In this HINTS Brief, we discuss four behavioral pillars of cancer prevention.

**Organizations Collaborate to Focus on Prevention Messages**

When it comes to cancer prevention, more information does not necessarily mean greater clarity. Despite a plethora of cancer prevention information available from myriad outlets, such information has not necessarily increased public understanding. In recognition of the need for clear, concise, and consistent public messaging, the National Cancer Institute (NCI) and the C-Change organization—made up of leaders from government, business, and nonprofit sectors—have joined forces to unite the cancer advocacy and research communities around a core set of messages designed to convey four behavioral pillars of cancer prevention: improve your diet, increase your activity, check your status, and quit smoking.

C-Change has worked with the Ad Council, NCI, and other partners to craft language that effectively communicates the importance of healthy behaviors in preventing cancer.

In this HINTS Brief, we examine HINTS data related to four behavioral pillars of cancer prevention and present information on the public’s cancer-related knowledge and perceptions about nutrition, physical activity, cancer screening, and smoking. These data underscore the need for the cancer community to coordinate communications efforts.

**Quick Facts**

- More than three-quarters (78%) of Americans think there are so many cancer prevention recommendations that it is hard to know which ones to follow.

- Diet, physical activity, and cancer screening recommendations from national organizations often vary, highlighting the need for coordinated communication efforts.

- Most experts agree that a healthy diet and an active lifestyle have cancer prevention benefits, that abstaining from smoking is the most important thing someone can do to prevent cancer, and that age-appropriate screening can detect many cancers at an early, treatable stage.

**The Four Behavioral Pillars of Cancer Prevention**

**Improve Your Diet**

- Experts recommend 4–13 servings of fruits and vegetables daily depending on energy needs, with special emphasis on dark green and orange vegetables and legumes.

**Increase Your Activity**

- Experts recommend at least 60 minutes of physical activity every day for children and adolescents and at least 150 minutes of moderate-intensity aerobic activity or 75 minutes of vigorous activity for adults each week.

**Check Your Status**

- Breast cancer: For women between the ages of 50 and 69, there is strong evidence that regular screening, including mammography, lowers the risk of dying from breast cancer by 30%. For women in their 40s, the risk can be reduced by about 17%. For women aged 70 or older, mammography may be helpful, although firm evidence is lacking.
  - In November 2009, the U.S. Preventive Services Task Force (USPSTF) modified its recommendations for mammography screening for specific age groups. For women aged 50–74, USPSTF recommended biennial screening mammography. The modified recommendation was based on data suggesting biennial screening mammography before age 50 resulted in more harm and produced smaller benefits than for older women, and therefore USPSTF recommended that this decision should be made by individual patients and their physicians.

- Colorectal cancer: When performed every 1–2 years in people between the ages of 50 and 80, the fecal occult blood test can decrease the number of deaths attributed to colorectal cancer. Experts have also found that regular sigmoidoscopy can reduce colorectal cancer deaths. More research is needed to learn the best timing between exams and to determine the effectiveness of screening by colonoscopy.

- Cervical cancer: Regular use of the Pap test, followed by appropriate and timely treatment, reduces deaths from cervical cancer. A vaccine available to girls and young women aged 9–26 can help prevent infection from the two types of human papillomavirus that cause the majority of cervical cancers worldwide.
  - In November 2009, the American College of Obstetricians and Gynecologists released new guidelines recommending that women delay their first Pap test until age 21 and be screened less often than recommended in the past.

**Quit Smoking**

- Quitting smoking has significant and immediate health benefits for men and women of all ages. Quitting smoking dramatically reduces the risk of lung and other cancers, coronary heart disease, stroke, and chronic lung disease.
Public Knowledge about Nutrition, Physical Activity, Cancer Screening, and Smoking Recommendations

Diet
Nutrition guidelines regarding the recommended number of fruits and vegetables per day vary across organizations. Such lack of consistency is reflected in the public’s knowledge and understanding of nutrition recommendations. In 2005, most Americans (82%) agreed that “there are so many recommendations about nutrition that it’s hard to know which ones to follow.” HINTS 2005 found that most Americans (89%) underestimated the recommended number of fruit and vegetable servings per day for adults.

Physical Activity
In HINTS 2007, more than half of the U.S. population (60%) correctly identified that at least 150 minutes of physical activity is recommended per week, which reflects current government recommendations. However, there is a lack of knowledge regarding the effect of physical activity on cancer prevention. Although studies have found an association between physical activity and reduced risk of colon and breast cancers, more than 68% of respondents to HINTS 2007 said that they didn’t know which types of cancer risk were associated with physical activity.

Cancer Screening
Different reputable, nationally recognized organizations have created a variety of cancer screening guidelines and continue to update those guidelines as better evidence becomes available. Although current HINTS data pre-date recently revised cancer screening recommendations, the data offer insight into Americans’ knowledge about screening recommendations as they existed at the time of data collection. HINTS 2003 found that most respondents (73%) knew that the recommended frequency for mammography screening was every 1–2 years, and approximately 54% knew that the recommended age at which to begin colon cancer screening was age 50. HINTS 2005, meanwhile, revealed that the majority of Americans (79%) were unaware of a change in recommendations for yearly Pap tests.

Smoking
Although most Americans have gotten the message that smoking causes lung cancer, approximately 10% of Americans—an estimated 11 million people—believe that there is little or no relationship between smoking and cancer, according to HINTS 2003. An additional 5%—an estimated 5 million people—had “no opinion,” indicating that even the most definitive recommendations warrant repeating.

How Can This Inform Your Work?
Changes in cancer prevention recommendations inevitably lead to public frustration and confusion about who should be screened, how often they should be screened, and what screening modalities should be used; how much exercise is recommended for good health; and which aspects of diet are associated with cancer prevention or cancer risk. Coordinated communications efforts, can help ensure that the public receives clear, consistent messages regarding cancer prevention.

C-Change is encouraging cancer organizations, as well as other organizations, to emphasize the four behavioral pillars in their organizations’ communications efforts. Evidence-based, audience-tested messages and resources are available at http://www.c-changeprojects.org/CommunicationsPlan/CancerMessages.asp.

The National Cancer Institute (NCI) fielded the first Health Information National Trends Survey (HINTS) in 2002 and 2003, surveys 6,369 Americans. Subsequent surveys followed in 2005 (5,586 Americans surveyed) and 2008 (7,674 Americans surveyed). HINTS was created to monitor changes in the rapidly evolving field of health communication. The survey data can be used to understand how adults 18 years and older use different communication channels to obtain health information for themselves and their loved ones, and to create more effective health communication strategies across populations.

HINTS Briefs provide a snapshot of noteworthy, data-driven research findings. They introduce population-level estimates for specific questions in the survey and summarize significant research findings that are a result of analyzing how certain demographic characteristics influence specific outcomes. Many Briefs summarize research findings from recent peer-reviewed journal articles using HINTS data.

For More Information on Cancer
• Call the NCI Cancer Information Service at 1-800-4-CANCER
• Visit http://cancer.gov
• Order NCI publications at https://cissecure.nci.nih.gov/ncipubs/

References Used in This HINTS Brief
