

# Metabolic syndrome in people living with type 1 diabetes in Belgium

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On behalf of the Initiative for Quality improvement and Epidemiology in Diabetes

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## INTRODUCTION

**Background:** Metabolic syndrome, a hallmark of type 2 diabetes, is increasingly identified in people living with type 1 diabetes (T1D). The Initiative for Quality improvement and Epidemiology in Diabetes (IQED) is a quality control system imposed by the Belgian health insurance system. Since 2001, IQED systematically collects data from a random sample (10%) of all patients on intensive insulin therapy treated in all 102 specialized diabetes clinics of Belgium.

The **Aim** of this real-life observational study was to investigate the prevalence of signs of metabolic syndrome and complications in adults with T1D.

## METHODS

**WHO:** Adults living with T1D, diabetes duration  $\geq 1$  year, diagnosed  $< 45$  years of age, included between 2016-2022 in the IQED database. Data on each individual were captured on first registration.

### HOW:

- Metabolic syndrome was defined as presence of 2 or more of the following conditions: obesity ( $> 30$  kg/m<sup>2</sup>), hypertension ( $\geq 140/90$  mmHg or treatment with antihypertensive drugs), albuminuria ( $> 30$  mg/dl), or dyslipidemia (TG  $\geq 150$  mg/dl, or HDL  $< 35$  mg/dl ( $< 40$  mg/dl in women) or treatment with lipid lowering drugs).
- Observed values are expressed as proportion, as mean, or as median.
- Statistical significance was tested using Chi-squared tests, t-tests, and Kruskal–Wallis tests.
- Prevalence of complications was investigated using Generalized Estimating Equations (SAS9.4) with Tukey pairwise comparison, adjusted for age, diabetes duration and sex.

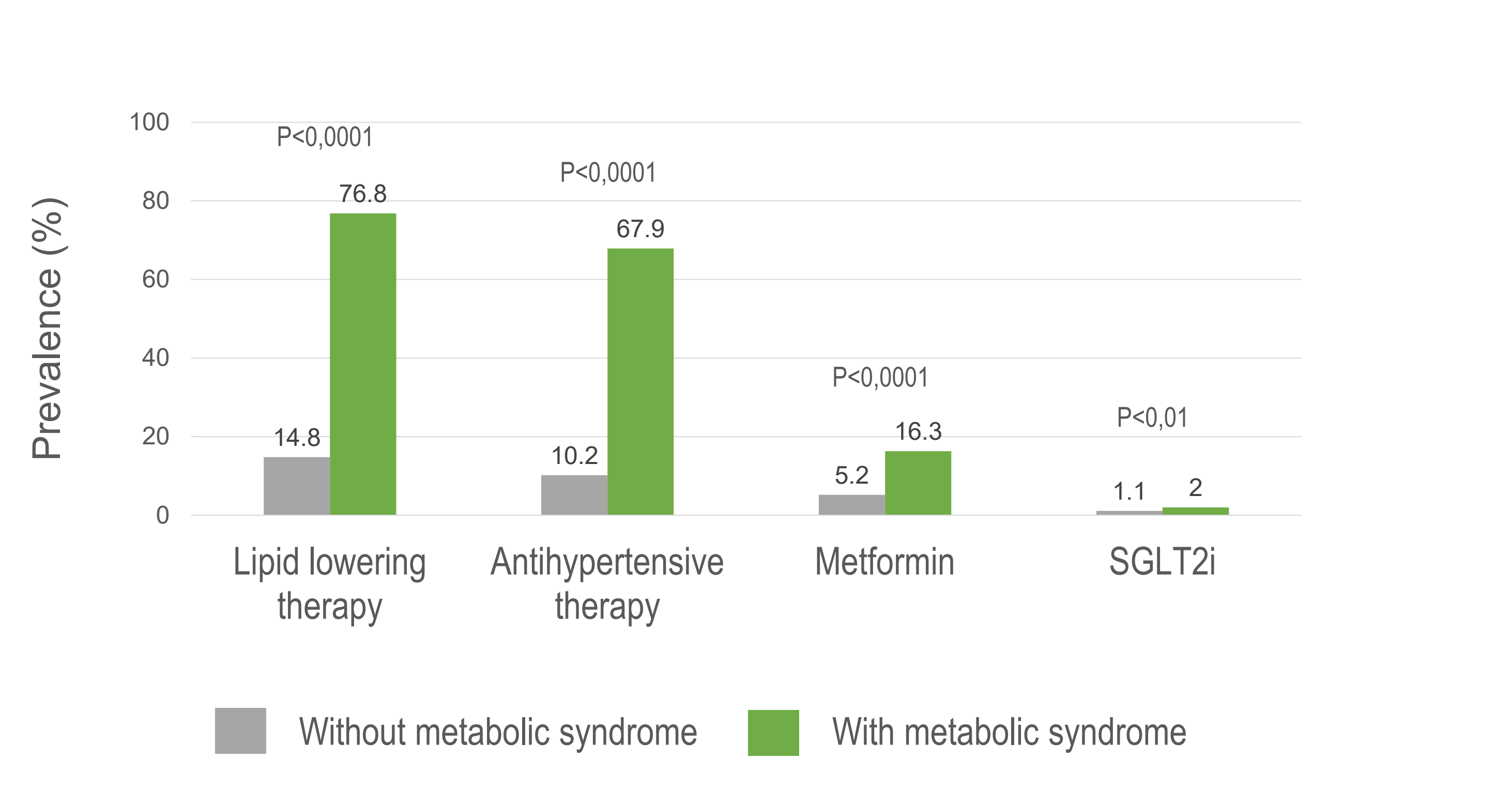
## RESULTS

**Table 1.** General characteristics of people living with T1D with and without signs of metabolic syndrome

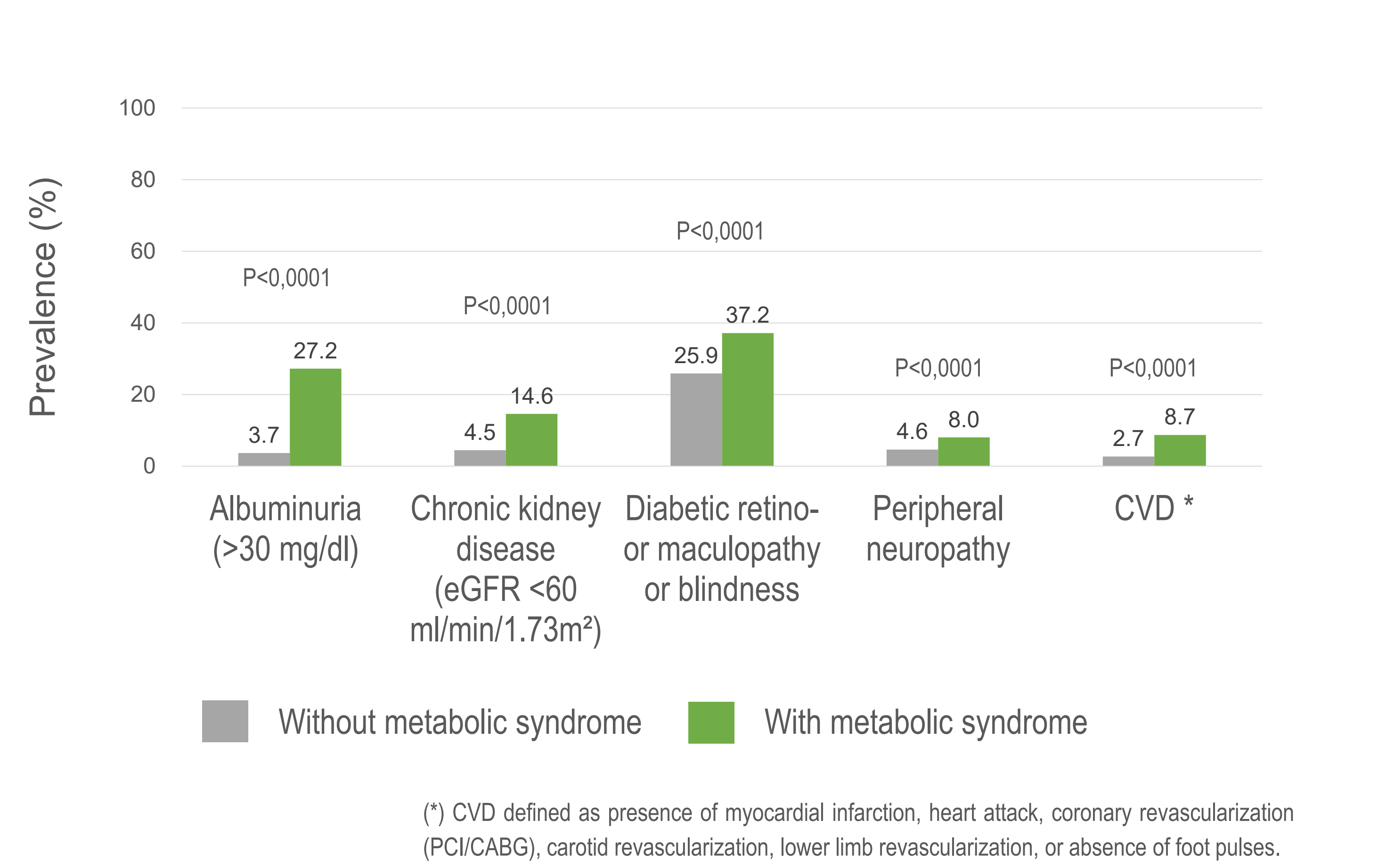
	No metabolic syndrome n= 3,325	Metabolic syndrome n= 2,694	p
Male, %	54.6	61.0	<0,0001
Median age, years	38.2	53.7	<0,0001
Median age at diagnosis, years	20.5	25.0	<0,0001
Median diabetes duration, years	15.7	27.7	<0,0001
Mean BMI, kg/m <sup>2</sup>	24.8	28.4	<0,0001
Mean HbA1c, %	7.7	7.9	<0,0001

## RESULTS

**Figure 1.** Non-insulin treatment rates in people living with T1D with and without signs of metabolic syndrome



**Figure 2.** Adjusted prevalence of complications in people living with T1D with and without signs of metabolic syndrome



## CONCLUSION

- In Belgium, signs of metabolic syndrome were identified in 45% of the adults living with T1D captured in IQED.
- People living with T1D with signs of metabolic syndrome:
  - Are more often male
  - Are older
  - Have a higher age at diagnosis
  - Have longer diabetes duration
  - Have a higher BMI
  - Have a higher HbA1c
- People living with T1D with signs of metabolic syndrome have a higher prevalence of complications compared to those without signs of metabolic syndrome.