

DNA test is an effective cervical cancer screening tool for women in low-income countries

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An inexpensive DNA-based test for human papillomavirus (HPV) can effectively be deployed in low- and middle-income countries such as Honduras, where prevalence of cervical cancer is high due to lack of screening resources. Credit: Tsongalis Laboratory

Cervical cancer is a major issue in low- and middle-income countries due to the lack of adequate screening such as routine Pap smear testing. These countries have high incidences of cervical cancer linked to human papillomavirus (HPV). Due to lack of resources for cancer screenings, these countries account for 85% of all cervical cancer cases.

A group of researchers from Dartmouth's Norris Cotton Cancer Center, led by Gregory Tsongalis, Ph.D., have introduced an inexpensive DNA-based testing protocol for HPV in Honduras. The team found that of 1,732 women screened, 28% were positive for a high-risk HPV type and of those, 26% had more than one HPV infection. Results also

showed that the most common HPV genotypes detected during testing were different than those commonly found in the United States. Their findings, "Screening for Human Papillomavirus in a Low- and Middle-Income Country" are newly published in ASCO's *Journal of Global Oncology*.

"We have shown that cervical cancer screening can be implemented in [low-resource settings](#) using this method, and that women are very interested and engaged in testing and follow-up clinic visits when necessary," says Tsongalis. "This study also identified something we were not expecting and that is a very [significant difference](#) in the types of high-risk HPV that we were detecting."

Such findings could mean profound implications for vaccination programs. "The causes of cervical cancer, while viral in nature, are not always the same type of virus and that could impact aggressiveness of disease, vaccinations and therapies," says Tsongalis.

The team would like to use their findings to guide studies of actual [cervical cancer](#) tissue and also to formulate therapeutic vaccine trials. "Being able to screen individuals who have never been tested before and studying the impact of the testing on their healthcare as well as our understanding of the biology of the disease is most exciting," says Tsongalis.

More information: Aaron E. Atkinson et al, Screening for Human Papillomavirus in a Low- and Middle-Income Country, *Journal of Global Oncology* (2019). [DOI: 10.1200/JGO.18.00233](https://doi.org/10.1200/JGO.18.00233)

Provided by Dartmouth-Hitchcock Medical Center

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