

So Cute. But I'm So Worried.

written by Eugene L. Heyden, RN. | February 20, 2017

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(He looks a little worried, too.)

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There's a real story here. I don't like it at all. It's a sad story—and not just a sad story. It's a tragedy.

One by one, too many of our precious African American babies are off to a bad start

in life. And I know why. I will tell you. Unfortunately, this story is one of those never-ending stories, unless we do something about it. I have something in mind.

Likely, the story starts before birth.

*“It is well known that vitamin D deficiency is prevalent among pregnant women and pregnant women have significantly lower levels of 25(OH)D than nonpregnant control women. **Approximately two in three pregnant women in the United States** have suboptimal vitamin D status, with an **even higher prevalence among black and Mexican-American women.**” (Lerchbaum and Obermayer-Pietsch, 2012, emphasis added)*

Vitamin D deficiency during pregnancy is fraught with danger. This danger threatens women of any color, any ethnicity. But for mothers with darker skin, vitamin D deficiency is a whole lot easier to come by, making the African American pregnancy—and the unborn baby involved—at heightened risk for some very bad things. I would say **fetal loss** is a bad thing. I would say **preeclampsia** is a bad thing. I would say **gestational diabetes** is a bad thing. I would say **fetal growth restriction** is a bad thing. To all this, let me add an increase in the risk of **maternal death**.

The bad things mentioned above are unquestionably associated with maternal vitamin D deficiency. And the crazy thing: this is a problem so easy to detect and so easy to resolve.

“Vitamin D deficiency is often clinically unrecognized, however laboratory measurements are easy to perform, and treatment of vitamin D deficiency is inexpensive.” (Grundermann and von Versen-Höynck, 2011)

Vitamin D during pregnancy performs some very valuable roles. It is not this little nutrient we sort-of need. It is an essential hormone. In the context of pregnancy, this vitamin—this hormone—performs a multitude of beneficial actions, many that promote a successful pregnancy. It should be in adequate supply. Vitamin D helps protect both baby and placenta against infection. It allows the blood vessels of the placenta to develop normally, reducing the incidence of placental insufficiency and a serious medical condition called preeclampsia. Vitamin D has so much to offer. For

many unborn babies, it is the gift of life. However, for many, vitamin D deficiency is a sentence of death. And as tragic as this is, it gets worse. There is a tragedy within a tragedy. This death sentence is disproportionately carried out.

“In 2005, black mothers were 2.3 times as likely as white mothers to experience an intrauterine fetal death or death of their infant.” (Bodnar and Simhan, 2010)

In the research paper quoted directly above, Bodnar and Simhan make a strong case that maternal vitamin D deficiency is behind the disparity between black and white pregnancy complications and outcomes, with greater risk of death and complication occurring in those with darker skin.

The reasons why vitamin D deficiency is more prevalent in the African American community are fairly straightforward. **1) Darker skin**—developed to withstand exposure to more intense sunlight—needs between 10 to 50 times more sun exposure than light skin to generate an equivalent amount of vitamin D (Bodnar and Simhan, 2010). Who among us takes the time to generate thousands of IUs (International Units) of vitamin per day by sun exposure, as was common in the distant past? **2) Diet** is also a big factor. Many foods high in vitamin D—such as seafood, reindeer meat, and walrus blubber—are replaced with fast or convenience foods with limited vitamin D content. A reliance on convenience foods is more prevalent in the African-American community. **3) Dairy avoidance** also contributes to vitamin D deficiency. Our society fortifies milk and dairy products with vitamin D. Thus, milk and dairy have become significant sources of vitamin D. However, a large percentage of black individuals are lactose intolerant and are unable to benefit from this important resource. **4) Supplementation** with vitamin D, at least in adequate amounts, occurs less frequently in blacks as opposed to whites. **5) Obesity** rate is higher in African Americans than in whites. Obesity is a risk factor for vitamin D deficiency because fat cells act as storage depots for vitamin D, such that the more you have, the more likely vitamin D will wind up being stored rather than becoming available for immediate use by the mother as well as her developing baby. The following should be of no surprise:

“Not surprisingly, there is a striking black-white disparity in the prevalence of vitamin D deficiency.” (Bodnar and Simhan, 2010)

And given all that vitamin D has to offer during pregnancy, is it any wonder that so many little ones who just happen to be black, are off to a bad start in life?

“Compared to white women, black women are at 1.5- to 2.5-fold greater risk of delivering a preterm birth, or very preterm birth, as well as a term low birth weight infant.

“Black infants are four times as likely as whites to have been exposed to in-utero vitamin D deficiency. They also die at a rate more than twice that of their white counterparts, and experience more frequent morbidity.” **(Bodnar and Simhan, 2010)**

Are you getting the picture? Black babies on average are disproportionately off to bad start in life. Vitamin D deficiency is a big part of the picture. So what is being done about the problem? Basically nothing. The professional excuse for doing basically nothing goes something like this: “We need further studies to elucidate the issues more clearly before we can arrive at a consensus on what steps to take in the future.” Clearly, there is no sense of urgency and no real action plan to eliminate vitamin D deficiency during pregnancy—any pregnancy, black, brown, or white. And we wonder why avoidable death and complication rates remain basically unchanged, decade after decade.

Now I don’t know for sure if the little guy up there was born premature or not, but I do know he made it out alive! Many do not. And let’s give the little guy a break and assume that Mom was vitamin D sufficient during pregnancy, offering him a great start in life. If true, that would be nice. But even if he was born vitamin D sufficient, this likely has not lasted.

Separated at birth from both mother and her circulating level of vitamin D, a newborn baby only has about an 8-week supply of vitamin D on board, even under the best of circumstances (Dawodu and Wagner, 2007). So if baby is nursing, Mom better be taking a lot of vitamin D (or making a lot by sun exposure) or her breast milk will be deficient. Studies have shown that it takes at least 2,000 IU—better yet 4,000 IU to 6,000 IU of vitamin D intake per day—or precious little vitamin D will show up in breast milk (Hollis and Waggoner, 2004; Hollis et al., 2015). Knowing that this level of supplementation is unlikely, experts highly recommend that the

nursing baby be supplemented with vitamin D. If not, **rickets**, a condition characterized by bone weakness and deformity, may develop.

In the USA and in this day and age, rickets is more likely to occur in the exclusively breast-fed African American baby. If the African American baby is taking formula, there is at least enough vitamin D included to prevent rickets, at least for a while. Surprisingly, rickets can develop outside of infancy, even in the adolescent (Wagner et al., 2008). A child complaining of muscle pain, often occurring in rickets or a related condition called **osteomalacia**, should be investigated for vitamin D deficiency. Actually, every child—black, white, or somewhere in between—should be investigated for vitamin D deficiency, but our African American children are clearly at a greater risk for rickets and osteomalacia than children with lighter skin.

According to FamiliesUSA.org, compared to ethnic groups with lighter skin, African American babies have twice the rate of **infant mortality** and are twice as likely to die from **SIDS** (Sudden Infant Death Syndrome). With respect to SIDS, *“Bone pathology in sudden infant death syndrome (SIDS) was investigated by British researchers, who found 87% of the SIDS babies less than one year of age showed histopathological [tissue pathology] of rickets.”* (Post and Ernst, 2013) FYI: Rickets is almost exclusively caused by vitamin D deficiency. Go ahead, connect the dots.

As the African American baby advances beyond infancy, FamiliesUSA report a doubling of the risk of **asthma** and a three-fold increase of **death from asthma** as compared with a white child. Vitamin D deficiency has clearly been associated with an increased risk of asthma. There is more bad news. And this is big!

Obesity is 73% higher in black children as compared to white children, as reported by FamiliesUSA. Obesity leads to many health problems including **diabetes**. And speaking of diabetes, **type 1 diabetes** (formerly known as juvenile-onset diabetes) rates in black children have apparently surpassed the type 1 diabetes rates in white children (source: Endocrinology Today, 2006) Vitamin D deficiency is clearly a risk factor for type 1 diabetes. *“Astonishingly, they found that children who received vitamin D supplementation at the recommended 2,000 IU/d [day] had reduced the risk of developing diabetes type 1 by 80%.”* (Holick, 2002) So, may I ask, why do policy makers recommend a mere 600 IU of vitamin D in infancy and childhood?

And if the infant/child is obese, just where do you think most of the vitamin D will go? Off to be stored in the fat cells, that's where it will go! It won't go into the battle against type 1 diabetes, that I can tell you.

There are other diseases that occur more frequently in our African American kids than in our white kids, many associated with vitamin D deficiency. **Multiple sclerosis** readily comes to mind. This neurological disease causes devastation on so many fronts, including various degrees of visual impairment and an impaired ability to initiate and control body movement. WebMD reports: "*Black Americans may be at higher risk for multiple sclerosis than whites, according to study findings that contradict a widely held belief that blacks are less likely to develop the neurological disease.*" (Preidt, 2013-2015) And yes, little black kids get multiple sclerosis, too. I have a case report on my desk outlining 6 cases of multiple sclerosis in African American kids, ages ranging 8 years old to 17 years old. (see Zelink et al., 1991) How sad. No! How tragic! Multiple sclerosis is clearly associated with vitamin D deficiency. Listen up!

"Early sun avoidance seems to precede the diagnosis of multiple sclerosis (MS). This protective effect is independent of genetic susceptibility to MS. (Islam et al., 2007, emphasis added)

Early life sunlight exposure and dietary vitamin D supplementation diminish the risk of MS. (Chaudhuri, 2005)

*Living above the 35 latitude [above Los Angeles or Atlanta, for example] for the first 10 years of life imprints on a child for the rest of his or her life a **100% increased risk** [double the risk] of developing multiple sclerosis no matter where they live thereafter. (Holick 2006, emphasis added)*

Another study checked the vitamin D intake in more than 187,000 women from two separate cohorts (study groups) . . . and found a 40% reduction in the risk of multiple sclerosis among women who used supplemental vitamin D. (Arnson et al., 2007)

Mice that were pretreated with 1,25(OH)₂D₃ [the active form of vitamin D] before they were injected with myelin to induce a multiple-sclerosis like disease were

immune from it. (Holick, 2005)

Given all the damage and heartache caused by vitamin D deficiency, can you see why I'm so worried about the little guy up there? But it really doesn't matter if a child is black or white (or somewhere in between), any little guy or gal can become vitamin D deficient unless decisive actions are taken to prevent it.

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