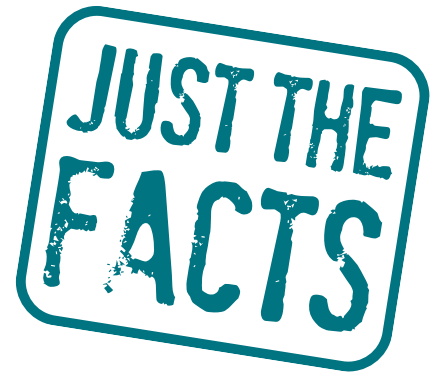


# HPV VACs

Vaccinate Adolescents against Cancers



## FACT **1** *The HPV vaccine is safe.*

Scientists from both the CDC and the FDA 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 the vaccine 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 have received the vaccine show that there is no relationship between HPV vaccines and autoimmune disorders, blood clots, or other serious disorders.<sup>1</sup>

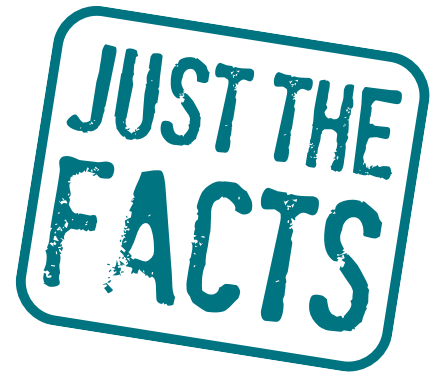
**TALKING POINT:** More than 200 million doses of vaccine have been distributed worldwide, with more than 80 million doses in the US. While the safety of these vaccines are continually monitored in 80 countries, no safety concerns have been identified. All vaccines have side effects, but reactions caused by HPV vaccines have been mostly mild and similar to those from other vaccines.<sup>2</sup>

## FACT **2** *The HPV vaccine does NOT cause fertility issues.*

Claims of HPV vaccine-induced infertility are anecdotal and not backed by research or clinical trials. The HPV vaccine 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 protect 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 .225 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>6</sup>

**TALKING POINT:** Given the quantities of aluminum we are exposed to on a daily basis, the quantity of aluminum in vaccines is miniscule. 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 also shows that younger people create more antibodies to the vaccine than those in their late teens.<sup>5</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>7,9,10</sup>

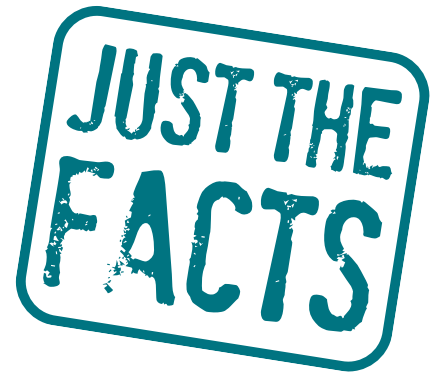
**TALKING POINT:** People are vaccinated well before they're exposed to an infection (i.e., measles and the other recommended childhood vaccines). Similarly, they should be vaccinated before they are exposed to HPV. Also, the HPV vaccine produces a higher immune response in preteens than it does in older teens.<sup>5</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>8</sup>

Studies have shown there's no correlation between receiving the HPV vaccine and increased rates of (or earlier engagement in) sexual activity.<sup>9</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; the CDC estimates that between 80-90% of sexually active people will be infected with at least one type of HPV in their lifetime.<sup>11</sup>

Although cervical cancer is currently the most common type of cancer caused by HPV, persistent infection also causes cancers of the base of the tongue and tonsils. These cancers are becoming more common, especially among men, and may be more common than cervical cancer by 2020. HPV can also cause penile and anal cancers in men. The **HPV vaccine provides protection against most of the genital cancers in men** caused by HPV infection.<sup>5</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; it also helps prevent most genital warts. In addition, when boys are vaccinated, they are less likely to spread HPV to their current and future partners.<sup>3</sup>

## FACT 6 *The HPV vaccine is effective and prevents 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 and genital warts.<sup>8</sup>

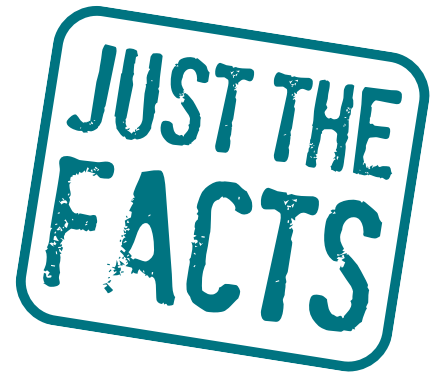
HPV-associated cancers can take decades to develop, and the vaccines have not been in use long enough to produce studies comparing cancer rates. Advanced pre-cancers are universally accepted markers for cancers.

**TALKING POINT:** The vaccine has been proven, through numerous studies, to prevent the cell changes and infections that correspond with multiple HPV-associated 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>14,15</sup> and genital warts.<sup>16,17</sup>

# HPV VACs

Vaccinate Adolescents against Cancers



**FACT 7** *Many parents do not know about the HPV vaccine and benefit from a quality provider recommendation.*

Studies have shown many parents (37%) have no prior knowledge about the vaccine before their child's provider educates them about it. Knowledge varies across racial/ethnic groups, socioeconomic status, and geographic areas.<sup>12</sup> Studies have also shown that parents value the HPV vaccine equally with other adolescent vaccines.<sup>18</sup> In addition, parents want to prevent cancer in their children.

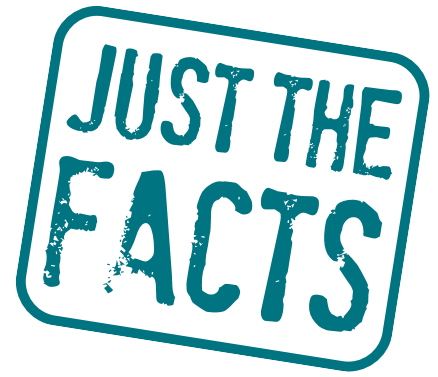
**TALKING POINT:** A quality provider recommendation is the **single best predictor of vaccination.**<sup>2</sup> Recent studies show that a patient who receives a provider recommendation is four to five times more likely to receive the HPV vaccine.<sup>19,20</sup>

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

Ongoing studies have found that those who received the 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, but studies continue.<sup>13</sup>

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

# HPV VACs

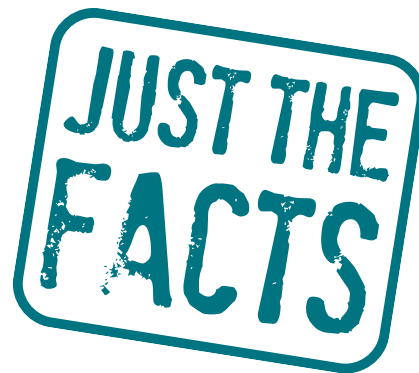


## Vaccinate Adolescents against Cancers

### References

- <sup>1</sup> Centers for Disease Control and Prevention. (2015). HPV Vaccine is Safe – (Gardasil). Retrieved from <http://www.cdc.gov/vaccinesafety/pdf/data-summary-hpv-gardasil-vaccine-is-safe.pdf>
- <sup>2</sup> Centers for Disease Control and Prevention. (n.d.). Frequently Asked Questions about HPV Vaccine Safety. Retrieved from <http://www.cdc.gov/vaccinesafety/vaccines/hpv/hpv-safety-faqs.html>
- <sup>3</sup> Centers for Disease Control and Prevention. (2014). HPV Vaccine – Questions & Answers. Retrieved from <http://www.cdc.gov/vaccines/vpd-vac/hpv/vac-faqs.htm>
- <sup>4</sup> Offit, P.A. (2014). Vaccines and Aluminum. Retrieved from <http://vec.chop.edu/service/vaccine-education-center/vaccine-safety/vaccine-ingredients/aluminum.html>
- <sup>5</sup> Cancer Council Victoria. (n.d.). Myths and facts about HPV and the vaccine. Retrieved from <http://www.hpvvaccine.org.au/parents/myths-and-facts-about-hpv-and-the-vaccine.aspx>
- <sup>6</sup> Centers for Disease Control and Prevention. (2015). Vaccine Excipient & Media Summary. Epidemiology and Prevention of Vaccine-Preventable Diseases, 13th Edition. Appendix B-10. Retrieved from <http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf>
- <sup>7</sup> Bednarczyk, R. A., Davis, R., Ault, K., Orenstein, W., & Omer, S. B. (2012). Sexual activity-related outcomes after human papillomavirus vaccination of 11- to 12-year-olds. *Pediatrics*, 130(798). doi 10.1542/peds.2012-1516
- <sup>8</sup> National Cancer Institute. (2015). Human Papillomavirus (HPV) Vaccines. Retrieved from <http://www.cancer.gov/about-cancer/causes-prevention/risk/infectious-agents/hpv-vaccine-fact-sheet#r18>
- <sup>9</sup> Jena, AB, Goldman, DP, Seabury, SA. (2015). Incidence of sexually transmitted infections after human papillomavirus vaccination among adolescent females. *JAMA Intern Medicine*, 175(4):617-623. doi:10.1001/jamainternmed.2014.7886
- <sup>10</sup> Smith LM, Kaufman JS, Strumpf EC, Lévesque LE. (2015). 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 Feb 3;187(2):E74-81. doi: 10.1503/cmaj.140900. Epub 2014 Dec 8.
- <sup>11</sup> Chesson HW, Dunne EF, Hariri S, Markowitz LE. The estimated lifetime probability of acquiring human papillomavirus in the United States. *Sexually Transmitted Diseases* 2014; 41(11):660-664.
- <sup>12</sup> Wisk LE, Allchin A, Witt WP. (2014). Disparities in human papillomavirus vaccine awareness among U.S. parents of preadolescents and adolescents. *Sexually Transmitted Diseases*, 41(2): 117–122. doi: 10.1097/OLQ.0000000000000086
- <sup>13</sup> Deléré Y1, Wichmann O, Klug SJ, van der Sande M, Terhardt M, Zepp F, Harder T. The efficacy and duration of vaccine protection against human papillomavirus: a systematic review and meta-analysis. *Dtsch Arztebl Int.*, 111(35-36):584-91. doi: 10.3238/arztebl.2014.0584
- <sup>14</sup> Pollock KGJ, Kavanagh K, Potts A, Love J, Cushien K, Cubie H, Robertson C, Cruickshank M, Palmer TJ, Nicoll S, Donaghy M. (2014). Reduction of low- and high-grade cervical abnormalities associated with high uptake of the HPV bivalent vaccine in Scotland. *British Journal of Cancer*, 111:1824-1830. doi: 10.1038/bjc.2014.479

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## Vaccinate Adolescents against Cancers

- <sup>15</sup> Baldur-Felskov B, Dehlendorff C, Munk C, Kjaer SK. (2013). Early Impact of Human Papillomavirus Vaccination on Cervical Neoplasia – Nationwide Follow-up of Young Danish Women. *Journal of the National Cancer Institute*, 106(3): djt460. doi: 10.1093/jnci/djt460
- <sup>16</sup> Ali H, Donovan B, Wand H, Read THR, Regan DG, Grulick AE, Fairley CK, & Guy RJ. (2013). Genital warts in young Australians five years into national human papillomavirus vaccination programme: national surveillance data. *BMJ*, 2013;346:f2032. doi: <http://dx.doi.org/10.1136/bmj.f2032>
- <sup>17</sup> Bauer HM, Wright G, Chow J. (2011). Evidence of Human Papillomavirus Vaccine Effectiveness in Reducing Genital Warts: An Analysis of California Public Family Planning Administrative Claims Data, 2007–2010. *American Journal of Public Health*, Vol. 102(5), pp. 833-835. doi: 10.2105/AJPH.2011.300465
- <sup>18</sup> Healy et al. *Vaccine*. 2014;32:579-584
- <sup>19</sup> Health care provider recommendation, human papillomavirus vaccination, and race/ethnicity in the U.S. National Immunization Survey. *American Journal of Public Health*. 2013. 103(1):164–169. <http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2011.300600>.
- <sup>20</sup> Factors associated with human papillomavirus vaccine-series initiation and healthcare provider recommendation in U.S. adolescent females: 2007 National Survey of Children’s Health. *Vaccine*. 2012. 30(20):3112–3118. <http://www.ncbi.nlm.nih.gov/pubmed/22425179>.



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