



# What Works to Prevent Cancer?

PHOTO BY DAN SEARS

Changing human behavior, combined with increased monitoring of environmental exposures, can help prevent cancer.

Many preventable cases of cancer happen because human behavior is so difficult to change. With cervical cancer, for instance, nearly 100 percent of cases could be prevented using available tools, including vaccination against the human papillomavirus (HPV), screening and follow-up of abnormal Pap smears, says Dr. Jennifer Smith. “With all of this together, we can approach eradication of cervical cancer.” Smith documents disparities in screening and vaccination and works to increase those rates, from North Carolina to Kenya. “We should no longer

accept that cervical cancer exists,” she says.

Emerging literature suggests that what prevents most parents from getting their children vaccinated against HPV isn’t concern about side effects, but rather cost, lack of access and lack of doctor recommendation, says Dr. Noel Brewer. “We need to offer the HPV vaccine in schools and in pharmacies, to make it more accessible outside the doctor’s office,” he says.

Public policy can reduce lung cancer deaths by preventing cigarette smoking. “But the difficulty is in getting policy makers to

enact policies that we know work,” says Dr. Kurt Ribisl. Major effective policies include taxes, bans on public smoking and curtailing marketing. Online marketing is difficult to control, but Ribisl showed that bans on use of credit cards to buy cigarettes online and on commercial shipping of cigarettes purchased in the U.S. have reduced the number of online cigarette retailers and the popularity of those that remain ([bit.ly/A24BSV](http://bit.ly/A24BSV)).

Increased monitoring of toxic substances in the environment and exposures to individuals also may help prevent cancer. Arsenic in drinking water has been linked to cancer, and though the U.S. Environmental Protection Agency has published limits for public drinking water, no such standards exist for private wells.

Recently, Dr. Rebecca Fry found that certain North Carolina counties have arsenic levels above the EPA standard and need increased monitoring (see [bit.ly/w8XGYp](http://bit.ly/w8XGYp)) and that individuals in North Carolina are exposed to toxic metals (see [bit.ly/yn6BeX](http://bit.ly/yn6BeX)). In a separate study, she showed epigenetic effects of arsenic exposure in individuals ([bit.ly/yTwyx5](http://bit.ly/yTwyx5)). “We showed an association between arsenic exposure and biological effects that can have many different consequences that could include cancer,” Fry says.

—Angela Spivey

“**We need to offer the HPV vaccine in schools and in pharmacies to make it more accessible outside the doctor’s office.**”

—NOEL BREWER, PhD, ASSOCIATE PROFESSOR OF HEALTH BEHAVIOR AND HEALTH EDUCATION



Researchers featured in this article include:

- Noel Brewer, PhD, associate professor of health behavior and health education
- Rebecca Fry, PhD, assistant professor of environmental sciences and engineering
- Kurt Ribisl, PhD, professor of health behavior and health education
- Jennifer Smith, PhD, research associate professor of epidemiology