

**TYPE 1 DIABETES**

# **FROM INVISIBLE TO UNMISTAKABLE**



For more information,  
please visit the website  
[www.testfortype1.com/de](http://www.testfortype1.com/de)

**T1D  
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# WHAT IS TYPE 1 DIABETES?



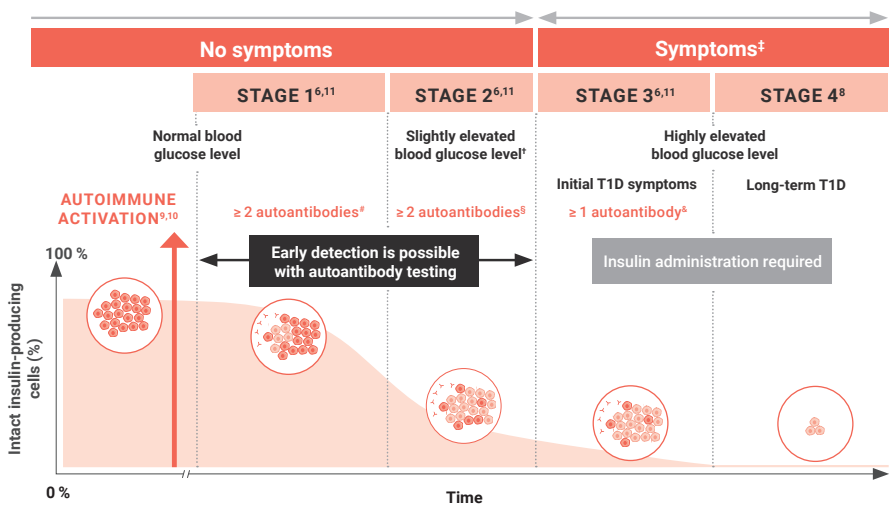
Type 1 diabetes is a **progressive disease** with a growing number of people being affected worldwide.<sup>1</sup>



Type 1 diabetes is an **autoimmune disease** in which the immune system attacks and destroys the **body's own insulin-producing cells**, resulting in a decreased production of vital insulin.<sup>2-8</sup>

## PATHOGENESIS OF TYPE 1 DIABETES:

From invisible to impossible to miss – an autoimmune process in phases<sup>2-5</sup>



Note: the illustration is only an example for illustrative purposes.

Adapted from Breakthrough T1D<sup>7</sup>

- Insulin-producing cell
- Destroyed insulin-producing cell
- ↪ Autoantibodies

The disease progresses in four stages – from asymptomatic stages 1 and 2 to stage 3, when the first symptoms appear, and finally to stage 4, when the disease is fully developed.<sup>3,4,7,8</sup>

Stages 1 and 2 are characterised by the presence of **two or more islet autoantibodies** in the blood.<sup>2-8</sup> From type 1 diabetes Stage 2 onwards, **rising blood glucose levels** are also observed.<sup>2-8</sup>

# TYPE 1 DIABETES OFTEN COMES AS A SHOCK

Approximately 20 %–30 % of individuals diagnosed with type 1 diabetes experience serious **complications**<sup>14</sup>, such as **diabetic ketoacidosis**. The objective of early detection is to prevent diabetic ketoacidosis at the time of diagnosis.



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## WHAT IS DIABETIC KETOACIDOSIS?



**Diabetic ketoacidosis** is a severe metabolic disorder. It occurs as a serious complication of diabetes, particularly in type 1. It develops when the body **has no or significantly too little insulin available** to utilise glucose in the blood.<sup>15</sup>

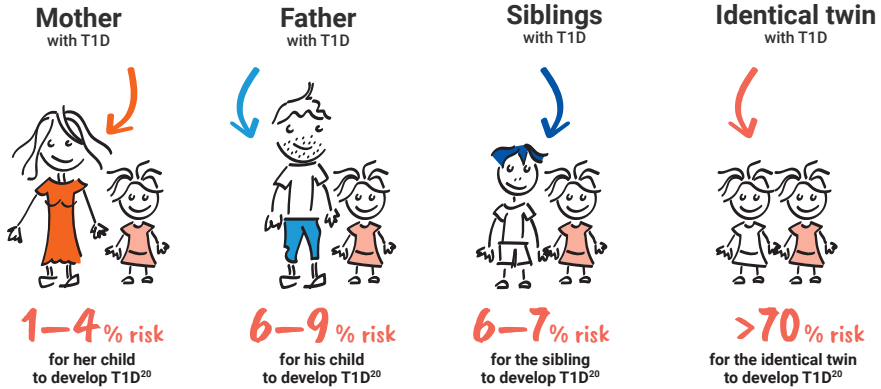


When diabetic ketoacidosis occurs, **treatment in an intensive care unit** at a hospital is usually necessary.<sup>15</sup>



In children, diabetic ketoacidosis can result in **memory problems and mental impairment**<sup>16–18</sup> and blood glucose levels may be more difficult to control for a prolonged period afterwards.<sup>19</sup>

# TYPE 1 DIABETES CAN AFFECT ANYONE



In the general population, the risk of developing type 1 diabetes (T1D) is 0.4 %. People who have a close family member with type 1 diabetes run a higher risk of developing it themselves.<sup>20</sup>



**Type 1 diabetes is the most common metabolic disorder** in children and adolescents.<sup>21</sup>



In Germany, approximately **1 in 425 children and adolescents** is affected by type 1 diabetes.<sup>22</sup>



Up to 90 % of those affected have **no close relatives with type 1 diabetes**.<sup>6,23</sup> In other words, type 1 diabetes can affect anyone.



The onset of **type 1 diabetes is prompted by various factors** – genetics is just one of them.<sup>6</sup>



Approx. 62 % of people with **type 1 diabetes** are diagnosed **after the age of 20**.<sup>1</sup>

# THE BENEFITS OF EARLY DETECTION



In the early stages of type 1 diabetes, no symptoms are yet apparent, but the **autoimmune disease can already be diagnosed at these stages.**<sup>2-8</sup>



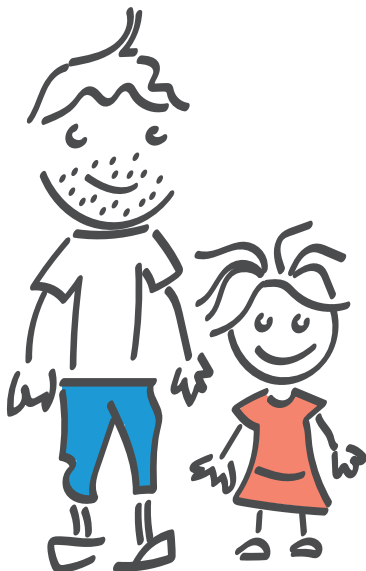
**Roughly 1 out of 350 children** has early-stage type 1 diabetes without knowing it.<sup>24,25</sup>



The objective of early detection is to **prevent diabetic ketoacidosis at the time of diagnosis**, while also **determining the best time to start insulin therapy.**<sup>2-5</sup>



Early detection helps those affected come to terms with their condition and **gradually adjust to living with type 1 diabetes.**<sup>23,26,27</sup>



# TYPE 1 DIABETES: EARLY DETECTION – BETTER INFORMED

## Early detection studies in type 1 diabetes

[www.typ1diabetes-frueherkennung.de](http://www.typ1diabetes-frueherkennung.de)

All children between the ages of **2 and 10 years** can take part in the Fr1da study on a voluntary basis and free of charge – **depending on regional availability.**

People who have **first- or second-degree relatives** with type 1 diabetes, and are aged between **1 and 21 years** and live in **Germany**, can get tested free of charge throughout Germany.

More about the Fr1da study:



More about Fr1da for relatives:



The Fr1da study is an independent scientific study conducted by Helmholtz Munich.

T1D: type 1 diabetes.

# Autoantibodies against beta cell autoantigens (insulin, glutamate decarboxylase [GAD65], insulinoma-associated antigen 2 [IA-2] or zinc transporter 8 [ZnT8]) detected in patient serum.<sup>6</sup> † Fasting plasma glucose 100–125 mg/dl (5.6–6.9 mmol/l) or 2-hour plasma glucose during an oral glucose tolerance test (oGTT) 140–199 mg/dl (7.8–11.0 mmol/l) or HbA<sub>1c</sub> 5.7%–6.4% (39–47 mmol/mol) or  $\geq 10\%$  increase in HbA<sub>1c</sub>.<sup>11</sup> ‡ Common symptoms of T1D include excessive thirst, frequent urination, extreme fatigue, blurred vision, and weight loss.<sup>6,12</sup> § Some individuals with previously confirmed multiple autoantibodies may revert to a single or negative autoantibody status.<sup>13</sup> & Some patients may lack autoantibodies in T1D stage 3.<sup>11</sup>

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