



# Clinical burden associated with Type 2 diabetes mellitus in France: an update from the national insurance claim database

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# Disclosure

## Pr. Jean-Pierre Riveline

Advisory panel member for: Sanofi, MSD, Eli Lilly, Novo Nordisk, Abbott, Alphadiab, Air Liquide, Insulet, Dexcom and Medtronic.

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# Context and objectives

- The Type 2 diabetes Mellitus (T2DM) management landscape in France has evolved over the past decade.
- Among many factors that have influenced the management of T2DM, new technologies like continuous glucose monitoring (CGM) and treatments like SGLT2i, and new data showing long-term benefits of GLP1-RA therapies are keys.

The primary objectives of this study were to describe the characteristics of patients with T2DM; and the current management of T2DM, including use of glucose-lowering medications in France.

# Methods and data source

- Descriptive, retrospective, cross-sectional study.
- Representative sample of T2DM adult generated from the French ESND claims database, which is a 2% representative sample of about 99% of the total population<sup>1</sup>.
- Patients with diabetes were identified by anti-diabetic drug reimbursement, long-term disease, or hospital diagnoses ICD-10 codes. Patients with T2DM were secondarily identified using a classification algorithm.
- A control group of non-diabetes patients (1:3 ratio) was matched using a propensity score including age, sex, geography, health coverage, social deprivation index, and diabetes unrelated cancer presence (2017-2021).
- The analysis described the socio-demographic, clinical characteristics, and treatment lines of T2DM in 2022.
- Results were compared to similar data previously generated in 2013<sup>2</sup>.

1. Maillard O, Bun R, Laanani M, Verga-Gérard A, Leroy T, Gault N, Estellat C, Noize P, Kaguelidou F, Sommet A, Lapeyre-Mestre M, Fourrier-Réglat A, Weill A, Quantin C, Tubach F. Use of the French National Health Data System (SNDS) in pharmacoepidemiology: A systematic review in its maturation phase. *Thérapie*. 2024 Nov-Dec;79(6):659-669. doi: 10.1016/

2. Charbonnel B, Simon D, Dallongeville J, Bureau I, Dejager S, Levy-Bachelot L, et al. Direct Medical Costs of Type 2 Diabetes in France: An Insurance Claims Database Analysis. *PharmacoEconomics - Open*. 2018;2(2):209–19.

# Study population demographics

In 2013  
Age (years) : 67.2 ± 12.9  
Median 67 (18–112)

Characteristics	Cases (N = 80 127)
Age (years), mean +/- SD	68.4 +/- 13.0
Median (range)	69 (18 – 109)
Under 40 years (%)	1 978 (2.5%)
40–49 years (%)	4 367 (5.5%)
50–59 years (%)	12 217 (15.2%)
60–69 years (%)	21 838 (27.3%)
70–79 years (%)	24 245 (30.3%)
80 years and over (%)	15 482 (19.3%)
Sex	
Men (%)	43 945 (54.8%)
Deprivation index	
Missing data	6 547
1 (most favored)	11 168 (15.2%)
2	13 052 (17.7%)
3	14 713 (20.0%)
4	16 268 (22.1%)
5 (most disadvantaged)	18 379 (25.0%)
Presence of a non-diabetes-related cancer between 2017 and 2021	
Yes (%)	7 563 (9.4%)

SD, standard deviation.

# Results – comorbidities and complications in the analysis period (2017-2021) vs control group

The relative risks of macrovascular complications were significantly higher in the T2DM cohort (vs controls).

	Comorbidities and Complications N (%)	RR vs. Controls [95%CI]
At least one comorbidity/complication	66 921 (83.4%)	
Transient ischemic attack	462 (0.6%)	1.36 [1.22-1.51]
Treated Hypertension in 2022	58 237 (72.6%)	1.73 [1.72-1.74]
Stroke	1 718 (2.1%)	1.77 [1.67-1.88]
Myocardial infarction	1 907 (2.4%)	2.15 [2.03-2.28]
Unstable angina pectoris	752 (0.9%)	2.15 [1.96-2.36]
Treated dyslipidemia in 2022	45 478 (56.7%)	2.47 [2.45-2.50]
Coronary revascularization without infarction	3 046 (3.8%)	2.54 [2.42-2.66]
Arteriopathy of the lower limbs	1 474 (1.8%)	2.75 [2.56-2.95]
Renal failure	2 383 (3.0%)	2.76 [2.61-2.91]
Bariatric surgery	477 (0.6%)	3.16 [2.78-3.60]
Heart failure	1 987 (2.5%)	3.17 [2.98-3.38]
Lower limb amputation	432 (0.5%)	7.4 [6.21-8.83]

# Results – therapy lines and CGM use

Treatment	Q4 2022 (cumulative) N=66 891	Charbonnel 2013
<b>Monotherapy</b>	26 749 (40.0%)	41.2%
<b>Dual therapy</b>	16 592 (24.8%)	25.6%
<b>Tritherapy</b>	8 726 (13.0%)	12.7%
<b>Other Multi therapy excluding insulin</b>	1 268 (1.9%)	1.0%
<b>Insulin regimens</b>	13 556 (20.3%)	19.4%
<b>No documented treatment</b>	13 360 (16.6%)	13.6%

65% of patients maintained the same pharmaceutical treatment regimen throughout 2022.

SGLT2i were prescribed in 9.9% of patients, GLP1-RA in 17%, CGM in 5.6%, respectively.

Sulphonylurea/glinide use in 2022 was 4.7% vs. 8.8% in 2013.

4.8% of patients had continuous use of FreeStyle Libre system (at least 3 quarters in 2022).

# Study limitations

- The SNDS database does not include lab test results, such as HbA1c, limiting the ability to assess glycemic control directly.
- Patient identification relied on excluding type 1 diabetes rather than confirming type 2 diabetes through genetic or clinical markers. This approach may misclassify complex cases like MODY, though the impact is likely minimal due to the predominance of T2DM.
- The analysis used 2022 data, which does not reflect the 2024 HAS guideline updates or the more recent approval of FreeStyle Libre 2 system for T2DM patients on basal insulin.

# Conclusions

- People with T2DM remain at high risk for macrovascular complications.
- Since 2013, treatment patterns have remained largely unchanged, despite the availability of new therapies and CGM technologies.
- Uptake of these innovations is still low, reflecting persistent treatment inertia.
- The prevalence of diabetes-related complications has not declined, highlighting the need for improved clinical management.
- Expanding access to newer treatments and CGM could help overcome inertia, improve outcomes, and potentially reduce long-term complications—despite higher initial costs.

# Acknowledgment

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**Authors of this work:**

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## Background

- The Type 2 diabetes Mellitus (T2DM) management landscape in France has evolved over the past decade.
- Among many factors that have influenced the management of T2DM, new technologies like continuous glucose monitoring (CGM) and treatments like SGLT2i, and new data showing long-term benefits of GLP1-RA therapies are keys.
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## Methods

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## Results

- 65% of patients maintained the same pharmaceutical treatment regimen throughout 2022.
- SGLT2i were prescribed in 9.9% of patients, GLP1-RA in 17%, CGM in 5.6%, respectively.
- Sulphonylurea/glinide use in 2022 was 4.7% vs. 8.8% in 2013.
- 4.8% of patients had continuous use of FSL (at least 3 quarters in 2022).

## Conclusions

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Heart failure	1 987 (2.5%)	3.17 [2.98-3.38] ↔
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1 2 3 4 5 6 7 8 9

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## References

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## Acknowledgements

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