

GLP-1 Medications (Ozempic, Wegovy) and Your Surgery

Overview

- GLP-1 receptor agonists induce delayed gastric emptying, which has implications for perioperative aspiration risk during anesthesia [1].
- The increasing prevalence of GLP-1 receptor agonist use in patients with obesity presents a new challenge for anesthesiologists [2].
- High-quality studies are needed to determine optimal perioperative care for patients on GLP-1 receptor agonists [2].
- GLP-1 receptor agonists show potential to reduce postoperative complications in total joint arthroplasty, but findings remain inconsistent [3].
- Further research is needed to clarify the impact of GLP-1 receptor agonists on surgical outcomes and establish perioperative management guidelines [3].
- Conflicting findings regarding the impact of GLP-1 receptor agonists on postoperative outcomes in arthroplasty highlight the need for well-designed multicenter studies and randomized controlled trials [4].
- Arthroplasty surgeons will encounter an increasing number of patients on GLP-1 agonists, necessitating an understanding of their perioperative implications [5].
- GLP-1 receptor agonist therapy is not associated with adverse events following shoulder surgery [6].
- GLP-1 agonist use should not be a contraindication for proceeding with total shoulder arthroplasty [6].
- Elective preprocedural cessation of GLP-1 receptor agonists and GLP-1/GIP receptor agonists is not recommended due to insufficient data supporting cessation and risks of hyperglycemia and compromised weight control [7].
- Variability in available studies, potential confounding factors, and severe heterogeneity of conclusions emphasize the need for more high-quality evidence-based primary research to optimize perioperative management of patients taking GLP-1 receptor agonists [8].
- Narrative reviews explore the mechanisms of action of GLP-1 agonists, their effects on bone health, and their implications in perioperative patients undergoing orthopedic surgery, with an emphasis on spine surgery [9].

- Semaglutide and other GLP-1 agonists may increase the number of eligible candidates for elective total joint arthroplasty by enabling weight loss and improving diabetic control [10].
- Semaglutide and other GLP-1 agonists may potentially reduce postoperative complications such as sepsis and prosthetic joint infections [10].
- GLP-1 receptor agonist use suggests a potential benefit for optimizing high-risk patients with obesity or diabetes undergoing total joint arthroplasty [11].
- GLP-1 receptor agonists may provide skeletal benefits in type 2 diabetes patients by addressing specific mechanisms underlying diabetic osteopathy [16].
- The effects of GLP-1 receptor agonists on diabetic osteopathy vary by agent type, patient characteristics, and treatment duration [16].
- Further investigation is needed to elucidate the association between GLP-1 receptor agonist use and the increased incidence of osteoarthritis diagnosis and conversion to total knee arthroplasty in patients with no preexisting osteoarthritis [19].

Effects on Surgery and Recovery

- Interdisciplinary collaboration between endocrinologists and anesthesiologists is important to ensure safe and individualized perioperative management of patients on GLP-1 RAs [1].
- High-quality studies are needed to address the optimal perioperative care of patients on GLP-1RAs [2].
- Further research is needed to clarify the impact of GLP-1 receptor agonists on outcomes and establish perioperative management guidelines for total joint arthroplasty [3].
- Conflicting findings regarding the effects of GLP-1 RAs on surgical outcomes highlight the need for well-designed multicenter studies and randomized controlled trials [4].
- GLP-1 agonist use should not be a contraindication for proceeding with total shoulder arthroplasty (TSA) [6].
- Elective preprocedural cessation of GLP-1RAs and GLP-1/GIPRAs is not recommended due to insufficient data supporting cessation and risks of hyperglycemia and compromised weight control [7].
- Variability in available studies, potential confounding factors, and severe heterogeneity of conclusions emphasize the need for more high-quality evidence-based primary research to optimize perioperative management of patients taking GLP-1 RAs [8].
- Semaglutide and other GLP-1 agonists may reduce postoperative complications such as sepsis and prosthetic joint infections in total joint arthroplasty [10].
- GLP-1RA use has a potential benefit for optimizing high-risk patients with obesity or diabetes undergoing total joint arthroplasty [11].
- Preoperative glucagon-like peptide-1 receptor agonist use may be linked to reduced readmission risk following joint arthroplasty [12].
- Preoperative glucagon-like peptide-1 receptor agonist use is not associated with evidence of increased postoperative medical harm following joint arthroplasty [12].

- Current observational data suggest that perioperative GLP-1 RA use in patients undergoing total hip or knee arthroplasty is not associated with a consistent increase in short-term revision rates [13].
- Perioperative GLP-1 RA use in patients undergoing total hip or knee arthroplasty may be associated with a reduced risk of postoperative infection [13].
- Extended GLP-1 RA withholding, 24-hour clear liquid diets, and pre-procedural gastric POCUS may be associated with reduced residual gastric content in selected patient populations [14].
- Perioperative GLP-1RA use was associated with a small yet statistically significant reduction in the odds of wound dehiscence following carpal tunnel release (CTR) [15].
- Perioperative GLP-1RA use did not increase the odds of any other 90-day postoperative complications following carpal tunnel release [15].
- Exenatide is the best option agent with regard to the risk of fracture among GLP-1 receptor agonists [17].
- GLP-1 receptor agonists are a promising tool for preoperative weight loss in patients with obesity and type-2 diabetes mellitus undergoing orthopaedic surgery [18].

Practical Considerations

- The increasing prevalence of GLP-1 RA use in patients with obesity presents a new challenge for anesthesiologists regarding perioperative care [2].
- High-quality studies are needed to address the optimal perioperative care of patients on GLP-1 RAs [2].
- Further research is needed to clarify the impact of GLP-1 RAs on outcomes and establish perioperative management guidelines for total joint arthroplasty [3].
- Conflicting findings regarding the effects of GLP-1 RAs on surgical outcomes highlight the need for further research, including well-designed multicenter studies and randomized controlled trials [4].
- Elective preprocedural cessation of GLP-1 RAs and GLP-1/GIP RAs is not recommended due to insufficient data supporting cessation and the risks of hyperglycemia and compromised weight control [7].
- Narrative reviews explore the mechanisms of action of GLP-1 agonists, their effects on bone health, and their implications for perioperative patients undergoing orthopedic surgery, with an emphasis on spine surgery [9].
- GLP-1 RA use may benefit high-risk patients with obesity or diabetes undergoing total joint arthroplasty [11].
- Preoperative GLP-1 receptor agonist use may be linked to reduced readmission risk following joint arthroplasty [12].
- Preoperative GLP-1 receptor agonist use is not associated with evidence of increased postoperative medical harm in joint arthroplasty [12].

Key Evidence

- [L4] This review summarizes the pharmacological mechanisms and clinical implications of GLP-1 RA-induced delayed gastric emptying, evaluates current literature on perioperative aspiration risk, and emphasizes the importance of interdisciplinary collaboration between endocrinologists and anesthesiologists to ensure safe and individualized perioperative management. [1] ([10.3904/kjim.2025.277](#))
- [L4] Due to the increasing popularity of GLP-1RAs in patients with obesity, the authors call for further high-quality studies to address the optimal perioperative care of patients on GLP-1RAs. [2] ([10.5114/ait/203167](#))
- [L5] The paper concludes that while GLP-1 receptor agonists show potential to reduce postoperative complications in total joint arthroplasty, findings remain inconsistent, and further research is needed to clarify their impact on outcomes and establish perioperative management guidelines. [3] ([10.1016/j.arth.2025.10.027](#))
- [L4] However, conflicting findings highlight the need for further research, particularly well-designed multicenter studies and randomized controlled trials, to clarify the effects of GLP-1 RAs on surgical outcomes. [4] ([10.1016/j.arth.2025.07.015](#))
- [L5] Arthroplasty surgeons will encounter an increasing number of patients on GLP-1 agonists, making it important to understand the implications of their use in the perioperative period. [5] ([10.1016/j.arth.2023.12.002](#))
- [L1] Based on this data, GLP-1 agonist use should not be a contraindication for proceeding with TSA. [6] ([10.1016/j.jse.2025.12.005](#))
- [L2] The variability in available studies, potential confounding factors, and the severe heterogeneity of conclusions all emphasize the need for more high-quality evidence-based primary research to optimize perioperative management of patients taking GLP-1 RAs. [8] ([10.1186/s13741-026-00662-9](#))
- [L4] This narrative review explores the mechanisms of action of GLP-1 agonists, their effects on bone health, and the implications of their use in perioperative patients undergoing orthopedic surgery, with an emphasis on spine surgery. [9] ([10.1177/15563316261438492](#))
- [L5] Semaglutide and other GLP-1 agonists may increase the number of eligible candidates for elective total joint arthroplasty by enabling weight loss and improving diabetic control, while also potentially reducing postoperative complications such as sepsis and prosthetic joint infections. [10] ([10.1016/j.arth.2023.12.014](#))
- [L1] These findings suggest a potential benefit of GLP-1RA use for optimizing high-risk patients who have obesity or diabetes undergoing total joint arthroplasty. [11] ([10.1016/j.arth.2025.09.054](#))
- [L1] Preoperative glucagon-like peptide-1 receptor agonist use may be linked to reduced readmission risk following joint arthroplasty, without evidence of increased postoperative medical harm. [12] ([10.1016/j.arth.2025.11.036](#))

- [L4] Current observational data suggest that perioperative GLP-1 RA use in patients undergoing total hip or knee arthroplasty is not associated with a consistent increase in short-term revision rates and may be associated with a reduced risk of postoperative infection. [13] ([10.1186/s42836-026-00375-w](#))
- [L4] Available observational evidence suggests that extended GLP-1 RA withholding, 24-hour clear liquid diets, and pre-procedural gastric POCUS may be associated with reduced residual gastric content in selected patient populations. [14] ([10.7759/cureus.108216](#))
- [L3] Perioperative GLP-1RA use was associated with a small yet statistically significant reduction in the odds of wound dehiscence following CTR and did not increase the odds of any other 90-day postoperative complications. [15] ([10.1016/j.jhsg.2025.100746](#))
- [L1] GLP-1 RAs may provide skeletal benefits in T2DM patients by addressing specific mechanisms underlying diabetic osteopathy, with effects varying by agent type, patient characteristics, and treatment duration. [16] ([10.1186/s12891-025-09022-y](#))
- [L1] Exenatide is the best option agent with regard to the risk of fracture. [17] ([10.1007/s00198-018-4649-8](#))
- [L5] GLP-1 receptor agonists are a promising tool for preoperative weight loss in patients with obesity and type-2 diabetes mellitus undergoing orthopaedic surgery. [18] ([10.2106/jbjs.24.01287](#))
- [L3] Further investigation is needed to elucidate the association between GLP-1-RA use and the increased incidence of OA diagnosis and conversion to TKA in patients with no preexisting OA. [19] ([10.1177/23259671241297157](#))

References

- [1] Delayed gastric emptying induced by glucagon-like peptide-1 receptor agonists and its implications for perioperative risk during anesthesia. *The Korean Journal of Internal Medicine*. 2026. DOI: 10.3904/kjim.2025.277
- [2] GLP-1 agonists: a new hope for patients, a new challenge for anaesthetists. *Anaesthesiology Intensive Therapy*. 2025. DOI: 10.5114/ait/203167
- [3] Glucagon-Like Peptide-1 Receptor Agonists: Have We Found the Holy Grail for Total Joint Arthroplasty?. *The Journal of Arthroplasty*. 2025. DOI: 10.1016/j.arth.2025.10.027
- [4] Impact of Glucagon-Like Peptide-1 Receptor Agonists on Postoperative Outcomes in Arthroplasty: A Systematic Review. *The Journal of Arthroplasty*. 2025. DOI: 10.1016/j.arth.2025.07.015
- [5] The Impact of Glucagon-Like Peptide-1 Agonists on Hip and Knee Arthroplasty and Perioperative Considerations. *The Journal of Arthroplasty*. 2024. DOI: 10.1016/j.arth.2023.12.002
- [6] GLP-1 receptor agonist therapy is not associated with adverse events following shoulder surgery: a systematic review and meta-analysis. *Journal of Shoulder and Elbow Surgery*. 2026. DOI: 10.1016/j.jse.2025.12.005
- [7] Periprocedural use of GLP-1 receptor agonists: ANZCA Clinical Practice Recommendations. *ANZCA*. 2025.

- [8] Perioperative anesthesia management of GLP-1 receptor agonists: a systematic review of potential risks. *Perioperative Medicine*. 2026. DOI: 10.1186/s13741-026-00662-9
- [9] GLP-1 Agonists in Orthopedic Surgery: A Narrative Review of Bone Health and Surgical Implications. *HSS Journal*. 2026. DOI: 10.1177/15563316261438492
- [10] Semaglutide and Other GLP-1 Agonists: A Boon for the Arthroplasty Industry?. *The Journal of Arthroplasty*. 2024. DOI: 10.1016/j.arth.2023.12.014
- [11] The Impact of Glucagon-Like Peptide-1 Receptor Agonist Use on Clinical Outcomes After Total Hip and Knee Arthroplasty: A Systematic Review and Meta-Analysis of 346,899 Patients. *The Journal of Arthroplasty*. 2025. DOI: 10.1016/j.arth.2025.09.054
- [12] Glucagon-Like Peptide-1 Receptor Agonists, Readmission, and Postoperative Complications in Arthroplasty: A Systematic Review and Meta-Analysis. *The Journal of Arthroplasty*. 2025. DOI: 10.1016/j.arth.2025.11.036
- [13] Glucagon-like peptide-1 receptor agonists in total joint arthroplasty: a comprehensive systematic review of what orthopaedic surgeons should know. *Arthroplasty*. 2026. DOI: 10.1186/s42836-026-00375-w
- [14] Peri-Procedural Fasting and Gastric Ultrasound Strategies in Glucagon-Like Peptide-1 (GLP-1) Receptor Agonist Users: A Systematic Review With Qualitative Synthesis. *Cureus*. 2026. DOI: 10.7759/cureus.108216
- [15] Impact of Perioperative Glucagon-Like Peptide-1 Receptor Agonists on Postoperative Outcomes Following Carpal Tunnel Release. *Journal of Hand Surgery Global Online*. 2025. DOI: 10.1016/j.jhsg.2025.100746
- [16] Differential effects of GLP-1 receptor agonists on diabetic osteopathy in type 2 diabetes: a patient-stratified network meta-analysis. *BMC Musculoskeletal Disorders*. 2025. DOI: 10.1186/s12891-025-09022-y
- [17] Glucagon-like peptide-1 receptor agonists and fracture risk: a network meta-analysis of randomized clinical trials. *Osteoporosis International*. 2018. DOI: 10.1007/s00198-018-4649-8
- [18] GLP-1 Receptor Agonists in Orthopaedic Surgery: Implications for Perioperative Care and Outcomes. *Journal of Bone and Joint Surgery*. 2025. DOI: 10.2106/jbjs.24.01287
- [19] The Impact of Contemporary Glucagon-like Peptide-1 Receptor Agonists on the Onset, Severity, and Conversion to Arthroplasty in Hip and Knee Osteoarthritis. *Orthopaedic Journal of Sports Medicine*. 2025. DOI: 10.1177/23259671241297157