ASSET

AI for Sustainable Prevention of Autoimmunity in the Society

Structure and Goals

"Diabetesvård med superkrafter"
Stockholm, November 11th, 2022

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LHC

DIAMYD MEDICAL

Mainly.AI

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AI for Sustainable Prevention of Autoimmunity in the Society

VÄSTRA GÖTALANDSREGIONEN
SAHLGRENSKA UNIVERSITETSSJUKHUSET

Leading Health Care

NDR NATIONELLA DIABETESREGISTRET

VINNOVA

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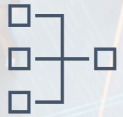
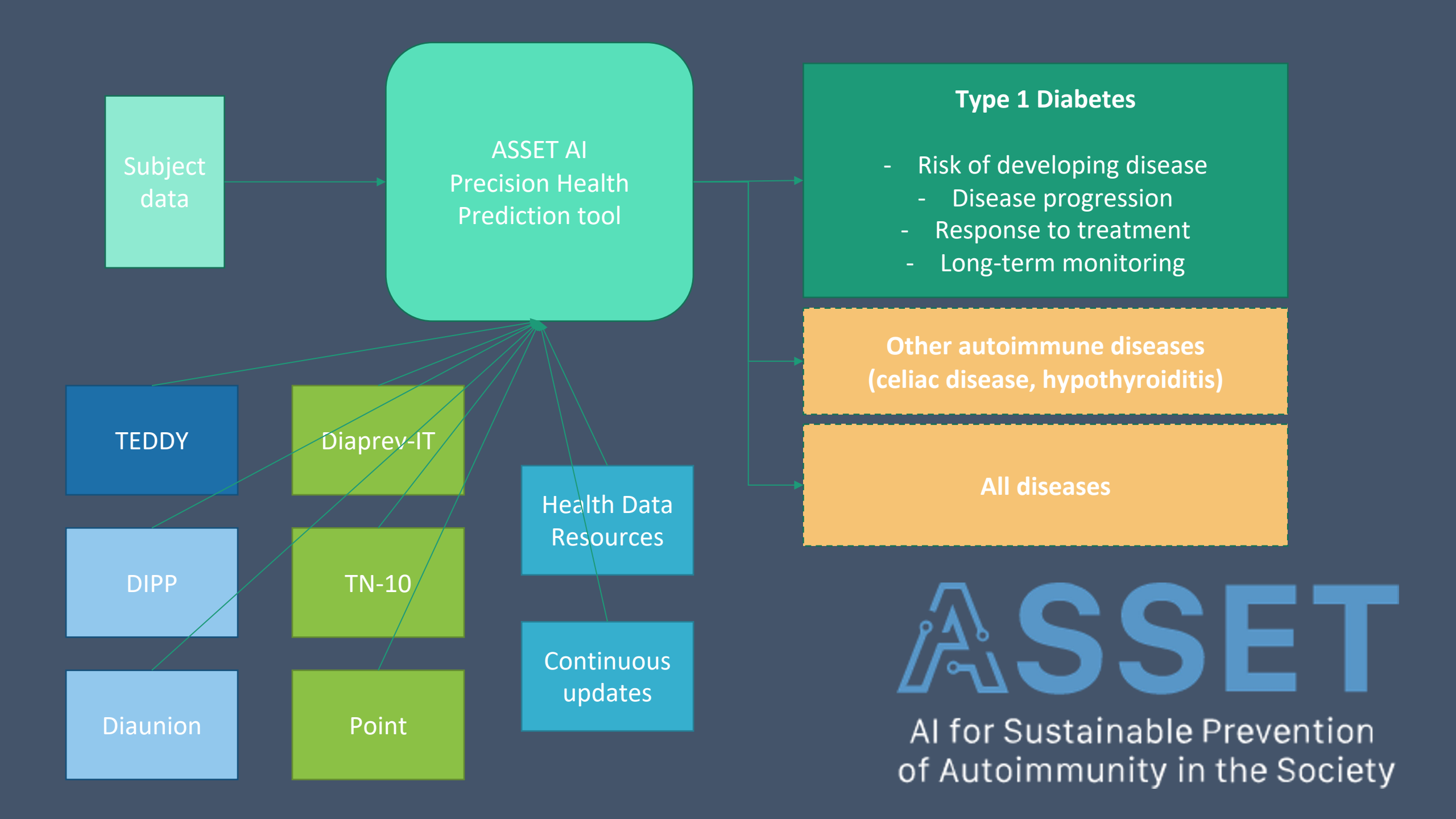
AI for Sustainable Prevention of Autoimmunity in the Society

Artificial Intelligence / Machine Learning algorithms to improve prediction of risk and response to treatment in T1D

Clinical evaluation of personalized preventive action



Evaluating the economic and legal prerequisites of applying a precision health approach in the Swedish health care system


Subject data
ASSET AI
Precision Health
Prediction tool
Type 1 Diabetes
- Risk of developing disease
- Disease progression
- Response to treatment
- Long-term monitoring
Other autoimmune diseases
(celiac disease, hypothyroiditis)
All diseases
TEDDY
Diaprev-IT
DIPP
TN-10
Diaunion
Point
Health Data Resources
Continuous updates
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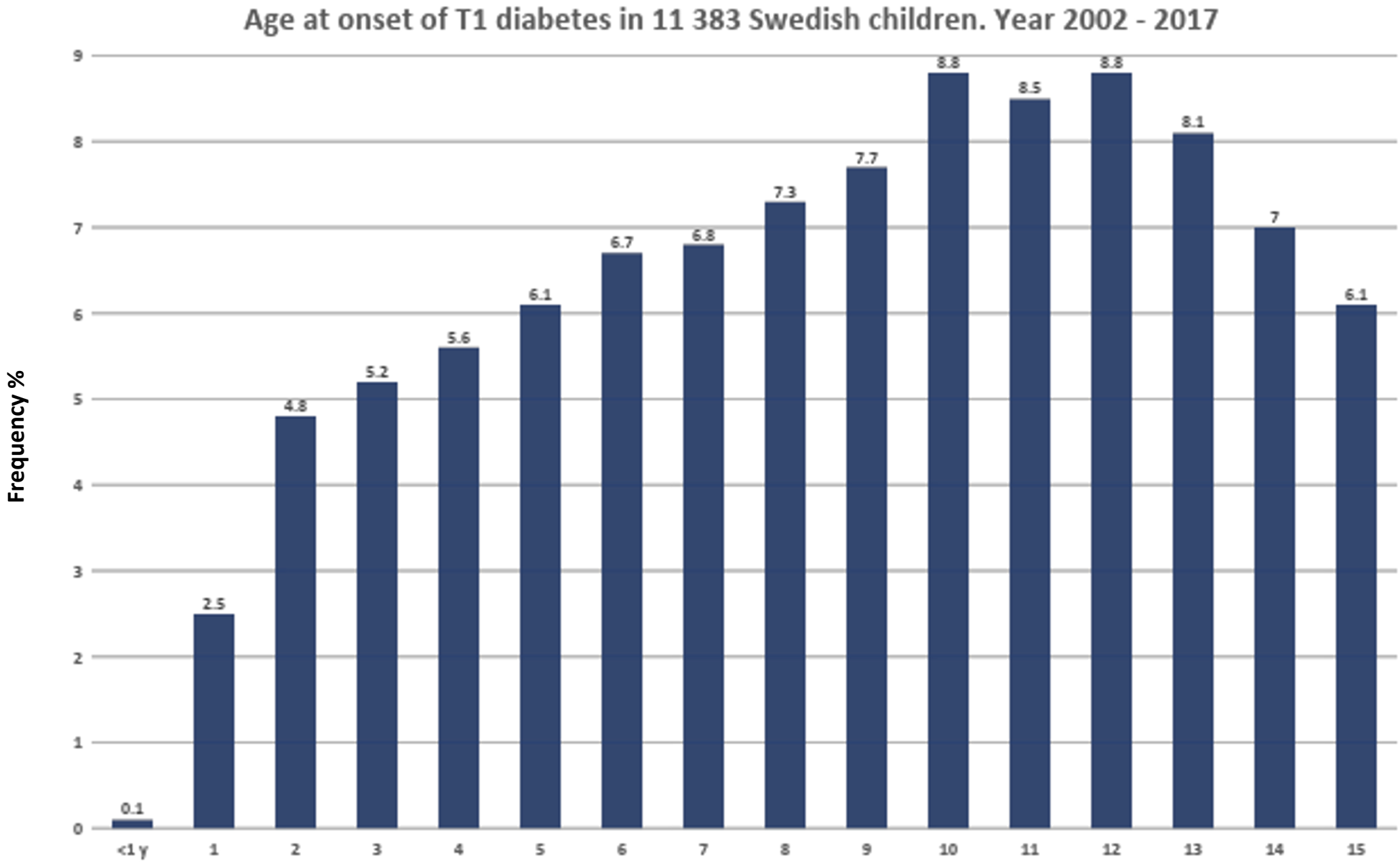
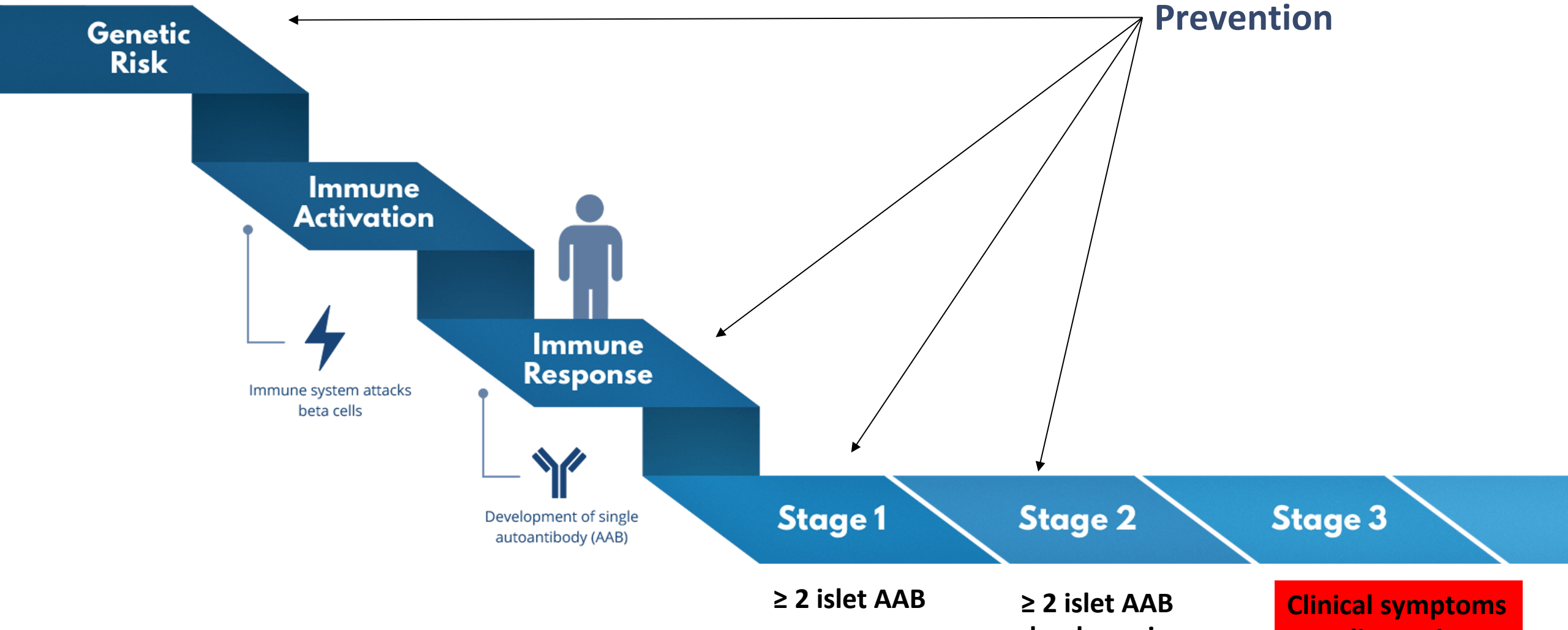

Age at onset of T1 diabetes in 11 383 Swedish children. Year 2002 - 2017
Frequency %
0
1
2
3
4
5
6
7
8
9
0.1
2.5
4.8
5.2
5.6
6.1
6.7
6.8
7.3
7.7
8.8
8.5
8.8
8.1
7
6.1
<1 y
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

Precision prevention and treatment for T1D



Different trajectories for onset and development

(source: Trialnet)

Machine Learning algorithms to improve prediction of risk of response to treatment in T1D

Artificial Intelligence /

TEDDY

The Environmental Determinants of Diabetes in the Young

- **Data from observational cohort studies (TEDDY)**
- **Access data from other cohort studies and prevention/intervention clinical trials through collaborations**
- **Use AI/ML algorithms to improve prediction of T1D risk and response to treatments**
- **Use data analysis to improve design of clinical trials**

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personalized action

Clinical evaluation of preventive

- **Evaluating preventative therapeutics (starting with clinical trial of Diamyd)**
- **Evaluating practical feasibility of screening – what to screen for, when and for whom?**
- **Simulating screening and follow-ups (*in silico*)**
- **Evaluating clinical support tool**

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Impact of ASSET

- **“Big picture” approach**
- **Risk prediction and treatment effect**
- **Clinical decision support tool**
- **Screening program**
- **Healthcare hurdles to precision prevention implementation**
- **Expansion beyond diabetes?**
- **Collaborations**

A Forum to drive precision medicine in Type 1 Diabetes

Contact with T1D research community

Aim for an European-level contact network

Partnerships in developing AI algorithms

Discuss best practices for screening programs

Integration of data from different cohort studies

https://www.asset.healthcare/

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