

# Vitamin K Administration Guideline

## Guideline information

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### Summary of document:

This guideline is based on NICE's recommendations concerning Vitamin K for newborn babies alongside the British National Formulary (BNF). Newborn infants have very low levels of Vitamin K which is needed for normal clotting. The aim of prophylactic treatment is to avoid Vitamin K deficiency bleeding (VKDB). Haemorrhage from this can occur in a variety of sites, including the brain.

### Scope:

This document is applicable to all midwifery, medical and nursing staff caring for the newborn in hospital or community in Hywel Dda University Health Board (HDD). The guidance uses the term "woman" (pronouns she or her) to describe individuals whose sex assigned at birth was female, whether they identify as female, male or non-binary. It is important to acknowledge it is not only people who identify as women for whom it is necessary to access women's health and reproductive services. Therefore, this should include people who do not identify themselves as women but who are pregnant or have recently given birth. Obstetric and midwifery services and delivery of care must therefore be appropriate, inclusive and sensitive to the needs of those

individuals whose gender identity does not align with the sex that they were assigned at birth.

Read in conjunction with this guideline:

[www.nice.org.uk/guidance/ng201](http://www.nice.org.uk/guidance/ng201) [Antenatal care](#)

Patient information:

Include links to [Patient Information Library](#)

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Glossary of terms:

HDN Haemorrhagic Disease of the Newborn

VKDB Vitamin K Deficiency Bleeding

BNFc British National Formulary for Children

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## Scope

This document is applicable to all midwifery, medical and nursing staff caring for the newborn in hospital or community in Hywel Dda University Health Board.

## Aim

The aim of this guideline is to support health care professionals to give appropriate information and care when offering the administration of prophylactic Vitamin K to all newborns.

This guideline is based on NICE's recommendations recommending Vitamin K for newborn babies alongside the British National Formulary (BNF). Newborn infants have very low levels of Vitamin K which is needed for normal clotting. The aim of prophylactic treatment is to avoid Vitamin K deficiency bleeding (VKDB). Haemorrhage from this can occur in a variety of sites, including the brain.

## Objectives

The aim of this document will be achieved by the following objectives:

- Understanding haemorrhagic disease of the newborn and Vitamin K Deficiency Bleeding.
- Able to provide information to enable parents to make informed decision.
- Able to identify those babies who have recognisable factors and identifiable as being at higher risk of HDN/ VKDB.

## Introduction

Haemorrhagic disorder of the newborn (HDN) is a bleeding disorder that manifests most commonly in the first few weeks of life after birth.

The term haemorrhagic disorder of the newborn encompasses all haemorrhagic diseases, i.e., due to vitamin K deficiency, trauma, clotting factor deficiency, etc. When the cause is vitamin K deficiency, it is referred to as vitamin K deficiency bleeding or VKDB. This is the most common cause for HDN.

Haemorrhagic disease of the newborn can be categorised into three groups. These groups are separated based on the age of onset.

1. Early onset VKDB (within the first 24 hours of birth, can also occur in-utero or during birth.)

Early onset VKDB causes bleeding from the mouth or nose or from the stump around the umbilical cord. It can also occur under the skin or in the brain and abdomen. It is rare and almost always affects babies whose mothers have taken specific medications during pregnancy, including anti-epileptic (medicines to reduce seizures) and anticoagulants (medicines to reduce blood clotting). These medicines can affect the way the body uses vitamin K.

2. Classical onset VKDB (within the first week after birth/ 2nd through 7th day)

Classical onset VKDB causes bleeding from the mouth, umbilicus (tummy button) or rectum (back passage). Baby may vomit blood, have blood in their poo, experience nosebleeds or have unexplained bruises. If these symptoms are not treated, there may also be bleeding in the brain, which can be fatal.

Classical onset VKDB affects 1 in every 2,000 babies and is usually caused by a low level of vitamin K in a baby's diet. At birth, babies have only small stores of vitamin K. These stores build up once the baby starts feeding. If these stores become too low, the baby is at risk of VKDB and therefore needs to be checked carefully for symptoms, particularly if baby has struggled with breastfeeding.

### 3. Late onset VKDB (From 8 days but within baby's first year)

Late onset VKDB is thought to affect approximately 1 in 11,000 babies if a vitamin K supplement is not given at birth.

Late onset VKDB is a more serious problem which happens after the baby is about three weeks old and can often develop without warning. Bleeding can occur in the gut and over 50% of babies who are diagnosed with late onset VKDB will have bleeding in the brain (intracranial bleeding). About a third of these babies will suffer a serious permanent brain injury which can be fatal. Late onset VKDB may develop if the baby has undiagnosed liver disease or if they were not given vitamin K at birth.

The Department of Health, Welsh Office and the Royal College of Paediatrics and Child Health recommend that all babies are given Vitamin K by intramuscular injection as soon as possible after birth.

Expectant parents should be informed of this information. Early administration, soon after birth and within the first 24 hours of birth, can minimise the risk of early VKDB or HDN developing.

## 1. Antenatal

Parents should be informed antenatally of the evidence supporting the administration of Vitamin K to newborn infants. The administration of Vitamin K should have been discussed with the parents by the birth preferences antenatal appointment with the community midwife.

The Antenatal discussion should be documented in the maternal antenatal notes as part of the plan for birth and should contain:

- Whether parental verbal consent has been given.
- The dose and route of administration of Vitamin K.
- An account of a full discussion with parents if they decline Vitamin K administration or choose oral administration.

Parents' wishes should be reaffirmed when the mother goes into labour.

## 2. Informed Consent for the Administration of Vitamin K. -

Staff should be aware of the following key points when discussing Vitamin K administration, to ensure that this consent is fully informed.

- Vitamin K is required for the production of essential clotting factors in the liver.
- Haemorrhagic disease of the newborn (HDN) is caused by a deficiency of vitamin K.
- HDN may cause severe bleeding which may be fatal or cause severe brain damage. Bleeding can occur without warning.
- Phytomenadione /Vitamin K 1mg intramuscularly gives universal protection against HDN
- Whilst some studies in the early 1990's suggested a link between IM vitamin K and childhood cancers, subsequent research has not confirmed these findings. Such a link is therefore deemed to be unproven and unlikely. Therefore, the possibility of a link between IM vitamin K and childhood cancer should not be raised with parents when seeking consent for the administration of Vitamin K.
- It is the agreed policy therefore to advise administration of vitamin K intramuscularly. However, if some parents object to the IM administration of vitamin K then advise that may be administered orally (see dosage & administration information below). This however does NOT guarantee full protection, particularly if some doses are vomited or missed. Babies with liver disease are at particular risk.

Listed below are some important factors.

- Vitamin K deficiency occurs because of poor placental transfer, the absence of Vitamin K2 producing bacteria in the sterile fetal (and early neonatal) gut and due to liver immaturity.
- Although colostrum has high levels of vitamin K, breast milk contains LESS Vitamin K than formula milks and breast fed babies have a reduced intake in the first few days. As a result of this haemorrhagic disease of the newborn has the greatest incidence amongst breast fed babies. This is not a reason not to breast feed but a reason for Vitamin K prophylaxis.
- Vitamin K is a fat soluble Vitamin and **oral** Vitamin K is poorly absorbed from the gut when there is liver disease. Many liver diseases are not apparent for days or weeks after birth, and these babies cannot be identified when prophylaxis is first given. Clinicians should be alert to the possibility of liver disease signified by prolonged jaundice after 14 days.

### 3. Which Babies are at greater risk of bleeding?

Not all babies without obvious risk factors who are at risk of bleeding can all be easily identified.

Babies who are more recognisable as having increased risk include:

| <b>Table 1. Babies at increased Risk of HDN</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Fetal factors</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <ul style="list-style-type: none"> <li>• Premature (born before 37 weeks of pregnancy).</li> <li>• Failing to take or absorb feeds.</li> <li>• Complicated birth e.g. breech, assisted or caesarean birth.</li> <li>• Babies who are unwell in the newborn period.</li> <li>• Have liver disease (which may show itself as jaundice lasting more than two weeks, or have other symptoms e.g. pale stools and or dark urine). Babies born with a liver disorder are not able to produce bile salts required for absorption of vitamin K.</li> <li>• Have bleeding or spontaneous bruising in early infancy or who are ill from other causes.</li> <li>• Babies with malabsorption diseases such as cystic fibrosis or hepatobiliary diseases such as biliary atresia.</li> </ul> |
| <b>Maternal factors</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <p>Mothers who have been taking certain enzyme-inducing drugs that antagonise vitamin K in the baby:</p> <ul style="list-style-type: none"> <li>➤ Anticonvulsant drugs i.e. carbamazepine, phenobarbital, phenytoin</li> <li>➤ Anticoagulant therapy: Warfarin</li> <li>➤ Treatment for tuberculosis: rifampicin.</li> </ul> <p>NOTE: These babies must have prophylactic Vitamin K given parenterally (i.e. Not oral route).</p>                                                                                                                                                                                                                                                                                                                                               |

If left untreated VKDB can cause significant internal bleeding which can result in brain damage or death.

## 4. Route and Dose.

### 5.1 Intramuscular Vitamin K

The administration of an intramuscular dose of Vitamin K remains the gold standard in the prevention of classic and late VKDB and is recommended for all babies born in Wales.

It should be administered as **soon as practicable** after birth, and definitely within 24 hours. This is a ONCE only dose.

Dose is weight dependent

| All healthy infants $\geq$ 2.5kg |
|----------------------------------|
| 1mg of Vitamin K Intramuscularly |

A lower dose of Vitamin K is recommended for infants < 2.5kg and will be prescribed and given depend upon the infant's birth weight and is weigh dependent.

This should be calculated using the following formula of 400micrograms/kg (maximum doses of 1mg) and is weight dependent.

An example of dosing can be seen below:

| Infants < 2.5kg  |                        |                  |
|------------------|------------------------|------------------|
| Weight of infant | Dose at Birth          | Injection Volume |
| 1 kg             | 400micrograms (=0.4mg) | 0.04ml           |
| 1.5kg            | 600micrograms (0.6mg)  | 0.06ml           |

NOTE: Prescribers should avoid using decimal points when prescribing

Konakion ®MM Paediatric 2mg in 0.2ml solution for injection is used in Hywel Dda University Health Board.

- Note: Parental administration to premature babies weighing < 2.5kg may increase the risk for the development of kernicterus.
- If intramuscular injections are contraindicated (e.g. babies with inherited disorders of coagulation or babies with very low muscle mass) then Vitamin K may be prescribed by the Paediatricians via the oral route or by intravenous injection if the enteral route is contraindicated or unreliable.

#### 4.1.1. Prescribing for IM Vitamin K

- Intramuscular Vitamin K can be administered by the midwife as detailed in the s Midwives Exemptions (Neonatal Drugs).
- All medication administered to neonates should be checked by two qualified members of staff.
- Checking and administration of IM Vitamin K must be documented on a medication administration record.

**Injection Site:** Suitable muscle e.g. Upper thigh.

**Special Considerations:**

- The contents of the ampoules should be clear. If turbidity or phase separation present do not use.
- Local irritation may occur at the injection site but is unlikely due to the small injection volume.

**Compatibilities /Incompatibilities:**

- Do not inject with any other medicines.

## 4.2. Oral Vitamin K

The parents of a healthy, mature infant who decline intramuscular Vitamin K should then be offered oral Vitamin K.

|                  |                        |                                                                                                                                              |
|------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| First oral dose  |                        | Phytomenadione 2mg/0.2mg oral solution should be given <b>as soon as possible following birth</b> (definitely within 24 hours of birth).     |
| Second oral dose |                        | Phytomenadione 2mg should be given within the first week of life (days 4 -7).                                                                |
| Third oral dose  | Breast fed             | A further third 2mg oral dose of Phytomenadione will be required if the infant is still being breast fed ( ±"top up") between days 21 to 28. |
|                  | Exclusively Bottle fed | Infants that are receiving formula only by days 21 to 28 <b>DO NOT</b> require a third oral dose of Phytomenadion.                           |

NOTE: If the infant spits or vomits within three hours of administration of oral Vitamin K, a further dose should be given.

### 4.2.1. Responsibility for Administration Oral Vitamin K

Responsibility for Administration of Oral Vitamin K

In Hospital

- At Birth: The midwife will administer vitamin K orally.
- At 4-7 days: The midwife will administer vitamin K orally. Details of these doses will be documented on the prescription chart and in the notes.

Not In Hospital.

- At birth: The community Midwife will administer vitamin K orally.
- A prescription of the further 2 doses of Vitamin K will need to be prescribed
- At 4 -7 days: The parents can be shown how to administer the second dose of Konakion. The vitamin K can be given to parents if it is anticipated parents will administer at one month.
- At 1 month (only if exclusively breast fed): The community midwife will administer the third dose, unless the parents are happy to do so.

#### **4.2.2. Prescription for Oral Vitamin K**

- An outpatient prescription for appropriate number of ampoules (depending on method of feeding) should be given to the parent prior to discharge.
- Checking and administration of any oral doses of Vitamin K should be documented on a medication administration record.

#### **4.2.3. When Oral Vitamin K is not recommended.**

The oral route is not appropriate for high risk, sick, or premature infants. In addition, the manufacturers do not recommend this route for babies born to mothers or birthing persons who are taking carbamazepine, phenobarbital, phenytoin, rifampicin or warfarin at the time of delivery.

- In breast fed babies, all babies should have a further dose as Konakion® MM Paediatric 2 mg should be given at 1 month of age (BNFc)
- HDD only stock the Konakion® MM brand of Phytomenadione which contains glycolic acid, which is derived from beef. Vegetarians and vegans may not feel comfortable giving this to their baby. Please see below for alternatives.

### **4.3. Vegan Vitamin K**

- Vegan alternatives to Konakion® MM Paediatric are limited,
- One such alternative is Neokay capsules, but availability is often limited.
- Ideally the decision to use an alternative should be made in the antenatal period to allow staff to discuss with pharmacy and confirm whether Neokay will be available for the birth date.
- The Neokay contents are made of coconut but do contain a small amount of gelatine in the capsules and although care can be taken to avoid ingestion of this, parents need to be made aware.

#### **4.3.1. Vegan Vitamin K Oral Prophylaxis in healthy neonates, including healthy preterm babies.**

If Neokay is available to order from pharmacy, it is a prescription request item and will need to be ordered in the antenatal period to determine availability.

### **Neokay capsules 1mg:**

The contents of the capsule are made with coconut oil but the capsule does contain gelatine so to avoid ingestion of this, the following should occur;

- The contents of a single Neokay capsule should be administered by cutting the narrow tubular tip off the capsule and squeezing the liquid into the baby's mouth.
- The oral drops will only be effective at reducing the risk of VKDB if the baby absorbs the doses they are given. Recommend giving the baby their oral vitamin K drops immediately after a feed of breast milk or formula, because the fat in the milk helps the vitamin K to be absorbed.

Vitamin K has a bitter taste. Another dose should be given if the first dose is spat out or the baby is sick within three hours of the dose being given.

#### • **Exclusively breastfed babies:**

The administration of 1mg Neokay by mouth at birth protects healthy term babies from the risk of bleeding due to vitamin K deficiency in the first week of life.

Note- Evidence to date suggests that for babies who are being exclusively breast-fed, a **dose of 1mg once weekly for 12 weeks offers the best protection against late vitamin K deficiency bleeding**

## **5. Supporting parents who may decline Vitamin K prophylaxis.**

Parents of healthy term babies have the right to refuse consent for Vitamin K prophylaxis by any or all routes. However, it is important to explore the reasons why a parent may decline and to ensure that they are correctly informed of the risks of Vitamin K deficient bleeding and the potential for serious long term morbidity and mortality.

If a parent wishes to decline Vitamin K administration via any route after discussion with a midwife, a neonatologist (Tier 2 or above) should be requested to attend to support information sharing and exploration of any issues with the parents.

Approximately a third of babies with HDN/ VKDB will experience severe bleeding without showing early symptoms. Although it is not possible to identify every baby who is at risk of VKDB, there are warning signs. Recognising these warning signs and acting upon them quickly will allow prompt identification of VKDB and increase the likelihood of treatment being effective.

## 6.1 Warning Signs of Vitamin K Deficiency Bleeding

Advise parents to contact midwife, health visitor or GP if baby:

- Is having feeding difficulties. Baby may be getting enough nutrition but may not be building up enough vitamin K in their liver. If parents have chosen not to give baby a vitamin K supplement, they always have option to reconsider their choices if baby is having feeding difficulties in the first couple of days after birth.
- Has persistent or late jaundice.
- Jaundice is common in the first few days after birth, but if it carries on or develops later it can be a sign of problems with baby's liver, even baby has received a vitamin K supplement. Babies with jaundice may be sleepy and less interested in feeding. Advise parents to contact their midwife, health visitor or GP urgently if baby is not gaining weight properly, has pale stools (poo) or dark urine, or is ill in any way, or if they have any concerns.
- Baby is **sleepier** or fussier than usual.
- Vomits or has diarrhoea.
- Has a bulging around the fontanelle.

**Advise they seek urgent medical advice, call 999 for an ambulance or take baby to the nearest emergency department if:**

- Baby has unexpected and unexplained bleeding or bruising anywhere on their body. Site of bleeding include umbilical cord, nose or mouth or there may be blood in their stools, making them darker than usual. Many babies who later suffer bleeding in the brain have had prior minor bleeds from the skin, nose or mouth.
- Fits or seizures.
- Respiratory issues.
- Baby is unarousable.

**Advise parents that:**

- If baby does not receive vitamin K at birth, make sure the healthcare team who may be caring for the baby know this. Giving vitamin K can increase the baby's levels of vitamin K if they are low and stop internal bleeding if it has occurred.
- If baby has had antibiotics during the first few days of life, advise parents to inform the healthcare team caring for baby in the first month are aware if baby has not had vitamin K.

**Always advise that parents seek urgent medical attention if there are any suspicions or concerns that the baby is unwell.**

See [Appendix 1](#) – Patient information factsheet for Vitamin K for parents.

## References:

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[The production of menaquinones \(vitamin K2\) by intestinal bacteria and their role in maintaining coagulation homeostasis - PubMed](#)

[Konakion MM Paediatric 2 mg/0.2 ml solution for injection - Summary of Product Characteristics \(SmPC\) - \(emc\)](#)

## Appendix 1 Antenatal Information Factsheet Vitamin K

This leaflet explains what vitamin K is, and its importance in preventing bleeding problems in newborn babies. If you would like further information to support your decision making, please contact your named midwife. Public Health Wales recommends giving vitamin K to all newborn babies because of its proven benefits in reducing the risk of Vitamin K Deficiency Bleeding (VKDB)

### What is vitamin K?

Vitamin K occurs naturally in food (especially red meat and some green vegetables). It is also produced by friendly bacteria in our gut. We all need it as it helps to make our blood clot and to prevent bleeding problems. All babies are born with low levels of vitamin K. As babies mature and feed well, they begin to produce their own supply of vitamin K from natural bacteria found in their bowel. They can also get a small amount of vitamin K from their mother's breast milk and it is added to formula milk.

### How do low levels of vitamin K affect a newborn baby?

A very small number of babies suffer bleeding problems due to a shortage of vitamin K.

This is called Vitamin K Deficiency Bleeding (or VKBD) for short.

### When can this happen and how could VKDB affect my baby?

VKDB can be categorized into three groups. These groups are separated based on the baby's age when it begins:

- **Early onset VKDB (within the first 24 hours of birth)**

Early onset VKDB causes bleeding from the mouth or nose or from the stump around the umbilical cord. It can also occur under the skin or in the brain and abdomen. It is rare and almost always affects babies whose mothers have taken specific medications during pregnancy, including anticonvulsants (medicines to reduce seizures) and anticoagulants (medicines to reduce blood clotting). These medicines affect the way the body uses vitamin K.

- **Classical onset VKDB (within the first week after birth)**

Classical onset VKDB causes bleeding from the mouth, umbilicus (tummy button) or rectum (back passage). Your baby may vomit blood, have blood in their poo, experience nosebleeds or have unexplained bruises. If these symptoms are not treated, there may also be bleeding in the brain, which can be fatal.

Classical onset VKDB affects 1 in every 2,000 babies and is usually caused by a low level of vitamin K in a baby's diet. Check your baby carefully for symptoms, particularly if your baby has struggled with breastfeeding.

- **Late onset VKDB (after the first week but within your baby's first year)**

Late onset VKDB is thought to affect approximately 1 in 11,000 babies if a vitamin K supplement is not given at birth.

Late onset VKDB is a more serious problem which happens after the baby is about three weeks old and can often develop without warning. Bleeding can occur in the gut and over 50% of babies who are diagnosed with late onset VKDB will have bleeding in the brain (intracranial bleeding). About a third of these babies will suffer a serious permanent brain injury which can be fatal. Late onset VKDB may develop if the baby has undiagnosed liver disease or if they were not given vitamin K at birth.

(Please read the 'Warning signs of VKDB' section on the bottom of this factsheet so that you know what to look out for).

## **How can Vitamin K Deficient Bleeding be prevented?**

The Department of Health, the Welsh Government, NICE and the Royal College of Paediatrics and Child Health recommend that all newborn babies are given vitamin K to reduce the chances of dangerous internal bleeding.

### **How is the Vitamin K given?**

The most effective treatment is a single dose of vitamin K injected into the baby's thigh muscle shortly after birth.

Vitamin K by mouth (orally) is also effective in most cases but your baby will need to have a number of doses in the first month of life. Vitamin K by mouth is not advised for high risk, sick or premature babies.

For a small number of babies, vitamin K may not be effective when given by mouth. This may be because the baby has difficulty absorbing the vitamin or if the baby vomits after the baby has been given vitamin K. If baby spits out the vitamin K or vomits within three hours of having oral vitamin K it will need to be repeated.

Vegan alternatives to Vitamin K given are limited. One such alternative is Neokay capsules, but availability is often limited. Ideally the decision to use an alternative should be made in the antenatal period to allow staff to discuss with pharmacy and be able to confirm whether Neokay will be available for your baby for the birth date.

The Neokay contents are made of coconut but do contain a small amount of gelatine in the capsules although care can be taken to avoid ingestion of this

It is recommended that Neokay is given weekly up until baby is 12 weeks old.

## **Are some babies at a higher risk of Vitamin K Deficient Bleeding?**

Babies are more likely to have VKDB if they:

- Are premature.
- Had a complicated birth e.g. requiring the use of forceps or ventouse, where bruising has occurred.
- Need to have surgery.
- Are unwell for any reason.
- Find it hard to absorb feeds.
- Have liver disease.
- Cannot absorb fat-soluble vitamins due to diarrhoea, coeliac disease or cystic fibrosis.
- Are babies of mothers taking anti-convulsant medications.
- Are babies of mothers with significant liver disease.

It is impossible to identify all babies who will definitely be high risk.

1 in every 4 babies who develop VKDB have none of the problems above.

## **What happens if my baby developed VKDB?**

VKDB occurs in one in every 8,500 full term babies if no vitamin K supplement is given. The risk for exclusively breastfed babies is higher around 1:1200. Many more of these babies - up to 1:80, may show excess bleeding following minor surgical procedures such as circumcision.

In the whole of the UK, if no vitamin K was given, 10 to 20 of the 800,000 babies born each year might be brain damaged as a result of a bleed into the brain, and five babies would die of this condition.

## **Can vitamin K be harmful?**

A concern was expressed in the early 1990s that there was a link between vitamin K supplements and leukaemia or other cancers. A careful review of the data from the UK Children's Cancer Study Group in 2003 found no evidence to support this.

## **When do I need to start thinking about this?**

During your pregnancy you should consider whether your baby should receive vitamin K, and if so, how it should be given.

Vitamin K for your baby should be given as soon as possible after birth. If you would like your baby to have vegan vitamin K by mouth, please let your midwife know in your pregnancy so the vitamin K can be ordered ready for your baby.

## **What if I say no to vitamin K for my baby?**

You may decide that your baby should not receive vitamin K, or you may prefer a modified course.

Parents of healthy term babies have the option to decline to give their baby Vitamin K. Following birth, a midwife and a neonatologist (baby doctor) will offer to explore with you the reasons why you may wish to decline to give your baby vitamin K. They will support you to ensure that you have the correct information for your decision making. It is your decision as to whether your baby receives extra vitamin K and how it is given, and the purpose of this factsheet is to help you make an informed decision.

In these circumstances, the risk of bleeding is increased, and you must be aware of the warning signs of Vitamin K Deficiency Bleeding.

We may recommend you reconsider your decision if your baby is born prematurely, is unwell, or has feeding problems or if there are other unforeseen circumstances where additional vitamin K is beneficial.

**Please note:** If your baby needs to have a surgical procedure, such as the separation of a tongue tie, they may need to have at least one vitamin K injection or two doses of oral vitamin K. If you have any questions or concerns about this, please ask your midwife, paediatrician or GP.