

## From Mom to Baby: Antibodies and Infant Health

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*The National Coalition for Infant Health is a collaborative of more than 200 professional, clinical, community health, and family support organizations focused on improving the lives of premature infants through age two and their families. NCFIH's mission is to promote lifelong clinical, health, education, and supportive services needed by premature infants and their families. NCFIH prioritizes safety of this vulnerable population and access to approved therapies.*

Everyone knows children inherit some things from their parents: their blue eyes, their curly hair, or perhaps their love of the outdoors. Moms take [prenatal vitamins](#) and get maternal vaccines like [Tdap](#) to transfer health benefits and good antibodies to their

unborn babies. (1, 2)

However, some maternal antibodies carry risks that pregnant women should understand. Though serious dangers are rare, expectant mothers should be aware of them and prepared to discuss them with their doctors as part of their prenatal care.

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### **When Mom’s Immune System Fights Baby’s Blood Cells**

When a baby’s blood type is incompatible with his or her mother’s, sometimes the mom’s immune system sends antibodies to



“fight” the baby’s red blood cells. This rare condition, known as hemolytic disease of the fetus and newborn, **affects** between 3 and 80 pregnancies per 100,000, usually during the second or subsequent pregnancies. (3)

Severe symptoms, while extremely rare, once took the lives of thousands of infants every year. Medical progress has dramatically reduced that number. Hemolytic disease of the fetus and newborn is treatable today with fetal blood transfusions.

### When Baby Inherits Incompatible Blood Cells from Dad

Another rare disease stemming from blood-cell incompatibility occurs when a baby inherits blood platelets from his or her father. When this happens, the mom’s immune system may respond to her baby’s unfamiliar platelets as if they were attacking her, sending harmful antibodies into the womb and giving the child fetal and neonatal alloimmune thrombocytopenia.

There is no national **screening** for either blood cell-type incompatibility condition or test to **predict** their severity. The most common indicator is a **sibling** who already has it. So doctors should closely monitor expectant mothers during subsequent pregnancies and prepare for delivery and neonatal care accordingly. (4, 5)

### When Mom Has Certain Autoimmune Diseases

Sometimes harmful antibodies transferred to unborn babies have nothing to do with compatibility but result from their mothers’ immune systems. This situation is the case with congenital heart block. When a woman with an autoimmune condition like **lupus** or **Sjogren’s** syndrome gets pregnant, her body may create antibodies that attack her child’s heart as it develops in the womb. (6, 7)

Congenital heart block is **very rare**, affecting one in every 15,000-20,000 births. Thanks to ongoing advances in medical imaging technology, it is also becoming easier to diagnose. Current treatments include certain medications and the insertion of a pacemaker in the baby’s heart after the baby is born.

These conditions can happen, even if an expectant mom follows every prenatal protocol, which is why new, better and less invasive treatments are needed. The good news is that scientists are working to develop better tests and treatments – for all of these and other rare, fetal, and infant conditions.

Doctors know what to look for and test for these conditions as necessary. Women should know and ask about them to better advocate for themselves and their children.

### References:

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### National Coalition for Infant Health Values (SANE)

**Safety.** Premature infants are born vulnerable. Products, treatments and related public policies should prioritize these fragile infants’ safety.

**Access.** Budget-driven health care policies should not preclude premature infants’ access to preventative or necessary therapies.

**Nutrition.** Proper nutrition and full access to health care keep premature infants healthy after discharge from the NICU.

**Equality.** Prematurity and related vulnerabilities disproportionately impact minority and economically disadvantaged families. Restrictions on care and treatment should not worsen inherent disparities.