

## **The Impact of Glucagon-Like Peptide Receptor Agonists on Conscious Sedation with Recommendations**

**By Anthony S. Feck, DMD, Dean of Faculty, DOCS Education**

As a weight loss aid, Ozempic mimics a natural hormone that tells the brain you're full. By increasing the time it takes for food to leave the body, it also slows digestion. Although it has a minor effect on gastric emptying time, the most common side effects are nausea and vomiting.

For patients taking weight loss drugs, it is crucial to exercise caution during sedation as their protective reflexes may be compromised. Therefore, sedation dentists must carefully monitor these patients and take appropriate measures to ensure their safety.

Understandably, an anesthesiologist providing general anesthesia will have a different protocol than a dentist providing conscious sedation. Despite the possibility of withholding all food for 48 hours before the appointment, patients may experience difficulty adhering to the restriction and may experience hypoglycemia during conscious sedation.

### **GLP-1 Receptors**

Glucagon-Like Peptide (GLP-1) receptor agonists are used to treat diabetes by activating GLP-1 receptors in the pancreas, which leads to enhanced insulin release and reduced glucagon release responses that are glucose-dependent, with a consequent low risk for hypoglycemia. They have also been shown to reduce the rates of major adverse cardiovascular events, comprising non-fatal myocardial infarction, non-fatal stroke, and cardiovascular death, in patients with type 2 diabetes mellitus.

GLP-1 receptor agonists have also been shown to cause weight loss in some individuals. In 2014, the FDA approved the first of these drugs specifically for weight loss for people with a BMI of 30 and above or a BMI of at least 27 with one weight-related comorbid disease, which affects more than half the U.S. adult population. The weight loss is thought to be caused by slowing digestion by increasing the time it takes for food to leave the body. There is also evidence of actions within the CNS that result in reduced hunger.

### **Precautions Advised**

While these drugs are considered a significant advancement in the treatment of diabetes and obesity, they are not without negative side effects in some individuals. They come with a US Boxed Warning of a risk of thyroid C-cell tumors, medullary thyroid carcinoma, and are contraindicated in patients with multiple endocrine neoplasia syndrome type 2.

Since elevated liver enzymes can be a concerning side effect for individuals taking GLP-1 receptor agonists, liver function should be monitored regularly.

These drugs have also caused new or worsening kidney disease, including kidney failure, in some people. People taking GLP-1 receptor agonists may become dehydrated from vomiting or diarrhea, causing kidney problems.

In addition, studies have linked GLP-1 receptor agonists to skeletal muscle breakdown.

## Conscious Sedation Recommendations

At present, there isn't enough evidence-based data to make any definitive protocol recommendations for patients taking GLP-1 receptor agonists undergoing sedation procedures. However, it is reasonable to assume that the increased risk of nausea and vomiting during anesthesia increases the risk of aspiration in patients taking these drugs. It is also reasonable to assume this risk is greater the deeper the depth of sedation when the patient's protective reflexes that prevent aspiration are less intact.

Given the increased potential for nausea and vomiting, it is important that the pre-sedation instructions allow for a period of withholding these drugs prior to sedation based on their half-life. The half-life of these drugs varies widely (see table below) from two weeks with the extended-release form of exenatide (Bydureon Bcise®) which is injected weekly, to thirteen hours for the daily injected liraglutide (Victoza®, Saxenda®).

<b>GLP-1 Receptor Agonist Brand</b>	<b>Generic</b>	<b>Method of Administration</b>	<b>Half-Life</b>	<b>FDA Approved for Weight Loss</b>
<b>Trulicity®</b>	<b>Dulaglutide</b>	<b>Weekly Injections</b>	<b>5 days</b>	<b>No</b>
<b>Bydureon Bcise®</b>	<b>Exenatide</b>	<b>Weekly Injections</b>	<b>2 weeks</b>	<b>No</b>
<b>Victoza®</b>	<b>Liraglutide</b>	<b>Daily Injections</b>	<b>13 hours</b>	<b>No</b>
<b>Saxenda®</b>	<b>Liraglutide</b>	<b>Daily Injections</b>	<b>13 hours</b>	<b>Yes</b>
<b>Ozempic®</b>	<b>Semaglutide</b>	<b>Weekly Injections</b>	<b>1 week</b>	<b>No</b>
<b>Rybelsus®</b>	<b>Semaglutide</b>	<b>Daily Oral</b>	<b>1 week</b>	<b>No</b>
<b>Wegovy®</b>	<b>Semaglutide</b>	<b>Daily Injections</b>	<b>1 week</b>	<b>Yes</b>
<b>Mounjaro®</b>	<b>Tirzepatide</b>	<b>Weekly Injections</b>	<b>5 days</b>	<b>No</b>
<b>Zepbound®</b>	<b>Tirzepatide</b>	<b>Weekly Injections</b>	<b>5 days</b>	<b>Yes</b>

Until there is more evidence-based research on the impact of GLC-1 receptor agonists on anesthesia, specifically conscious sedation, DOCS Education recommends a medical consult with the patient's PCP or endocrinologist, and absent the strong recommendation to the contrary from their prescribing physician, have the patient withhold their weekly injectable GLP-1 receptor antagonist one week prior to sedation, and their daily GLP-1 receptor agonist on the day of the sedation appointment, and be NPO 6 hours prior to the appointment as usual. These recommendations closely align with those of the American Society of Anesthesiologists (June 28-2023).

The patient taking a GLP-1 Receptor Agonist for treatment of diabetes may also be taking other diabetic medication such as Metformin, Glipizide, or Jardiance. Given that they will be NPO for 6 hours prior to the sedation procedure, they should withhold these other diabetic medications as well on the day of the sedation appointment.

The sedation team should record a baseline blood glucose at the sedation workup and take blood glucose readings on the day of sedation at presentation, every hour thereafter, and upon dismissal. Sedations should be kept on the light side, and antiemetic medications be a part of the protocol. This means hydroxyzine (25-50mg) for oral sedation, and ondansetron (4mg) for intravenous sedation.

Should the patient have GI symptoms such as nausea and/or vomiting on the day of and prior to the sedation appointment, the procedure should be rescheduled.

