

# HPV VACS



## Vaccinate Adolescents against Cancers

### **FACT 1** *The HPV vaccines are safe.*

Scientists from the CDC, the FDA, and other organizations in the US and around the world continue to monitor and report any adverse events and side effects related to HPV vaccines. Monitoring in 2009 revealed that most side effects related to HPV vaccines were mild and were similar to those seen with any other vaccine. Several studies from 2011-2015 looking at more than four million women and girls who were vaccinated show that there is no relationship between HPV vaccines and autoimmune disorders, blood clots, or other serious disorders.<sup>1</sup>

**TALKING POINT:** More than 270 million doses of vaccine have been distributed worldwide, with more than 100 million doses in the US. Like with all vaccines, HPV vaccine safety is constantly monitored, and these studies continue to show that HPV vaccination is very safe. All medications and vaccines can have side effects. The most common side effects seen with HPV vaccination are mild and are very similar to the reactions from other vaccines.<sup>1,2</sup>

### **FACT 2** *HPV vaccination does NOT cause fertility issues.*

There is no evidence that HPV vaccination causes fertility or reproductive problems. HPV vaccination can actually help protect fertility by preventing gynecological problems related to the treatment of cervical cancer. It's possible that the treatment of cervical cancer could leave a woman unable to have children. It's also possible that treatment for cervical pre-cancer could put a woman at risk for problems with her cervix, which could cause preterm delivery or other problems.<sup>3</sup>

**TALKING POINT:** There are no data to suggest that getting the HPV vaccine will have a negative effect on future fertility. In fact, getting vaccinated and protecting against cervical cancer can help ensure a woman's ability to get pregnant and have healthy babies.<sup>3</sup>

# HPV VACCs



## Vaccinate Adolescents against Cancers

### **FACT 3** *The HPV vaccine does NOT contain harmful ingredients.*

HPV vaccines contain ingredients that have been proven to be safe. Like the hepatitis B and Tdap vaccines, HPV vaccines contain aluminum, which boosts the body's immune response to the vaccine. In addition to certain vaccines, aluminum is found in breast milk, infant formula, antacids, and numerous foods and beverages, including fruits and vegetables, seasonings, flour, cereals, nuts, dairy products, and honey. Typical adults ingest 7 to 9 milligrams of aluminum per day, whereas the HPV vaccines contain no more than .5 milligrams of aluminum per dose.<sup>4</sup> These vaccines, like other vaccines for children and adolescents, do not contain thimerosal (a preservative that contains mercury).<sup>5</sup>

**TALKING POINT:** People are exposed to aluminum every day through food and cooking utensils. Aluminum-containing vaccines have been used for decades and have been given to more than **1 billion people without problems**. In spring 2000, the National Vaccine Program Office reviewed aluminum exposure through vaccines and determined that no changes to vaccine recommendations were needed based on aluminum content. The Global Advisory Committee on Vaccine Safety, part of the World Health Organization, has also reviewed studies and found no evidence of health risks that would require changes to vaccine policy.<sup>4</sup>

### **FACT 4** *The HPV vaccine is necessary, regardless of sexual activity.*

Vaccines are for prevention, not treatment, so they only work if given before coming in contact with a virus. Research shows that cancer protection decreases as age at vaccination increases.<sup>6</sup>

Studies have shown that HPV vaccination is not associated with changes in sexual behavior. Age of onset of sexual activity, incidence of STIs, and rates of pregnancy have all been shown to be similar in vaccinated girls compared to unvaccinated girls.<sup>7,8,9</sup>

**TALKING POINT:** People are vaccinated well before they're exposed to an infection – just like measles or pneumonia. Similarly, they should be vaccinated before they are exposed to HPV. Vaccinating children at age 11 or 12 offers the most HPV cancer prevention.<sup>2</sup>

HPV is so common that almost everyone will be exposed at some point in their lives. So even if your child delays sexual activity until marriage, or only has one partner in the future, they could still be exposed if their partner has been exposed.<sup>10,11</sup>

Studies have shown there's no correlation between receiving the HPV vaccine and increased rates of, or earlier engagement in, sexual activity.<sup>8</sup>

# HPV VACS



## Vaccinate Adolescents against Cancers

### **FACT 5** *The HPV vaccine is for boys and girls.*

Both males and females can get HPV. It's very common; scientists estimate that between 80-90% of people will be infected with at least one type of HPV in their lifetime.<sup>11</sup>

Although cervical cancer is the most well-known type of cancer caused by HPV, persistent infection can cause several other types of cancer, including cancers of the base of the tongue and tonsils. These cancers are now the most common HPV cancers and affect more men than women.<sup>12</sup> HPV can also cause penile and anal cancers in men. HPV vaccination helps prevent infection with the types of HPV that cause most HPV cancers in men.<sup>3</sup>

**TALKING POINT:** HPV vaccination is strongly recommended for boys and girls. Vaccination helps protect boys from getting infected with the most common types of HPV that can cause cancers of the throat, penis, and anus.<sup>3</sup>

### **FACT 6** *The HPV vaccine is effective and helps prevent cancer.*

In studies that led to the approval of HPV vaccines, the vaccines provided nearly 100% protection against persistent cervical infections with HPV types 16 and 18, plus the pre-cancers that those persistent infections can cause. In addition, a clinical trial of HPV vaccines in men indicated that they can prevent anal pre-cancers caused by persistent infection.<sup>10</sup>

HPV cancers can take decades to develop, and the vaccines have not been in use long enough to produce studies comparing cancer rates. Advanced pre-cancers are universally accepted markers for cancers.

**TALKING POINT:** The vaccine has been proven, through numerous studies, to prevent the infections that can cause multiple HPV cancers.

In addition, population studies in the US and other countries that have introduced the HPV vaccine have shown a significant reduction in abnormal Pap test results<sup>13,14</sup> and genital warts.<sup>15,16</sup>

# HPV VACs



Vaccinate Adolescents against Cancers

## **FACT 7** *An effective recommendation from a clinician matters.*

An effective clinician recommendation – recommending the HPV vaccine in the same way and on the same day as other adolescent vaccines – is the number one reason parents choose to vaccinate their children.<sup>17</sup> Recent studies show that a patient who receives a recommendation from a provider is four to five times more likely to receive the HPV vaccine.<sup>18,19</sup> Studies have also shown that parents value the HPV vaccine equally with other adolescent vaccines.<sup>20</sup> In addition, parents want to prevent cancer in their children.

**TALKING POINT:** Try this effective recommendation: *Your child needs three vaccines today to protect against meningitis, HPV cancers, and pertussis.*

## **FACT 8** *The effectiveness of the HPV vaccine does not decrease over time.*

Ongoing studies have found that those who received the HPV vaccine continue to have antibodies to the virus, providing long-term protection against infections and pre-cancers. There is no indication that they will decrease over time. Studies will continue to monitor the duration of protection.<sup>21</sup>

**TALKING POINT:** Studies continue to monitor how long the vaccine protects against HPV infections and cancer. Protection has been shown to last more than 10 years with no signs of the protection weakening.

# HPV VACCs

## Vaccinate Adolescents against Cancers



### References

- <sup>1</sup> Weekly epidemiological record, 14 July 2017, vol. 92, 28 (pp. 393–404). World Health Organization. <http://www.who.int/wer/2017/wer9228/en/>. Accessed April 4, 2018.
- <sup>2</sup> Human papillomavirus (HPV) questions and answers. Centers for Disease Control and Prevention. <https://www.cdc.gov/hpv/parents/questions-answers.html>. Published December 19, 2017. Accessed April 4, 2018.
- <sup>3</sup> What parents should know about HPV vaccine safety and effectiveness. Centers for Disease Control and Prevention. <https://www.cdc.gov/vaccines/partners/downloads/teens/vaccine-safety.pdf>. Published April 22, 2016. Accessed April 4, 2018.
- <sup>4</sup> Vaccine ingredients – aluminum. Children’s Hospital of Philadelphia. <http://www.chop.edu/centers-programs/vaccine-education-center/vaccine-ingredients/aluminum>. Published November 4, 2014. Accessed April 4, 2018.
- <sup>5</sup> Hamborsky J, Kroger A, Wolfe S, eds. Vaccine Excipient & Media Summary. In: *Epidemiology and Prevention of Vaccine-Preventable Diseases*. 13th ed. Washington D.C.: Public Health Foundation; 2015. <http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf>. Accessed April 4, 2018.
- <sup>6</sup> Herweijer E, Sundström K, Ploner A, Uhnoo I, Sparén P, Arnheim-Dahlström L. Quadrivalent HPV vaccine effectiveness against high-grade cervical lesions by age at vaccination: A population-based study. *Int J Cancer*. 2016;138(12):2867-2874. doi: [10.1002/ijc.30035](https://doi.org/10.1002/ijc.30035).
- <sup>7</sup> Bednarczyk RA, Davis R, Ault K, Orenstein W, Omer SB. Sexual activity-related outcomes after human papillomavirus vaccination of 11- to 12-year-olds. *Pediatrics*. 2012;130(5):798-805. doi: [10.1542/peds.2012-1516](https://doi.org/10.1542/peds.2012-1516).
- <sup>8</sup> Jena AB, Goldman DP, Seabury SA. Incidence of sexually transmitted infections after human papillomavirus vaccination among adolescent females. *JAMA Intern Med*. 2015;175(4):617-623. doi: [10.1001/jamainternmed.2014.7886](https://doi.org/10.1001/jamainternmed.2014.7886).
- <sup>9</sup> Smith LM, Kaufman JS, Strumpf EC, Lévesque LE. Effect of human papillomavirus (HPV) vaccination on clinical indicators of sexual behaviour among adolescent girls: the Ontario Grade 8 HPV Vaccine Cohort Study. *CMAJ*. 2015;187(2):E74-81. doi: [10.1503/cmaj.140900](https://doi.org/10.1503/cmaj.140900). Epub Dec 8, 2014.
- <sup>10</sup> Human papillomavirus (HPV) vaccines. National Cancer Institute. <https://www.cancer.gov/about-cancer/causes-prevention/risk/infectious-agents/hpv-vaccine-fact-sheet>. Accessed April 5, 2018.
- <sup>11</sup> Chesson HW, Dunne EF, Hariri S, Markowitz LE. The estimated lifetime probability of acquiring human papillomavirus in the United States. *Sex Transm Dis*. 2014;41(11):660-664. doi: [10.1097/OLQ.0000000000000193](https://doi.org/10.1097/OLQ.0000000000000193).
- <sup>12</sup> How many cancers are linked with HPV each year? Centers for Disease Control and Prevention. <https://www.cdc.gov/cancer/hpv/statistics/cases.htm>. Accessed April 4, 2018.
- <sup>13</sup> Pollock KGJ, Kavanagh K, Potts A, et al. Reduction of low- and high-grade cervical abnormalities associated with high uptake of the HPV bivalent vaccine in Scotland. *Br J Cancer*. 2014;111(9):1824-1830. doi: [10.1038/bjc.2014.479](https://doi.org/10.1038/bjc.2014.479).
- <sup>14</sup> Baldur-Felskov B, Dehlendorff C, Munk C, Kjaer SK. Early impact of human papillomavirus vaccination on cervical neoplasia – Nationwide follow-up of young Danish women. *J Natl Cancer Inst*. 2014;106(3):djt460. doi: [10.1093/jnci/djt460](https://doi.org/10.1093/jnci/djt460).

# HPV VACCs

## Vaccinate Adolescents against Cancers



- <sup>15</sup> Ali H, Donovan B, Wand H, et al. Genital warts in young Australians five years into national human papillomavirus vaccination programme: national surveillance data. *BMJ*. 2013;346:f2032. doi: [10.1136/bmj.f2032](https://doi.org/10.1136/bmj.f2032).
- <sup>16</sup> Bauer HM, Wright G, Chow J. Evidence of human papillomavirus vaccine effectiveness in reducing genital warts: an analysis of California public family planning administrative claims data, 2007-2010. *Am J Public Health*. 2012;102(5):833-835. doi: [10.2105/AJPH.2011.300465](https://doi.org/10.2105/AJPH.2011.300465).
- <sup>17</sup> Smith PJ, Stokley S, Bednarczyk RA, Orenstein WA, Omer SB. HPV vaccination coverage of teen girls: the influence of health care providers. *Vaccine*. 2016;34(13):1604-1610. doi: [10.1016/j.vaccine.2016.01.061](https://doi.org/10.1016/j.vaccine.2016.01.061).
- <sup>18</sup> Ylitalo KR, Lee H, Mehta NK. Health care provider recommendation, human papillomavirus vaccination, and race/ethnicity in the US National Immunization Survey. *Am J Public Health*. 2012;103(1):164-169. doi: [10.2105/AJPH.2011.300600](https://doi.org/10.2105/AJPH.2011.300600).
- <sup>19</sup> Lau M, Lin H, Flores G. Factors associated with human papillomavirus vaccine-series initiation and healthcare provider recommendation in US adolescent females: 2007 National Survey of Children's Health. *Vaccine*. 2012;30(20):3112-3118. doi: [10.1016/j.vaccine.2012.02.034](https://doi.org/10.1016/j.vaccine.2012.02.034).
- <sup>20</sup> Healy CM, Montesinos DP, Middleman AB. Parent and provider perspectives on immunization: Are providers overestimating parental concerns? *Vaccine*. 2014;32(5):579-584. doi: [10.1016/j.vaccine.2013.11.076](https://doi.org/10.1016/j.vaccine.2013.11.076).
- <sup>21</sup> Deleré Y, Wichmann O, Klug SJ, et al. The efficacy and duration of vaccine protection against human papillomavirus: a systematic review and meta-analysis. *Dtsch Arztebl Int*. 2014;111(35-36):584-591. doi: [10.3238/arztebl.2014.0584](https://doi.org/10.3238/arztebl.2014.0584).



cancer.org | 1.800.227.2345