



GESTION PÉRI-OPÉRATOIRE DES NOUVEAUX ANTIDIABÉTIQUES

Dr Marie Delmas

Le 29 novembre 2025

- Les inhibiteurs du cotransporteurs SGLT2
- Les analogues du récepteur au GLP-1 / GIP



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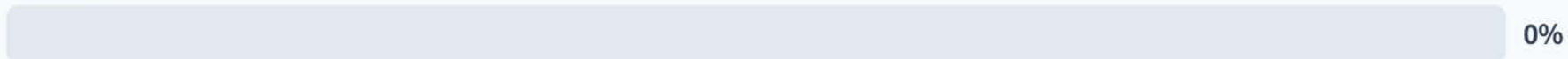


Les inhibiteurs du co-transporteur du SGLT2 sont indiqués dans le traitement du:

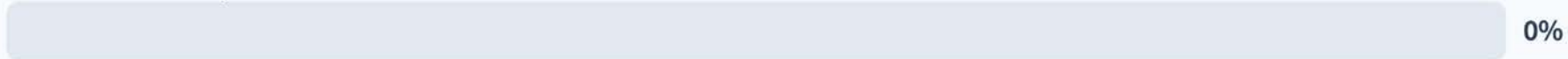
Diabète



Obésité



Insuffisance cardiaque



Insuffisance rénale



INHIBITEURS DU SGLT2

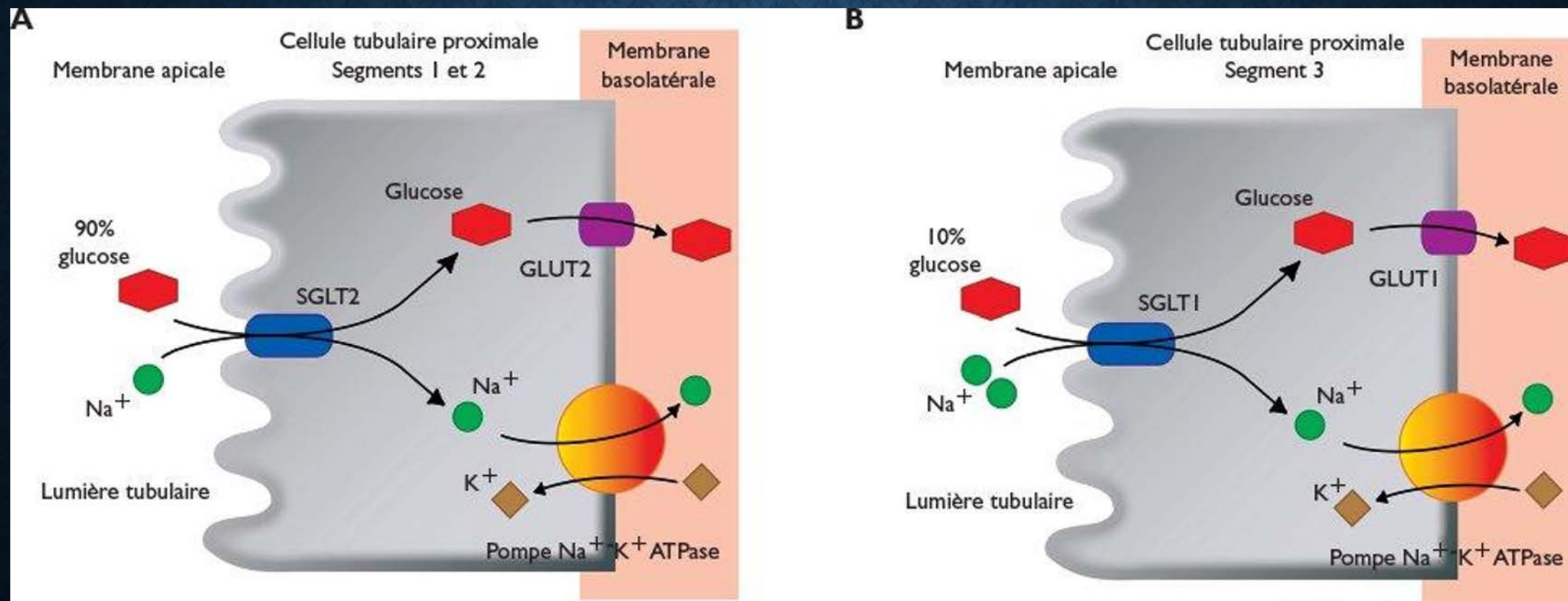
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Les glifozines

- Indications:
 - diabète de type 2 (en association ou en 2nd intention)
 - obésité
- Inhibition de la réabsorption rénale du glucose
- Effet bénéfique dans l'insuffisance cardiaque et rénale

INHIBITEURS DU SGLT2

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Pruijm, M., Beaud, F., Humbert, A., Zanchi, A., Burnier, M., Les inhibiteurs du cotransporteur SGLT2 comme nouveau traitement du diabète : aspects rénaux, Rev Med Suisse, 2015/463 (Vol.11), p. 488–492.



Effect of Sodium–Glucose Cotransporter 2 Inhibitors on Diabetic Ketoacidosis Among Patients With Type 2 Diabetes: A Meta-analysis of Randomized Controlled Trials

Diabetes Care 2016;39:e123–e124 | DOI: 10.2337/dc16-0885

Huilin Tang,^{1,2} Dandan Li,³
Tiansheng Wang,⁴ Suodi Zhai,² and
Yiqing Song¹

Published in final edited form as:

Diabetes Metab Res Rev. 2017 November ; 33(8): . doi:10.1002/dmrr.2924.

Ketoacidosis associated with SGLT2 inhibitor treatment: Analysis of FAERS data

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SGLT2 inhibitors and diabetic ketoacidosis: data from the FDA Adverse Event Reporting System

Short Communication | Published: 12 May 2017

Volume 60, pages 1385–1389, (2017) [Cite this article](#)



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L'acido-cétose peut être induite par :

L'anesthésie loco-régionale

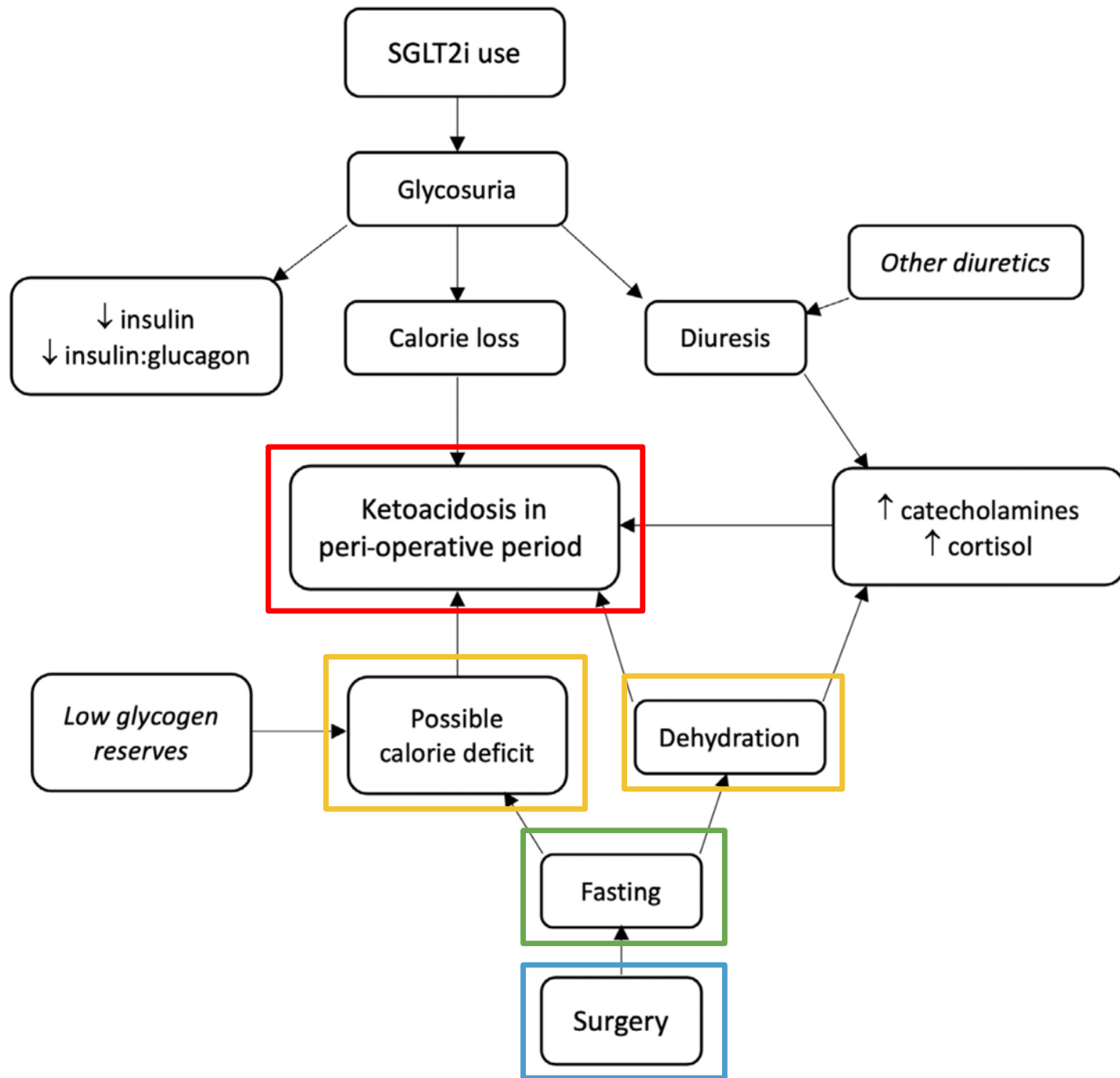
0%

Le jeûne pré-opératoire, le stress chirurgical

0%

Des anesthésies itératives

0%



Impact en péri-opératoire

Milder TY, Greenfield JR, Milder DA. Peri-procedural ketoacidosis risk with sodium-glucose cotransporter 2 inhibitor use in people without diabetes. *Anaesthesia*. 2023 Nov;78(11):1418-1419.

INHIBITEURS DU SGLT2

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ACIDOCÉTOSE “EUGLYCÉMIQUE”				
Symptômes	Nausées, vomissements Fatigue Douleurs abdominales Confusion progressive			
Clinique	Tachycardie Respiration de Kussmaul avec une haleine fruitée Déshydratation			
Valeurs biochimiques	pH	<	7,3	
	Bicarbonate	sérique	<	15 mmol/L
	Cétonémie	>	3mmol/L	
	Glycémie est fréquemment ≥ 11 mmol/L (200mg/dL)			

MANAGEMENT PÉRI-OPÉRATOIRE INHIBITEURS DU SGLT2

TABLE 3
Cleveland Clinic Anesthesiology Institute preoperative medication guidelines for diabetes⁶

Medication	Days before surgery	Day of surgery
Sodium-glucose cotransporter 2 inhibitors		
All except ertugliflozin	Hold 3 days preoperatively	Hold
Ertugliflozin	Hold 4 days preoperatively	Hold

Morey-Vargas OL, Gossmann M, Ketz JM, Abdelmalak BB. Managing noninsulin glucose-lowering medications before surgery: A comparison of clinical practice guidelines. Cleve Clin J Med. 2025 Jul 1;92(7):429-437.

Diabetes medication	Day prior to admission	Timing of surgery	
		Patient for am surgery	Patient for pm surgery
SGLT-2 inhibitors (eg dapagliflozin, canagliflozin, empagliflozin, ertugliflozin)	Omit on day before surgery	Omit on day of surgery	Omit on day of surgery

Ayman G, Dhatariya K, Dhesi J, et al. Guideline for Perioperative Care for People with Diabetes Mellitus Undergoing Elective and Emergency Surgery. 2023

Table 1 Pharmacokinetic properties of sodium-glucose co-transporter (SGLT) inhibitors.

	= Forxiga	= Jardiance	= Invokana
	Dapagliflozin	Empagliflozin	Canagliflozin
Oral bio-availability; %	78	60	65
T-max; h	1-2	1	1-2
T ½ elimination; h	12.2	12.4	11-13

GUIDELINES

Preoperative assessment of adults undergoing elective noncardiac surgery

Updated guidelines from the European Society of Anaesthesiology and Intensive Care

Massimo Lamperti, Carolina S. Romero, Fabio Guarracino, Gianmaria Cammarota, Luigi Vetrugno, Boris Tufegdžić, Francisco Lozano, Juan José Macías Frías, Andreas Duma, Matthias Bock, Kurt Ruetzler, Silvia Mulero, Daniel A. Reuter, Luigi La Via, Simon Rauch, Massimiliano Sorbello and Arash Afshari

patient should be counseled about the risk before deciding to proceed with sedation/general anaesthesia (CPS)

- R12.7: If the procedure is of such urgency that postponement is not desirable, endotracheal intubation by rapid sequence induction/intubation is advised. (CPS)
- R12.8: SGLT2 inhibitors (SGLT2i) drugs should be withheld for 3 to 4 days before elective procedures to reduce the risk of euglycemic diabetic ketoacidosis. (CPS)
- R12.9: Patients taking SGLT2i medications should consume clear fluids approximately 2 h before the procedure to keep regular hydration. (CPS)
- R12.10: Euglycemic diabetic ketoacidosis should be suspected in this category of patients, and blood β -hydroxybutyrate is a functional confirmatory test. (CPS)
- R12.11: If a patient taking SGLT2i drugs did not discontinue the medication in time, dehydration caused by bowel preparation for endoscopy can increase the ketone levels, and the patient should be adequately hydrated before leaving the hospital. (CPS)

MANAGEMENT PÉRI-OPÉRATOIRE INHIBITEURS DU SGLT2

It should be considered to interrupt SGLT-2 inhibitor therapy for at least 3 days before intermediate- and high-risk NCS.

Ila

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European Heart Journal (2022) 43, 3826–3924
<https://doi.org/10.1093/eurheartj/ehac270>

ESC GUIDELINES

2022 ESC Guidelines on cardiovascular assessment and management of patients undergoing non-cardiac surgery

Developed by the task force for cardiovascular assessment and management of patients undergoing non-cardiac surgery of the European Society of Cardiology (ESC)

Endorsed by the European Society of Anaesthesiology and Intensive Care (ESAIC)

- Les inhibiteurs du cotransporteurs SGLT2
- Les analogues du récepteur au GLP-1 / GIP

ANALOGUES GLP-1

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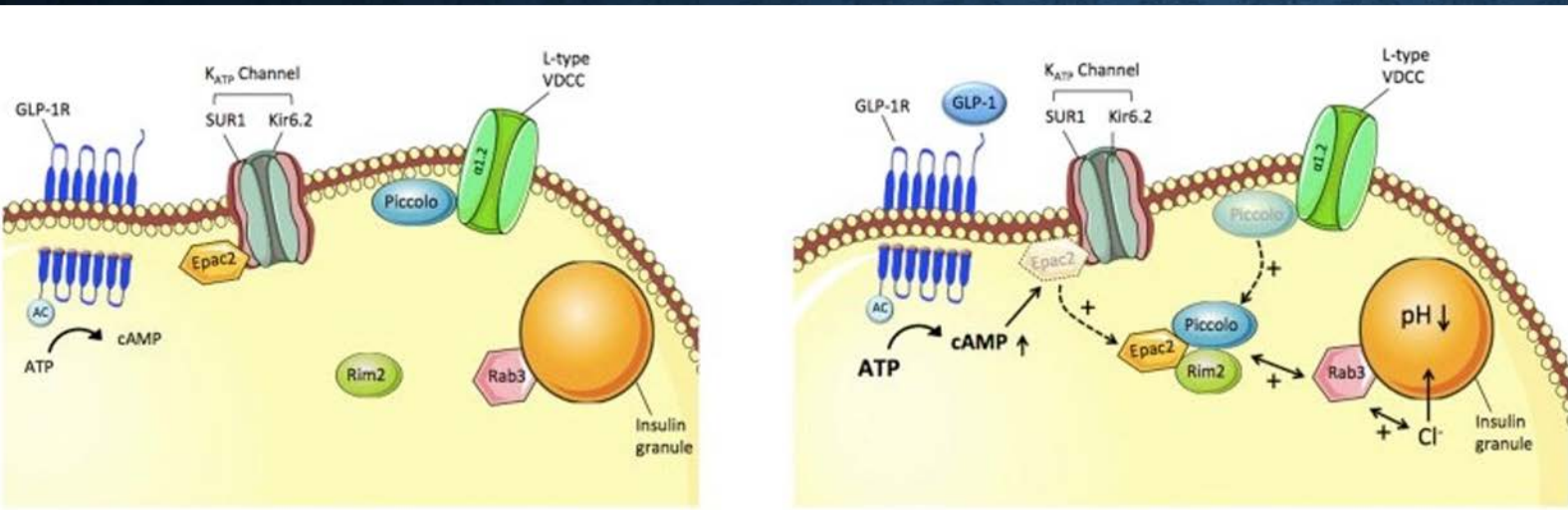
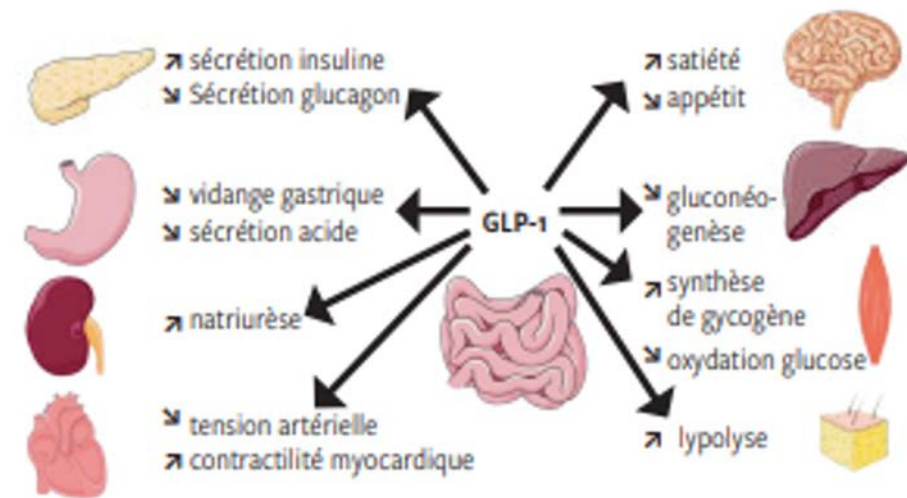


FIG 1

Actions systémiques du GLP-1



- **Indications**
 - diabète de type 2
 - obésité
- **Sécrétées par la muqueuse du tube digestif**

Table 3 Common glucagon-like peptide-1 (GLP-1) receptor agonists.

Name	Tradename	Half-life	Withhold time (three elimination half-lives)	Dose	Route
Lixisenatide	Lyxumia [®]	3–4 h	9–12 h	10–29 µg daily	Subcutaneous
Exenatide	Byetta [®]	2.4 h	7 h	5–10 µg daily	Subcutaneous
Liraglutide	Victoza [®]	13 h	39 h	0.6–1.8 mg daily	Subcutaneous
Dulaglutide	Trulicity [®]	90 h	27 h	0.75–1.5 mg weekly	Subcutaneous
Exenatide extended release	Bydureon [®]	> 7 d	21 d	2 mg weekly	Subcutaneous
Semaglutide	Ozempic [®]	160 h	20 d	0.25–1 mg weekly	Subcutaneous
Semaglutide (oral formulation)	Rybelsus [®]	7 d	21 d	3–14 mg daily	Oral
Tirzepatide	Mounjaro [®]	120 h	15 d	2.5 mg weekly	Subcutaneous

Milder DA, Milder TY, Liang SS, Kam PCA. Glucagon-like peptide-1 receptor agonists: a narrative review of clinical pharmacology and implications for peri-operative practice. *Anaesthesia*. 2024 Jul;79(7):735-747.



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La distribution des récepteurs sur la muqueuse digestive fait redouter quelle complication?

Occlusion digestive

0%

Gastroparésie

0%

Diarrhée

0%

ANALOGUES GLP-1

OZEMPIC® - RYBELSUS® - VICTOZA® - TRULICITY®

Case Reports > Can J Anaesth. 2023 Aug;70(8):1397-1400. doi: 10.1007/s12630-023-02521-3.

Epub 2023 Jun 6.

Regurgitation under anesthesia in a fasted patient prescribed semaglutide for weight loss: a case report

Michael A Gulak ¹, Patricia Murphy ²

Case Reports > Can J Anaesth. 2023 Aug;70(8):1394-1396. doi: 10.1007/s12630-023-02440-3.

Epub 2023 Mar 28.

Semaglutide, delayed gastric emptying, and intraoperative pulmonary aspiration: a case report

Sandra R Klein ¹, Ion A Hobai ^{2 3}

> J Clin Anesth. 2023 Aug;87:111091. doi: 10.1016/j.jclinane.2023.111091. Epub 2023 Mar 2.

Relationship between perioperative semaglutide use and residual gastric content: A retrospective analysis of patients undergoing elective upper endoscopy

Saullo Queiroz Silveira ¹, Leopoldo Muniz da Silva ², Arthur de Campos Vieira Abib ¹, Diogo Turiani Hourneaux de Moura ³, Eduardo Guimarães Hourneaux de Moura ³, Leonardo Barbosa Santos ⁴, Anthony M-H Ho ⁵, Rafael Souza Fava Nersessian ², Filipe Lugon Moulin Lima ¹, Marcela Viana Silva ³, Glenio B Mizubuti ⁶

Original Contribution

Effect of various perioperative semaglutide interruption intervals on residual gastric content assessed by esophagogastroduodenoscopy: A retrospective single center observational study

Leonardo Barbosa Santos MD^{a b 1} , Glenio B. Mizubuti MD, PhD^{c 1} ,
Leopoldo Muniz da Silva MD, PhD^{a b} , Saullo Queiroz Silveira MD^d ,
Rafael Souza Fava Nersessian MD^e , Arthur de Campos Vieira Abib MD^a ,
Fernando Nardy Bellicieri MD^d , Helidea de Oliveira Lima MD, MSc^b , Anthony M.-H. Ho MD^c ,
Gabriel Silva dos Anjos BS^a , Diogo Turiani Hourneaux de Moura MD, PhD^f , Eduardo Guimarães Hourneaux de Moura MD, PhD^e , Joaquim Edson Vieira MD, PhD^g 

Pre-operative management of GLP-1 agonists

Lamperti et al. 2024

Pre-operative evaluation of adults undergoing elective non-cardiac surgery. Updated guidelines from the ESAIC

When GLP-1 agonist is prescribed as...



A weekly injection: we recommend pausing GLP-1 agonists given for glycaemic control at least one week before or, if given for obesity, at least two weeks before a scheduled procedure requiring sedation/anaesthesia



A daily oral administration: we recommend pausing GLP-1 agonists on the day of the procedure

All patients...



Should take a clear fluid diet for 24 hours before any procedure



Could potentially have full stomach despite a lack gastrointestinal symptoms

Whenever possible...



A gastric ultrasound could be performed, and if gastric content is found, the patient is considered at high risk of aspiration. Patients should be counselled for this risk before deciding to proceed with sedation/general anaesthesia



Endotracheal intubation by rapid sequence induction/intubation is advised if the procedure is of such urgency that postponement is not possible

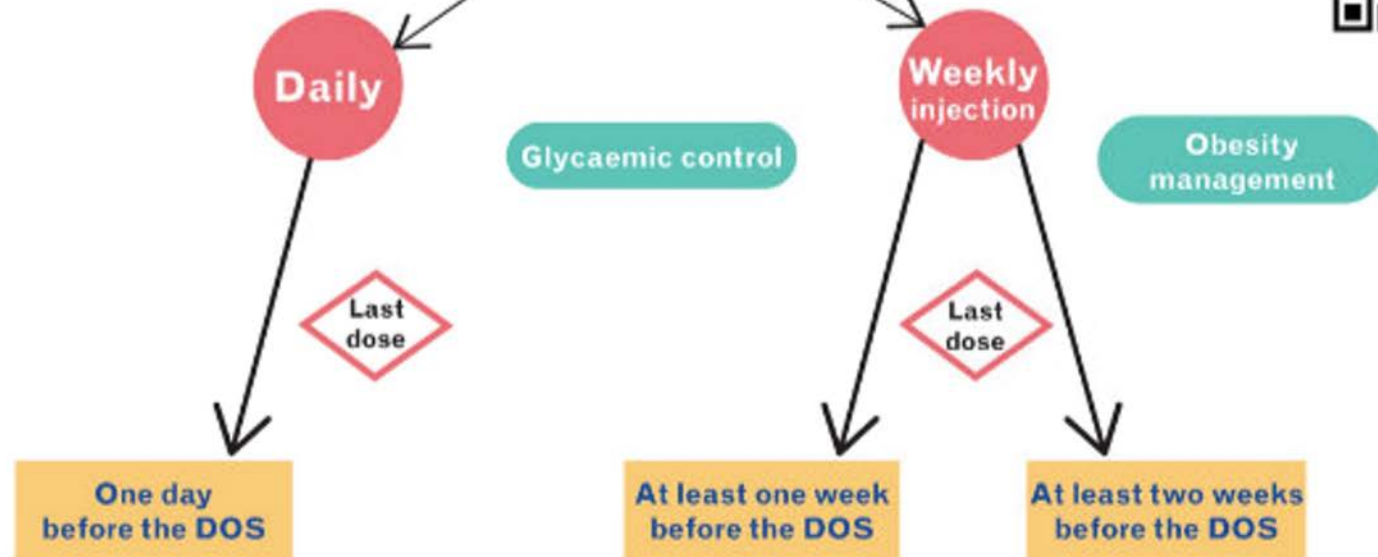
Pre-operative management of GLP-1 agonists

Pre-operative evaluation of adults undergoing elective non-cardiac surgery. Updated guidelines from the ESAIC

Lamperti et al. 2024



How often does the patient take the GLP-1?



GUIDELINES

Preoperative assessment of adults undergoing elective noncardiac surgery

Updated guidelines from the European Society of Anaesthesiology and Intensive Care

Massimo Lamperti, Carolina S. Romero, Fabio Guarracino, Gianmaria Cammarota, Luigi Vetrugno, Boris Tufegdžić, Francisco Lozano, Juan José Macías Frías, Andreas Duma, Matthias Bock, Kurt Ruetzler, Silvia Mulero, Daniel A. Reuter, Luigi La Via, Simon Rauch, Massimiliano Sorbello and Arash Afshari

Use of GLP-1 agonists and SGLT2 inhibitors**Is using GLP-1 agonists or SGLT2 inhibitors changing the perioperative management of patients undergoing procedures requiring sedation/ anaesthesia?**

- R12.1: When a GLP-1 agonist is prescribed as a weekly injection and considering the long half-life of GLP-1 agonists, we recommend pausing GLP-1 agonists at least 1 week before a scheduled procedure requiring sedation/anaesthesia. If these drugs are given for obesity, then 2 weeks (three half-lives) are recommended. (CPS)
- R12.2: If the medication is prescribed as daily oral or subcutaneous administration, we recommend pausing GLP-1 agonists on the day of the procedure. (CPS)
- ~~R12.3: There is no evidence to show that stopping these medications even 1 week before the procedure will eliminate the risk of delayed gastric emptying, despite following the usual fasting timing for surgery. (CPS)~~
- R12.4: A clear fluid diet for 24h before any procedure should be considered in patients taking GLP-1 agonists. (CPS)
- R12.5: All patients taking GLP-1 agonists should be considered as at risk of having a full stomach despite a lack of gastrointestinal symptoms. (CPS)
- R12.6: Whenever possible, a gastric ultrasound should be performed. If gastric contents are found by ultrasound and these are considered as a high risk for aspiration, patient should be counselled about this risk before deciding to proceed with sedation/general anaesthesia. (CPS)

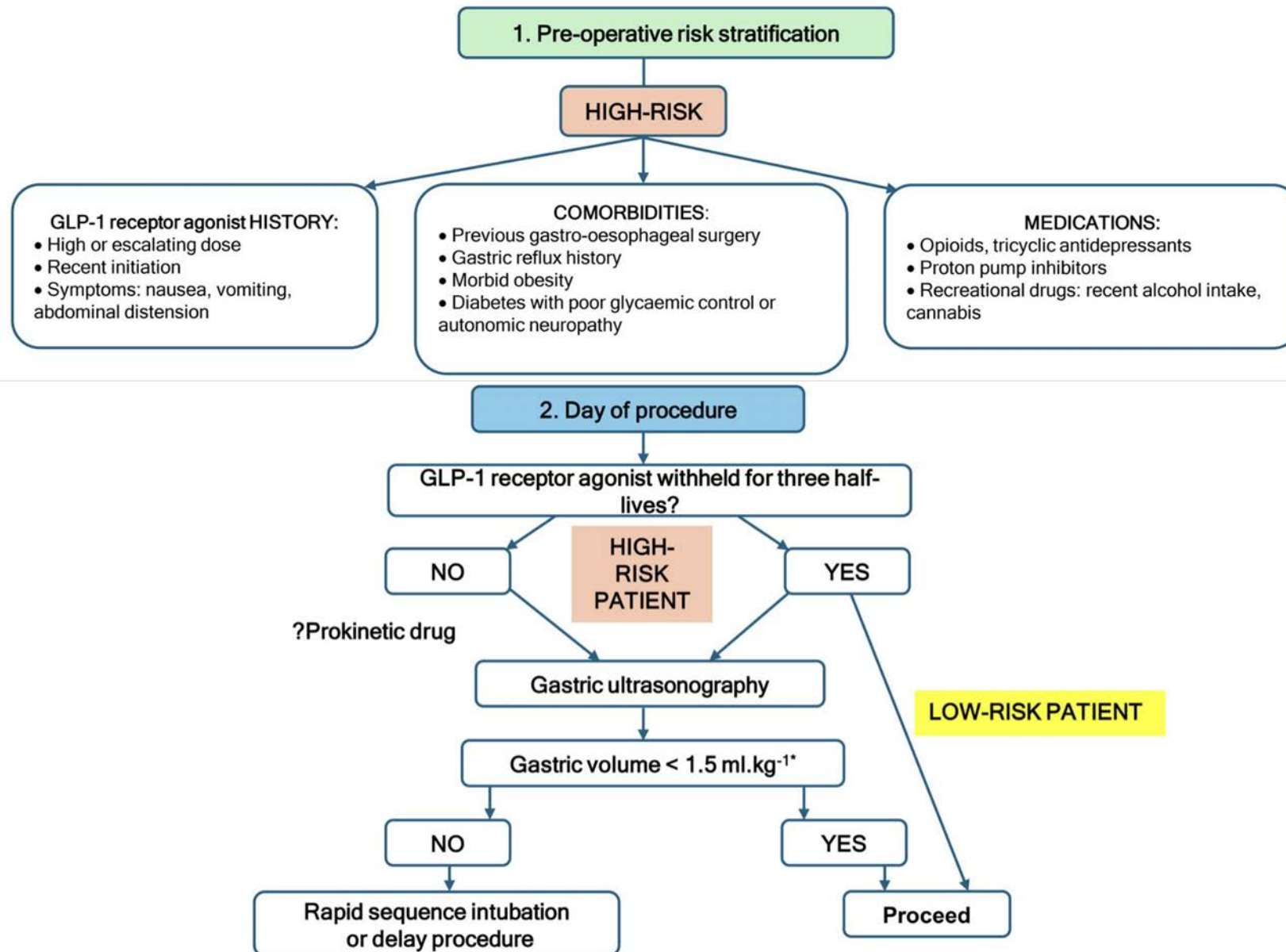
- **RECOMMENDATIONS**

- In **June 2023, the Canadian Anesthesiologists' Society** circulated a communication amongst their members **highlighting the risk for patients using GLP-1 receptor agonists**.¹¹ It is important to have a shared decision-making approach among the care team that begins early, when procedures are being scheduled, rather than in the days leading up to the procedure.
- The Canadian Journal of Anesthesiology recently published an editorial that included some recommendations.¹² The editorial's authors recommended the following:
 - Consider holding the GLP-1 receptor agonist **for at least 3 half-lives** ahead of the procedure to clear approximately 88% of the drug. For example, semaglutide has a half-life of 1 week and would therefore need to be held for 3 weeks.
 - For patients taking a GLP-1 receptor agonist for weight loss, hold the GLP-1 receptor agonist for at least 3 half-lives ahead of the procedure.
 - For patients taking a GLP-1 receptor agonist for type 2 diabetes, consult with the endocrinologist about the risks and benefits of holding the drug for at least 3 half-lives ahead of the procedure.
- **If the patient is unable to hold the GLP-1 receptor agonist for at least 3 half-lives before the procedure,**
 - **consider rapid-sequence induction of general anesthesia, to reduce the risk of aspiration, and**
 - **consider the use of point-of-care gastric ultrasonography, where available, to check for residual gastric content.**
- Prolongation of the fasting period in this situation is not recommended, given the lack of safety evidence.
- Use a shared decision-making approach with patients to openly discuss the risks and benefits of each option before the procedure.
- According to the American Society of Anesthesiologists' consensus guidelines, if the patient has reported gastrointestinal side effects of nausea or vomiting due to a GLP-1 receptor agonist, they must be considered at increased risk for complications requiring "full-stomach" precautions for anesthesia.¹³

TABLE 3
Cleveland Clinic Anesthesiology Institute preoperative medication guidelines for diabetes⁶

Medication	Days before surgery	Day of surgery
Glucagon-like peptide 1 receptor agonists		
Oral or daily injectable	Continue	Hold
Weekly injectable	Hold the dose the week before surgery	Hold

Morey-Vargas OL, Gossmann M, Ketz JM, Abdelmalak BB. Managing noninsulin glucose-lowering medications before surgery: A comparison of clinical practice guidelines. Cleve Clin J Med. 2025 Jul 1;92(7):429-437.





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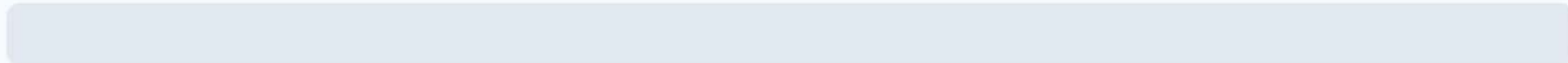
Chez les patients obèses (non diabétiques), l'arrêt des agonistes GLP-1 est recommandé pendant:

3 demi-vies d'élimination



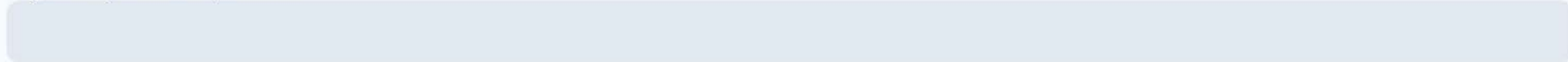
0%

7 demi-vies d'élimination



0%

3 jours systématiquement



0%

TAKE HOME MESSAGE

Médicaments	Chirurgie mineure ou majeure
Analogues GLP-1 Ozempic® - Rybelsus® - Victoza® - Trulicity®	Prise quotidienne: Pas de prise le matin Prise hebdomadaire: Stop J-7 * Obésité: respect des 3 ½ vies
Inhibiteurs SGLT2 Jardiance® - Forxiga®	Stop J-3