



The Why, What and Where Podcast on the Updated 2023 IWGDF Guideline on Offloading Treatments for Diabetes-Related Foot Ulcers

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ABSTRACT

In this podcast the lead authors of the 2023 International Working Group on the Diabetic Foot (IWGDF) guideline on offloading treatments for diabetes-related foot ulcers briefly discuss why we need offloading treatments for people with diabetes-related foot ulcers, what the new international offloading guideline recommends, and where offloading treatment might go into the future.

A podcast audio is available with this article.

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Key Summary Points

Offloading treatment is arguably the most important treatment for diabetes-related foot ulcers.

International guidelines are needed to weigh up all new offloading treatment evidence and provide recommendations.

The updated guideline recommends that first-choice offloading treatment for a plantar foot ulcer should be any non-removable knee-high offloading device, unless contraindicated or not tolerated, and for an ulcer on the lesser digits it should be flexor tendon tenotomy.

There are, however, large gaps between what offloading treatments the evidence says work and what are used in clinical practice and these gaps need to be bridged.

New offloading treatments are being developed to help bridge these gaps in future.

DIGITAL FEATURES

This article is published with digital features, including a podcast, to facilitate understanding of the article. To view digital features for this article, go to <https://doi.org/10.6084/m9.figshare.24746727>.

PODCAST TRANSCRIPT

SB: Sicco Bus, University of Amsterdam, Amsterdam, the Netherlands (Chair, IWGDF Offloading guidelines).

PL: Pete Lazzarini, Queensland University of Technology, Brisbane, Australia; The Prince Charles Hospital, Brisbane, Australia (Secretary, IWGDF Offloading guidelines).

SB: Hi, my name is Sicco Bus. I'm a Professor of Clinical Biomechanics at the Amsterdam University Medical Center in the Netherlands. And I'm the Chair of the IWGDF Offloading Working Group.

PL: Thanks, Sicco. My name is Pete Lazzarini, and I'm a Principal Research Fellow at The Prince Charles Hospital in Brisbane, Queensland, Australia, and also the Queensland University of Technology. And I also have the great pleasure of being the Secretary of the International Working Group (on the Diabetic Foot) Offloading Working Group.

And I also have the great pleasure of starting this podcast by asking a number of questions to the Chair of the Offloading Group, Professor Sicco Bus. I'll start, Sicco, by asking why do we need offloading treatment and, probably more specifically, why do people with diabetes-related foot ulcers need offloading treatment in particular?

SB: Yeah, well that's a good question to start with in this podcast. When people with diabetes have peripheral neuropathy, it's mainly the high mechanical stress on the foot that causes a foot ulcer to develop, and when people are weight-bearing and active [1–3]. So to heal the foot ulcer, taking the pressure off, which we call offloading, is very important and we would say among the most important treatments for the

foot ulcer that is present in order for it to heal [4–6].

So, now we know how foot ulcers develop and how important offloading is, why do clinicians, Pete, actually need an offloading treatment guideline?

PL: It's a very good question, Sicco. One of the reasons for this is we've had offloading treatments now being used in clinical practice for nearly 70 years, such as offloading devices, from total contact casts all the way down to postoperative shoes [7–9]. We've got footwear, such as medical grade footwear down to off-the-shelf footwear. There are various surgical offloading procedures, such as digital flexor tenotomies, Achilles tendon lengthening, etc. and a whole bunch of other offloading treatments, such as felted foam, gait retraining, and even Botox has been used in terms of offloading interventions for people with diabetic foot ulcers [7–9]. But what we really need to know from the evidence is what actually works best for patients with diabetes-related foot ulcers when we look at a whole bunch of different outcomes, and the effects on those outcomes of those interventions such as on healing, infections, amputations, pressure, new lesions, etc. [7]. What we took for the guidelines is 200 papers and a systematic review of 200 papers and a number of meta-analyses to determine what was best in terms of those offloading interventions [10].

So, Sicco, if I may, after talking about why we need offloading treatment guidelines, let's move on to what offloading recommendations we actually made in the IWGDF guidelines and, more specifically, what does the new offloading treatment guideline actually recommend?

SB: Yes, that's of course the core of the guidelines that we developed as a working group and we make different layers, so we have different choices: first-choice, second-choice, third-choice treatments for offloading, in particular plantar foot ulcers that have a neuropathic origin [11]. The first-choice treatment is a common one, which is has been around for many rounds of developing offloading guidelines, and it's the non-removable knee-high offloading device, whether that's a total contact cast or a knee-high walker that is made non-

removable [11]. Now, in this 2023 update we have an exception for digital ulcers, because now based on studies that have been done, an RCT [randomized controlled trial] on digital flexor tenotomy [12], the first-choice treatment for a digital ulcer is to do a digital flexor tenotomy based on this new high-quality trial [11]. When the first-choice treatment is contraindicated or not tolerated by the patient, the second-choice treatment should be any removable offloading device, so it could be a knee-high offloading device or an ankle-high offloading device [11]. If no offloading devices are available, that's a situation that is possible since we're covering the whole globe, then the last-choice treatment, or third-choice treatment, is to use felted foam, but only in combination with appropriate footwear [11]. It may be possible that foot ulcers do not heal based on using these non-surgical offloading devices, and then the recommendations say various surgical interventions may be used like Achilles tendon lengthening or metatarsal head resection as a procedure to promote healing of the foot ulcer [11].

So now we have the recommendations that are in the guidelines, what does the supporting evidence say about these offloading treatments, Pete?

PL: Great question, Sicco. From the systematic review of the 200 papers, we're able to distill from them basically what the impacts of these different interventions were on different outcomes [10]. So for example, why we recommended non-removable knee-high offloading devices compared to other offloading treatments [11]. Well, the evidence suggests that they are actually better for healing, better in preventing infections, amputations, to reduce activity, better for improving adherence and overall cost-effectiveness [10]. But, they do come with harms as well? We found that they increased the likelihood of new lesions and a little bit of dissatisfaction in terms of quality of life for patients [10]. But overall, when we weighed up all those outcomes, we considered that non-removable devices were by far more effective and better for patients with diabetic foot ulcers than (other) offloading treatments [10]. And that's similar for some of the other

offloading interventions. For example, when we weighed up removable knee-high offloading devices versus removal ankle-high offloading devices, the reason we now have an equivalent recommendation for those as a second-line is because they had similar impacts on healing and infections, and then slightly different impacts both positively and negatively on other outcomes, but overall were quite similar [10, 11]. But otherwise, we encourage people to go to the table (Table 4) in the systematic review which summarizes the effects and the quality of evidence for all those effects for all offloading treatments in one table [10].

So where, after all of that, is the offloading future going, Sicco, and where and how do we actually deal with the gap that we've seen between the evidence and actual practice when we're implementing offloading devices or interventions?

SB: Yes, that's a good point because that's a common thing that we see already for many years and we've had these surveys being done, sort of around 2008–2010, that showed that there is a gap between what does the guideline recommend and what is actually used in clinical practice [13, 14]. And it seems to me to have changed a little bit, so that more evidence-based practice is being done [15, 16]. But we still in many situations see this gap, and that gap needs to be bridged [9, 11]. I think a first thing that we need to do is to really register what is actually done in clinical practice and what the efficacy is of clinical practice [11]. So what is in usual practice being done, in terms of offloading, what are the outcomes, and how do they relate to the evidence that we have [11]? From that point on, we can sort of have ideas about how the usual care may have to change, or when usual care is actually quite effective, also taking into account the preferences of the patient and other circumstances that may be important for choosing an offloading device, we can probably get the evidence and the clinical practice and bridge that gap and get them more together [11].

Now that's an important aspect of offloading treatment that we're still facing, but where would new offloading treatments bring us in the future, Pete?

PL: A great question. It's actually very exciting, Sicco, in terms of the offloading future. We've seen now a number of treatments developed, like smart boots, smart insoles, and smart socks even, that tell us about the plantar pressures, the adherence, shear, and activity of patients at any one time when they're offloading, so that's very exciting [9, 17, 18]. What we need to know is the actual data around what is effective or not with those particular, I guess, outcomes like pressure, adherence, etc., to be able to use those smart devices [9, 17, 18]. We've also got psychological treatments, like motivational interviewing, to try and improve adherence that is showing some benefits [19, 20]. Also, personalized 3D scanned and printed moonboots are on the horizon, Sicco, which is very exciting and that hopefully will be developing lighter, sturdier, cheaper, and more comfortable, basically moonboots in the future [17]. But all these things need to be trialed in high-quality studies if we are to actually see them recommended in guidelines in the future [10, 11].

And with that, I think that brings us to the close of this IWGDF offloading podcast and thank you very much to the great Professor Sicco Bus and to the audience, and with that thank you, Sicco.

SB: Yes. Thank you very much, Pete.

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Ethical Approval. This podcast is based on previously conducted studies and does not contain any new studies with human participants or animals performed by any of the authors.

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