**HPV Vaccine Myth(s)**

**HPV CAUSES CANCER IN FEMALES and MALES.**

**C-A-S-E**: **C**orroborate-**A**bout Me-**S**cience-**E**xplain/Advise

**Myth: HPV vaccine is too new**

* + HPV vaccine was licensed in 2006 with studies for several years prior to approval. This vaccine was started around the same time as Tdap and meningococcal vaccines which are widely accepted.
  + More than 187 million doses have been given in greater than 130 countries.
  + There is no known need for booster doses. The people vaccinated as part of studies prior to approval in 2006 are being followed to determine if boosters are ever needed. After all this time, the protection is still strong without need for an additional booster dose.

**Myth: It’s too early to give HPV vaccine**

* + The immune response is better in younger patients.
  + Only 2 doses are required if started before age 15 years rather than 3 doses if started at age 15 years or later.
  + The vaccine is preventative only and will not work to treat those who are already infected.
  + 70-80% of all adults become infected with HPV. 90% clear infection but 10% do not clear infection. Of the 10% who do not clear infection, many will develop cervical or head and neck cancer.
  + Protection has been long-lasting. In the future, we will learn about the need for a booster from the initial study groups.

**Myth: Giving HPV vaccine early will make my pre-teen think about sex or lead to sex. Our value system is to be monogamous.**

* + Studies have shown that giving HPV vaccine to pre-teens does not lead to early or increased sexual behavior.
  + 70-80% of all adults become infected so although HPV is obtained through sexual contact, think about HPV as a virus almost everyone becomes infected with at some point in his or her life.
  + We support your value system. Giving HPV vaccine prevents cancer and is not at odds with your values.

**Myth: We are giving too many vaccines.**

* + Antigens are anything foreign to the immune system.
  + Our immune systems can respond to billions of antigens and responds to many thousands of them in our day to day life.
  + In the entire childhood vaccine series, we are giving 130-140 unique antigens. This is “a drop in the bucket” compared to the amount of antigens we are exposed to in everyday life and common infections.
  + Our vaccines are different than they used to be. In 1960, we were giving just 3 vaccines (small pox, polio, DTP). Those vaccines contained over 3,200 antigens. Today, in the entire series of vaccines, although we are giving many more shots and protecting against many more diseases, we are giving **25 times less** antigens.
  + The amount of shots we are giving is safe, effective, and tested vigorously.

**Myth: There are toxic preservatives in vaccines.**

* + Preservatives were used in some vaccines in the past to prevent contamination. Preservatives have been removed from almost all vaccines **NOT** because they were shown to be toxic, but because most vaccines are packaged as single dose vials now which do not require preservatives.
  + HPV does not contain Thimerosal which was a common preservative used in some vaccines before 2001. Thimerosal has never been shown to have any toxic effects in studies involving hundreds of thousands of patients, but was removed from almost all vaccines anyway.
  + HPV vaccine contains aluminum to help with the immune response.
  + Aluminum comes from the earth’s crust. We are exposed to and ingest aluminum on a daily basis including in many household products including food, medicine, cosmetics, antiperspirants, etc.
  + The amount of aluminum in HPV vaccine is 0.5 mg per dose. Typically, adults ingest 7 to 9 milligrams of aluminum per day. For comparison, the aluminum contained in all vaccines is similar to that found in about 1 quart or 32 fluid ounces of infant formula which babies ingest safely each day.

**Myth: HPV vaccine will cause infertility, neurological disease, cancer, death…**

* + Vaccines in general and specifically HPV vaccine are more scrutinized than any other medical treatment.
  + HPV vaccine was studied in more than 20,000 people before approved for routine use and is now followed in post-approval studies in greater than 60,000 subjects.
  + In addition, there is a national database to track any concerns about any vaccine called VAERS (Vaccine Adverse Event Reporting system). This system is in place to identify rare problems with vaccines.
  + Using all of these studies and tracking systems involving millions of people, we know that there is **NO** significant difference in over 200 categories of illness, death, emergency room visits or hospitalizations after receipt of HPV vaccine compared to the baseline population.

**Myth: Boys don’t need HPV Vaccine**

* + HPV infection is a very common infection in both males and females.
  + HPV causes head and neck cancer in addition to cervical cancer, genital cancer, and genital warts.
  + Males get approximately ½ the number of cases of HPV-related cancer ( about 9,000 cases per year) that women get, and can also put their partners at risk of cancer by spreading HPV.
  + We will have the greatest impact on cancer prevention when we have high rates of HPV vaccination in both males and females.

**Myth: HPV vaccine can cause HPV infection**

* + HPV vaccine is not a live vaccine.
  + HPV vaccine uses just surface proteins of the virus to make the vaccine so it **CANNOT** cause infection of make pre-existing infection worse.

**Myth: HPV vaccine is not effective**

* + HPV vaccine is extremely effective causing greater than 99% of people to have antibodies after vaccination.
  + Studies have shown close to 100% protection against pre-cancers and genital warts.
  + Despite the fact that HPV vaccine completion nationally is just over 30%, since 2006 when HPV vaccination began, there has been more than 60% reduction in HPV infection in teen girls.

**Myth: It’s better to get immunity naturally by getting infected with HPV**

* + Most people will be infected with at least one strain of HPV at some point in their lives, but will never know they are infected.
  + 90% clear infection without getting clinical disease, but 10% do not clear infection and will end up with disease including about 30,000 cases of new HPV-related cancer each year.
  + We cannot predict who clears infection and who does not so taking the risk of getting natural protection from HPV infection is taking a chance on getting a cancer which is **PREVENTABLE.**