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Evidence for the Vitamin K Shot in Newborns – Exclusive Q&A with Rebecca Dekker on her New Research

March 18th, 2014 by [Sharon Muza](#)



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[Evidence Based Birth](#), a popular blog written by occasional Science & Sensibility contributor Rebecca Dekker, PhD, RN, APRN, has just published a new article, “[Evidence for the Vitamin K Shot in Newborns](#)” that examines Vitamin K deficiency bleeding (VKDB)- a rare but serious consequence of insufficient Vitamin K in a newborn or infant that can be prevented by administering an injection of Vitamin K at birth. I had the opportunity to ask Rebecca some questions about her research into the evidence and some of her conclusions after writing her review. – Sharon Muza, Science & Sensibility Community Manager.

Note: Evidence Based Birth website may be temporarily unavailable due to high volume loads on their server. Please be patient with the site, I know the EBB team is working on it.

Sharon Muza: Why was the topic of Vitamin K an important one for you to cover and why now?

Rebecca Dekker: Well, I try to pick my articles based on what my audience wants me to cover. I heard over and over again that people were confused and concerned about Vitamin K. A lot of parents told me they weren't sure if they should consent to the injection or not. There was just so much confusion, and even I didn't understand what the Vitamin K shot was all about. I didn't know what I was going to do at the birth of my own child last December. It seemed like there was a need for an evidence-based blog article to clear up all the confusion once and for all.

So as usual, I dove in head first into the research, with no up-front biases one way or the other. I just wanted to get to the bottom of this mess!

SM: Were you surprised by what the current research showed about the rates of VKDB, and the apparent significant protection offered by the Vitamin K shot?

RD: I knew that Vitamin K deficiency bleeding (VKDB) was rare, but I didn't realize—until I started reading the research—how effective the shot is at basically eliminating this life-threatening problem.



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I was surprised by how low the rates of VKDB are in European studies, and by how VKDB is more common in Asian populations. I was also surprised by the fact that we don't track VKDB in the U.S. and we have no idea how many infants in the U.S. would develop VKDB if we stopped giving the shot.

The number of infants in Tennessee last year who developed VKDB is very concerning to me. They had 5 cases of life-threatening VKDB in Nashville during an 8 month period—7 if you count the infants who were found to have severe Vitamin K deficiencies but didn't bleed. None of these infants received Vitamin K, mostly because their parents thought it was unnecessary and weren't accurately informed about the risks of declining the shot.

So the Tennessee situation makes me worry that maybe there is something about our diets in America, or our genetics, that makes us at higher risk for VKDB if we decline the Vitamin K shot for our newborns. But we don't know our underlying risk, because we don't track these numbers on a nationwide scale.

SM: What was the most surprising finding to you in writing this article?

RD: That the research on Vitamin K for newborns goes back as far as the 1930's and 1940's... that we have literally eight or nine decades of research backing up the use of Vitamin K for newborns. I was under the impression that we were using the shot without any supporting evidence. That turned out not to be the case.

I even forked out the money to buy the landmark 1944 study in which a Swedish researcher gave Vitamin K to more than 13,000 newborns. He observed a drastic decrease in deaths from bleeding during the first week of life. I am usually able to read all of my articles through my various subscriptions, but this article was so old the only way I could read it was to buy it. It was pretty eye-opening. There was some really good research going on back then on Vitamin K. About 15 years later, the American Academy of Pediatrics finally recommended giving Vitamin K at birth. We know that it takes about 15 years for research to make its way into practice. It looks like the same was true back then.

But there is this misconception that “Vitamin K doesn’t have any evidence supporting its use,” and I found that belief is totally untrue. There is a lot of evidence out there. People have just forgotten about it or not realized it was there.

SM: What was the most interesting finding to you in writing this article?

RD: That the two main risk factors for *late* Vitamin K deficiency bleeding (the most dangerous kind of VKDB that usually involves brain bleeding) are **exclusive breastfeeding** and **not giving the Vitamin K shot**.

Parents who have been declining the shot are the ones who are probably exclusively breastfeeding. So their infants are at highest risk for VKDB.

SM: What do you think is the biggest misconception around the Vitamin K shot?



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RD: How do I choose which one? There are so many misconceptions and myths. I’ve heard them all. The scary thing is, I’ve heard these misconceptions from doulas and childbirth educators—the very people that parents are often getting their information from. I’ve heard: “You don’t need Vitamin K if you aren’t going to circumcise.” “Getting the shot isn’t necessary.” “Getting the shot causes childhood cancer.” “Getting the shot is unnatural and it’s full of toxins that will harm your baby.” “You don’t need the shot as long as you have delayed cord clamping.” “You don’t need the shot if you had a gentle birth.”

Informed consent and refusal isn’t truly informed if you’re giving parents inaccurate information.

SM: What do you think are the sources of information that families are using to make the Vitamin K decision and where are they getting this information from? Do you think families trust the evidence around this?

RD: This is what I did—I googled “Vitamin K for newborns” and read some of the blog articles that pop up on the front page of results. It is truly alarming the things that parents are reading. “Vitamin K leads to a 1 in 500 chance of leukemia.” “Vitamin K is full of toxins.” Most of the articles on the front page of results are written by people who have no healthcare or research background and did not do any reference checking to see if what they were saying was accurate. It’s appalling to me that some bloggers are putting such bad information out there.

If parents don’t trust the evidence, it may be because they have read so many of these bad articles that it’s hard to overcome the bias against Vitamin K. All I can say is, given the number of bad articles on the internet about Vitamin K, I can totally understand the confusion people have.

I mean, even I was confused before I started diving into the research! I truly went into this experience with no pre-existing biases. I just wanted to figure out the truth. If even I—the founder of Evidence Based Birth—didn't know all the facts about Vitamin K, then I think that's a pretty good sign that most other people don't know the facts, either!

To help remedy the amount of misinformation out there, I'd like for the new Evidence Based Birth article to make it towards the top of the Google results so that parents can read evidence-based information on Vitamin K and check out the references for themselves.

SM: In your article, you state “The official cause of classical VKDB is listed as “unknown,” but breastfeeding and poor feeding (<100 mL milk/day) are major risk factors.” – Why, if breastmilk offers little to no protection against VKBD, is “poor feeding” seen as a risk factor? What should it matter?

RD: Poor feeding is a risk factor for classical VKDB, which happens in the first week of life. There are limited amounts of Vitamin K in breastmilk overall, but there is more Vitamin K in colostrum than in mature milk. So infants who don't receive enough milk in those first few days may be at higher risk. This connection was first observed by Dr. Townsend in Boston in the 1890's. He figured out that he could help some infants with early bleeding by getting them to a wet nurse. These infants weren't getting enough milk from their biological mothers, for whatever reasons.

SM: Are families in the USA receiving proper informed consent around the issue of Vitamin K and the risks and benefits of the different options available to their children at birth (injection, oral, or declination of both?)

RD: I'm not sure, but my gut reaction is that I don't think parents are giving informed consent. In my case, when my first child received the shot, I wasn't even told that she got it! They just did it in the nursery when they separated me from my daughter after birth. It would have been nice to receive some education on it and be given the chance to consent. Maybe if healthcare providers had been properly consenting parents all along, we wouldn't have so much misinformation out there! By taking parents out of the equation and doing the shot in the nursery without their knowledge, that certainly doesn't help educate the public!

I don't think we are doing a very good job with the parents who decline the shot, either. If you read the part of my article where I wrote about the epidemic in Nashville, all of the parents refused the shot, but none of the parents gave *informed* refusal. All of them had been given inaccurate information about the shot, so they couldn't make a truly informed decision. Can you imagine what it must be like for the people who gave them the inaccurate information? That would be so terrible to know that your misinformation may have led to the parents making the choice that they did.

SM: What should the information look like during the consent process so that families can make informed decisions about having their newborns receive Vitamin K in injection or oral form.

RD: I think [the CDC has a really great handout](#) that can be used for informed consent. If parents want more detailed information and references, or if they have concerns that the CDC handout doesn't answer, then the [Evidence Based Birth blog article](#) covers most of the research out there.

Also, here is [a link to a peer-reviewed manuscript](#) that is free full-text, and although it is written at a higher level, it does a good job addressing the myths about the Vitamin K shot.

SM: Are you aware of any adverse effects from either the injection or the oral administration of Vitamin K, other than bruising, pain and bleeding at the injection site if an injection pathway is chosen?

RD: Not if given via the intramuscular method. Some bloggers out there look at the medication information sheet and immediately start pointing out some scary sounding side effects. It's important to realize that those side effects refer to *intravenous* administration. Giving a medication intravenously (IV) is a whole different ballgame than giving an intramuscular shot (IM). In general, medications have the potential to be a lot more dangerous if they are given IV—because when medications are given IV they go straight to the heart and all throughout the circulation in potent quantities. For newborns, the Vitamin K is given IM, not IV, which is a much safer method of giving medications in general.

SM: In a childbirth education class, with limited time and a lot of material to cover, what message do you think educators should be sharing about the Vitamin K options.

RD: If I had to sum it up in a minute or less, I would share that babies are born with limited amounts of Vitamin K, and Vitamin K is necessary for clotting. Although bleeding from not having enough Vitamin K is rare, when it happens it can be deadly and strike without warning, and half of all cases involve bleeding in the baby's brain.

Breastfed babies are at higher risk for Vitamin K bleeding because there are very low levels of Vitamin K in breastmilk. Giving a breastfed infant a Vitamin K shot virtually eliminates the chance of life-threatening Vitamin K deficiency bleeding. The only known adverse effects of the shot are pain, bleeding, and bruising at the site of the injection.

Right now there is no FDA-approved version of oral Vitamin K, although you can buy a non-regulated Vitamin K supplement online. A regimen of three doses of oral Vitamin K1 at birth, 1 week, and 1 month reduces the risk of bleeding. Although oral Vitamin K1 is better than nothing, it is not 100% effective. It is important for parents to administer all 3 doses in order for this regimen to help lower the risk of late Vitamin K deficiency bleeding.

If parents want to use the oral method, or decline the Vitamin K altogether, I would encourage them to do their research and talk with their healthcare provider so that they truly understand the risks of declining the injection. I would tell them to take caution when reading materials online because there is a lot of misinformation out there and you don't want them making important healthcare decisions based on faulty information.

SM: How should a childbirth educator (or other professional who works with birthing women) respond when asked by parents “Why does breastmilk, the perfect food for babies, not offer the protection that babies need? It doesn't make sense?”

RD: Breastmilk *is* the perfect food for babies! But for some reason—we don't know why—Vitamin K doesn't do a very good job of going from the mom to the baby through breastmilk. Our diets today are probably low in Vitamin K (green leafy vegetables), which doesn't help matters, either.

It's possible that maybe there is some reason we don't know of that could explain why Vitamin K doesn't cross the placenta or get into breastmilk very well. Maybe the same mechanism that keeps Vitamin K out of breastmilk is protecting our babies from some other environmental toxin. Who knows?

If it helps, look at it this way—don't blame it on the breastmilk! Blame it on the Vitamin K! That pesky little molecule doesn't do a good job of getting from one place to the other. So we have to give our infants a little boost at the beginning of life to help them out until they start eating Vitamin K on their own at around 6 months.

SM: If formula feeding is protective, because of the addition of Vitamin K in the formula, why wouldn't oral dosing of Vitamin K be effective for the exclusively breastfed infant – is it just a compliance issue?

RD: Part of the failure of oral Vitamin K is compliance—not all parents will give the full regimen of oral doses, no matter how well-intentioned they are. But research from Germany shows that half of the cases of late VKDB occur in infants who completed all 3 doses. It's thought that maybe some infants don't absorb the Vitamin K as well orally. Vitamin K is a fat-soluble vitamin, and it needs to be eaten with fatty foods or fatty acids in order for it to be absorbed. So maybe some of those infants had the Vitamin K on an empty stomach. Or maybe they spit it up!

SM: Do you expect a strong reaction from any particular segment of professionals or consumers about your findings?

RD: No more so than when I published the Group B Strep article!

I anticipate that some people may think that the shot is too painful for newborns, and they may theorize that this pain will cause life-long psychological distress. Unfortunately there really isn't any evidence to back that claim up, and so I can't really address this theory. But I have spoken with parents and nurses, and they say that having the baby breastfeed while the shot is administered can drastically reduce the pain of the shot.

I would encourage parents who are worried about pain to weigh these two things: the chance of your infant experiencing temporary pain with an injection, versus the possibility of a brain bleed if you don't get the shot.

SM: Any last thoughts that you would like to share with Science & Sensibility readers on this topic?

RD: You can be a natural-minded parent... interested in natural birth and naturally healthy living, and still consent to your newborn having a shot with a Vitamin K to prevent bleeding. These things are not mutually exclusive. One hundred years ago, infants with Vitamin K deficiency bleeding would have died with no known cause. But today, we have the chance to prevent these deaths and brain injuries using a very simple remedy. The discovery of Vitamin K and its ability to prevent deadly bleeds is a pretty amazing gift. I am thankful to all of the researchers and scientists who used their talents and gifts and got us to this point, where we now have the power to prevent these tragedies 100% of the time.

I want to thank Rebecca Dekker for taking the time to answer my questions I always look forward to Rebecca's new articles, and appreciate the effort she puts into preparing them, Have you had a chance to read Rebecca Dekker's new post on the [Evidence for Vitamin K Shots in Newborns](#)? Will you be changing what you say to your clients or patients based on what you read or based on this interview with Rebecca? What are your thoughts on this information? Are you surprised by anything you learned? I am very interested in your thoughts – please share in our comments section. – SM

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1. [Cara Montgomery](#)
March 18th, 2014 at 10:07 | [#1](#)
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Great blog today, thank you. As a childbirth educator brings a lot of things to mind for me. 1) The amount of inaccurate information available to parents and attempting to overcome this. 2) How serious the ramifications can be passing on incorrect information to parents. 3) The importance of helping parents asses risk for themselves. 4) The sometimes contradictory feeling I get when explaining to parents that on one hand our bodies and babies know best (birth, breastfeeding, etc...) and on the other hand that some interventions can ben necessary and save lives. Lots to think about today!



2. [Billee Wolff](#)
March 18th, 2014 at 11:01 | [#2](#)
[Reply](#) | [Quote](#)

Thank you for this article, it really clears up so much misinformation I have read and believed.



3. [Jessica](#)
March 18th, 2014 at 11:36 | [#3](#)
[Reply](#) | [Quote](#)

Thanks for this information. I refused vitamin K with my last two babies because I assumed that with gentle births there would be no need for it. Apparently I was wrong. But with my last baby, I developed blood clots post partum. Is vitamin K still a good idea for infants whose mothers have known clotting issues?



4. [Deena Blumenfeld E-RYT, RPYT, LCCE](#)
March 18th, 2014 at 11:47 | [#4](#)
[Reply](#) | [Quote](#)

Rebecca ~ Thank you for countering the myths surrounding the Vit. K shot. I appreciate your realistic perspective. I find that any dogmatic way of parenting (e.g. “natural”) doesn’t leave the parent room to be flexible... Though I

suppose that's the definition of dogmatic! I encourage my parents not to be dogmatic with regards to their pregnancies, childbirth or parenting. So, again, thank you. As always, I will share your article on my social media outlets.



5.

[Lori Daley](#)

March 18th, 2014 at 11:47 | [#5](#)

[Reply](#) | [Quote](#)

Thank you, Rebecca Dekker, once again! Whether we (speaking for birth professionals) already have an opinion or not, I think we should all know this information to be able to pass onto clients/students who are asking us what we think or know about the possible risks of getting or refusing the vitamin K shot following birth. This was a lot of work, I know it! Thank you again for clearing the myths surrounding this after-birth intervention and bringing light to fact that parents are so often bombarded with misinformation on the net, even perpetuated sometimes by doulas and childbirth educators. Well worth the \$5 to purchase the pdf as a handout for clients and classes. And I love your 1 minute summary above! 😊



6.

[Rebecca Dekker](#)

March 18th, 2014 at 12:40 | [#6](#)

[Reply](#) | [Quote](#)

Hi Cara and Deena, thank you for your comments!! Cara... I totally concur. Definitely food for thought. I feel that way about my blog articles all the time, which is why I have such high standards for what I will publish, and why I send it to experts in the field for review. I really don't want to put inaccurate information out there. And Deena— that is a really good point. I think flexibility is important. The most outspoken opponents of Vitamin K are often the most dogmatic and leave little room for flexibility.



7.

[Rosemarie](#)

March 18th, 2014 at 13:04 | [#7](#)

[Reply](#) | [Quote](#)

Thank you for all the research you did and for sharing this with all of us in the childbirth field. As a birth doula and childbirth educator who teaches evidence based practices, I can now share these findings to help couples make the best and safest decisions for their babies.



8.

lex

March 18th, 2014 at 13:59 | [#8](#)

[Reply](#) | [Quote](#)

Hi,

Glad to hear its not all negative towards things that help our babies live.

I've just read it on facebook and someone has left a comment there saying about women having vit k in their diets etc...

doesn't matter for some women like me, i depend on medical stuff, i have epilepsy and take drugs which require me to have doses of vit k and obv best for baby too because of the effect the drugs have.

People need educating, its half the problem these days people make "trend" choices and not informed and educated choices.



9.

Kathy Harvey

March 18th, 2014 at 15:17 | [#9](#)

[Reply](#) | [Quote](#)

Very interesting Rebecca and thank yo for your time and preparation. Very worthwhile investing a few dollars. How do you see a babies biological blueprint as fundamentally faulty when there must be reasons why nature provides relatively low levels of vit k in early days? Your page 10 no. 3 seems incomplete as there is discussion around these “low levels” at birth being why foetal intracranial haemorrhage is very rare? More research please?



10.

Infinite Sovereign

March 18th, 2014 at 15:40 | [#10](#)

[Reply](#) | [Quote](#)

On Merck’s package insert for AquaMEPYTON it states that “typically” severe reactions occur after IV use, but it does not say that they happen exclusively as a result of IV administration. What is the risk of anaphylaxis from intramuscular injection as compared to the risk of death from VKPD? It should also be noted that Hospira’s version of the vit k shot contains aluminum, which concerns me greatly. It is hard to make a risk/benefit evaluation without knowing this information.

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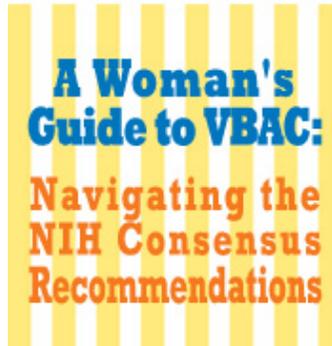
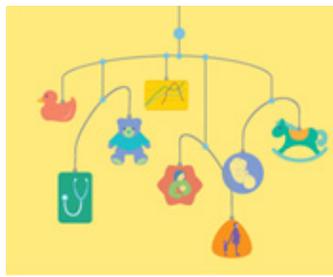
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