Birth Defects Risk Factors–Maternal Infections

| Maternal Infection | Potential Fetal Complications | Incidence of Infection in Newborns* | Maternal Prevention Strategies |
|--------------------|--|--|--|
| Toxoplasmosis | Visual defects, blindness, cerebral defects, seizures, mental retardation, hearing loss, hepatomegaly, splenomegaly, jaundice, intrauterine growth retardation, low birth weight | 1/1000 to 1/8000 live births in the USA ^{1, 2, 3} | T Avoid consumption of undercooked meats T Avoid handling soiled cat litter prior to conception or during pregnancy |
| Cytomegalovirus | Chorioretinitis, mental retardation, microcephaly, neurologic dysfunction and hearing loss | 1/100 live births ^{4, 5, 6, 7} | T Wash hands frequently and practice good hygieneT Avoid exposure to CMV+ toddlers |
| Parvovirus | Fetal myocarditis, hemolytic anemia, nonimmune hydrops fetalis, and fetal death. Confirmatory data establishing parvovirus as a teratogenic agent are lacking; there is no epidemiological information available that conclusively establishes parvovirus intrauterine infection as a cause of birth defects. | 1/3333 live births ^{8, 9, 10, 11} | T Avoid exposure to children with fifth disease (parvovirus) |
| Rubella | Visual defects, blindness, deafness, cerebral defects, seizures, lethargy/ irritability, large anterior fontanelle, hepatomegaly, splenomegaly, jaundice, cardiovascular and cutaneous defects | 1/100,000 live births ^{12, 13, 14} (congenital rubella syndrome) | T Rubella immunity at least three months before conception |

* Please note: *Incidence of Infection in Newborns* does not equal the incidence of symptomatic, affected children. In utero fetal exposure to infection does not always result in illness or congenital malformations. Statistics describing fetal exposure to maternal infection are often a combination of: 1) the incidence of the infection among newborns; and 2) the incidence of disease manifestation among affected newborns. The data, therefore, serve only as an approximation and are intended to broadly describe the impact of infectious diseases among the newborn population.

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| Maternal Infection | Potential Fetal Complications | Incidence of Infection in Newborns* | Maternal Prevention Strategies |
|------------------------|--|---|--|
| Herpes/Varicella Virus | Herpes exposure: Visual defects, blindness, cerebral defects, cutaneous lesions <u>Varicella exposure</u> : Varicella embryopathy or congenital varicella syndrome (visual defects, cerebral defects, limb defects, cutaneous lesions, extensive scarring) | Herpes: 15, 16, 17, 18, 19, 20 1/435 live births Varicella: 15, 16, 17, 18, 19, 20 1/62,500 live births | T Safe sexual practices to avoid exposure to herpes virus T Obtain vaccination against chicken pox if not contracted during childhood |
| Syphilis | Hearing loss, fetal demise with hydrops if infection is severe; if mild, abnormalities of skin, teeth, bones | 1991: 1/900 live births ²¹ (1991 surveillance data demonstrated 107.3 cases congenital syphilis/100,000 live births) 1999: 1/7,000 live births ²² (1999 surveillance data demonstrated 14.3 cases congenital syphilis/100,000 live births) | T Safe sexual practices to avoid exposure to syphilis |

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