GUIDELINES FOR VACCINATING PREGNANT WOMEN (Part 1 of 2)

Vaccination of pregnant women should be considered on the basis of risk vs. benefit. Risk to a developing fetus from vaccination of the mother during pregnancy is theoretical. No evidence exists of risk to the fetus from vaccinating pregnant women with inactivated virus or bacterial vaccines or toxoids. Live vaccines administered to a pregnant woman pose a theoretical risk to the fetus; therefore, live, attenuated virus and live bacterial vaccines generally are contraindicated during pregnancy. Benefits of vaccinating pregnant women usually outweigh potential risks when the likelihood of disease exposure is high, when infection would pose a risk to the mother or fetus, and when the vaccine is unlikely to cause harm.

The following table may be used as a general guide.

Vaccine	General Recommendation for Use in Pregnant Women
ROUTINE	
COVID-19[16]	Recommended
Hepatitis A[1]	Evaluate risk vs. benefit
Hepatitis B[2]	Recommended in some circumstances
Human Papillomavirus (HPV)[3]	Not recommended
Influenza (Inactivated)[4]	Recommended
Influenza (LAIV)*	Contraindicated
Measles, Mumps, Rubella (MMR)*	Contraindicated
Meningococcal (MenACWY)[5]	May be used if otherwise indicated
Meningococcal B[5]	Evaluate risk vs. benefit
Pneumococcal (PCV13, PCV15, PCV20)[6]	No recommendation
Pneumococcal (PPSV23)[7]	Inadequate data for specific recommendation
Inactivated Poliovirus (IPV)[8]	May be used if needed
Tetanus, Diphtheria (Td)	Should be used if otherwise indicated (Tdap preferred)
Tetanus, Diphtheria, Pertussis (Tdap)[9]	Recommended
Varicella*	Contraindicated
Zoster (RZV)[17]	No recommendation
TRAVEL & OTHER	
Anthrax[10]	*Low risk of exposure:* not recommended *High risk of exposure:* may be used
BCG*	Contraindicated
Japanese Encephalitis (JE)[11]	Inadequate data for specific recommendation
Rabies[12]	May be used if otherwise indicated
Typhoid (Oral* & Parenteral)[13]	Inadequate data (Vi polysaccharide if needed)
Vaccinia (smallpox)*[14]	*Pre-exposure:* contraindicated *Post-exposure:* recommended
Yellow Fever*[15]	May be used if benefit outweighs risk

*Live attenuated vaccine

(continued)

NOTES

[1]**Hepatitis A Vaccine:** Weigh risk vs. benefit in pregnant women at high risk for exposure.

[2]**Hepatitis B Vaccine:** Vaccination is recommended for all previously unvaccinated pregnant adults. Heplisav-B and PreHevbrio are not recommended in pregnancy due to lack of safety data.

[3]**Human Papillomavirus (HPV) Vaccine:** HPV vaccines are not recommended for use in pregnant women. If a woman is found to be pregnant after initiating the vaccination series, the remainder of the 3-dose series should be delayed until completion of pregnancy. Pregnancy testing is not needed before vaccination. If a vaccine dose has been administered during pregnancy, no intervention is needed.

[4]**Inactivated Influenza Vaccine (IIV):** Women who are or will be pregnant during influenza season should receive IIV. Age appropriate vaccine formulation must be given.

[5]**Meningococcal (MenACWY) and Meningococcal B Vaccines:** Pregnancy should not preclude vaccination with MenACWY, if indicated. Defer vaccination with MenB vaccine unless benefits outweigh risks.

[6]**Pneumococcal Conjugate Vaccine (PCV13, PCV15, PCV20).** ACIP currently has no recommendation for PCV vaccination but ACOG recommends vaccination in pregnant patients at high risk for severe pneumococcal disease.

[7]**Pneumococcal Polysaccharide Vaccine (PPSV23):** The safety of pneumococcal polysaccharide vaccine during the first trimester of pregnancy has not been evaluated, although no adverse consequences have been reported among newborns whose mothers were inadvertently vaccinated during pregnancy.

[8]**Inactivated Polio Vaccine (IPV):** Vaccination of pregnant women should be avoided on theoretical grounds. However, if a pregnant woman is at increased risk for infection and requires immediate protection, IPV can be administered in accordance with the recommended schedules for adults.

[9]**Tetanus, Diphtheria, acellular Pertussis (Tdap) Vaccine:** One dose of Tdap should be administered during each pregnancy irrespective of the patient's prior history of receiving Tdap. To maximize the maternal antibody response and passive antibody transfer to the infant, optimal timing for Tdap administration is between 27 and 36 weeks of gestation although Tdap may be given at any time during pregnancy. For women not previously vaccinated with Tdap, if Tdap is not administered during pregnancy, Tdap should be administered immediately postpartum. *Wound Management:* If a Td booster is indicated for a pregnant woman, Tdap should be administered. *Unknown or Incomplete Tetanus Vaccination:* Pregnant women who never have been vaccinated against tetanus should receive three doses containing tetanus and reduced diphtheria toxoids. The recommended schedule is 0, 4 weeks and 6 through 12 months. Tdap should replace 1 dose of Td, preferably between 27 and 36 weeks gestation.

[10]**Anthrax Vaccine:** In a pre-event setting with low risk for exposure to aerosolized *B. anthracis* spores, vaccination of pregnant women is not recommended and should be deferred until after pregnancy. In a post-event setting with a high risk of exposure, pregnancy is neither a precaution nor a contraindication to PEP. Pregnant women at risk for inhalation anthrax should receive AVA and 60 days of antimicrobial therapy as described.

[11]**Japanese Encephalitis (JE) Vaccine:** No controlled studies have assessed the safety, immunogenicity, or efficacy of Ixiaro in pregnant women. Vaccination during pregnancy may be considered if travel to an area with endemic infection is unavoidable and risk of disease outweighs risk of adverse effects in pregnancy.

[12]**Rabies Vaccine:** Because of the potential consequences of inadequately managed rabies exposure, pregnancy is not considered a contraindication to post-exposure prophylaxis. If risk of exposure to rabies is substantial, pre-exposure prophylaxis might be indicated during pregnancy.

[13]**Typhoid Vaccine:** No data have been reported on the use of any of the typhoid vaccines in pregnancy. Vi polysaccharide vaccine should be given to pregnant women if clearly needed.

[14]**Vaccinia (smallpox) Vaccine:** Should not be administered in a pre-event setting to pregnant women or to women who are trying to become pregnant. If a pregnant woman is inadvertently vaccinated or if she becomes pregnant within 4 weeks after smallpox vaccination, she should be counseled regarding concern for the fetus. Smallpox vaccination during pregnancy should not be a reason to terminate pregnancy. Pregnant women who have had a definite exposure to smallpox virus (ie, face-to-face, household, or close-proximity contact with a smallpox patient) and are, therefore, at high risk for contracting the disease, should be vaccinated. When the level of exposure risk is undetermined, the decision to vaccinate should be made after assessment by the clinician and the patient of the potential risks versus the benefits of smallpox vaccination.

[15]**Yellow Fever Vaccine:** Pregnancy is a precaution for YF vaccine administration. If travel is unavoidable, and the risks for YFV exposure outweigh the vaccination risks, a pregnant woman should be vaccinated. If the risks for vaccination outweigh the risks for YFV exposure, pregnant women should be issued a medical waiver to fulfill health regulations. Although no specific data are available, a woman should wait 4 weeks after receiving YF vaccine before conceiving.

[16]**COVID-19 Vaccine:** Vaccination is recommended for all pregnant patients, those who might become pregnant, recently pregnant or breastfeeding. A growing body of evidence on safety and efficacy of vaccination indicates that benefits outweigh any potential risks. Those unvaccinated prior to pregnancy or previously received only monovalent vaccine are recommended to receive bivalent mRNA vaccine.

[17]**Zoster Vaccine (RZV):** Consider delaying vaccination until after pregnancy due to insufficient data. The live attenuated vaccine (ZVL) is no longer available.

REFERENCES

For information on individual vaccines, please see vaccine monograph at www.eMPR.com, contact company for labeling and/or call the National Immunization Hotline at 800-232-4636.

Sources: Advisory Committee on Immunization Practices (ACIP). Guidelines for Vaccinating Pregnant Women. Updated July 2022. Available at: https://www.cdc.gov/vaccines/pregnancy/hcp-toolkit/guidelines.html. Accessed May 2, 2023.

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