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## Evaluating the Importance of Oral Health in T1D

### Dr. Wysham:

So there is ample research to suggest a bidirectional relationship between dental health and type 2 diabetes. But can the same be said for patients with type 1 diabetes? The answer to that question will be the focus of our discussion today.

Welcome to *Diabetes Discourse* on ReachMD. I'm Dr. Carol Wysham. And joining me today to share her findings on tooth loss in patients with type 1 diabetes is Dr. Rodica Pop-Busui. She is the Larry D. Soderquist Professor of Diabetes and Vice-chair for Clinical Research in the Department of Internal Medicine and also the Director of Clinical Research, Mentoring and Development of M-Diabetes at the University of Michigan.

Dr. Pop-Busui, thanks for being here today.

### Dr. Pop-Busui:

Thank you so much, Dr. Wysham, for the very kind introduction. It's truly a privilege to be here today.

### Dr. Wysham:

Well, let's start off. Can you tell us what got you interested in evaluating long-term oral health for patients with type 1 diabetes?

### Dr. Pop-Busui:

Yes, absolutely. As you mentioned already, the link between oral health and diabetes risk, and more recently some of the complications of diabetes, has been emerging, I would say, at least in the last decade or so, and there is ample evidence demonstrating that through a variety of the potential mechanisms, oral health may affect risk of developing diabetes, risk of developing complications initially to the cardiovascular perspective, and as we have also demonstrated more recently, neuropathic complication with a potential link being this low-grade inflammation that has been demonstrated to be instrumental in all these conditions. And so definitely trying to understand how best oral health component may be fitted into this puzzle that delineates the phenotypes of patients who are more likely to develop complication, I think it's quite relevant.

So we were very fortunate, and this work, of course, has been done as a team effort, together with several of my colleagues, investigators in the, well-known Diabetes Control and Complication Trials/Epidemiology of Diabetes Intervention and Complications, or DCCT-ED, a cohort that doesn't require too much introduction. We all know that the findings of the original DCCT have changed the standard of care, and more recently, because we were able to acquire so many additional evaluations, we are able to understand more complex interactions among risk factors and complications risks. So that was one of the reasons that we were fortunate to have several dental health-related outcomes, granted not necessarily the best. However, we had, captured over the years, sound dental outcomes, and as you very well know, this cohort had been continuously phenotyped for the entire spectrum of complications and risk factors now for almost 40 years, so that's the link.

### Dr. Wysham:

Yeah, so this study actually correlates quite well with my entry into the field of diabetes. It spans my entire career, so it is a very interesting group of people. Well, thank you.

For those of you just tuning in, you're listening to *Diabetes Discourse* on ReachMD. I'm Dr. Carol Wysham, and today I'm speaking with Dr. Rodica Pop-Busui about her research on the relationship between type 1 diabetes and oral health.

So now that you've reviewed the methodology, let's take a look at the results. Dr. Pop-Busui, can you share with us your key findings?

### Dr. Pop-Busui:

Yeah, absolutely. So, what we have found is that definitely oral complications, including tooth loss and periodontitis, have been actually quite prevalent, even in this cohort of patients with type 1 diabetes. We have also, demonstrated that there is a clear link between the degree of glucose control over time, and the risk of developing, oral, complications, as well as several other risk factors, particularly some of the lipid parameters, that, also have been associated with more severe dental complications. We, of course, tested for other known risk factors for oral health, and granted, the most important one is aging. We know that, aging remains one of the most important risk factors in general at the population level in the development of oral health and dental complications, but that contributions of glucose control in type 1 diabetes translated also and some of the lipid parameters, translated in, an independently high risk for oral complication.

**Dr. Wysham:**

That's very interesting. So, are there associations between the diabetes-related complications and the oral health conditions? Were there some independent relationships between those 2 factors?

**Dr. Pop-Busui:**

Right, and that is something that we have also, reported in other cohorts. I think the information is still ongoing to look specifically more in depth on some of the combination, but we do have some associations, particularly with neuropathy, in this type 1 cohort. And that has been also previously reported on smaller cohorts of patients with, with type 2 diabetes.

**Dr. Wysham:**

I think this is really important because it gives us the potential for something that has a definite ability to address, and that is the oral health and the potential for long-term complications, so it's an important question. So, given this data and what you know about type 2 diabetes, can you give us some strategies in your practice and what we can, perhaps, do to help improve the oral care for our patients with type 1 diabetes, and type 2 for that matter?

**Dr. Pop-Busui:**

So I think that, as diabetes care providers—because obviously, diabetes, it's so prevalent. We are reaching now 37 million in this country only. And if we also think about very high rates that we see in children, whether they are with type 1 and type 2 and the rise in type 2 in kids and you know, it's also quite worrisome. I think that implementing in our care a component in which oral health should be much more actively pursued and not only education but also to active steps that would prompt more direct collaborations with our dental or dentistry colleagues, would be one way to try to mitigate risks as it seems clearly from all this data that we and other have unveiled that, the link between oral health and overall diabetes care management and risk for complications seems to close a vicious cycle, so breaking these cycles on any end definitely will be beneficial for our patients.

**Dr. Wysham:**

Am I stretching your comments too far by saying that we should be spending as much time making sure our patients see their dental health professionals as we do getting to get their annual eye exams done?

**Dr. Pop-Busui:**

Well, perhaps not. I think that also it's quite easy when we examine our patients to have a quick look, to their oral health because sometimes these can be quite, obvious that can prompt additional step for direct referrals, but definitely, I think that we, could make sure that we join efforts to promote, as part of, of, standard of care of diabetes that oral health plays a central role.

**Dr. Wysham:**

So that's a great note to end on as we come to the end of today's program. I'd like to thank my guest, Dr. Rodica Pop-Busui, for sharing her perspective on oral health in patients with type 1 diabetes. Dr. Pop-Busui, thank you for joining me today.

**Dr. Pop-Busui:**

Thank you so much for having me. It was truly my pleasure.

**Dr. Wysham:**

Well, it was our pleasure as well. For ReachMD, I'm Dr. Carol Wysham. To access this episode and others from our series, visit [reachmd.com/diabetesdiscourse](https://reachmd.com/diabetesdiscourse), where you can Be Part of the Knowledge. Thanks for listening.