

## **Association Between Semaglutide Use and Mood Disorders in Patients with Type 2 Diabetes**

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### **Background and Objective:**

Glucagon-like peptide-1 receptor agonists (GLP-1 RAs) have been approved for blood glucose management and weight loss since 2005 with the FDA approval of exenatide. However, research has shown mixed results concerning effects on mood. The aim of this study is to investigate whether the use of the GLP-1 RA semaglutide, specifically Ozempic, is associated with mood disorder diagnoses, particularly depression and anxiety.

### **Methods:**

A retrospective study was conducted using data from the IU School of Medicine-Evansville RWEdataLab (CRC/Sidus Insights) national Real-World psychiatry and cardiology databases containing de-identified EHR information. The databases were searched for patients with type 2 diabetes. Odds ratios were calculated to compare the occurrence of depressive episodes, major depression, or anxiety after 2018 given at least one documented prescription of Ozempic.

### **Results:**

A total of 660,523 patients with type 2 diabetes were identified from 5,316,216 patients in the psychiatric database. 187,838 patients were identified from 3,396,429 patients in the cardiac database. The psychiatric database demonstrated semaglutide was significantly associated with higher odds of mood disorder diagnoses: anxiety (OR 2.323; 95% CI: 2.277–2.370), depressive episodes (OR 2.029; 95% CI: 1.988–2.071), and major depression (OR 1.449; 95% CI: 1.406–1.493). The cardiac database demonstrates similar trends: anxiety (OR 1.967; 95% CI: 1.792–2.159), depressive episodes (OR 1.585; 95% CI: 1.398–1.797), and major depression (OR 1.660; 95% CI: 1.317–2.092).

### **Conclusion and Potential Impacts:**

Our findings suggest that in patients with T2DM, semaglutide prescription is likely positively associated with a mood disorder diagnosis. Limitations of the database include a lack of dosage information and potential over- and underrepresentation of the true prevalence of mood diagnoses. Additionally, the observational nature of the study means causality cannot be implied. However, our findings suggest increased vigilance for depression and anxiety is appropriate in patients prescribed semaglutide.