

## Vitamin K Prophylaxis

Partly adapted from Pomegranate Midwives

*A single supplementation of vitamin K is recommended for newborns to prevent Vitamin K Deficiency Bleeding (VKDB) also known as Hemorrhagic Disease of the Newborn.*

### Why is vitamin K important?

Vitamin K is a fat-soluble vitamin that is necessary for normal blood clotting. In adults Vitamin K is primarily made from bacteria in the gut. However, that process does not begin in infants until after birth and normal levels of Vitamin K do not occur in babies until between 6 weeks and 6 months. Regardless of the level of Vitamin K in the maternal blood, the placenta transfers only small amounts to the baby. Neither human breastmilk nor colostrums are considered good sources of Vitamin K.

In some babies, low levels of Vitamin K can make their blood less likely to clot. If the blood doesn't clot, it will lead to Vitamin K Deficiency Bleeding (VKDB) – formerly called Hemorrhagic Disease of the Newborn.

Sometimes this bleeding is visible to parents and care providers, for example if the baby is bleeding without stopping from the cord site or a scratch on their face. But sometimes, there can be internal bleeding, which can't be immediately seen from the outside until serious and potentially life-threatening damage has occurred.

The Canadian Pediatric Society recommends that all newborns receive an injection of Vitamin K within the first 6 hours of life. It has been in use in North America since the 1950s, and has reduced the incidence of VKDB to 1 in 1 million.

*Vitamin K Deficiency Bleeding may occur in apparently healthy newborns. Bleeding may be internal or external and the disease may involve severe bleeding such as intracranial haemorrhage.*

### How common is Vitamin K deficiency bleeding?

It is difficult to determine the exact incidence of VKDB since vitamin K has been used as a preventative measure for fifty years. The BC Perinatal Health Programme estimates the range of incidences from 0.1/1000 to 15/1000 depending on risk factors and feeding. Some pediatricians place the risk as high as 1/250 for exclusively breastfed infants.

VKDB usually occurs from birth up to 12 weeks of age, but the risk remains until the baby is about a year old. The most common form of VKDB occurs within the first week of life.

## **How can Vitamin K deficiency bleeding be prevented?**

A single injection of 1 mg of vitamin K intramuscularly (into the thigh muscle) of the newborn within the first few hours after birth will prevent most cases of VKDB.

A formulation of Vitamin K suitable for oral administration is not approved for use in Canada. If the oral route is chosen the infant should be given 1-2mg shortly after birth, and repeated at 1-2 weeks and at 4 weeks.

## **Are there any risks or side effects to Vitamin K?**

The only known side effects to the injection are the momentary pain, and the potential for infection or nerve damage at the injection site (as with any blood draw or injection). In the past, 2 studies linked Vitamin K injection to childhood leukemia, but these studies have been discounted by follow-up studies.

Some parents worry that the pain of the injection may interfere with breastfeeding and bonding. In order to minimize this, we use the smallest dose and the tiniest needle possible. Usually, we wait until you have a good opportunity to cuddle with your baby and have started breastfeeding. Ideally, we try and administer the injection when the baby is at the breast, in your arms, since babies feel less pain when they are nursing. Most babies tend to cry a little and then settle soon after the injection.

## **Are there risk factors for VKDB?**

The general incidence of VKDB among babies who do not receive Vitamin K is thought to be about 1 in 10,000. However, for some babies, the risk is higher than that. This includes situations where there is:

- Some medications taken during pregnancy (including: anti-convulsants, anti-coagulants, tuberculostatics and cephalosporins)
- Antibiotic use during labor
- Instrumental birth (vacuum or forceps)
- Need for resuscitation after the birth
- Bruising or birth injury
- Liver or bowel disease in the newborn
- Late onset of feeding (colostrum has a higher concentration of Vitamin K than breast milk)
- Inadequate breast milk intake
- Exclusive breastfeeding (there is more Vitamin K in formula than breast milk, however, there are many more benefits to breastfeeding whenever possible!)
- Surgical procedures after birth (doctors/mohels will not perform circumcision on babies who have not had a Vitamin K injection)
- More common in summer months
- There is some question as to whether early cord clamping increases the risk of bleeding due to fewer platelets and other factors being passed to the baby at birth

### **Are there any alternatives?**

It is possible to give Vitamin K orally. It must be administered at the first feed, then again at 2-4 weeks, and again at 6-8 weeks.

Oral Vitamin K is thought to reduce the incidence of VKDB to 4 in 1 million. The disadvantages of oral Vitamin K include that there are no long term studies on its efficacy, that it is not absorbed as well as injected Vitamin K, and there may be unreliable intake of oral Vitamin K to start with (e.g. variable absorption or regurgitation). Some also question the effect on the baby of the sugar content in certain preparations of oral Vitamin K, especially since it is given so soon after birth.

There are a number of different preparations of oral Vitamin K. If you choose to use an oral preparation, it is your responsibility to purchase it. Your care provider will administer the first dose shortly after the birth, but it will be your responsibility to administer the other doses according to the schedule. The injectable form can also be given orally.

### **Would I know if my baby might have VKDB?**

Symptoms include, but are not limited to:

- Bruises, especially unexplained bruises
- Bleeding from the mouth, nose, umbilicus, circumcision site, and anus
- Hematomas
- Blood in the urine, stool or vomit
- Poor feeding
- Prolonged bleeding from puncture sites
- Difficulty breathing
- Bleeding within the abdomen or chest
- Enlarged liver

VKDB can also cause intracranial hemorrhage. Of the babies who contract late onset VKDB (after 8 days of life), half will have severe brain damage or death as the result of intracranial bleeding.

Symptoms of intracranial hemorrhage include, but are not limited to:

- Unusual sleepiness
- Apathy
- Irritability
- Agitation/screaming
- Vomiting
- Tense fontanels
- Spasms
- Touch sensitivity
- Unusual posture

## Key Points

- Vitamin K supplementation is normally administered to the newborn within the first hours postpartum
- If parents choose to give Vitamin K orally, they should be aware that the effectiveness of this route is not well known and likely is less effective than the injected vitamin K
- If parents decline to have the Vitamin K administered to the newborn after considering the risks and benefits, an Informed Refusal should be signed.
- It is important to watch the baby for poor growth/feeding, failure to thrive, and 'warning bleeds'

## Informed Choice of Vitamin K Prophylaxis

I/we have read all of the information on the previous page and have had the opportunity to ask questions regarding the treatment options for my/our baby for prevention of vitamin K deficiency bleeding. I/we understand the risks and benefits of treatment as outlined. My/our choice for treatment is initialed below.

\_\_\_\_\_ I elect to have the vitamin K prophylaxis administered by the care provider

\_\_\_\_\_ I decline to have the vitamin K prophylaxis administered by the care provider

\_\_\_\_\_  
Client (Name)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Partner

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date