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Hold the Sunscreen: Your Body Needs That Vitamin D

Problems of vitamin D deficiency, is slathering on the sunscreen actually not such a good idea. You are listening to ReachMD, The Channel For Medical Professionals. Welcome to The Clinician's Roundtable. I am Dr. Lauren Streicher, your host, and with me today is Dr. Michael F. Holick. Dr. Holick is a Ph.D. MD and is a Professor of Medicine, Physiology and Biophysics. He is the Director of the Bone Healthcare Clinic and the Heliotherapy Light and Skin Research Center at Boston University Medical Center. Dr. Holick has authored over 500 scientific articles. His book is titled The UV Advantage. Today we are discussing the impact of vitamin of D deficiency.

DR. LAUREN STREICHER:

Welcome Dr. Holick.

DR. HOLICK:

Hello its a pleasure to be here.

DR. LAUREN STREICHER:

Do you think that most physicians are aware of the vital role vitamin D plays in prevention and treatment of not only metabolic bone disease, but other conditions or do we still have a lot of work to do increase awareness?

DR. HOLICK:

I think we have a lot of work to do to increase awareness. In fact, I think a lot of physicians actually have been getting the information from their patients because there is so much information out in the press about the health benefits of vitamin D. Often a patient will go to their physician and ask for a blood level of vitamin D which we recommended to be the 25-hydroxyvitamin D and the physician initially would say, well why would you want that?

DR. LAUREN STREICHER:

And hopefully will know what to do with it when they get the results?

DR. HOLICK:

Exactly and so when they do get it and they find that the patient is deficient, it is kind of like a wake-up call and now they begin ordering it on more of their patients. Today the assay for 25-hydroxyvitamin D is the most ordered assay in the United States by physicians. So message is finally getting out there, but we still need to really educate all medical and healthcare professionals about this issue.

DR. LAUREN STREICHER:

And what do you says is the minimum appropriate level. I have seen anywhere from 28, 30, 32 and much higher?

DR. HOLICK:

Yeah, what we recommend is that everybody be above 30 nanograms per mL for their 25-hydroxyvitamin D and I think that some of your listeners maybe thinking, well why not order the active form, which is 125-dihydroxyvitamin D which some doctors will order and the reason is that the active form of vitamin D is actually normal or elevated when you are vitamin D deficient. So you will only want to order 25-hydroxyvitamin D and it should be greater than 30 nanograms per mL and up to 100 nanogram per mL is perfectly safe.

DR. LAUREN STREICHER:

And at what age should it first be measure. I think if we go back historically vitamin D was recognized in the pediatric population with rickets, but now we are thinking of it very much as an adult problem. So at what do you think it is appropriate to get a baseline level?

DR. HOLICK:

It's a very good question. We estimate now that 50% of the world's population is vitamin D deficient. So if you start ordering tests on all of these people, it would overwhelm our healthcare system. So I think a much better approach is to make sure that is to follow the American Academy of Pediatrics' recent recommendation that during the first year of life from the child is born, they should be on 400 units of vitamin D a day. My recommendation for children over the age of 1 and all adults be on a minimum of 1000 international units of vitamin D a day as a supplement along with a multivitamin that contains 400 units of vitamin D.

DR. LAUREN STREICHER:

And particularly you talk about patients coming and asking their doctors for this, certainly among my patients, there is a growing movement to maintain extremely high levels of vitamin D. So when is it too much of a good thing. You know, vitamin D of course is fat soluble, so when is there a concern for toxicity?

DR. HOLICK:

Again excellent question and you always worry about people being over enthusiastic about something that if a little is good, a lot is better. In the case of vitamin D, happily you have to take more than 10,000 units a day to worry about toxicity and typically toxicity is

associated with a high blood calcium and so in fact, vitamin D intoxication is one of the most rarest of medical conditions, but with that said, my philosophy is to keep my patients between 30 and up to 100 nanograms per mL of 25-hydroxyvitamin D is perfectly safe. Doesn't matter if you are 35 or 55. Right now in my opinion there is not yet enough evidence to warrant people to worry that it'd be above 30 or 35 nanograms per mL.

DR. LAUREN STREICHER:

So where does this come from. I have not seen any literature to support that either, but yet I certainly have patients that come in and say, my understanding is that I need to have a level of 100 or 120. Do you know where that is coming from?

DR. HOLICK:

Yes, I do. There are some people out there that have web sites that have been promoting vitamin D for health. They are relatively new to the...

DR. LAUREN STREICHER:

Do they by any chance sell vitamin D?

DR. HOLICK:

Well either they sell vitamin D, some of them do, but many of them don't, but they have various other connections that potentially could profit from it, but sometimes like I said a little knowledge is a dangerous thing and so you should not be above 100 nanograms per mL. There is absolutely no evidence that it is of additional benefit. There is data though that if you look at say the Nurse's Health Study out of Harvard, one study showed that women that had a blood level of 48 nanogram per mL on average reduced their risk of developing breast cancer by 50%. So those are the kind of data that are coming out to suggest that yeah maybe it should be 40 or 50, but we don't know for sure whether that's absolutely true. What we do know though is above 30 will maximize vitamin D's effect for many health benefits.

DR. LAUREN STREICHER:

Before we ge to the problems that can result from vitamin D deficiency, can you just run through the risk factors for vitamin D deficiency because we know that lack of sun exposure is not the only one.

DR. HOLICK:

Sure, I mean your major source of vitamin D even if the dermatologists don't like hearing this, it is your casual exposure to sunlight. Almost everybody's 25-hydroxyvitamin D level peaks at the end of the summer and is at the lowest level at the end of the winter. Major causes are obesity because the fat sequesters the vitamin D, so obese people need 2 to 3 times more vitamin D to maintain a normal vitamin D status. Patient's fat malabsorption syndrome, patients have increase in skin pigmentation, so African-Americans extremely high risk, because when they are outdoors they are walking around with a sun protection factor of at least 8 that means they are reducing ability to making vitamin D in their skin by more than 90%, wearing sunscreen all the time, avoiding all direct sun exposure are

just some of the causes. We also know that aging decreases the ability of your skin to make vitamin D. What we show that even elderly if they get outside for about 10 or 15 minutes of arms and legs couple of times a week is still enough to satisfy their body's requirement.

DR. LAUREN STREICHER:

Unless you are in Chicago. No I mean seriously there are areas of the country that you don't get sun and I wonder if there have been studies that look at geographically differences in vitamin D?

DR. HOLICK:

There have been studies and you will be surprised at the results, but it is not a surprise to me with the message of sun protection, avoiding all direct sun exposure that's been out there unchallenged for 30 years even in Florida it has been reported that more than 40% to 50% of Floridians, both children and adults are vitamin D deficient. Its true that if you live above Atlanta, Georgia, you cannot make any vitamin D in your skin in the wintertime and all the more reason to be aggressive in taking your vitamin D supplement.

DR. LAUREN STREICHER:

Let's talk a little bit about how to correct vitamin D deficiency. I have a seen a number of protocols for my patients that have very, very low levels, you know, 10, 12, 14. What is your recommendation?

DR. HOLICK:

So I recommend and we published this in Lancet back in 1998 that if you give 50,000 units of vitamin D2 which is the only pharmaceutical form of vitamin D in the United States once a week for 8 weeks to a normal weighted individual, it will usually raise your blood level by 100% and you will get them above 30 nanograms per mL, but you don't correct the cause of the vitamin D deficiency. So many of these patients will return in 6 months and be deficient again. So I put them now on 50,000 units of vitamin D2 every other week.

DR. LAUREN STREICHER:

And then in between, nothing in between?

DR. HOLICK:

No, you don't need it and we showed now, we have 6-year data to show that these patients all maintain blood levels above 30 and they are usually between 40 and 60 nanograms per mL. For those that don't want to go to their doctor to get the vitamin D2 capsule or they don't want to take it every 2 weeks, you can go to your local pharmacy and buy a vitamin D supplement, 1000 units to treat the deficiency, I typically recommend taking 2000 to 3000 units a day for 2 to 3 months and then to prevent recurrence is to take about 1500 to 2000 units of vitamin D a day.

DR. LAUREN STREICHER:

If you are just joining us, you are listening to The Clinician's Roundtable from ReachMD, The Channel For Medical Professionals. I am Dr. Lauren Streicher and I am speaking with Dr. Michael Holic, the Director of the Bone Health Care Clinic and The Heliotherapy Light and Skin Research Center at Boston University Medical Center and we are discussing the impact of vitamin D deficiency.

Dr. Holick my understanding is that vitamin D deficiency is now definitively associated with some cancers. Could you please talk about which cancers are associated with vitamin D deficiency and how definitive that association is?

DR. HOLICK:

First of all I will let your readership know that I wrote a review in New England Journal of Medicine in July 2007 that outlines a lot of the benefits of vitamin D and also they can go to my web site vitamindhealth.org and on there actually are the PDFs of many of my articles including this New England Journal Review and we know now that you are at increased risk of developing colon, prostate, breast, esophageal cancers, non-Hodgkin's lymphoma. There is probably about 15 cancers have now been associated with vitamin D deficiency.

DR. LAUREN STREICHER:

And how significant is that impact?

DR. HOLICK:

Well there is evidence to suggest that if you increase your vitamin D intake to at least 1000 international units of vitamin D a day that you could reduce your risk of developing colorectal cancer by as much as 50%. There was a study done in the Nurse's Health Study out of Harvard that women taking the most vitamin D reduce their risk of developing breast cancer by about 50%.

DR. LAUREN STREICHER:

Its amazing to me that there is not a greater awareness of this, because this is significant and you don't hear much about it.

DR. HOLICK:

That's correct and in fact there was a women's health initiative came out of course with the conclusion that vitamin D and calcium was of no benefit in reducing risk of colorectal cancer, but what they didn't appreciate from their data set which I then pointed out to them and published as a letter in New England Journal of Medicine that women that had a blood level of less than 12 nanograms per mL and followed for 8 years had a 253% increased risk of developing colorectal cancer when compared to women that had a blood level of over 20 or 25 nanograms per mL.

DR. LAUREN STREICHER:

Well there are a lot of issues I think with that women's health initiative study as we look at it more closely?

DR. HOLICK:

No question and also there was a very nice study done out of Omaha, Nebraska by Dr. Heaney's group and Lapi had published that showing that postmenopausal women taking 1100 units of vitamin D a day along with 1500 mg of calcium a day for 4 years reduced their risk of developing all cancers by 60% compared to women that were not taking the supplement.

DR. LAUREN STREICHER:

What about the impact of vitamin D on autoimmune disease?

DR. HOLICK:

Its always been known that if you live at a higher latitude especially if you live above Atlanta, Georgia for the first 10 years of your life, you increase your risk of developing multiple sclerosis by 100% for the rest of your life. There was a study done in Finland where they showed that during the first year of life children taking 2000 units of vitamin D a day and then followed for 31 years reduced their risk of type 1 diabetes by 78%. There is evidence that rheumatoid arthritis, women taking the most vitamin D reduced their risk by 44% and another study done here out of Harvard showed that women taking more vitamin D more than 400 units a day reduced their risk of developing multiple sclerosis again by about 42%.

DR. LAUREN STREICHER:

And what about heart disease?

DR. HOLICK:

Again, I mean I know that your listeners maybe saying my god, how can vitamin D be doing all these things, but there is really good science to back up all of this because for example we know that vitamin D is now important in regulating cell growth and inhibiting cancer cell growth. We know that vitamin D plays an important role in immune function and decreasing risk of infectious diseases some of which we believe may be responsible for autoimmune diseases and the same is true for heart disease. We now know that vitamin D is critically important in regulating heart muscle function, in regulating smooth muscle function in your blood vessels and regulating the blood pressure hormone renin and as a result it was reported recently that you have a 50% higher risk of having a heart attack if your are vitamin D deficient. You have a more than 100% increased risk of dying of a heart attack, of your first attack if you are vitamin D deficient. You have about a 78% higher risk of having peripheral vascular disease if you are vitamin D deficient. So there is now a clear relationship with vitamin D deficiency and increased risk of heart disease, dying of a heart attack and even stroke.

DR. LAUREN STREICHER:

Could you finally finish by telling us a little bit about your book?

DR. HOLICK:

The book, The UV Advantage is for the consumer audience and in there though I am told because physicians have read it and they like it equally well and because I really provide all of these benefits that we have talked about and I explained it in a way that's very understandable and I have a simple prescription for how to prevent and treat vitamin D deficiency and at the end of the book I actually even provide tables for anyone anywhere on the globe anytime of the year for any skin type to be able to be exposed to some sunlight to satisfy their body's requirement, but separately Springer and Umanapress published a book that was edited by me on the health benefits of vitamin D that's more geared toward healthcare professionals and physicians and a new edition will be coming out this year.

DR. LAUREN STREICHER:

I would like to thank our guest Dr. Holick for making us more aware of the role vitamin D plays not only in metabolic bone disease, but cancer, diabetes, heart disease, and many other medical conditions.

I am Dr. Lauren Streicher, you have been listening to The Clinician's Roundtable from ReachMD, The Channel For Medical Professionals. Please visit our web site at reachmd.com which features our entire library through on-demand podcasts or call us toll-free with your comments and suggestions at 888-639-6157, that is 888-639-6157. Thank you for listening.