

## VITAMIN K INFORMATION

Newborns are naturally born with low levels of Vitamin K. Rarely, a normal healthy infant may develop hemorrhagic disease of the newborn (HDN), a devastating and sometimes fatal disease due to the low levels of Vitamin K. The very rare **early** form of HDN occurs within a day of birth and is almost exclusively due to medications taken by the mother (anticonvulsants, anticoagulants, tuberculostatics and cephalosporins) which cross the placenta and interfere with Vitamin K metabolism. Data on the incidence of bleeding among newborns in this risk group varies between 2-12%.

The **classic** form of HDN develops between 2-7 days after birth, with estimated rates of 1 case in 200-400 infants. Risk factors include prematurity, traumatic birth, and delayed or poor feeding. Surgical procedures, such as circumcision, dramatically increase the incidence of HDN. This most common form of HDN can be prevented by a single oral or single injectable intramuscular (IM) dose of Vitamin K.

The **late** form of HDN occurs after the 1st week of life, with a peak incidence between weeks 3-6, although some reports cite cases presenting up to 6 months of age. Late onset HDN is the most devastating to the infant, with risk of intracranial hemorrhage, and with the potential for permanent neurological damage or death. Late onset HDN can be prevented by a single IM dose (by injection) of Vitamin K. A single oral dose is not effective, though a series of oral doses may be effective. Estimates of frequency of late HDN vary widely, with an average rate of 7 cases per 100,000 infants. Breast feeding has been cited as a risk factor for HDN, though breastfeeding advocates disagree, and counter that early and unrestricted breast feeding has a protective effect against classic HDN. This is because colostrum contains higher concentrations of Vitamin K than breast milk, and hind milk contains twice that of foremilk. Formula fed infants have an extremely low level of risk for HDN, due to the addition of Vitamin K to the formula as well as the high levels of Vitamin K found in cow's milk. This information should not be misconstrued as a recommendation to formula feed your infant, but is provided as possible evidence that oral routes of administration of Vitamin K do seem to confer protection to the infant. Vitamin K administration to the normal healthy infant is still quite controversial, though routine administration by injection is widely adopted in the United States. There is as of yet no internationally agreed-upon, or in some cases, even nationally agreed upon regimens for Vitamin K. In the meantime, it is the parents who must sift through the information available, and make a decision regarding Vitamin K administration to their newborn. Please take the time to research to your satisfaction the information available to date regarding this complex topic prior to making your selection below. A bibliography is available by request.