

Vitamin K



NCT Information sheet

You have to make many decisions for your children during their lifetime. Deciding how, or even whether, vitamin K should be given is one of the first decisions you'll need to make after your baby is born. This information sheet explains what is known about vitamin K.

Vitamin K is needed to make blood clot. Compared with adults, babies are born with low levels of vitamin K but the amount is usually enough to stop bleeding. A few babies, though, do not have enough vitamin K to prevent bleeding problems. The risk of bleeding is highest in the first 13 weeks of life. If bleeding happens in the first few days of life, doctors call it 'classic bleeding'. If bleeding happens after this, it is called Haemorrhagic Disease of the Newborn (HDN), or Vitamin K Deficiency Bleeding (VKDB).

Bleeding can be very serious for the baby, but it is difficult to tell which babies are at risk, although some babies are thought to be at higher risk (see 'Can we pick out higher-risk babies?' below). For this reason, the Department of Health recommends that all babies are given vitamin K soon after birth. Some parents decide not to give their baby vitamin K. Vitamin K can be given by injection or by mouth, so if you want your baby to have vitamin K you will need to think about which way you would prefer.

Background

HDN is a rare but very serious disease. It affects about 1 in 10,000 low-risk babies if they are not given vitamin K. Half of all babies who bleed have a haemorrhage into their brain (intracranial bleeding). This often causes brain damage, and very often the baby dies.

In the 1950s and 1960s, it became standard practice for all babies to have an injection of vitamin K into a muscle. Later, in the 1980s, some health professionals and parents wondered if it was necessary to give vitamin K injections to every baby because HDN is so rare. Instead, single doses by mouth became popular, and some babies, if they

were not deemed to be at higher risk, were not given vitamin K at all.

A study over two years in the British Isles, published in 1991, confirmed that HDN was rare. The babies who had HDN were more likely to have liver disease or be breastfed. Then in 1990 and 1992, studies were published that suggested a possible link between injected vitamin K and childhood cancers including leukaemia. This meant more babies were given vitamin K by mouth. The number of babies with HDN went up slightly as a result, perhaps because oral vitamin K is slightly less effective than when it is given by injection.

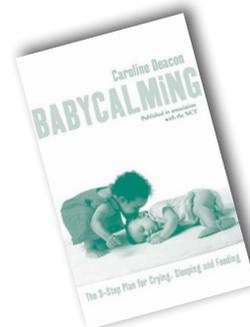
How much vitamin K should babies have?

There has never been a standard policy across the UK about the dose or way vitamin K should be given. Scientists do not know what the levels of normal newborn clotting factors should be. They are not sure if levels in adults are a good guide to newborn levels. Perhaps babies have low levels of vitamin K for reasons that we do not yet understand. Artificial baby milks have vitamin K added; this means that a baby fed on artificial milk has adult levels of vitamin K. When a new baby is given vitamin K by mouth or by injection, levels rise to many times adult levels. Scientists do not know if this is harmful.

Can we pick out higher-risk babies?

Perhaps vitamin K should only be given to babies at increased risk of HDN. Most doctors believe that babies at higher risk include: (i) babies born after less than 37 weeks of pregnancy; (ii) babies whose birth involved the use of forceps, ventouse or caesarean, where bruising occurs; (iii) babies who had trouble breathing and did not get enough oxygen when they were born; (iv) babies whose mothers are taking anti-convulsants, anti-coagulants, or drugs to treat tuberculosis.

This means that about a third of babies would be thought of as at higher risk. Some



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studies suggest that many of the babies who develop bleeding have problems with their liver. It is hard to spot these babies before they bleed.

Babies who are at higher risk of HDN benefit from vitamin K by injection. Giving vitamin K by injection probably keeps levels higher for longer as the vitamin forms a store in the muscle where it was injected.

Can vitamin K by injection increase the risk of cancers including leukaemia?

Problems from the injection are uncommon but may occur, as with any injection. The baby feels pain and on rare occasions may have an infection at the place where the injection goes in, or bleeding and bruising in the muscle. Mistakes may occasionally be made with the injection, and the wrong dose or drug may be given. To minimise this risk, the injection should only be given outside the labour room. According to some studies, there was an increased risk of cancers including leukaemia. Further studies, though, including large numbers of babies, have shown no link between vitamin K injections and cancers including leukaemia. Overall, there does not seem to be a higher risk of cancer in babies who are given vitamin K injections, and there is no convincing evidence that there is any increased risk of leukaemia.

What about breastfed babies?

According to studies, HDN was more common among breastfed babies. We know vitamin K levels are higher in colostrum (the first milk you produce) than in mature milk. Levels are also higher in the milk a baby has after some time on the same breast. In the past, babies were not breastfed till some time after birth, and strict four hourly feeding routines were usual; this probably meant that babies got less vitamin K than nature intended. Nowadays, though, babies are usually helped to feed soon after birth, thereby receiving colostrum, and mothers are encouraged to breastfeed for as long and as often as their baby wants. This should reduce the risk of HDN in babies that are breastfed.

Should the mother take vitamin K?

Giving vitamin K to mothers before and after they have their babies has been tried in small-scale studies. Vitamin K does go across the placenta and into breastmilk, but it does not seem to be enough to prevent the rare cases of bleeding.

Vitamin K for breastfed babies

If breastfed babies have vitamin K by mouth, the Government recommends that they should have three doses: two in the first week of life, and a third at one month of age.

There is no need for further doses after this.

How to decide

The evidence suggests that higher-risk babies benefit from injection of vitamin K rather than being given it orally. Breastfed babies probably benefit from three doses of vitamin K by mouth. There are risks and downsides to both ways of administering vitamin K. It is up to you to make sure the midwives and doctors who care for you and your baby know your wishes as to whether you want your baby to have vitamin K, and if so which way you would prefer.

What to watch out for

If your young baby bleeds, for example if you find blood oozing from the cord stump, or if bleeding continues for some time after the 'heel prick' blood test, or if your baby has a nose bleed or unexplained bruising, then talk to your doctor or midwife. These babies need to be checked in case this bleeding is a sign of HDN. If your baby has jaundice lasting longer than 2–3 weeks, you should talk to your doctor or midwife because this may be a sign of liver problems, which increase the risk of abnormal bleeding.

Further reading

Vitamin K – the debate and the evidence. MIDIRS Informed Choice for Professionals No. 18. Bristol: MIDIRS; 2008.

Hey E. *Vitamin K: can we improve on nature?* MIDIRS Midwifery Digest 2003;13(1):7-12

Wickham, S. *Vitamin K and the newborn.* AIMS: London; 2003.

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