

The right treatment can make the difference between saving a limb or losing it. Welcome to SB H Bronx Health Talk produced by SBH health system and broadcast from the beautiful studios at Saint Barnabas Hospital in the Bronx I'm Stephen Clark.

According to the Centers for Disease Control and Prevention an estimated 73,000 non-traumatic amputations occur in America every year. 60% of these amputations occurred in patients with diabetes making diabetes the most common cause of non-traumatic amputations in the US. What's more, amputation has been found to result in a 30% increase in depression, reduced physical activity, a poor quality of life and far higher mortality rates. With us today to discuss limb salvage is Dr. Emilio Goez, Chief of the Podiatry Service at SBH Health System. Welcome Dr. Goez.

*A: Hi Steve how are you?*

Q: Good, so from what I understand and we've spoken about this before even a small cut on the foot of someone with diabetes can become limb-threatening virtually overnight. Right?

*A: In fact it is well known now that even just a small dime-sized lesion in somebody's foot with diabetes can have a higher mortality rate than some types of cancer such as colon and breast.*

Q: But why is that?

*A: Well by the time a diabetic patient presents to our office with a wound, an ulcer, an area of the foot where skin is missing, the many factors that are damaged by diabetes all*

*add up and so the diabetic patient presents with poor blood flow, poor sensation to feet, usually decreasing kidney function and overall it all adds up to situation where the patient's health deteriorates and mortality can be really high.*

Q; So what happens when a patient comes to see you or a member of your team, is it a multidisciplinary approach that goes into effect?

*A: Currently, especially when our patients come to our wound center or the podiatry clinic we do try to follow the multidisciplinary approach. In essence we examine our patients as far as their circulation, their nutrition status, the function of their kidneys, their liver and the control of their sugar and generally we're referring patients to the vascular surgeon, the endocrinologist, the infectious disease depending on the condition of the particular patient we have in front of us.*

Q: And I guess there are a number of different options as far as treatment goes, right?

*A: Depending on whether the patient's ulcer is caused by poor foot function, poor mechanics of the bones of the foot or poor blood flow. So for instance the average diabetic patient has a little bit of everything and it is our job to determine which one of them is the main cause for the current alteration or infection. Very frequently it's all of them at the same time and then many times our patients end up inside the hospital for treatment.*

Q: What are some of those treatments?

*A: The most common reason for admission is an infection of the foot usually it starts at the toe or the bottom of the foot. The infections usually quickly advanced through the bottom of the foot up the ankle and even up to the leg. Many times the infection invades the blood system and the patient can come in even disoriented or really sick with high fevers and sugar out of control so only a multidisciplinary type of approach can help a patient and everybody usually act simultaneously.*

*Q: Now I assume amputation is the last resort?*

*A: The focus of our program right now is to decrease amputations as you mentioned, amputation occurs in 60% of the diabetic patients in the Bronx the numbers are even higher so the purpose behind the podiatry division, the division of vascular surgery, infectious disease in the hospital and as well as the endocrinology service and internal medicine is to try to prevent more amputations by providing a multidisciplinary approach where the patient is targeted from every single body system.*

*Q: Now I know one option that's available at SBH is hyperbaric oxygen therapy and before we talk about what it is, I know you told me years ago when you were training and I guess surely thereafter you knew very little about it and didn't put a lot of faith in it, is that correct?*

*A: Correct, the progress of the desire for surgeons to prevent amputations led to the*

*rediscovery let's say of hyperbaric oxygen and as a treatment modality it had been in fact to a certain extent was disregarded but the reality is it extreme it's extremely helpful and very often makes the difference between limb loss and being able to keep your leg or your foot.*

Q: Well let's talk about hyperbaric oxygen therapy. What exactly is it?

*A: So oxygen, as you know, is normally in the air, however if you can take oxygen and compress it and deliver it to somebody in a compressed form it actually can act as a medicine itself so high concentrations of oxygen as we are able to provide in our chambers help fight infections, stimulate the growth of new small vessels and in turn lead to faster healing. Normally the patient comes into our center, we make sure that their vital signs are stable, that they are healthy enough to be treated and they go into the chamber and simply what the patient feels is no different than being in an airplane, you feel a slight change in pressure, you want to clear your ears. Basically you watch TV for the period of time you're in the chamber and once you're done you go home and generally patients feel quite well after it.*

Q: I guess, what is it, like an hour treatment once a day for a matter of weeks?

*A: It's a 90-day treatment for five days a week usually.*

Q: And most people are are eligible, they're candidates for this, right?

*A: There's very few instances where you're not able to go into the chamber. Truly all you're doing is breathing oxygen, a hundred percent oxygen in the chamber, so unless you have some very serious disease most people are eligible to go inside the chambers, they're clear and transparent and they're you know, they usually watch TV and sometimes some patients simply sleep while they're getting the treatment there's no pain involved and it's quite easy for the patient.*

**Q: At SBH these are one-person chambers, right?**

*A: Correct, their individual chambers and the patient can choose whatever TV channel they like to watch or what they want to do while they're in the chamber but they are there single chambers.*

**Q: And I guess unless you're terribly claustrophobic there shouldn't be a problem, right?**

*A: The chambers are crystal clear and you can see outside. Even patients that have claustrophobia, most of the time can manage the treatment and in any case if the patient doesn't feel comfortable one day or wants to get out then they can get out of the chamber virtually immediately.*

**Q: What convinced you years ago that hyperbaric oxygen therapy was effective?**

*A: The clinical data all supports the effectiveness of the treatment. You can't really argue with it. It's very clear that the hyperbaric oxygen treatments improve the speed with which healing occurs and interestingly the*

*healing that occurs is of better quality and tired that what occurs without the treatment so the clinical data is very supportive of it and then once I started using it I could see it on my own patients that they clearly were healing faster than the patients that do not receive the treatment.*

Q: I know you brought it to my attention, a few months ago, about a patient with gangrene who came in who was helped through hyperbaric oxygen therapy.

*A: So there are conditions in the foot where an infection can be so severe that it quickly, very quickly moves up the structures of the foot in particular tendons and ligaments we call fascia, the infection can be so powerful that it can separate these tissues and simply migrate and go up the leg. The surgeon usually helps the patient by draining the infection from the foot but then the hyperbaric oxygen can very quickly help you fight the infection so together with antibiotics and appropriate medication plus the oxygen treatments you literally can save somebody's leg just because we have the ability to put the patient to the hyperbaric oxygen chambers.*

Q: Now the hyperbaric oxygen therapy also works for other conditions, right?

*A: So hyperbaric oxygen can be used for situations where patients lose sight due to occlusion or the closing of a small vessel in their eye. It can help the eye. Many patients that get treatment for cancer, the areas that get radiation sometimes ulcerates or get wounds that simply will not heal and the hyperbaric oxygen is highly*

*effective for radiation type burns. Burn victims can benefit and anyone that can get injured in a fire, in a home, the carbon monoxide which normally can kill people, a single treatment of hyperbaric oxygen can really help to remove the carbon monoxide from the patient's blood.*

Q: Now I know again for your means, primarily, the hyperbaric oxygen also works well with several other modalities some of the bread-and-butter modalities that podiatrists do, right?

*A: In our Center we see many many diabetic patients and we treat with IV antibiotics, we apply orthotics and prosthetic limbs and all types of skin substitutes and advanced wound care modalities, specifically products that are made in labs to replace skin portions. We can apply these in the wound center and once again if you combine those with the hyperbaric oxygen you get much faster healing and better results.*

Q: I guess it's fair to say that you've been on the frontlines in saving limbs and that if patients can come to you in any kind of expedient fashion they have a fighting chance of saving their toes, their foot or their or their leg.

*A: The faster we see them the better the probability but I'll tell you we also get it in our Hospital, in our emergency room, a lot of patients that have been neglected by other institutions and we're very patient and willing to try and and save their feet and as a foot doctor, amputation reduction is really my goal and what I've focused my career in the last*

*several years because I was doing too many of them and the education that the not only the patient, but the entire medical community has to receive, has to be focused on prevention of the amputation and reduction.*

Q: Well that's very important work, Well thank you Dr. Goetz is for joining us today in SBH Health Talk.

A: *It's been a pleasure.*

For more information on services available at SBH health system visit [www.sbhny.org](http://www.sbhny.org) and thank you for joining us today.