# WE ARE EDENT1FI

## How can YOU help?

- Spread the EDENT1FI message
- Recommend screening through local initiatives (www.edent1fi.eu)
- Recommend clinical trials on disease modifying therapies (www.innodia.org)
- Stay up-to-date on studies in early-stage T1D and potential 'preventive' therapies

## Diabetes can be fast but we can be faster!

EDENT1FI
European action for the Diagnosis of Early Non-clinical Type 1 diabetes For disease Interception

This project is supported by the Innovative Health Initiative Joint Undertaking (IHI JU) under grant agreement No 101132379. The JU receives support from the European Union's Horizon Europe research and innovation programme, from The Leona M. and Harry B. Helmsley Charitable Trust, from Breakthrough T1D, from EFPIA, from COCIR, from Vaccines Europe, from EuropaBio and from MedTech. Additional funding is provided to associated UK partners through the UKRI (UK Research and Innovation) Guarantee Fund.

Visit our website for more information

www.edent1fi.eu

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## Why should we screen for T1D?

Europe counts 295 000 children and adolescents with T1D, with 31 000 new-onset cases each year. These are the **highest numbers worldwide**. While the autoimmune destruction of ß-cells stays off the grid for months – even years – T1D is only diagnosed when clinical symptoms appear. However, 1 out of 3 children presents with **diabetic ketoacidosis** (DKA), a life-threatening complication that urges hospitalization.

But…

*What if we could detect T1D earlier?*

First-degree relatives possess an increased risk for T1D development compared to the general population (3-6% vs. 0,4%). However, **85-90% of new-onset cases occurs without having a first-degree relative** with T1D, emphasizing the importance of general population screening. While **genetic screening** of newborns identifies those with an increased risk of T1D in their lifetime (1,1% of the screened newborns), it is not a diagnosis. Today, we are able to screen for the presence of specific **autoantibodies** against ß-cells using a **simple blood test**.

Having ≥2 autoantibodies indicates a stage of **pre-symptomatic T1D**. More than 80% of these people will however get symptomatic T1D (stage 3) within 20 years. The pre-symptomatic stage of T1D can be divided in stage 1 and 2, in which having dysglycemia marks the transition between the stages. **Autoantibody screening** in the general population will identify **1 out of 300 children** to be in a pre-symptomatic stage of T1D.
**Screening, education and follow-up** of children with pre-symptomatic T1D significantly reduces the risk of DKA, lowers blood glucose levels, reduces HbA1C values and preserves higher C-peptide levels (i.e. well-preserved ß-cell function) at the time of clinical T1D diagnosis.

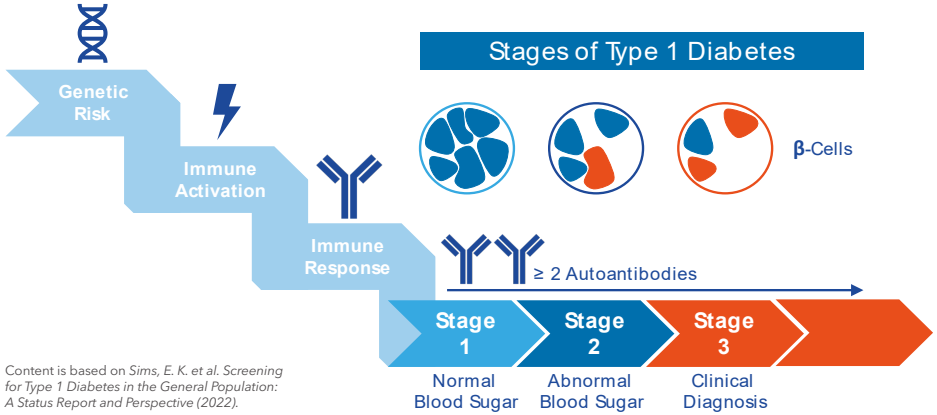
Altogether, screening and follow-up of pre-symptomatic T1D leads to **better glycemic control** and **less long-term complications**. Preventing risk in the future is precisely the rationale of screening for early T1D. In addition, it offers the opportunity to **participate in clinical trials**.

## How should we detect T1D at early stages with screening programs?

Multiple screening initiatives arise worldwide, but lack a unified approach. Organizing **population-wide autoantibody screening** therefore raises multiple questions concerning the optimal detection age and the socioeconomical feasibility. While genetic screening can be performed during neonatal examination, autoantibody screening needs **repeated testing during childhood and adolescence** since the age of seroconversion

## Are we ready?

Early detection of T1D based on the presence of autoantibodies will become the **new clinical standard**.




Content is based on *Sims, E. K. et al. Screening for Type 1 Diabetes in the General Population: A Status Report and Perspective (2022).*

## What to do with positive screens?

**Close metabolic monitoring** is needed for people with pre-symptomatic T1D, in order to determine the rate of disease progression. However, **standardized methods and frequencies** for follow-up are lacking. Current screening programs propose monitoring of HbA1C, random glucose levels, oral glucose tolerance test and/or continuous glucose monitoring, depending on age and disease stage, while receiving T1D education and counselling.

In the meantime, the **pharmaceutical industry** pursues to develop interventions that slow down or prevent disease progression. Thus, being diagnosed with early-stage T1D offers new opportunities to **participate in clinical trials**. In this regard, Teplizumab was shown to delay T1D progression from stage 2 to 3 T1D by ~2-3 years. While this drug is FDA-approved in 2022, Europe is optimistically awaiting EMA-approval.

** This 5-year Horizon Europe project is coordinated by the team of Prof. Chantal Mathieu of the KU Leuven (Belgium) and co-coordinated by the team of Prof. Anette G. Ziegler from the Helmholtz Munich (Germany).*

## The role of EDENT1FI*

At EDENT1FI, we are working to revolutionize how we **tackle T1D in European children**. EDENT1FI is a global collaboration between 27 partners in 13 countries from academia, industry and patient organizations, with one common goal: „To arrest T1D at the pre-clinical phase".
**Future guidelines** will be shaped by projects like EDENT1FI, in which pivotal questions are examined: how do we set up a universal screening strategy? What is the correct age to start autoantibody screening? Do children have to be re-screened and how often? How should we monitor positive screens? What is the economical and psychological impact of screening?