Pregnant mom's exposure to flu vaccine kick-starts fetal immune system

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Some researchers have hypothesized that the fetus can be exposed to and mount an immune response against allergens to which the mother has been exposed, and this may have an effect on the development of allergic sensitivity (e.g. eczema and asthma) later in an infant's life. However this hypothesis has remained controversial because of an inability to detect antigen-specific T cells in cord blood. Recently, a newly developed technique known as MHC tetramer staining has facilitated the detection of antigen-specific T cells.

In the June 1 issue of the Journal of Clinical Investigation, a team of researchers led by Rachel Miller from Columbia University used this technique to study cord blood B and T cell immune responses following maternal vaccination against influenza with Fluzone during pregnancy.

The vaccination of pregnant women against influenza is considered safe and is recommended by the Centers for Disease Control and Prevention. The authors detected anti-Fluzone antibodies in approximately 40% of cord blood specimens examined. These results and further data reported in the study establish that B and T cell responses to antigens occur in utero following maternal vaccination against influenza, supporting the theory that the human neonatal immune system is not deficient or incompetent but, rather, capable of responding to environmental exposures.

These conclusions have important implications for determining when immune responses to environmental exposures begin.

Source: Journal of Clinical Investigation