



Vitamin K shot hesitancy: Information for providers

What is the current New York State requirement for newborn vitamin K prophylaxis?

New York State regulations, Section 12.3 of Title 10, state that “[it] shall be the duty of the attending physician, licensed midwife, registered professional nurse, or other licensed medical professional attending the newborn to assure administration of a single intramuscular dose of 0.5–1.0 mg of vitamin K1 oxide (phytonadione) within six hours of birth in accordance with current standards of medical care.” Since 1961, the American Academy of Pediatrics has recommended an intramuscular dose of vitamin K to prevent vitamin K deficiency bleeding.

Is oral vitamin K an acceptable substitute for the injection?

No. Oral vitamin K for newborns does not meet the requirements of New York State regulation and is not recommended by the American Academy of Pediatrics or the American College of Obstetricians and Gynecologists.^{1,2} Furthermore, oral vitamin K is not approved by the United States Food and Drug Administration for use in newborns.

What are the risks and benefits of the vitamin K shot, and why is it important?

The intramuscular injection of vitamin K is safe. The risks associated with the vitamin K shot are similar to the risks associated with any other shot: pain, bruising, or swelling at the injection site.³ However, it effectively prevents vitamin K deficiency bleeding.

Where do parents get information about vitamin K?

There are relatively few resources for parents that are produced by reputable clinical, academic, or government organizations. Some of the resources include information about oral vitamin K because it is used in parts of Europe, and some states allow its use. As stated above, oral vitamin K does not meet New York State regulation requirements, nor is it approved for use in newborns by the United States Food and Drug Administration. Also, there are many sources of incorrect information or misinformation. Parents might use social networks and peer groups, forums, and unregulated websites to access information – but, some parents report that they consulted a medical provider.⁵ There are many sources of incorrect information or misinformation, such as social networks and peer groups, forums, and unregulated websites.

Why are parents hesitant or concerned about the vitamin K shot?

Parents fear adverse side effects. However, vitamin K is safe, and it has been safely administered since 1961. Also, parents may not understand what vitamin K deficiency bleeding is, or why vitamin K is needed to protect their babies from vitamin K deficiency bleeding, or how dangerous vitamin K deficiency bleeding can be. When parents are worried about pain, it might be helpful to suggest holding or breastfeeding their baby during or immediately after the shot is given.⁶

Some of the concerns that can make a parent hesitant about the vitamin K shot at birth are: pain, exposure to preservatives, an excessive dose, and potential side effects.⁵

Some parents want to limit early exposure to preservatives. One of the ingredients found in the vitamin K shot is benzyl alcohol, a preservative. However, benzyl alcohol is a common ingredient in many medications.³ Benzyl alcohol is proven to be harmless in small doses, such as what is found in the vitamin K shot.

Similarly, some are concerned about potential excessive dosage. The amount of vitamin K in the intramuscular dose is in fact higher than the daily requirement of vitamin K. However, it is important to justify the reason for the higher dose. Babies have low levels of vitamin K at birth, and the current intramuscular dose will supply their need for vitamin K until they have another source from their diet.³

Some parents are concerned by a previously reported link between the vitamin K shot at birth and childhood leukemia. This study has since been disproved by numerous studies across different countries.⁶

A comprehensive, evidence-based Questions and Answers document for the most common misconceptions and myths about vitamin K prophylaxis, has been published by the University of Michigan C.S. Mott’s Children’s Hospital, and it is listed under additional educational resources for parents.

What are some effective strategies when working with parents who are reluctant or nervous about vitamin K?

Parents want what they believe is best for their baby. To provide them with the most effective and comprehensive information, it is important to assess the parents' knowledge about the vitamin K shot. Providers should provide factual information about the risks and benefits of receiving the shot. A provider should respectfully inquire and address parents' medical concerns by providing individualized education, while giving scientific evidence to address myths and misinformation. Studies report an increase in the acceptance of the vitamin K shot after receiving education about vitamin K deficiency bleeding.⁷

Why is it important to address parental vitamin K hesitancy?

While vitamin K deficiency bleeding is rare in the United States, it can be fatal. Also, there is a known association between vitamin K refusal and subsequent hesitancy and refusal to immunize.^{4,8} Hesitancy during the newborn stage offers the provider an opportunity to learn about the parents' concerns. It is important to take the time to provide adequate information about intramuscular vitamin K, and provide additional education around vaccinations to increase likelihood of future immunization adherence.⁹

Additional educational resources for parents

The New York State Department of Health has developed a fact sheet for expectant parents. This document answers some of the most frequent questions that have been identified by researchers.

- https://health.ny.gov/community/infants_children/vitamin_k/index.htm

In addition, the University of Michigan has developed a Questions and Answers document that provides more information on frequently asked questions, and addresses misinformation that is often shared through social media and social networks.

- www.med.umich.edu/1libr/Pediatrics/vitaminKQuestionsAndAnswers.pdf

¹ <https://pediatrics.aappublications.org/content/112/1/191> (full position reaffirmed February 2015)

² <https://www.acog.org/Clinical-Information/physician-faqs/-/media/3a22e153b67446a6b31fb051e469187c.ashx>

³ www.cdc.gov/ncbddd/vitamink/faqs.html

⁴ www.ncbi.nlm.nih.gov/pmc/articles/PMC5526450/pdf/nihms882898.pdf

⁵ www.ncbi.nlm.nih.gov/pubmed/26371205

⁶ www.med.umich.edu/1libr/Pediatrics/vitaminKQuestionsAndAnswers.pdf

⁷ www.ncbi.nlm.nih.gov/pubmed/26711469

⁸ www.ncbi.nlm.nih.gov/pubmed/25873083

⁹ <https://publications.aap.org/journal-blogs/blog/5904>