

'Get vaccinated,' says HPV expert at UB Medical School

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(Medical Xpress) -- A University at Buffalo microbiologist whose lab has been studying the human papilloma virus for years, says that parents should have their children vaccinated with Gardasil, the HPV vaccine.

At the same time, he says the vaccine is not the long-term answer to solving [HPV infections](#) and the cancers they cause.

Thomas Melendy, PhD, associate professor in the Department of Microbiology and Immunology and the Department of Biochemistry in the UB School of Medicine and Biomedical Sciences and his colleagues have been studying how the [human papilloma virus](#) "hijacks" a cell's DNA machinery in order to replicate its [viral genome](#).

Currently, Melendy and his UB colleagues are working to develop an anti-viral drug against HPV infections, as well as strategies that would kill HPV [cancer cells](#) while leaving normal cells alone. Melendy's group is the world leader in identifying critical interactions between the HPV proteins and human proteins that the virus uses to duplicate its [viral DNA](#). Last year, Melendy won an award for best overall research presentation in basic sciences at the 26th International Papillomavirus Conference in Montreal. His work explained why HPV, unlike other DNA viruses, integrates so readily into the genome of [human cells](#).

In the Q & A below, Melendy discusses his detailed knowledge of HPV and why children should be vaccinated.

What is HPV?

HPV, or human papilloma viruses, have co-evolved with humans over millions of years. HPV infections are very common and almost everyone has one at some point in their lives. Most infections create a small benign wart, which is generally resolved by our immune systems. Some HPV strains only infect the outer skin while others are sexually transmitted and only infect the genitalia or other mucosal surfaces.

How common are HPV sexually transmitted infections?

HPV sexually transmitted infections are among the most common. Virtually one in nine people in the U.S. have an active HPV sexually transmitted infection at any time. Some require treatment; others may not even be apparent and resolve on their own. It is only the rare HPV infection, one in thousands of cases, that develops into cancer.

How concerned should parents be about cervical cancer caused by HPV?

[Cervical cancer](#) is the third most common cancer in women in the U.S. It also causes almost all other anogenital cancers, and over half of oral cancers. This means that HPV causes more cancers than anything other than smoking. Unlike other cancers, such as breast cancer, the absence of a family history of cervical cancer provides little statistical protection. Genetic modifiers and environmental factors, such as smoking, play some role, but the overwhelming single predictor for HPV cancer is having a persistent HPV infection. While regular Pap smears help catch cervical cancer early, so it's more treatable, nearly one in three cases still results in death in the U.S., and it's one out of two cases worldwide. That's approximately 5,000 deaths a year in the U.S. and 232,000

worldwide. Unlike most forms of cancer, cervical cancer often strikes early, killing women in the prime of their lives.

What are the advantages of the HPV vaccine?

The HPV vaccine is clearly worthwhile. If given properly to all girls before they become sexually active, the HPV vaccine would prevent about two-thirds of cervical cancers; vaccinating boys as well as girls will also provide likely protection against other anogenital and oral cancers. Since HPV is such a common sexually transmitted infection, and since even condoms are only partially effective at preventing HPV transmission, the vaccine series needs to be given before people first become sexually active.

What are the vaccine's drawbacks?

This is not a "risky" vaccine. It has no mercury-containing chemicals -- for which no danger has been proven -- but some people, nevertheless, remain concerned. There is no viral, genetic material so there is no danger of infecting anyone from the vaccination. While there are apocryphal reports of serious health consequences to a few young girls, there is absolutely no evidence at this point that the vaccine caused the negative health consequences attributed to it. To date, the number of cases that might have caused an unusual allergic response are so small (a handful) that the benefits of saving thousands of lives by the [HPV vaccine](#) far outweigh the risks for any individual.

What else is being done to prevent, diagnose and treat HPV infections and the cancers they cause?

Better vaccines, better treatments against HPV infection, and better treatments for HPV-induced cancers are all necessary. This is a cancer

that can, in many cases, be prevented through vaccination or, potentially, by early treatment of HPV infections--if new, anti-HPV drugs can be developed. HPV cancers are potentially far more amenable to cancer-specific treatments than are most cancers. Additional research funding in these areas could save thousands and thousands of lives every year.

Provided by University at Buffalo

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