The Need For Diabetes Screening

PODCAST 27

00:22
Dr. Jane Caldwell
Welcome to *On Medical Grounds*. Our guest for this episode is Dr. Jay Shubrook, here to talk with us about diabetes, why we must diagnose earlier and by what screening methods. Dr. Shubrook is a professor at the Touro University, California College of Osteopathic Medicine. After 10 years in primary care, he completed a diabetes management fellowship and has been focusing on diabetes care ever since.

Hello Dr. Shubrook and welcome to *On Medical Grounds*.

Dr. Jay Shubrook
Hello, it's a pleasure to be here.

00:57
Dr. Jane Caldwell
You're on sabbatical right now. Tell me about the book you're writing.

Dr. Jay Shubrook
Yeah, so as part of sabbatical you need to do a project and so my project is to write a book and much of my focus is looking at how we can improve primary care's ability to help people manage diabetes. So, the book is called *At This Point Everyday: Diabetes for Primary Care* and it will be a series of cases with explanations to really just provide assistance for trainees and primary care healthcare professionals to help manage, diagnose and really help people with diabetes. And so I hope it could be a very useful book for busy clinicians.

01:43
Dr. Jane Caldwell
So, let me reiterate, are these case studies that you're writing about?

Dr. Jay Shubrook
So, there are case based explanations, so like the first section of the book will be 9 different ways that diabetes can present and so there will be cases and then we'll talk about why that type of presentation leads itself to a certain type of diabetes.

01:57
Dr. Jane Caldwell
I see, I see, OK. Why do you think diabetes is moving to younger populations?

Dr. Jay Shubrook
Boy, that's a really great question and I think this is an important thing. You know, diabetes, we know is a very serious condition. Certainly, we're focusing on this discussion on type 2 diabetes, and we're seeing it in younger and younger people. And I think we live in a society that promotes ease. It doesn't promote health. We have become more and more automated. We're less active, we eat more processed foods and as a result we are becoming more obese as a society. And I think obesity is one of the modifiable risk factors for type 2 diabetes, and we're seeing more and more metabolic illnesses. So what used to be type 2 diabetes as an adult disease, we now know up to 40% of children who have diabetes actually have type 2 and what's scariest about that is the younger you're diagnosed with type 2 diabetes, the more progressive the disease is and the less likely you are going to respond to the current treatments, so this is really something that is very important and something we need to get a handle on.

03:13

Dr. Jane Caldwell
Yes, that's disturbing. How do you or how did you screen in your practice?

Dr. Jay Shubrook
Sure, so there's been some updates and on who we should screen, and I would highlight that that at this point all people above the age 35 should be screened at least once every three years for diabetes, and that can be with a fasting glucose, an A1C, or glucose tolerance test. But you can screen younger people if they have risk factors and those risk factors would be someone with a personal or family history of prediabetes or diabetes. Someone that's got metabolic syndrome, truncal obesity, dyslipidemia, hypertension, or come from a family or an ethnic background that has higher rates of diabetes, and so again as we become a more diverse population, we're going to see more and more screening in younger people and I think because type 2 diabetes is a silent condition, we really need to rely on screening as an entry point to identify this 'cause the earlier we find it, the earlier we can treat it, the better we can do.

04:16

Dr. Jane Caldwell
Alright, well that answered my next question. Are most patients willing to be proactive?

Dr. Jay Shubrook
So I think this is tricky. I think that the way we communicate with our patients is really important. We know that lots of people will say well, I'll worry about diabetes when I get it because they know they have a family history and you know, there are pretty major changes. I think that what we need to do is let people know that one, diabetes isn't a death sentence, two, diabetes can be controlled, in some respects controlled without medications. And the earlier you start an activity, the better you'll do. So, I do think if we don't communicate those things then I think patients will say I'll worry about that later because it's a lot of work for not a visual or an immediate gratification. But if we can show the meaning of early intervention and how it can improve their life, I do think people tend to be more open and receptive, saying what can I do? Because you know, you're not just reducing diabetes or reducing all the complications with diabetes, including cardiovascular disease, certain cancers and such.

05:32

Dr. Jane Caldwell
So, what medications and lifestyle recommendations do you make to a patient who is prediabetic?

Dr. Jay Shubrook
Yeah, and this is something that we still have not disseminated widely enough, and this is really important. So, both healthcare professionals and the population in general need to know there's a lot we can do

to prevent someone from getting type 2 diabetes. So first of all, a shout out to the Diabetes Prevention Program. This is a national program that is lifestyle-based, kind of guided under the direction of the Centers for Disease Control and Prevention, that is basically a one-year lifestyle intervention that can reduce your risk of getting diabetes anywhere from 58% to 71%. And that's without medication, so this is something that we all have a handle on.

Now in addition to that, there are a number of medications. None of them are FDA approved. We have no FDA approved treatments for prevention of diabetes, but medications such as pioglitazone, acarbose, have been shown to prevent diabetes. Certainly, some of the GLP-1 receptor agonists have also been shown to be effective in helping to prevent diabetes. And then quite honestly, anything that helps you to lose weight is also affected so you can see that sometimes these weight loss medications have shown efficacy in preventing diabetes, as has bariatric surgery, so metabolic surgery also reduces your risk. And then I failed to mention that metformin also has a 30% reduction. But what I would highlight here is that if people can lose somewhere in the range of 7% of their body weight, they have a really good chance of changing their trajectory to diabetes, and you can decide how you're going to lose that weight. But losing that weight makes a big difference.

07:24

Dr. Jane Caldwell

I've heard sitting is the new smoking. So, so exercise and regular physical activity. It helps you lose weight. But are there some other benefits? For example, increasing blood flow?

Dr. Jay Shubrook

Yeah, I think that's what I love about that is that as we become a sedentary society, we are very well intended and we go out and we do too much, and then we get injured. And then we stop again. So, I think you know it doesn't have to be big changes, just moving more often makes a big difference. And not only our cognition, how we think, how we act, but also our health in general. You know, most weight loss is not achieved through intensive physical activity, but more moderate physical activity. So, I would say set an alarm on your phone and five minutes out of every hour, take a little walk, move around. You know you could have a pedal at your desk. Absolutely we are sitting ourselves to death slowly and it doesn't take much to change that that 150 minutes of physical activity per week is on top of whatever we're doing now. And while that may seem onerous for many people, you could literally do 5 minutes four times a day and you would meet that goal very very quickly. So, walk, do squats. You know, take a take a can of soup with you when you're watching commercials, do something to get your body pumping and absolutely that helps not only diabetes, cardiovascular health, and things like your productivity.

08:56

Dr. Jane Caldwell

Well, that sounds good. After I talk to you, I'm going to go take a walk. How about alcohol? Does the consumption of alcohol promote diabetes?

Dr. Jay Shubrook

Yeah, alcohol has a little bit more of a complex relationship with diabetes, so we know that alcohol in excess is hard on the liver. And I am personally someone that believes that type 2 diabetes really originates from the liver and its ability to process fats and glucose and its production of glucose. So, I think that alcohol in excess can make your liver less efficient and can be tied to diabetes. And I'd also highlight the alcohol empty calories. So, if we're looking at the obesity epidemic, many people when you drink alcohol, you're not counting those calories as calories that you're looking at your whole diet, but it is meaningful. It makes a big, big difference. So, while it is a dose relationship and there is multiple factors, in general anything more than moderate alcohol is not going to help you in diabetes.

10:00

Dr. Jane Caldwell
I guess that would be true for soft drinks and sodas as well. With empty calories.

Dr. Jay Shubrook
Well, I'm glad you mentioned that. Yeah, so this is again an opinion, an opinion I think is growing in terms of popularity. But we know that certainly in the U.S., many of our sweetened beverages are sweetened with high fructose corn syrup. And high fructose corn syrup is quite hard for the liver to handle and in many respects when we see patients with non-alcoholic fatty liver disease, particularly from fructose, high fructose corn syrup. We see that their body looks like they've been drinking alcohol, so I actually say this to be dramatic, but every time you drink a soda, it's really about the same thing as drinking an alcoholic drink and we have one of our partners, John Marc Schwartz at Touro University did a study where they took high fructose corn syrup out of the diet. And within 10 days, these kids who are at risk for diabetes and were having insulin resistance, had normalization of their livers. And so, I would really say that we need to treat high fructose corn syrup and sweet beverages like we treat alcohol. They should be drinking little or moderate at best.

11:24

Dr. Jane Caldwell
You mentioned in an earlier question some new medications available for prediabetes. Could you mention them again here? Just briefly.

Dr. Jay Shubrook
Sure, so again, nothing has an FDA approval, but the medications currently are metformin, pioglitazone, acarbose, the GLP-1 receptor agonist such as liraglutide and semaglutide and dulaglutide and exenatide and then some of the weight loss medications, that are specifically for weight loss have shown some benefit as well, but their names are escaping me, I'm sorry to tell you that.

12:05

Dr. Jane Caldwell
And are they positioned for FDA approval?

Dr. Jay Shubrook
You know currently there has not been much of an appetite for getting FDA approval for diabetes prevention because there's the, believe it or not, the diagnosis of prediabetes is controversial for some, and so it's a little bit of a tough road to get that covered.

That being said, both metformin and pioglitazone are quite cheap, and I use them regularly even though they're not FDA approved, and I do use GLP-1s, particularly in adolescents. But again, getting them covered 'cause those are branded medications can be a little bit harder, but there are medicines that are cheap and can be used to help prevent diabetes.

12:55

Dr. Jane Caldwell
Urgent care facilities are becoming the preferred method of routine care for many. What role can they play in diabetes screening and prevention?

Dr. Jay Shubrook
Yeah, that's an important question. You know, I would say that we need as many touch points as possible to find people who are at risk for diabetes, right? We know that currently one in ten Americans have diabetes, including one in four older adults, and one in three Americans have prediabetes. Many of these patients are not getting routine screenings and any time that we have access to our patients, we should be looking at is there a way that we can identify conditions that not only are present but are complicating those other things, such as at urgent care, maybe have an infection and again prediabetes or diabetes could be affecting that.

So absolutely, I think that if you're going to get labs at these urgent care facilities or emergent care facilities, make sure you take a look because it might give you more indication about what's going on; and we did a small study in an emergency room where anybody who had an elevated glucose automatically had a triggered A1C and we actually found there were a lot of people who actually had dysglycemia who didn't know it.

14:15

Dr. Jane Caldwell
A recent article in the *Annals of Internal Medicine* recommended lower BMI thresholds for diabetes screening in Black, Hispanic, and Asian American populations. Can you comment on racial disparities in diabetes prevention and treatment and how we can overcome them?

Dr. Jay Shubrook
Yeah, well that is a really important set of topics and there are a couple things that I want to try to peel out from this. So first of all, we know that the BMI was created to show kind of a normalization of weight, for weight and height and where we would have excess weight or underweight.

And of course, we're all built very differently, and a single BMI range is not going to work for everyone. I think we have very clearly shown that in Asian populations that metabolic abnormalities occur at lower BMIs. So, there is a national program called "Screen at 23", meaning that rather than identifying overweight at a BMI of 25, we should use a BMI of 23 because that's when you start to see these metabolic abnormalities. And I think that we're now learning that this is true in other populations, and particularly in South American populations, and some of the Caribbean populations.

So, I think we need more work on this, but we will need to individualize those BMIs so that we find these conditions as early as possible. Now to tie that to racial disparities. We know that we have some systematic problems in our health care and all levels from public health to making sure that everyone has access to preventive services, access to health care, access to screening, and this is multidimensional. I mean, we go back to the built environment. We go back to, you know, bias within the healthcare system. So, there's a lot we need to do, but I think that looking at the BMI and individualizing that to someone's ethnic background is going to be a small step in letting us find things earlier, and then I think we also need to build a better system that looks at the unique needs of each of our community members so that we can meet those needs within the culture and family needs of that population. Because I think that if you come from a place where you don't have a lot of trust in health care, you're not gonna you're not going to access health care. And that hurts, really, not only the entire population, but it hurts that individual because they're not going to be able to have access to screening. And so, I think we really have to find ways to overhaul our system to individualize to better meet the needs within the cultural setting. I don't know if that addressed your question.

17:08

Dr. Jane Caldwell
Yes, yes, thanks for breaking that down. Why do you think the medical community has been reactive rather than proactive in treating diabetes?

Dr. Jay Shubrook
So, I think there's a number of factors here as well. So first of all, I think there is not 100% consensus that we need to address prediabetes. I think that's the first level. The second is that most healthcare professionals that I know feel very overwhelmed when they're trying to treat diabetes. Diabetes is largely self-managed. This is something that the person takes care of themself; we're just facilitating with information and tools. But I think that many healthcare professionals don't feel like they were properly trained in providing lifestyle modifications and the healthcare environment is set for one problem, one answer. Right, we're not just treating one thing. Diabetes is not one thing. It's a complex medical condition with you know at least 8 pathophysiologic mechanisms and tied to hundreds of diseases. And so, when someone comes in with diabetes, it's very easy to get overwhelmed. And then we end up just kind of putting band aids on rather than trying to address the underlying factor.

I also think there's a lot of shame in diabetes, and so patients are less likely to seek care. They think, oh I must have done something wrong. And you know if I could say one thing, your family history is your biggest predictor of whether you're going to get diabetes, so that's a non-modifiable risk factor. So, I think it's important for patients to know that this is a medical condition. It is something that's important to address, and we'll do a better job helping you take care of your diabetes.

18:55

Dr. Jane Caldwell
One last question, what were you hoping that I would ask you today?

Dr. Jay Shubrook
Yeah, well, that's a great question, so I think, what would be 3 messages I would share with healthcare professionals? Maybe the thing I would want to share, so, I think that first of all we need to take diabetes seriously and we need to know that with diabetes, time is not our friend. So, when we're looking at diabetes, the more you invest upfront in prevention and treatment, the more you're going to see a legacy or long-term benefit from it. The longer we wait, the harder we have to work just to tread water.

Two, patients are eager to have tools that can help them. Those tools are not just medications. And I think if you're going to use medications, first of all, let the patient know what they're going to see that's going to be different. That might be a change in their blood pressure or change in their fasting glucose. Let them know what measurable change they're going to see, and then always go back and include lifestyle modification at any stage of diabetes 'cause it's a way to help people get off some medications and most people feel completely overwhelmed when they have diabetes 'cause they have so many different medications.

And then I think the third thing I would want to say is that as this becomes increasingly more common as a healthcare professional, you don't have to go it alone. You've got a team of healthcare professionals that can help you, including pharmacists, community health nurses, dietitians, diabetes educator and care specialists, other specialists. So, make sure that when you're treating your patient with diabetes, give them all the resources that help you and help them.

And then for the population of diabetes, I guess I'd want people to know that first of all, diabetes can be prevented, and it can be managed and even put into remission. But it does require early diagnosis, which means you have to be screened, and it does mean that you have to put your work upfront while the condition is relatively new to get control. I think that's what I want to share.

21:12

Dr. Jane Caldwell
Great summary. Well, Doctor Shubrook, we appreciate your efforts to inform and educate others. Thank you so much for taking time from your busy schedule to speak with us.

Dr. Jay Shubrook
It's been a pleasure.

Dr. Jane Caldwell
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