

EPISODE 5: Foot Care in Diabetes | Part 1: Preventative Foot Care

Rita Kalyani: Welcome to ***Diabetes Deconstructed***, a podcast for people interested in learning more about diabetes. I'm your host, Dr. Rita Kalyani, at Johns Hopkins. We developed this podcast as a companion to our Patient Guide to Diabetes website. If you want a trusted and easy to understand resource for diabetes, or to listen to previous podcasts, please visit ***Hopkins Diabetes Info dot org***.

This is Part 1 of our series on diabetes and foot care. Today we're delighted to speak with Dr. Nelson Maniscalco about the importance of proper foot care in people with diabetes. Dr. Maniscalco practices podiatry with Johns Hopkins Community Physicians at Greater Dundalk and East Baltimore Medical Center. Dr. Maniscalco received his undergraduate degree from Syracuse University and earned his medical degree from Barry University School of Podiatric Medicine. He then completed a three-year surgical residency program at Jersey Shore University Medical Center in Neptune New Jersey, in which he was trained in surgical areas including reconstructive surgery, joint replacement, foot and ankle trauma, fracture management, arthroscopy and wound management and limb salvage. Following the completion of his residency, Dr. Maniscalco completed a one-year fellowship in Podiatric Dermatology at Luke's University Health Network in Allentown, Pennsylvania. Welcome, Dr. Maniscalco.

Nelson Maniscalco: Thank you for having me. It's a pleasure to be here.

RK: We are so pleased to have you here today for you to share your expertise. To get us started, I was wondering if you could tell us why are people with diabetes more likely to develop foot problems than people without diabetes?

NM: Sure, that's an excellent question. So, diabetes has a number of varying effects on the body, many of which affect the lower extremity. Some of the more common things and complications that we see as they pertain to the feet and the ankles are decreased circulation due to stiffening of the arteries, decreased vasculature for healing wounds, decreased sensation in the feet, whereas people who normally would be able to feel something if it fell into their shoe, or if they got a cut or a scrape or something might not necessarily be able to acknowledge that because there's a degree of numbness there, which is known as diabetic neuropathy. And those big complications kind of mandate different and more appropriate care of the foot in a patient with diabetes.

RK: Is it true that everyone with diabetes is at risk of foot problems? Or is it only those that have complications like you described?

NM: Everyone at baseline does have an increased risk of developing complications by virtue of the fact of being diabetic. However, those who develop complications, whether they be a result of longer periods of hyperglycemia, or the sugar has been high for a long time, those are more likely to develop something like a foot ulcer or an amputation than someone who is very well controlled.

RK: Now when you talk about foot ulcer, do you mean in foot infection?

NM: Ulcer is a simple term that just refers to a wound or an open area of the skin on the foot. Roughly up to one in four patients with diabetes will experience one of those in their lifetime. Infection is an entirely different type of thing that can happen as a result of an open ulceration when bacteria get in. And that brings it up to a more serious event that requires more prompt management.

RK: You know, I often hear patients when they're diagnosed with diabetes, for the first time, worry about having an amputation of their limb or losing a toe. How commonly does that happen now in the United States?

NM: Amputation in diabetic patients is not extremely common. However, it is not unheard of happening, particularly in patients who have poorly controlled diabetes or patients who are not consistently caring for their feet in the appropriate recommended way, or maintaining their appropriate follow-ups with their providers to help to keep their feet safe from complications such as ulcers, infection, and amputation.

RK: Would you say it's fair to emphasize the importance of prevention then in trying to prevent foot ulcers and then prevent amputations in routine care? And how would you describe preventative methods for people with diabetes? What would you usually recommend?

- NM:** Absolutely, and I think with diabetes, preventative measures are really the best way to prevent these complications from happening; and it can severely limit the risk of amputation, infection, and ulceration just by following some simple guidelines to keep the feet protected from injury, especially in the setting of vascular disease or neuropathy or numbness in the feet. So some of the basic guidelines is what I kind of tell every one of my patients when I meet them for the first time when they are referred for diabetic foot exam. The first and foremost, you need to check your feet every single day. That's something that seems very simple to do. And it's a no-brainer, but you'd be surprised. There are some times when people want to unfortunately come in with an ulcer and I will be the first person to see it and they will not even be aware that it is there because of numbness and other limiting factors. So checking the feet is really one of the more important parts of routine diabetic care. Always wearing a good supportive shoe to support the architecture of the foot itself and protect it from injuries from the environment. Avoiding things like walking barefoot; that can put your feet at risk for harm from other things. They're all very, very important. And when it comes to caring for the feet at home, in terms of using sharp instruments near your feet to take care of basic things like toenails and calluses, those can all be much more risky tasks if your diabetes is complicated by something that would impair your wound healing or put you at risk for infection or amputation. So those are things that are evaluated at each follow-up visit with me to ensure that say foot care is available to that patient.
- RK:** We often say that diabetes self-management really is the cornerstone for people with diabetes, managing what they eat, their exercise, their medications, all the things that go into good self-management behavior. But I think the emphasis on inspecting feet really is something that we could probably do a better job at relaying to patients. When you say inspect feet, what do you mean by that, as a podiatrist? What would you recommend a person at home look for when they're looking at their feet, that could be of concern, that they should then tell their healthcare provider about?
- NM:** Sure. So the very first thing I like to emphasize is just getting to know your feet a little bit better than you do now. Everyone's foot's a little bit different, but you should be familiar with the color of your skin, the pigmentation of your skin, whether your nails have a certain shape to them, and also the architecture of your foot itself. So that if anything were to change, you would be aware of that. Things that we would look for that would be a little more concerning would be if there's color change in an area that wasn't previously there, such as redness, if there was swelling of a part or the whole foot or both feet that wasn't there prior. That's something that just with consistent monitoring, you would be able to pick up and then seek more prompt treatment for. And then just looking out for things that might not necessarily have been there previously, when you checked your feet the day before. If you saw your podiatrist six months ago, and you didn't have any complications of numbness, vascular disease, anything like that, you look at your feet one day, and you notice there's a scrape there, a cut and you don't know how it got there. It might be a good idea to call your podiatrist so that you can be re-evaluated. Maybe there is some numbness that has unfortunately developed there. Or at the very least have any type of wound evaluated to make sure it does not get infected and is managed the appropriate way.
- RK:** That's really helpful to know. Thanks for going into that level of detail. Because I know at times, it's hard to relay that exactly to look for beyond you know, breaks in the skin. And so it's really helpful to hear from you.
- NM:** Sometimes patients do have challenges inspecting their feet, sometimes with mobility issues, or if patients are confined to a wheelchair and just can't get down to look at their feet. Having a partner or significant other there who can help with that. Some patients of mine will photograph their feet and compare a photograph from the day before to the following day, or even use a mirror the old-fashioned way and just take a look at everything. Sometimes I'll even ask patients to wear a pair of white socks whenever they're out and about because when they take their socks off at the end of the day, that can be an indicator. If there's blood on the sock, if there's drainage on the sock, something that you didn't know was in there, that will tip you off that something is wrong, and then you can seek care.
- RK:** Those are really good tips. Definitely ones that I know I will keep in mind and I think are very helpful for our listeners to hear about. You talked about walking barefoot and that question comes up all the time. You're on vacation, you're on the beach, you are barefoot, even in the house, often we're barefoot. Can people with diabetes be barefoot? Or what do you usually recommend?
- NM:** So that's a good question. And that always is a very hard sell when we talk about that in the office because you know, there's something freeing about being barefoot on the beach or in the grass and grounding. And I don't like to speak in absolutes when it comes to how to manage your feet and your

care at home. Because people typically don't like to hear you absolutely cannot do this. However, barefoot walking is one of those things depending on if you have numbness or impaired wound healing, anything like that that's going on that could put your feet at risk is really something that even in the home I recommend against. Because the big concern essentially would be if you were to step on something, if you're even at home and you were walking on the carpet and a staple, a thumbtack, anything at all were to penetrate your foot and you didn't acknowledge that right away the potential for infection and a much more significant complication is there. So I try to discuss with people that it's a sacrifice to be made, of course; however, it can prevent a lot of headaches down the line in terms of things that you just don't want to happen as a result of your diabetes and your foot health in general.

RK: For people who don't have the complications of neuropathy, or numbness or tingling in the feet or a decreased circulation to the feet, would you consider it generally safe for those individuals to walk barefoot or would you also exercise caution?

NM: It could be considered generally safe. However, neuropathy is an interesting thing in the world of the feet because it's not every day that you just wake up and realize, "Well, I am neuropathic; I have numbness in my feet today." It's something that can often be subtle when it comes on. Even things as simple as checking the feet, wearing slippers in the house and not walking barefoot are basic precautionary measures to take even if you don't have complications related to your diabetes, and you are well controlled. Because they're simple things that can be done that can prevent worse things from happening.

RK: And it sounds like those symptoms, as you described, can deteriorate gradually. So you may not know as the symptoms of sensation, that that's occurring.

NM: Yeah, that's exactly right. And that's exactly why I bring my patients back for diabetic foot exams at regular intervals so that we can monitor these things for deterioration.

RK: For those people that do have neuropathy or poor circulation, you mentioned in general the importance of good fitting shoes. Could you talk a little bit more about what you mean by that? What kinds of specifications should people look for when they're buying their shoes?

NM: So, a good fitting shoe is important in any patient with diabetes, because if you aren't able to appreciate or feel the fit of the shoe as well, and neuropathy does happen to occur in the toes more frequently than the rest of the foot, and if it's early, it will begin in the toes classically. The toes can be injured by the front of a shoe. If there's a seam on the top of the shoe, if there's any deformity such as a bunion or a hammertoe that might rub on the shoe, or if the foot slides around in the shoe because it is not fitted well, it can cause irritation, it can cause ingrown toenail, which can then become infected, and it can cause friction injuries or pressure injuries that can lead to ulcers and infection. So an appropriately fitted shoe is critically important for those reasons and often diabetic shoes, which is one of the programs that's offered by most insurance companies and Medicare for patients who have complications and need more advanced types of shoe gear; it's a benefit that's offered to them because those patients will classically benefit from a shoe with extra depth, that will accommodate deformity, that will be fitted appropriately for any type of issue that the patient may have. In terms of standard shoe gear, I typically recommend lace up style athletic shoes as they will provide the best level of support, it will keep your foot seated in the shoe properly, and really you can't dispense of the idea of a really well-trained shoe salesman because being measured for a shoe is so critically important. And if you get the wrong style shoe, which I'm sure anybody here can attest to, things are uncomfortable. And if you can't appreciate that level of discomfort, that's when certain types of issues can happen.

RK: Do the shoes need to be seamless? You mentioned that sometimes seams can irritate the toes. Do you usually recommend seamless shoes?

NM: So a seamless shoe can certainly have benefits for that exact reason. The seams typically run over the top area of the toes, and since deformity is so common in the foot, especially as we get older, such as bunions and hammertoes. Any of those seams can put an area of friction or pressure on the skin which can become more and more delicate. Just simply having a seamless shoe can prevent any type of injury to the toes.

RK: Another question that will sometimes come up from patients is the use of diabetic socks. I wonder if you could comment just briefly about that. Are those items that you usually recommend for certain people?

Are there certain types of socks that you recommend? Or is that really not something routinely recommended?

NM: Diabetic socks now encompass a wide range of products that you can really purchase anywhere from varying degree of different sites. But the common theme of a diabetic sock is it's usually like a thicker material. And a good diabetic sock will have moisture wicking properties so that you don't retain moisture against the skin - classic materials such as cotton wool, things like that, that will help to take moisture away from the skin itself, and now some synthetic materials have been added into diabetic socks that can help to wick moisture away as well. Moisture control is important in patients with diabetes because they are more predisposed to getting things like an athlete's foot or a toenail fungus so those are really important. The other things that most diabetic socks will have a level of is a gentle compression, which can help to assist with swelling of the legs and the ankles patients will sometimes experience.

RK: So it sounds like in general these could be useful. Is that right?

NM: Absolutely. I've never recommended against a diabetic sock.

RK: That's good to know. What about toenails? Is there anything about toenails as people are clipping their own nails at home? Or do you recommend that they get it clipped by a podiatrist that people should know about?

NM: Toenails can be very challenging. To clip especially in people who have thickening of the toenails, brittleness of the toenails, or people with just can't get down to their toenails, have mobility issues and just can't get there the way they used to. The risk obviously would be injury to the foot itself and the skin by trying to care for your nails at home. Now as a rule, if you are diabetic you are at increased risk of infection just by virtue of the fact that you have impaired blood sugar. But, general nailcare can be very safe if there's not significant deformity of the nail and appropriate techniques are used. So if there's ever a question, I always recommend that my diabetic patients will schedule an appointment with their podiatrist just to go over appropriate nailcare. Now there are certain settings in which I will advise my patients not to care for their own nails at home: something like arterial insufficiency or decreased blood flow to the toes; something that if the skin were nicked when you're caring for your nails, would the wound be able to heal? Or is it more likely to get infected and cause a problem? In patients with that, I recommend they come visit me for their routine nail care so that I can help them with that procedure. Patients with neuropathy - the same type of reasoning applies that the risk is there for injury to the foot that might not necessarily be acknowledged and treated the correct way as quickly as it needs to be. So in patients with neuropathy and other complications and deformity and skin changes, I typically will recommend they come see me for their nail care, and at every evaluation I assess that level of risk, and I will let that patient know exactly what their safety level is and whether or not they need professional care of their nails. Along those same guidelines, the question of pedicures comes up frequently. I never ever will recommend a non-medical grade pedicure to a patient of mine with diabetes because I'm not completely familiar with and I would imagine that there are not sanitation and sterilization procedures. I have very frequently unfortunately seen fungal and bacterial infections of the feet in people after they've gotten non-medical grade pedicures. So polishing the nails, there's some debate... I consider that safe to do. Gently filing the nails is generally safe to do but a lot of times aggressive measures are used digging out ingrown toenails or using sharps instead of abrasives on calluses that can cause breakdown of the skin and other complications.

RK: Well, Dr. Maniscalco, thank you so much for sharing your expertise today. I know that I learned a lot and I'm sure this was very educational for our listeners as well. So thank you so much for your time and your expertise today.

NM: Thank you very much for having me. It's a pleasure.

RK: **RK:** I'm Dr. Rita Kalyani, and you've been listening to ***Diabetes Deconstructed***. We developed this podcast as a companion to our ***Patient Guide to Diabetes*** website. Our vision is to provide a trusted and reliable resource, based on the latest evidence, that people affected by diabetes can use to live healthier lives. For more information, visit ***Hopkins diabetes info dot org***.

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