VACCINATE YOUR FAMILY
The Next Generation of Every Child By Two

Measuring Antibody Titers: A Measure of Immunity?

Measuring titers – which commonly refers to the measuring of antibody levels in a person's blood to determine whether that individual is immune to a particular disease – does not always offer a complete picture of immunity.

1. **Immune memory, of which antibodies are one part, is created by exposing a child to a disease-causing virus or bacteria, either through natural infection or vaccination.**
   In the United States, vaccines have dramatically reduced cases of vaccine-preventable diseases. In fact, measles, rubella and polio have all been declared eliminated in this country thanks to immunizations. As a result, children today are unlikely to be exposed to these diseases. Outbreaks can happen, however, when someone travels to the U.S. from an area in the world where these diseases are still common. Only through vaccination will children be able to safely develop immune memory that will protect them in the case of an outbreak.

2. **Antibody tests require blood draws and are specific to each disease.**
   Each vaccine-preventable disease creates unique antibodies and requires a specific antibody level to protect a person from that disease. Titer tests, which are used to determine antibody levels, require drawing blood from a person. Testing antibodies against different diseases may not require multiple tubes of blood to be drawn, but they will be billed as separate tests. Titer tests therefore might take longer and cost more than giving vaccinations. It's also important to remember that many vaccines are now given in combination and cannot be separated. For example, if a child's titers for measles are tested, he or she may still need another dose of the MMR (measles-mumps-rubella) vaccine to fully protect him or her against mumps. Finally, there is no reliable test for rotavirus immunity so that vaccination series must be completed to increase the likelihood that a child is fully protected against that disease.

3. **Maternal antibodies can produce confusing results in infants.**
   Babies are born with protection from diseases to which their mothers have developed an immunity. These maternal antibodies are passed through the placenta and stay with the baby for a short period of time after birth. Because these are antibodies, and not T- or B- memory cells, the baby's immune system cannot continue to defend itself against these diseases once the antibodies leave the baby's bloodstream. That is why we vaccinate children beginning at two months of age. One maternal antibody that lasts longer, however, is measles. If you vaccinate a baby against measles prior to one year of age, the baby may not mount a response to the vaccine because he or she already has maternal antibodies present. When those antibodies leave, however, the baby is once again vulnerable to measles. Therefore, if you were to test antibody titers in a baby before 12 months of age, the baby may show antibodies against measles even though we know that baby will not be immune against the disease in a few short months.

Vaccinations are a less expensive and less traumatic way to protect babies, children and adults from dangerous vaccine-preventable diseases.

Additional Reading

1. Plotkin, Stanley A. “Correlates of Protection Induced by Vaccination.” *Clinical and Vaccine Immunology*. July 2010, p. 1055-1065.
2. Kass, Elias. “Titer Andromedon.” *NDs for Vaccines* blog. 11 February 2019. http://ndsforvaccines.com/titer-andromedon/.
3. Iannelli, Vincent. “Vaccine Titer Testing.” *Vaxopedia* blog. 27 September 2016. https://vaxopedia.org/2016/09/27/vaccine-titer-testing/.