

Why Now Is the Time to Screen for Type 1 Diabetes

By: Sean Doherty, Chairman of JDRF T1D Fund & Ashleigh Palmer, CEO of Provention Bio

When type 1 diabetes (T1D) strikes, it's relentless. This chronic autoimmune disease dramatically alters every sphere of a person's life— physically, socially, and emotionally— and never gives patients or their families a break. Managing the disease requires precision and planning, including constant monitoring of blood sugar, carb intake, and insulin levels, to avoid more serious consequences such as hospitalization from acute diabetic ketoacidosis (DKA) and hypoglycemia. If poorly controlled over a lifetime, T1D can potentially lead to cardiovascular disease, amputation, and blindness. Although the disease can occur at any age, it's often diagnosed in children and young adults, creating a life-long roller coaster of frustration and debilitation.

T1D is stealthy. Long before it is clinically diagnosed, the disease is busy silently attacking beta cells that the pancreas needs to make insulin. Most people have no idea the disease has been triggered, possibly by a viral infection, and is progressing to a pre-symptomatic stage when their sugar metabolism becomes abnormal due to the increasing loss of these cells. Seventy-five percent of people at this early stage of disease will go on to develop clinical, or insulin-dependent, T1D within five years, and their lifetime risk is almost 100%. By the time T1D symptoms first present, as little as 30% of beta cells may be remaining at clinical diagnosis. By the time almost all T1D patients seek medical attention, based on today's available therapies, it may be too late to reverse or delay progression.

But what if there was a way to screen for early-stage disease and identify people at risk for clinical T1D before they exhibit symptoms or present with life-threatening DKA?

Screening Can Fundamentally Change the Course of T1D

Through a simple blood test for certain autoantibodies, people can detect whether they have early-stage T1D before symptoms occur. Early detection has been shown to reduce the risk of DKA, a dangerous, life-threatening event prevalent in newly diagnosed patients in the advanced stage of T1D. In fact, a recent four-year study published in the *Journal of the American Medical Association* found that screening children ages 2 to 5 in Germany as part of their routine well-baby exams helped identify those at high risk of developing T1D.

Of the high-risk group, only 3% of the children went on to develop DKA, a very low rate as compared to the at least 40% of T1D children in the U.S. that have DKA upon clinical diagnosis. By decreasing the risk of DKA, the cost of screening would be more than offset by cost savings linked to fewer diabetes complications due to DKA. In addition to the long-term benefits of avoiding DKA, autoantibody screening can also improve overall quality of life through earlier intervention and better disease control.

Why Screening Needs to Become Routine

While the impact of screening for pre-symptomatic T1D is evident, it has not yet become a routine part of medical care despite the well-established effectiveness of routine screening for other serious health conditions, such as breast cancer, colorectal cancer, and heart disease. Imagine living in a world where someone would find out they have high cholesterol only when they experience a heart attack. Routine early screening for conditions like this exists for good reason. It should be the same for T1D.

But herein lies the paradox: people are uneasy about screening for pre-symptomatic T1D because there is currently no approved way to treat or intercept it. However, autoantibody screening is exactly what is needed.

Know Your T1D Status

Early testing and intervention can significantly decrease the challenges, suffering, and complications that many T1D patients and their families experience upon diagnosis and beyond. That is why we are committed to raising awareness about the importance of routine screening for pre-symptomatic T1D. It's critical to understand that EVERYONE is a good candidate for T1D autoantibody screening. It certainly makes sense for family members of T1D patients, as they have a 15 times greater risk. But at the same time, 85% of newly diagnosed T1D patients don't have a relative with the condition, so many in the general population can also benefit from knowing their risk status.

If you're still not convinced that screening matters, ask any family with a loved one who learned of their diagnosis through DKA whether they would have preferred a warning. And, as we look to the future potential of therapies that could intercept T1D before it becomes symptomatic and insulin-dependent, screening could be the only way to avoid a lifetime of managing this challenging disease. If anything, 2020 has shown the world the importance of understanding risks to one's health is more critical than ever.