



Newborns & Vitamin K

What is Vitamin K?

Vitamin K is a fat soluble vitamin that is necessary for normal blood clotting.

Since Vitamin K is not easily passed through the placenta to the fetus, in newborns the main source is bacteria in their guts that synthesize Vitamin K. Of course, because babies are born sterile, it takes days to weeks to develop the necessary bacteria.

Why do we offer a Vitamin K supplement?

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 her 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.

Without Vitamin K supplementation, the incidence of VKDB is thought to be between 1.5% and 0.01%. (The wide variation is due to different feeding patterns and risk factors.) 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.

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.

How is Vitamin K given?

The standard is to give Vitamin K as an injection in the upper thigh, within about 1 hour of birth. The injection is made up of the active ingredient (phytonadione) and a preservative (benzyl alcohol).

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
- 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
- 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

Are there any alternatives?

Oral Vitamin K

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 midwife will administer the first dose shortly after the birth, but it will be your responsibility to administer the other doses according to the schedule. Sources: Finlandia Natural Pharmacy in Vancouver; Bastyr Naturopathic College in Seattle; Family Health Clinic in Langley; most naturopaths. The injectable form can also be given orally.

Treating for Risk Factors

While the aforementioned risk factors increase the risk of VKDB, *one third of babies who develop VKDB have no risk factors or prior warning.*

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 fontanel
- Spasms
- Touch sensitivity
- Unusual posture