

Economic and epidemiological burden of type 1 diabetes in France

The HEROES-1 study

OBJECTIVE

In 2021, an estimated 8.4 million people worldwide were living with type 1 diabetes (T1D), with 18% of them under the age of 20. In France, T1D accounts for 10% of all diabetes cases and is linked to significant clinical, humanistic, and economic burdens.

The HEROES-1 study aimed to assess the epidemiological and economic burden of T1D in France.

METHODOLOGY

Study design

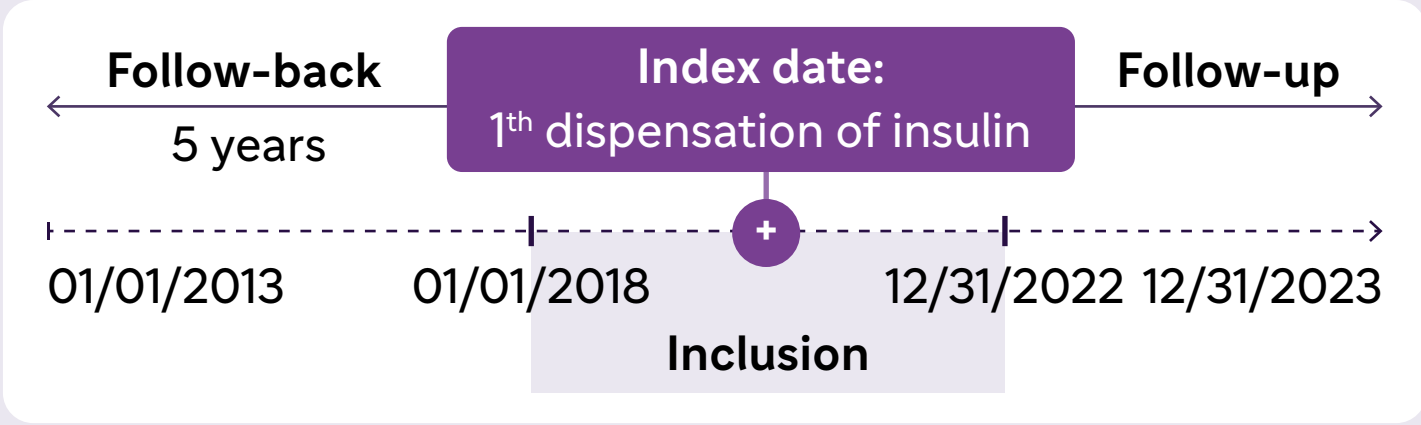
A retrospective observational study was carried out using data from the SNDS (National Health Data System). The SNDS contains individual-level data for outpatient and private healthcare facilities health expenditure billing and reimbursement purposes. Therefore, it encompasses anonymous, individual-level data for all healthcare claims for more than 99% of the population residing in France, regardless of the insurance scheme, i.e. close to 65 million people.

Study population

T1D patients treated with insulin between 2018 and 2022 were identified using a combination of criteria (Long-Term Disease [LTD], hospitalization, treatments, and a cutoff age of 35 or 45 years old for incident patients). Patients identified with T2D, iatrogenic, neonatal, gestational or secondary diabetes were excluded. This algorithm has already been published¹.

Study period

Using five years of retrospective and prospective data through the end of 2023, our data captured patient demographics, clinical characteristics along with diabetes duration and complications, hospitalizations, healthcare utilization, and associated costs. T1D duration was estimated with the duration since the start of the LTD for diabetes.



Sub-groups of interest

Pop A T1D population - incident cut-off age <35 y.o. Then, 3 subgroups of incident patients based on age at inclusion were constituted:
■ 0-7 y.o. ■ 8-17 y.o. ■ 18-34 y.o.

Pop B T1D population - Incident cut-off age <45 y.o.

CONCLUSION

The HEROES-1 study is among the first to provide longitudinal data on T1D in France over a 10-year period. Between 2018 and 2022, a steady increase in both the incidence and prevalence of T1D was observed, highlighting the growing impact of this chronic condition and associated costs.

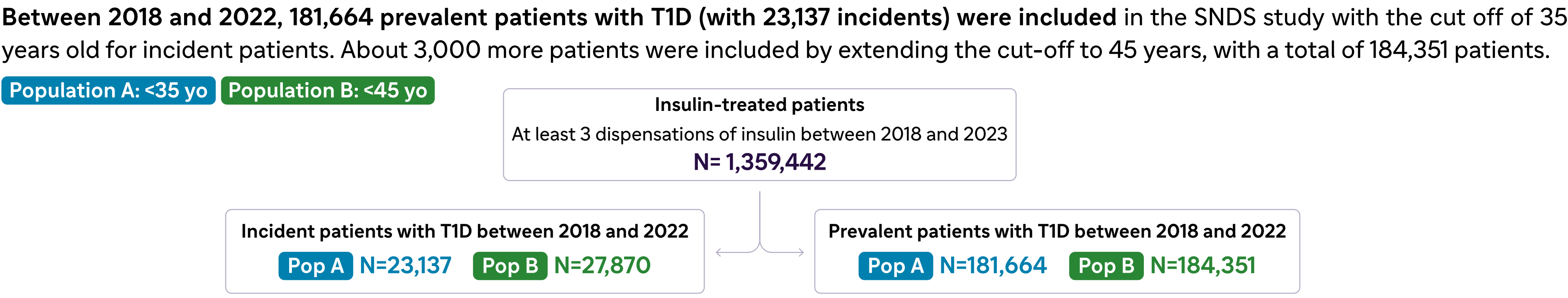
It delivers up-to-date insights on the burden of T1D, and epidemiological insights aligned with national data published by Santé Publique France.

Références
¹<https://static.hevaweb.com/web/pdf/604b358f3e276-sanofi-dt1-poster-isor2024-v4-web.pdf>

Disclosure
Presenting author is a Sanofi employee and may holdshares and/or stock options. This work was funded by Sanofi.

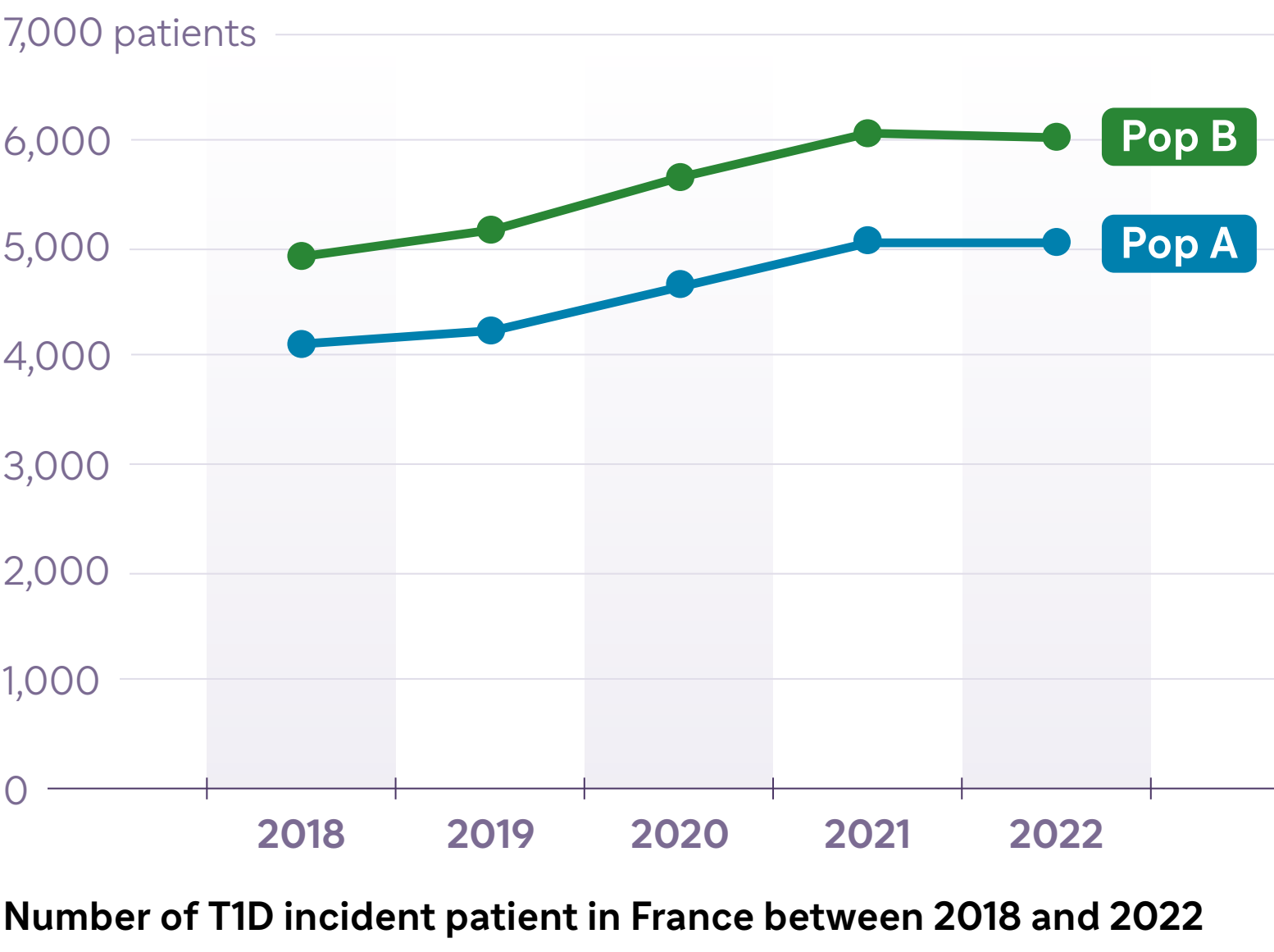
RESULTS

Flow-chart of the study population

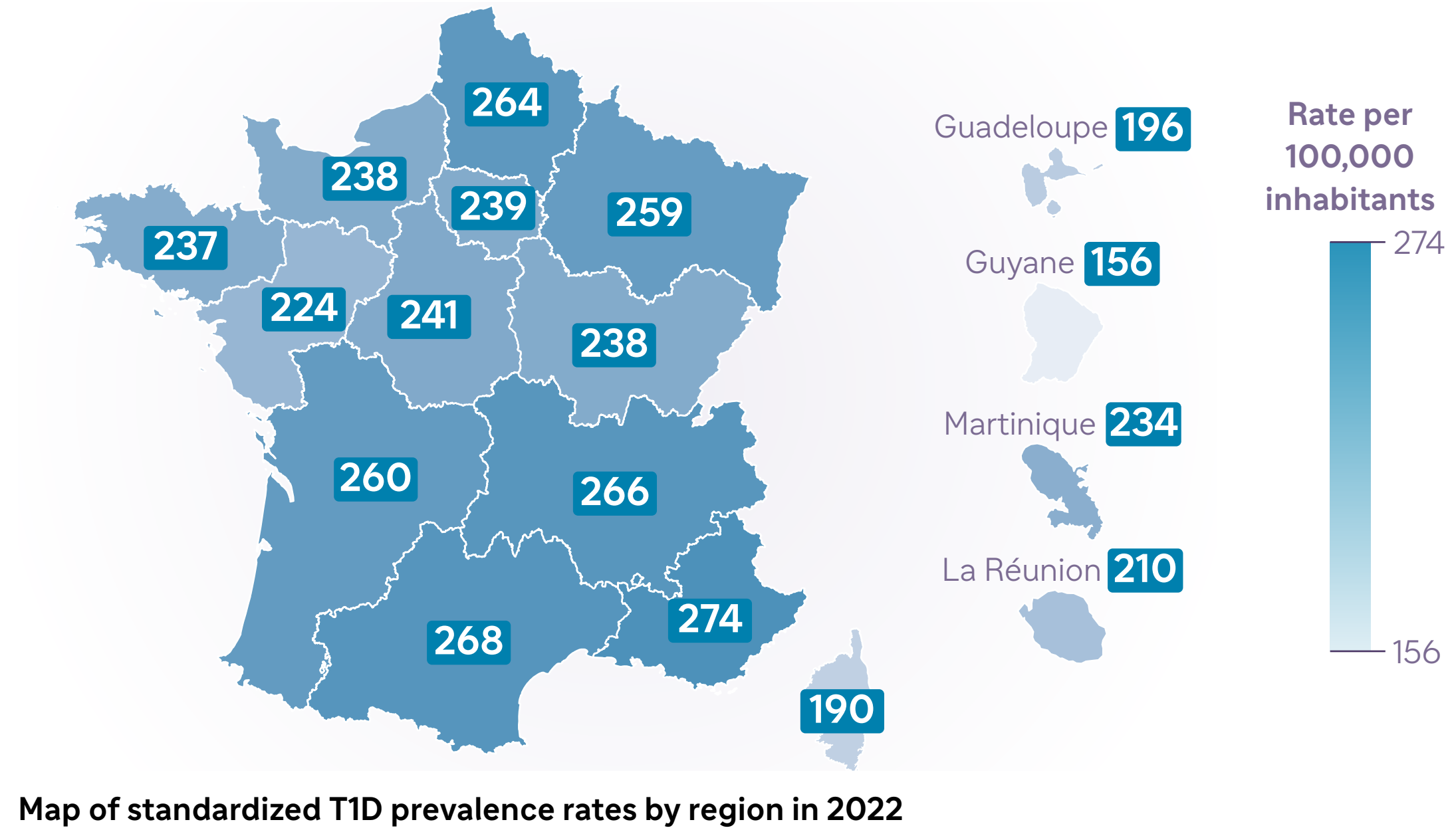


Epidemiological burden of T1D

Between 2018 and 2022, the annual standardized prevalence rate of T1D per 100,000 person-years increased from 200 to 231, reflecting a 15.4% rise. During the same period, the annual standardized incidence rate grew from 14.70 to 18.31, marking a 24.6% increase.



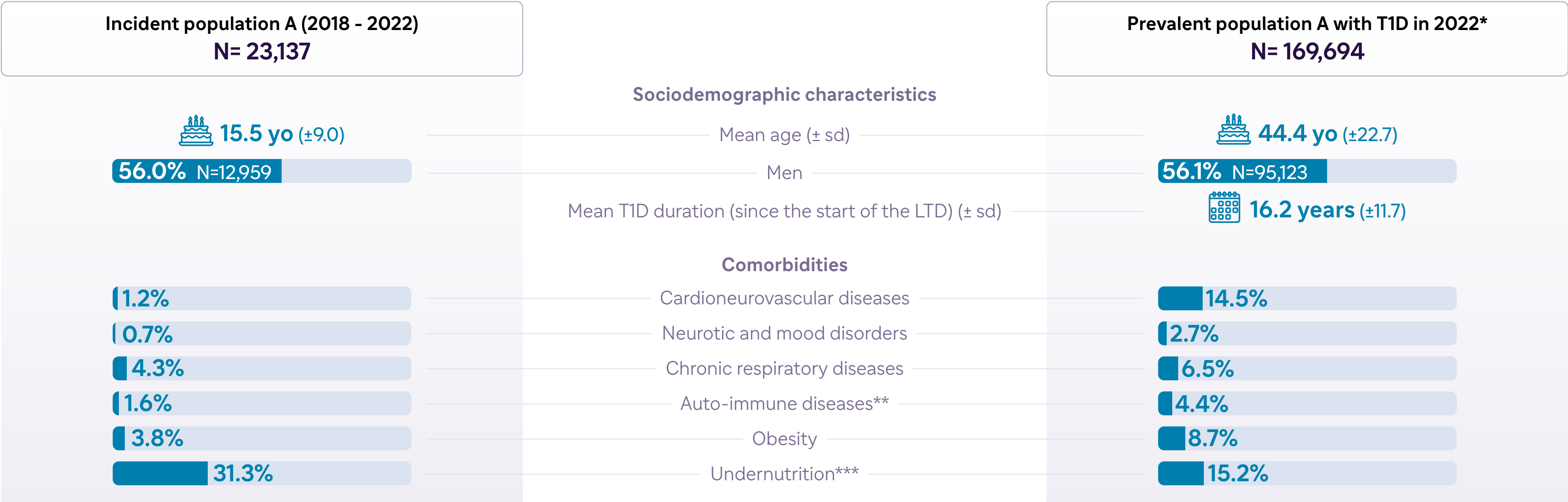
In metropolitan France, age and sex-standardized prevalence ranged from 224/100,000 persons in “Pays de la Loire” to 273/100,000 persons in “Provence-Alpes-Cote d’Azur”. The regions with the highest prevalence were region “Provence-Alpes-Cote d’Azur”, “Auvergne-Rhone-Alpes”, “Occitanie” and “Hauts-de France” (prevalence >260/100,000 persons).



Characteristics of prevalent T1D patients in 2022

Pop A

In 2022, the average age of individuals living with T1D was 44.4 years, with men accounting for 56.1% of them.



*Patients with T1D alive in January 01, 2022

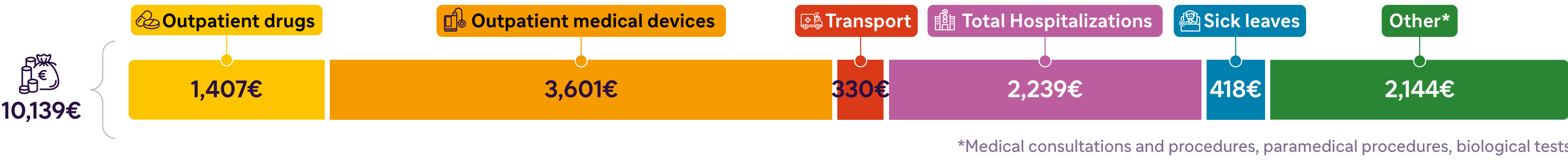
**Auto-immune diseases include: coeliac disease, autoimmune thyroiditis, Addison's disease, Guillain-Barré syndrome, chronic inflammatory diseases, multiple sclerosis, psoriasis

***ICD-10 code of undernutrition recorded in the inpatient database

Costs of T1D in 2022

Pop A

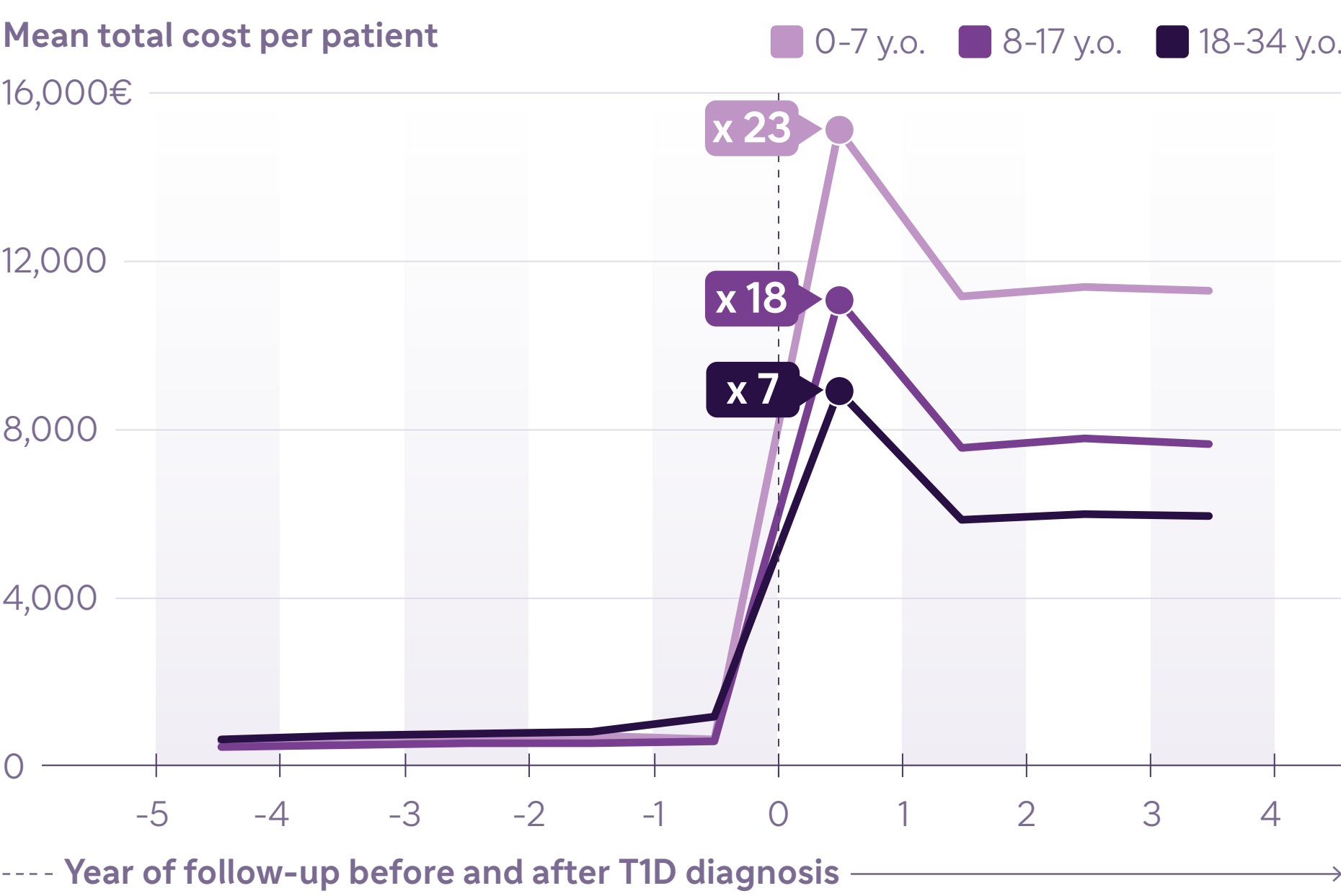
In 2022, the mean total reimbursed cost of patients with T1D was €10,139/patient. Outpatient medical devices and hospitalizations represented more than half of the total cost, 35.5% and 22.1% respectively.



Costs of T1D incident patients

Pop A

The mean total cost per patient significantly increased in the year of T1D diagnosis in the pediatric population, approximately €14,000-15,000 for the 0-7 age group and €11,000-12,000 in the 8-17 years age group.



T1D related complications

Pop A

Ophtalmic complications were the most frequently occurring complications, with a cumulative incidence of around 21% after 15 years of diabetes and almost 60% after 35 years of diabetes. Chronic kidney disease and hypertension were half as frequent, but still concerned more than 13% of patients after 15 years of diabetes.

