PARENTS PACK

MONTHLY UPDATES ABOUT VACCINES ACROSS THE LIFESPAN

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FEATURE ARTICLE

4 VACCINE CONSIDERATIONS FOR THOSE WITH CHRONIC MEDICAL CONDITIONS, INCLUDING DISABILITIES

If you ask a random group of people to define the term "disability," you will get an array of responses. Similarly, if you ask healthcare providers, lawyers and government officials what the word means in the context of their work, you will get different responses. As such, it would be difficult to provide a single answer to questions about whether people with certain chronic medical conditions are disabled or whether they should be vaccinated. However, some general considerations can help you navigate vaccine decisions for yourself or others in your family who have chronic or disabling medical conditions.

Consideration #1: Vaccine recommendations

In some cases, vaccine recommendations include guidance for specific subgroups of people. However, recommendations do not contain exhaustive lists of conditions because, like defining the word disability, circumstances vary. People with particular conditions can have different symptoms and degrees of impact, and some people have multiple, related conditions that can complicate their healthcare considerations. Because of such individual variability, the recommendations provide guidance for healthcare providers, but as with other healthcare decisions, like medications and treatments, the conversation between the provider and the patient or their family is going to provide the most specific and relevant information related to vaccine decision making for an individual.

Importantly, vaccine recommendations may more strongly encourage or discourage vaccination, or they may outline a more nuanced approach to vaccination, depending on the situation:

- **Example of increased importance of vaccination:** Some people with sickle cell disease have spleens that do not function properly or at all. This occurs in about 2 or 3 of every 10 children and about 5 of every 10 adults affected by sickle cell disease. When someone has a spleen that is not functioning, they are at increased risk for bacterial infections, like *Haemophilus influenzae* type b (Hib). Hib is a vaccine given only to children younger than 5 years of age. As such, the childhood immunization schedule offers additional guidance related to Hib vaccine for children with sickle cell disease if they did not complete the Hib vaccine series during infancy.
- **Example of discouraged vaccination:** Infants are typically recommended to get the measles, mumps and rubella (MMR) vaccine around 1 year of age. However, if a child was born lacking certain types of immune system cells, they should not get the MMR vaccine because it contains live, weakened viruses that their compromised immune system may not be able to successfully manage. This recommendation against getting a vaccine is called a *contraindication*. These children also cannot get other live, weakened vaccines, like chickenpox vaccine and a few others.
- **Example of more nuanced approach to vaccination:** Some viral infections, particularly chickenpox, can cause a condition known as Reye's syndrome if the patient is treated with aspirin or an aspirin-containing medication during recovery. Because the chickenpox vaccine contains live, weakened varicella virus, and some children receive low, daily doses of aspirin (e.g., to relieve joint inflammation if they have rheumatoid arthritis or if they have had a heart valve replacement), they have a *precaution* for receipt of the chickenpox vaccine. A precaution means that some additional considerations are warranted regarding a particular vaccine. In the case of children receiving aspirin therapy, the healthcare provider and the family will have to weigh the relative risk of getting exposed to varicella virus in the community versus through vaccination. Since the risk of getting Reye's syndrome is lower after vaccination compared with infection, the decision may be for the child to get vaccinated; however, often these children will be advised to stop their aspirin therapy for a period of six weeks after getting the vaccine to decrease the risk of developing Reye's syndrome.

To aid healthcare providers and families in navigating these types of situation-specific decisions, the childhood and adult immunization schedules include tables related to medical conditions as well as pages of notes related to such. Likewise, the "General Best Practices for Immunization" guide includes information about contraindications and precautions. You can check them out online:

- Childhood and Adolescent Immunization Schedule, Table 3 — Medical Indication
- Adult Immunization Schedule, Table 2 — Medical Condition and Other Indication
- General Best Practices for Immunization, Contraindications and Precautions

Visit the online version for links to resources:

continued >

Consideration #2: Risk of disease

When a specific condition is not outlined in the vaccine recommendations, considerations related to the risk of disease become more important. This means understanding both the likelihood of exposure to a disease in the community and whether an individual's condition puts them at greater risk of experiencing severe illness or complications if they get that infectious disease. For example, individuals with neurologic disabilities are more likely to be hospitalized when they get respiratory infections, and during COVID-19, while these individuals were infected at the same rate as others, they were *three times more likely to die from* their infections.

The reasons for increased risk associated with an infectious disease can vary. For example, people with Down syndrome often have physical changes in their airway anatomy and abnormalities in their immune systems that make them more susceptible to infections, particularly respiratory infections. Likewise, chronic conditions of a particular organ can make someone more likely to experience severe disease if they have an infection that is focused on that organ, such as increased severity of influenza in someone with asthma or chronic obstructive pulmonary disease (COPD). Their experience can either be the result of a greater likelihood of damage caused by the infection or a worsening of their existing condition. In some cases, the treatment for a condition can increase a person's risk of severe disease. For example, some steroids and other medications used to treat conditions like multiple sclerosis and lupus (among others), make the immune system less efficient at fighting infections.

Talking with your own or your family member's healthcare providers, including specialists, to understand the particular risk factors to be aware of can help with both protecting yourself or your family member and overall decision making, not just decisions related to vaccines.

Consideration #3: Effect of vaccine

Vaccine-specific considerations can also be helpful to consider when an individual's condition is not specifically mentioned in the recommendations. Two aspects of the vaccine should be considered: its safety and effectiveness.

Vaccine safety

In most cases, vaccines are made from only a few parts of viruses or bacteria, and as such, they do not typically generate immune responses that are sufficient to cause harm.

However, sometimes live, weakened versions of a virus are used to make a vaccine. Examples of routinely recommended vaccines of this type include MMR, chickenpox, intranasal influenza vaccine, and rotavirus vaccine. The oral polio vaccine was also a live, weakened vaccine. Although it is no longer used in the U.S., it is still used in some other countries. So-called "travel vaccines" that protect against yellow fever and typhoid (oral version) also include live, weakened vaccines. This group of vaccines can be of concern for people who have compromised immune systems because the way immunity is generated involves production of the virus. If someone's immune system is too weak to clear the viral infection caused by vaccination, the virus could reproduce at greater levels for a longer period, increasing the risk for rare, but severe, side effects in that individual as well as setting the stage for viral changes that could make the virus more dangerous for everyone.

Two points about the safety of live, weakened vaccines are important to consider:

- Discussions related to people with immune-compromising conditions should include whether the individual's condition makes an untoward outcome more likely — since not all immune system-related conditions have similar effects.
- If the individual can't get the vaccine because of safety concerns about viral replication, they are also likely at increased risk for severe outcomes if they are infected. As such, discussions should include how to protect them from getting infected and revisiting the relative risks and benefits of vaccination if the risk for infection increases, such as during an outbreak in the person's community.

Vaccine effectiveness

In some cases, a person's condition will prevent them from developing an adequate immune response to a vaccine. This is more often a concern with vaccines that are not live, weakened vaccines. If development of immune protection is a concern, additional vaccine doses may be recommended, or post-vaccination testing may be used to determine whether additional doses are needed. However, testing is not available to measure protection for all vaccines, and additional doses of vaccines, particularly those using parts of a pathogen, are generally not harmful.

Consideration #4: The vaccination experience

Depending on an individual's condition, vaccination may be more difficult. For example:

- If an individual has paralysis on one side of their body, receiving multiple vaccines in the functioning arm may make caring for themselves difficult for a few days after vaccination if they experience pain and swelling at the injection site.
- If someone is intellectually disabled, they may not understand why someone is giving them a needle.
- If someone is nonverbal, they may not be able to express how they are feeling after vaccination.

For these reasons, the mechanics of vaccine appointments also warrant consideration and discussion with the patient's healthcare team. A family member may be the best advocate for ensuring that vaccinations go smoothly as they are often the consistent presence across multiple appointments with different providers.

Three timepoints are important to consider for improving the vaccination experience: before, during and after the appointment. Because preparation will be based on the individual's age, condition and needs, these preparations will vary widely. You can find tips and suggestions sorted by age from infancy through adulthood in the "Age Groups and Vaccines" section of the Vaccine Education Center website.

One final note: If the family member becomes tense during vaccination appointments, the patient is also likely to become tense. In this scenario, it may be worth considering whether another family member, friend or caregiver can accompany the individual to vaccine appointments.

Conclusion

In sum, individual's vaccination needs will vary based on their condition and unique situation. To ensure that they are best protected against infectious diseases, consider and discuss vaccine recommendations, the risk of disease, the anticipated safety and effectiveness of the vaccine, and the vaccination experience.