For students between 130% and 185% of the federal poverty level, they can receive their breakfast at a reduced price (maximum \$0.30). Students above 185% of the poverty level pay the full price. The USDA reimburses all meals at a designated rate, depending on whether or not they are considered a free (\$1.23), reduced price (\$0.93) or full-price (\$0.23) meal. Reimbursements are higher for schools considered "severe need" that have 40% or more of their students eating free- or reduced-price lunches. Because the School Breakfast Program is federally funded, breakfasts served under this program must meet the Dietary Guidelines for Americans. Breakfasts must provide at least ¼ of the daily requirement for calories, protein, calcium, iron, vitamin A and vitamin C, while providing no more than 30% of calories from fat or 10% of calories from saturated fat.

Here in Wisconsin, in the 2003-04 school year, over 73,000 students participated in the program in 1,172 schools. 47.2% of schools that serve lunch as part of the National School Lunch Program also serve breakfast under the School Breakfast Program. Unfortunately, this is well below the national average of 79.4% of schools that serve both breakfast and lunch. In addition, only 24.8% of students who obtain free or reduced price lunches in Wisconsin also get breakfast, compared to 43.1% nationally. This ranks Wisconsin 51st in the United States for the percentage of low-income children served breakfast that also ate school lunch. Despite Wisconsin's low ranking, participation in the School Breakfast Program by schools and students has been increasing. Governor Doyle also recently proposed in his 2005-07 budget to increase the amount the state reimburses each breakfast served from \$0.10 to \$0.15 (in addition to the federal reimbursement) to encourage more schools to offer breakfast.

School districts in Wisconsin are considering the pros and cons of starting or expanding their breakfast program. There are many reasons why schools should consider offering breakfast. Some Wisconsin children may arrive at school hungry. There are different reasons for this, lack of time



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at home to eat breakfast, not hungry before leaving for school, no food at home or a long commute to school. Whatever the reason, children who are hungry are not able to learn as well as other children and do not score as well as other children on tests. Much research has been done on the benefits of breakfast, however, recently the USDA conducted a more rigorous study that compared the diet and nutritional status of children who ate school breakfasts during the school year to themselves during the summer while they were not eating breakfast at school. The study found that children who have a School Breakfast Program available to them, “consume a better overall diet, consume a lower percentage of calories from fat, are less likely to have a low intake of magnesium, and are less likely to have low serum levels of vitamin C and folate.”

In addition to nutritional benefits, studies have shown many other benefits of the School Breakfast Program including reduced absenteeism and tardiness and fewer behavior problems when breakfast is offered to all students. Furthermore, missing breakfast interferes with a child’s ability to learn and their cognitive ability. Students who participate in Universal School Breakfast program (i.e., breakfast offered to all students for free regardless of income) show increases in test scores over schools that do not have such a program.

For more information about the School Breakfast Program and how you can get involved in National School Breakfast Week, visit

<https://www.uwex.edu/ces/flp/apps/flrc/team/eating/resource/nsbw.cfm>

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## **Parental Attitudes Toward Soft Drink Vending Machines in High Schools**

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By Gayle Coleman

Do you think vending machines that sell soda pop should be in high schools? Are you a parent of a teenager? As nutrition educators, we know that soda pop contributes excess calories. On the other hand, we acknowledge that vending machine contracts with soft drink companies provide needed revenue to schools. But what do parents think?

Researchers from Minnesota examined parental attitudes towards soft drink vending machines in high schools by conducting six focus groups with a total of 33 parents at three suburban Minneapolis high schools. Participating schools were primarily white and middle to upper-middle class. Between 2 and 8 percent of students were eligible for free or reduced-price lunch. Five major themes emerged from these focus groups. The main theme was student control/choice. Parents believed high school students should have more freedom in making decisions and take more responsibility for their decisions. The second theme was regulations. Parents agreed that having regulations on the soft drink machines such as limiting the hours that students had access to them or offering alternative beverage choices would impact what students drank at school. However, the majority of parents were opposed to state regulations, preferring regulations be made locally and with input from parents, students, teachers and administrators. The third theme was parental knowledge. Overall, parents did not know if the schools had a contract with a company or what the financial benefits were to the schools. They also did not know the types, hours, number and location of the school's machines or if there were any rules about soft drink sales. The fourth theme was the purpose of soft drink vending machines in the schools. Although parents generally did not know how much money the machines generated for the schools, they agreed that the primary reason schools had vending machines was for the profit. Parents stated that if their children were going to drink soft drinks anyway, they would like to see the school benefit rather than a gas station or supermarket. The fifth theme was health impact. Parents agreed that drinking soft drinks, particularly in excess, did have negative physical effects including tooth decay, inhibition of calcium absorption, dehydration and poor athletic performance. They also were concerned about the effects of sugar and caffeine on their children, empty calories in soft drinks, and replacement of healthful drinks such as milk, juice and water or food. However, parents felt that the negative health impact of soft drinks was lower than cigarettes, alcohol, drugs and even coffee. In summary, parents tended to view the issue of soft drink vending machines more as a matter of personal choice than as a health issue.

In a related study, Martha Kubik and colleagues at the University of Minnesota mailed surveys to parents and teachers from 16 middle schools in the twin cities metro area. Only 18 percent of parents and 31 percent of teachers believed that schools give adequate attention to student nutrition, and the majority agreed that nutritional health of students should be a priority issue. Ninety percent agreed that healthier snacks and beverages should be available in school vending machines and ala carte lines. Seventy percent of the 243 parents and 70 percent of 334 teachers agreed or strongly agreed that it is important for schools to have a written school food policy about things like food in the classroom or snack and beverage choices in vending machines.



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*Implications for Extension Educators:* Parents and teachers are concerned about the nutritional health of students, and the foods and beverages available at schools. Education can help them be well informed advocates for school policies and practices that promote and support healthy food and beverage choices at school. When this type of education is accompanied by programs to improve parents' knowledge and skills to make healthy foods and beverages available for meals and snacks, students will benefit from consistent opportunities for healthy food choices at home and at school.

### Resources:

Hendel-Paterson, M., French, S.A., and Story, M.. Parental Attitudes Towards Soft Drink Vending Machines in High Schools. *Journal of the American Dietetic Association*. 2004; 104:1597-1600.

Kubik, M.Y., Lytle, L.A., and Story, M. Soft drinks, candy and fast food: What parents and teachers think about the middle school environment. *Journal of the American Dietetic Association*. 2005; 105:233-239.

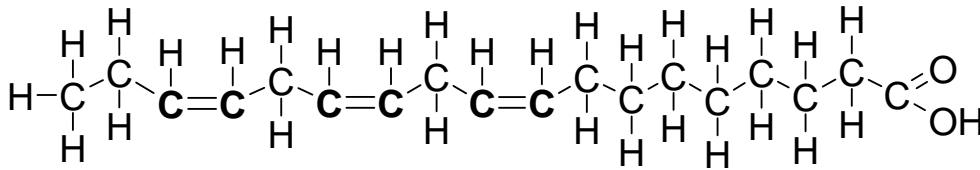


## Fatty Acids 101: The Alpha and Omega

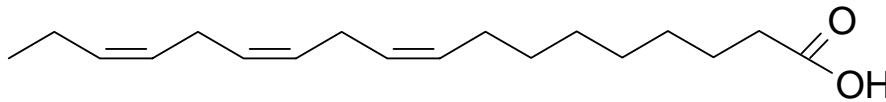
A brief overview of the importance of omega-3 fatty acids  
by Sherry Tanumihardjo and Julie Howe.



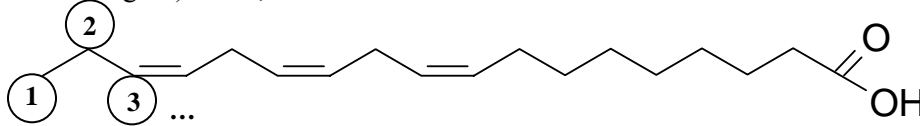
*Fatty acid structures:* All fatty acids are composed of carbon, hydrogen and oxygen. Below is the structure of an omega-3 fatty acid, also called alpha-linolenic acid or 18:3. The 18 refers to the number of carbons and the 3 after the colon refers to the number of double bonds (C=C).



Many nutrition textbooks use a simpler version of this structure:



What does it mean to be an omega-3 fatty acid? The Greek alphabet begins with the letter alpha ( $\alpha$ ) and the last letter is omega ( $\omega$ ). The alpha carbon is the carbon which is attached to the O's on the right side of the above figure. In order to be considered an omega-3 fatty acid, the first double bond needs to be on the third carbon from the  $\omega$  carbon (the last carbon on the left in the above figure). Thus, we count the carbons as follows:



The same counting scheme is used for omega-6 fatty acids. The first double bond is positioned on the sixth carbon from the omega side. An example of an omega-6 fatty acid is linoleic acid or 18:2. Other notations for omega-3 and omega-6 are n-3 and n-6, respectively. Omega-6 and omega-3 fatty acids are both “polyunsaturated” because they contain two or more double bonds.

An area of active research is the importance of the ratio of omega-6 to omega-3 fatty acids in the diet. The typical Western diet ratio is about 15:1. Thus, the Western or typical American diet is sometimes referred to as “deficient” in omega-3 fatty acids. Excessive amounts of omega-6 polyunsaturated fatty acids and/or a very high omega-6 to omega-3 ratio is thought to increase the risk of cardiovascular disease, and other diseases such as cancer, and some forms of arthritis.

*Why do we need certain types of fatty acids in the diet?* Because of the position of the double bonds, our bodies cannot make alpha-linolenic and linoleic fatty acids; thus they are considered “essential.” In general, omega-6 fatty acids are necessary for the formation of hormone-like fats that tend to promote blood clotting, induce pain and inflammation and cause smooth muscle contraction. Omega-3 fatty acids counter-balance these effects by reducing the tendency of blood to clot, reducing pain and inflammation. Other omega-3 fatty acids that we often hear about include docosahexaenoic acid (DHA), docosapentaenoic acid (DPA), and eicosapentaenoic acid (EPA). They have more carbons and more double bonds than most other fatty acids in our food.



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*Where do we find omega-3 fatty acids in the diet?* Plant sources of alpha-linolenic (18:3) omega-3 fatty acid include soybean oil, canola oil, walnuts and flaxseed. Fatty fish are good sources of DHA, DPA and EPA. Linoleic omega-6 fatty acid is predominantly found in vegetable oils such as corn, sunflower, soybean and safflower oil. By including more fatty fish and canola oil in place of other fats and oils, the omega-6 to omega-3 ratio can be lowered.

*Implications for Extension educators:* Since 2000, the American Heart Association has recommended two servings of fish per week. The *Dietary Guidelines for Americans (DGA) 2005*, recommend decreasing saturated and trans fats and giving preference to polyunsaturated and monounsaturated fats. The DGA also state: "Evidence suggests that consuming approximately two servings of fish per week...may reduce the risk of mortality from coronary heart disease and that consuming EPA and DHA may reduce the risk of mortality from cardiovascular disease in people who have already experienced a cardiac event." (page 31). An understanding of the terminology used to describe the various types of fats and oils is necessary as we help consumers decipher the information on food labels and select products with more desirable fat/oil composition.

*For your information:* If you would like to learn more about omega-3 fatty acids and other "Fats in Your Food," Sherry Tanumihardjo has prepared a professional development unit on this and related topics. Also a follow-up article on ENOVA oil will appear in the April issue of Nutrition for Family Living.

### Resources:

The *Dietary Guidelines for Americans 2005* contains additional recommendations for specific populations. The full document is available at <http://www.healthierus.gov/dietaryguidelines>.

The American Heart Association's report with recommendations on fish, fish oil and omega-3 fatty acids are online at: <http://www.americanheart.org/presenter.jhtml?identifier=3006581>.

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