



## Knowledge and Use of Folic Acid by Women of Childbearing Age—United States, 1995 and 1998

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IN THE UNITED STATES, APPROXIMATELY 4000 pregnancies are affected by neural tube defects each year; 50%-70% of these developmental defects could be prevented with daily intake of 400 µg of the B vitamin folic acid throughout the periconceptional period.<sup>1</sup> In 1992, the Public Health Service recommended that all women capable of becoming pregnant consume 400 µg of folic acid daily throughout their childbearing years to reduce their risk for having a pregnancy affected by neural tube defects.<sup>2</sup> In 1998, the Institute of Medicine recommended that all women of childbearing potential consume 400 µg of synthetic folic acid per day from fortified foods and/or a supplement in addition to food folate from a varied diet.<sup>3</sup> This report summarizes the findings of a survey conducted during July-August 1998 to assess folic acid knowledge and practices among women of childbearing age in the United States<sup>4</sup> and compares these results with those from a similar survey conducted in 1995. The findings indicate that 7% of women know folic acid should be taken before pregnancy to reduce the risk for neural tube defects.

In 1998, the March of Dimes Birth Defects Foundation contracted with the Gallup Organization to conduct a random-digit-dialed telephone survey of a stratified national sample of 2115 women aged 18-45 years. The re-

sponse rate was 52%. The margin of error for estimates based on the total sample size was  $\pm 3\%$ ; for comparisons involving subsets of the sample, the margin of error was greater. Statistical estimates were weighted to reflect the total population of women aged 18-45 years in the contiguous United States who resided in households with telephones. The 1998 survey included many of the same questions asked in 1995, and the methods employed were essentially the same.<sup>4</sup>

Overall, 68% of women reported having ever heard of or having ever read about folic acid, a 31% increase from 52% in 1995. Awareness of folic acid was lowest among women aged 18-24 years (50%) and women who had less than a high school education (40%). Of all women surveyed, 13% knew that folic acid helps prevent birth defects, and 7% knew that folic acid should be taken before pregnancy, compared with 5% and 2%, respectively, in 1995.

In 1998, 32% of women reported taking a vitamin supplement containing folic acid on a daily basis, compared with 28% in 1995. Among women who reported being not pregnant at the time of the survey, 29% reported taking a vitamin supplement containing folic acid, compared with 25% in 1995. The proportion of all women who took a vitamin containing folic acid less frequently than daily remained at 11%. Those who continued to be the most likely to take vitamin supplements containing folic acid on a daily basis include women aged 25-45 years (34%), college graduates (40%), and those with high incomes (e.g., 38% among women whose annual household income is greater than or equal to \$50,000).

From 1995 to 1998, the proportion of women who reported obtaining information about folic acid from magazine or newspaper articles decreased from 35% to 31%. However, the proportions that reported learning about folic acid from radio or television and health-care

providers increased from 10% to 23% and from 13% to 19%, respectively.

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**CDC Editorial Note:** Although the proportion of U.S. women who were aware that folic acid can prevent birth defects and that folic acid should be taken before pregnancy had increased since 1995, the findings in the 1998 survey indicate that only a small percentage of women were aware of the potential benefits of periconceptional intake of folic acid. Health-care providers, who were the source for information for only one in five women surveyed who had heard of folic acid, have an important role in promoting preconceptional health, including daily intake of 400 µg of folic acid throughout the childbearing years among women of childbearing potential.

An important limitation of the Gallup telephone survey is the low response rate (approximately 50%). In particular, knowledge and behavior patterns of nonparticipants may have been different from those of participants.

Results from two surveys (CDC, unpublished data, 1998; March of Dimes Birth Defects Foundation, unpublished data, 1998) suggest that professional education is needed to increase the proportion of health-care providers who recommend their patients of childbearing age consume 400 µg of folic acid daily. Health-care providers need to be aware that each encounter with a woman of childbearing age represents an opportunity to promote preconceptional health. Because approximately half of all pregnancies in the United States are unintended, both the Public Health Service and the Institute of Medicine recommendations emphasize the importance of periconceptional folic acid consumption for all women of childbearing potential.<sup>5</sup>



During April and May 1998, CDC conducted focus groups that included 58 health-care providers (physicians, nurses, nutritionists, and pharmacists) who spend at least half of their time providing care to women aged 18-35 years (CDC, unpublished data, 1998). These providers reported gaps in knowledge about the benefits of folic acid, pressures from the health-care delivery system that limit patient contact time, a lack of educational materials (e.g., handouts and daily reminders on intake and health assessment forms) to teach and counsel women about the benefits of periconceptional folic acid intake, and the importance of professional education for all members of multidisciplinary health teams.

In 1998, the March of Dimes conducted a study of attendees of departmental grand rounds at 19 nonrandomly selected academic centers with residencies in obstetrics and gynecology (March of Dimes Birth Defects Foundation, unpublished data, 1998); 463 attendees completed questionnaires about their knowledge and behavior related to folic acid. This informal survey indicated that 30% of the attendees did not know the recommended daily amount of folic acid, and 36% reported that they "rarely" or "sometimes" recommended folic acid to their patients.

To help prevent neural tube defects, the March of Dimes will invest up to \$10 million for a 3-year national folic acid education campaign. In addition, under the leadership of CDC and the March of Dimes, the National Council on Folic Acid was formed in 1997 as a coalition of organizations working to reduce the rate of neural tube defects through folic acid education. In January 1999, the council launched a major initiative to use media, new public and professional education materials, and community programs to promote neural tube defect prevention activities in the United States.

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**Publication of Guideline for Prevention of Surgical Site Infection, 1999**

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THE RECENTLY RELEASED *GUIDELINE FOR Prevention of Surgical Site Infection, 1999*<sup>1,2</sup> presents evidence-based recommendations for surgical site infection (SSI) prevention; provides an extensive review of the epidemiology, definitions, microbiology, pathogenesis, and surveillance of SSI; and provides a detailed discussion of the pre-, intra-, and post-operative issues relevant to SSI genesis. The guideline includes a continuing education component.

The guideline and information about continuing education credit are available on CDC's Hospital Infections Program, National Center for Infectious Diseases (NCID), World-Wide Web site <http://www.cdc.gov/ncidod/hip/> or by writing to SSI Guideline Evaluation Activity, Hospital Infections Program, NCID, Mailstop E-69, CDC, 1600 Clifton Rd., N.E., Atlanta, GA 30333. Participating in this activity is free, and the deadline for applying for continuing education credit is April 15, 2000.

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**Assessment of Public Health Computer Readiness for 2000—United States, 1999**

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2 tables omitted

COMPUTER SOFTWARE, EQUIPMENT, AND other devices that contain embedded microchips that store and process dates may use two-digit years (e.g., 99 for 1999) to reduce data entry burden and save electronic storage space; these devices may not work properly when the year 2000 (Y2K) arrives.<sup>1</sup> Many aspects of health-care delivery, public health surveillance and research, and critical infrastructure components (e.g., utilities and transportation services) depend on vulnerable computers. To ensure that critical public health functions will not be compromised because of Y2K problems, CDC assessed state public health agency readiness for Y2K. This report describes the findings of the assessment, which indicate that state health agencies that responded are substantially ready for Y2K and plan to reach full readiness in 1999.

In November 1998, CDC sent surveys to health officials in all states, territories, and the District of Columbia using a standardized questionnaire; responses were received from December 1998 through February 1999. Questions were asked about the degree of Y2K assessment performed and the degree of Y2K readiness achieved in 10 functional areas essential to public health and potentially vulnerable to Y2K problems. CDC received completed surveys from 29 states, representing 75% of the U.S. population.

The 29 public health agencies reported an average of 92% (median: 93%; range: 85%-99%) completion for the Y2K assessment across the 10 functional areas listed in the survey. The level of Y2K readiness averaged 77% (median: 75%; range: 66%-93%) across



the 10 areas; one state reported Y2K readiness in all areas. All states (with one exception in one functional area) reported intentions to reach full readiness during 1999 across all functional areas. However, there were 35 responses of “unknown” in various functional areas, with the greatest number (14) regarding the readiness of local public health agencies. Thirty-four percent of the respondents lacked a contingency plan, 49% had plans to develop one, and 17% did not intend to develop one.

**Reported by:** Information Resources Management Office, Office of the Director, CDC.

**CDC Editorial Note:** The survey results indicate substantial Y2K readiness of many computer-based functions, with plans to reach full Y2K readiness in 1999, in state health agencies that responded to the survey. Because 21 states, all the U.S. territories, and the District of Columbia did not respond, the survey findings do not reflect Y2K readiness in these locations. In addition, the lack of information about local public health agency readiness further limits the assessment of public health system readiness overall. Given the fixed deadline (December 31, 1999) for preparedness, states that do not plan to be ready until the fourth quarter of 1999 may have increased their risk for not completing the work in time. Finally, the lack of an intent to develop a contingency plan in some states further increases the risk for a longer interruption in service or operations than would be the case with adequate planning.

CDC has achieved Y2K readiness for all its major information systems and is in the final stages of ensuring that its infrastructure is ready (e.g., facilities, laboratory equipment, desktop computers and networking devices, telecommunications, and commercial software products). CDC also has implemented a toll-free hotline to provide Y2K information on health care and public health, telephone (877) 232-2020. The system provides an automated fax transmission consisting of a Y2K fact sheet and resource guide, including Internet

addresses for additional information on topics such as medical devices, health-care sector Y2K readiness, assessment checklists, and contingency planning templates.

The President's Council on Year 2000 Conversion reports that the nation's major infrastructure services (e.g., telecommunications, electric power production and distribution, banking and other financial services, and transportation), will be ready and that no major service disruptions will occur.<sup>1</sup> Additional information is available from the council, telephone (888) 872-4925 ([888] USA-4-Y2K), and on the World-Wide Web, <http://www.y2k.gov>.

Health-care providers and government health agencies must maintain a full commitment to Y2K preparations, readiness, testing, and contingency planning. Public health and safety and the quality of health care are paramount during the Y2K transition. All public health partners are encouraged to develop rigorous contingency plans and business continuity plans to assess and quickly respond to any problems. To track progress and identify vulnerable areas, CDC will repeat the state public health agency readiness assessment in June 1999.

#### REFERENCE

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## Back Pain Among Persons Working on Small or Family Farms—Eight Colorado Counties, 1993-1996

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*1 table omitted*

IN THE UNITED STATES, WORK-RELATED back pain often results in lost wages, reduced productivity, and increased medical costs.<sup>1,2</sup> However, national surveil-

lance data about these injuries, such as occupationally acquired back pain among workers on small or family farms, are limited.<sup>3</sup> To characterize back pain in a farming population, researchers at Colorado State University interviewed adult farmers residing in eight north-eastern Colorado counties (Larimer, Logan, Morgan, Phillips, Sedgewick, Washington, Weld, and Yuma) during 1993-1996, using the Colorado Farm Family Health and Hazard Survey (CFFHHS). This report summarizes the findings of CFFHHS, which indicate that back pain is common among farmers and most frequently attributed to repeated activities (RAs) (e.g. lifting, pushing, pulling, bending, twisting, and reaching).

University researchers selected a sample of 500 small or family farms (i.e.,  $\leq 10$  workers) in proportion to the number of Colorado farms in the National Agricultural Statistical Reporting Districts for Crop and Livestock. During the 3-year period using the CFFHHS questionnaire, 759 adults (aged  $\geq 18$  years) were interviewed from 458 (92%) farms to determine whether the respondents had experienced daily back pain for  $\geq 1$  week during the 12 months preceding the interviews. The p values for comparison of back pain prevalence by sex were calculated using the chi-square test. Most (458 [60%]) respondents were men. Average age of respondents was 50.5 years (range: 24-85 years).

Of the 458 men surveyed, 411 (90%) worked on farms  $\geq 5$  days per week; 451 (99%) worked  $\geq 2$  days per week. Of the 301 women surveyed, 136 (46%) reported working on farms  $\geq 5$  days per week; 227 (66%) worked  $\geq 2$  days per week. During the 12 months preceding the interviews, 196 (26%) respondents experienced back pain lasting  $\geq 1$  week. The prevalence of back pain among men was slightly higher than among women; both sexes reported that the lower back was the area most often affected. Approximately 45% of respondents attributed back pain to RAs; however, 13% of men and 8% of women attributed back pain to single incidents (SIs) such as slipping or falling.



Approximately one fifth of all respondents attributed back pain to both RAs and SIs. Depression, occupation, and long-term employment in agriculture also had statistically significant associations with back pain.<sup>4</sup> In all age categories, the prevalence of back pain did not differ significantly among men and women, except among those aged 30-39 years (36% versus 21%, respectively;  $p = 0.044$ ).

For men, work-related RAs were more likely than nonwork-related RAs to cause back pain; for women, nonwork-related RAs were more likely to cause back pain. Compared with women, men experienced back pain more often at work than at other locations, but this difference was statistically significant only for RA-related back pain. The overall prevalence of RA-related back pain among women was slightly greater among those who performed farm work than those whose duties were restricted to work in the home, but this difference was not statistically significant. Because of back pain, 38% of men and 30% of women had made "major" changes (undefined in the survey) in work activities; 10% and 8%, respectively, either changed or stopped their work permanently.

Dairy farmers were substantially more likely to report back pain (43%) than farmers who produced field crops (27%;  $p = 0.058$ ) or raised livestock (25%;  $p = 0.054$ ). The prevalence of back pain among farmers working on large farms (i.e., annual sales  $\geq$  \$100,000) was slightly higher than that of those working on small farms (29% versus 24%, respectively;  $p = 0.15$ ).

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**CDC Editorial Note:** Many risk factors for occupational and nonoccupational back pain have been proposed,<sup>5</sup>

with general agreement that overexertion and chronic whole-body vibration are important risk factors for work-related back pain.<sup>6</sup> CFFHHS confirmed that back pain is a major health problem among farmers in eight Colorado counties working on small or family farms.

Surveillance information about injuries among small and family farmers might be inadequately represented in national data. Two national data sources are available to estimate the prevalence and characteristics of work-related back pain in the United States: the Bureau of Labor Statistics (BLS) Annual Survey and the 1988 Occupational Health Supplement (OHS) in the National Health Interview Survey (NHIS). The BLS Annual Survey is based on sampled employers' reporting on occupational injuries and illnesses. In 1996 (the most recent year for which data are available), incidence of nonfatal injury or illness affecting the back and involving lost work days was 75.1 (0.8%) per 10,000 full-time agricultural workers<sup>7</sup>: 1.1% among dairy farmers, 1.0% among workers in livestock production, and 0.7% among workers in crop production. BLS data excluded self-employed farmers and farms with  $<11$  employees.

The OHS samples U.S. civilian non-institutionalized adults aged  $\geq 18$  years.<sup>8</sup> Although farm size was not considered in NHIS sampling, OHS data excluded people who "only worked around the house"; in comparison, CFFHHS did not exclude small farms or homemakers. In 1988, OHS/NHIS<sup>9</sup> included questions about back pain during the 12 months preceding the interviews among adult respondents who had worked during that time.<sup>8</sup> During 1988, the national prevalence of back pain (defined as lasting  $\geq 1$  week, excluding menstrual back pain) was 17.6% (22.4 million cases; 149 million lost work days).<sup>9</sup> Among major\* occupation categories for men, "farmers

except horticultural" ranked fifth in the prevalence of back pain attributed to work-related activities, with 213,000 cases. Women farmers ranked 20th among major occupations, with 21,000 cases.

Data from CFFHHS revealed aspects of back pain that are not readily available in national data. CFFHHS indicated that back pain among men was associated closely with work. Among women farmers, daily domestic activities (e.g., cleaning house and caring for children) may be risk factors for back pain.

CFFHHS results have at least four limitations. First, on small farms, it may be difficult to distinguish between work-related and domestic activities. Second, the survey covered only a section of Colorado, which may have unique regional and farming characteristics; therefore, the findings may not be generalizable to other regions, states, or the rest of the country. Third, responses to the survey were self-reported and may be subject to recall biases. Finally, 27% (108) of the eligible women within a responding family unit did not participate in the survey.

The Colorado survey results verify that back pain is a major work-related health issue. The survey also suggests that regional and state-based surveillance for work-related disorders could supplement the national surveillance system for a population underestimated or excluded. Findings from the Colorado survey pointed to an area that warrants further investigations. Other states, such as California, Iowa, Kentucky, and New York, have conducted similar surveys under the FFHHS program, and their findings may provide insight about back pain among small and family farmers.

#### REFERENCES

9 available

\*For this analysis, a "major" occupation was defined as an occupation constituting  $>0.5\%$  of the total sex-specific working population.<sup>9</sup>