

GLP-1 Therapy in Cancer Patients: Current Evidence & Practical Applications

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Disclosure:

The presenters have not had financial relationships with ineligible companies within the past 24 months.



OBJECTIVES

1

Review mechanism of action, indications, and evidence for GLP-1 therapies in patients with cancer

2

Identify precautions, contraindications, and adverse effects of GLP-1 utilization and risk mitigation strategies

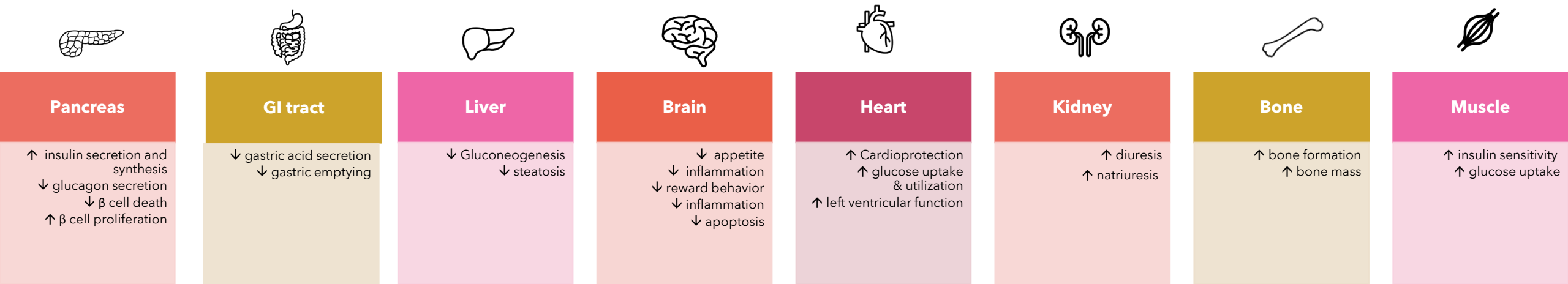
3

Evaluate unique nutritional needs of patients with cancer on GLP-1s and key strategies to support nutrition

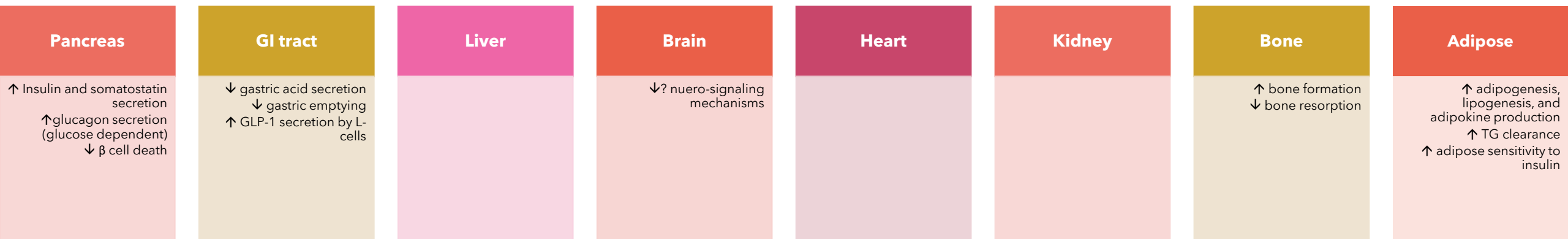


MECHANISM OF ACTION & EFFECTS

Glucagon-like peptide-1 (GLP-1)



Glucose-dependent insulintropic polypeptide (GIP)



Greenspan's Basic & Clinical Endocrinology, 10e. McGraw Hill; 2017. Accessed October 10, 2023.

Mol Metab. 2019 Dec;30:72-130.

Cardiovasc Diabetol. 2021 Sep 28;20(1):196.

Glucagon-Like Peptide-1 Receptor Agonists. [Updated 2024 Feb 29]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2026 Jan-.

Front Endocrinol (Lausanne). 2024 Jul 24;15:1431292.

Endocrine Reviews, Volume 47, Issue 2, April 2026, Pages 159–177.

Ther Adv Endocrinol Metab. 2025 Dec 23;16:20420188251406456.

GLP-1 AND GIP/GLP-1-RA: INDICATIONS

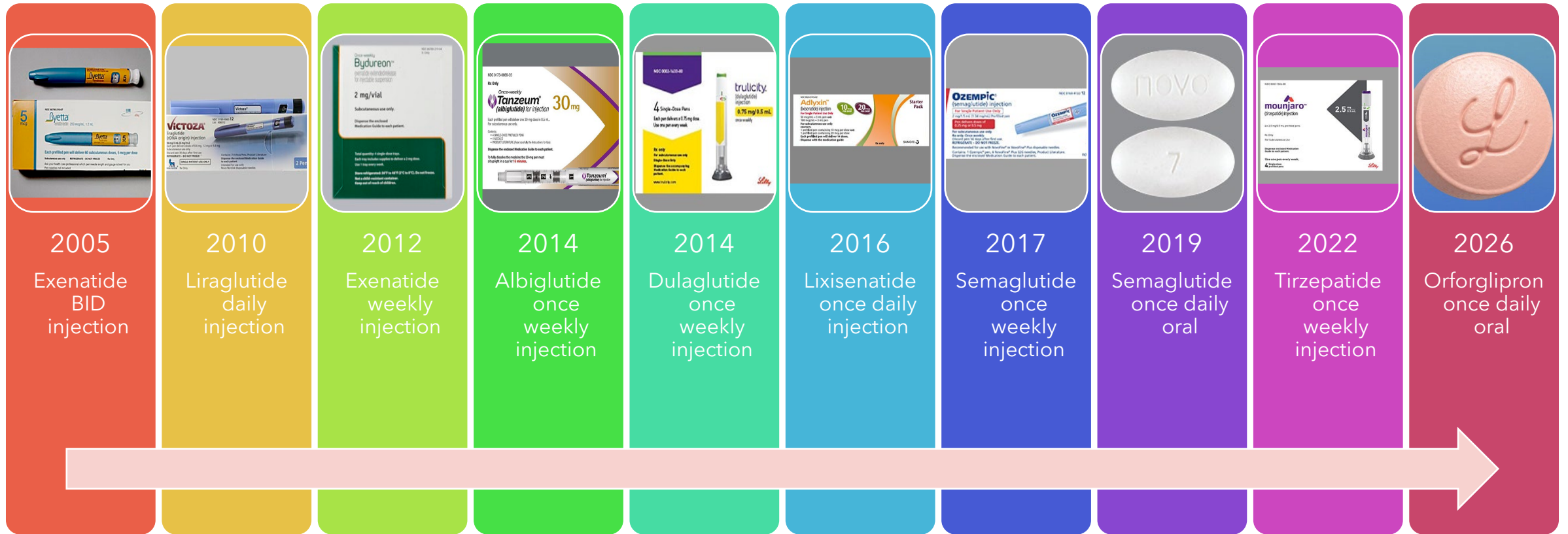
FDA Approved

- Type 2 Diabetes (T2D)
- Weight management
- Reduction of major cardiovascular events (secondary or high risk) in T2D or obesity/overweight
- Reduced progression of chronic kidney disease in T2D
- Metabolic dysfunction-associated steatohepatitis
- Obstructive sleep apnea in obesity

Non-FDA Approved

- Heart failure with preserved ejection fraction (weight management)
- Peripheral arterial disease
- Alzheimer disease
- Substance use disorder
- Polycystic ovarian syndrome
- Parkinson's disease
- Chronic obstructive pulmonary disease
- Inflammatory arthritis and psoriasis
- Osteoarthritis
- Chronic low back pain
- Depression
- Eye disorder including neuro-ophthalmic conditions
- Osteoporosis
- Migraines
- Asthma

GLP-1 AND GIP/GLP-1-RA AVAILABLE



Coming VERY Soon:

Cagrilintide + semaglutide (expected 2026/2027) - weekly injection

Retatrutide (expected 2027) - weekly injection

GLP-1S IN PATIENTS WITH CANCER

Reduction in
incidence of
obesity-related
cancers?

Increased risk for
thyroid cancer or
pancreatic
cancer?

Effects on
survival and
recurrence?



↓ Obesity



↓ Obesity related cancers

Obesity Related Cancers

- Colon
- Rectum
- Gastric
- Hepatocellular
- Gallbladder
- Pancreatic
- Kidney
- Esophageal
- Meningioma
- Thyroid
- Endometrial
- Ovarian
- Postmenopausal breast



GLP-1 Receptor Agonists and Cancer Risk in Adults With Obesity

Hao Dai, PhD; Yongqiu Li, MS; Yao An Lee, MS; Ying Lu, BA; Thomas J. George, MD; William T. Donahoo, MD; Kelvin P. Lee, MD; Harikrishna Nakshatri, PhD; John Allen, PharmD; Yi Guo, PhD; Ramon C. Sun, PhD; Jingchuan Guo, MD, PhD; Jiang Bian, PhD

Long-term cancer risk in users of GLP-1 agonists in Denmark: a nationwide emulated trial

Mads Gamborg,^{a,*} Mia Klinten Grand,^b Kathrine Grell,^b Susanne Rosthøj,^b Ulrik Pedersen-Bjergaard,^{c,d} Christian Torp-Pedersen,^{e,f} and Lina Steinrud Mørch^{a,**}

Annals of Internal Medicine

REVIEW

Risk for Cancer With Glucagon-Like Peptide-1 Receptor Agonists and Dual Agonists

A Systematic Review and Meta-analysis

Albert Ko, MD*; Yu-Cheng Chang, MD*; Furkan Bahar, MD*; Tsu Hsien Wang, MD; Nutchapon Xanthavanij, MD; Chun-Chiao Yu, MS; Rebecca Jen-Ling Hsieh, MD; Xin Ya See, MD; Shao-Wei Lo, MD; Junmin Song, MD, MS; Yuan Ping Hsia, MD; Cho-Hung Chiang, MD; Xiaocao Xu, MD; Shuwen Lin, MD; and Cho-Han Chiang, MD, MMSc



ORIGINAL ARTICLE

GLP-1 receptor agonist use and cancer risk in obese nondiabetic adults

A. H.-C. Hsu^{1,2,3,4}, P. T. Ramirez¹, Y.-H. Chang⁵, Y.-C. Chiang^{2,3,6}, M. C. Santia⁷, T. Meschini⁸, P. Mateo-Kubach¹, A. Suri¹ & A. A. Kamat^{1,*}

JAMA Oncol. 2025 Oct 1;11(10):1186-1193.
Lancet Reg Health Eur. 2025 Jun 14;55:101346.
Ann Intern Med. 2025 Dec 9.

Ann Oncol. 2026 Jun 7:S0923-7534(26)00157-2.
JAMA Netw Open. 2026;9(5):e2612143.

Retrospective cohort: Lower overall cancer risk in GLP-1 group (HR 0.83 [95%CI, 0.76-0.91]), specifically endometrial, ovarian, meningioma compared to non-GLP-1 group

Register-based emulated trial: More patients in GLP-1 group developed cancer compared to DPP4-i group (HR 1.35 [95% CI, 1.05-1.73])

Systematic review and meta-analysis: GLP-1s associated with no effect on thyroid cancer (OR 1.37 [95%CI, 0.82 to 2.31]), pancreatic cancer (OR, 0.84[CI, 0.53 to 1.35]), breast cancer (OR, 0.95 [CI, 0.60 to 1.49]), kidney cancer (OR, 1.12[CI, 0.78 to 1.60])

Target trial emulation in obese, non-diabetes patients: Propensity score matching showed lower incidence of cumulative obesity related cancers in GLP-1 compared to lifestyle alone group (HR 0.59 [CI, 0.53-0.679])

At the 2026 American Society of Clinical Oncology Meeting, 24+ presentations focused on relationship between GLP-1 use and cancer – many focusing on patients with obesity.

GASTROINTESTINAL CANCERS

- Hepatocellular carcinoma (HCC)

- Treating metabolic-associated steatohepatitis (MASH) = ↓ HCC?
- Retrospective data analysis has yielded mixed results
- Wang, et al. (2024): Retrospective cohort in T2DM population comparing GLP-1 to non-GLP-1 DM medications
 - Identified lower risk of incident HCC in GLP-1 groups compared to insulin and sulfonylureas
 - Similar in obesity v. non-obesity
 - In patients with diagnosis of MASLD/MASH or liver fibrosis/cirrhosis, only lower risk when compared to insulin (not other DM medications)
- Titus, et al. (2025) Retrospective propensity score-matched cohort study using data from Veterans Health Administration comparing GLP-1 to dipeptidyl peptidase-4 inhibitor (DPP4i)
 - GLP-1 users had higher incidence of HCC compared to DPP4i users (OR 1.31 [95% CI, 1.11-1.56])

- Colorectal cancer (CRC)

- Bone Morphogenetic Protein 4 (BMP4) focus of research, exogenous GLP-1s shown to reduce BMP4 among additional mechanisms
- Zhong, et al. (2025): Meta-analysis including 7 retrospective cohort studies to evaluate GLP-1s and risk of colorectal cancer
 - Pooled analysis revealed increased risk of CRC among patient receiving GLP-1s (RR 2.31 [95% CI, 1.82-2.93]) but not associated with GLP-1s compared to other medications (OR 1.73 [95% CI: 0.21-14.18])
- Wang, et al. (2024): Retrospective cohort of national TriNextX population with T2D
 - Propensity matched data showed GLP-1s associated with decreased risk of CRC compared to insulin (HR 0.56 [95% CI, 0.44-0.72]), metformin (HR 0.75 [95% CI, 0.58-0.97]) SGLT2i, sulfonylureas, and thiazolidinediones



See full prescribing information for complete boxed warning.

- In rodents, semaglutide causes thyroid C-cell tumors. It is unknown whether OZEMPIC® causes thyroid C-cell tumors, including medullary thyroid carcinoma (MTC), in humans as the human relevance of semaglutide-induced rodent thyroid C-cell tumors has not been determined (5.1, 13.1).
- OZEMPIC® is contraindicated in patients with a personal or family history of MTC or in patients with Multiple Endocrine Neoplasia syndrome type 2 (MEN 2). Counsel patients regarding the potential risk of MTC and symptoms of thyroid tumors (4, 5.1).

Juan P. Brito, MD; Jeph Herrin, PhD; Kavya Sindhu Swarna, MPH; Naykky M. Singh Ospina, MD; Victor M. Montori, MD; David Toro-Tobon, MD; Guillermo E. Umpierrez, MD; Rodolfo J. Galindo, MD; Yihong Deng, PhD; Mindy M. Mickelson, MA; Hui Shao, MD; Eric C. Polley, PhD; Rozalina G. McCoy, MD, MS

Prespecified secondary analysis of trial emulation: GLP-1 not associated with increased overall risk for thyroid cancer compared to DPP4i, SGLT2i, and sulfonylureas (HR 1.24 [95%CI, 0.88-1.76]), did identify higher risk in first year after GLP-1 initiation (HR 1.85 [95%CI, 1.11-3.08])

Study	Design	Results
Abi Zeid Daou C, et al.	Observational (FAERS)	↑ Association of thyroid cancer with GLP-1s
Bezin J, et al.	Nested case-control	↑ Association of all thyroid cancer and medullary thyroid cancer with GLP-1s
Alves C, et al.	Meta-analysis	No increased risk for thyroid cancer
Hu W, et al.	Meta-analysis	No increased risk for thyroid cancer
Silverii GA, et al.	Meta-analysis	↑ Association of thyroid cancer with GLP-1s, no effect on papillary/medullary individually
Nagendra L, et al.	Meta-analysis	No increased risk for thyroid cancer, pancreatic cancer, any neoplasm

PANCREATIC CANCER RISK

Study	Design	Results
Azoulay L, et al.	Population-based cohort	No increased risk for pancreatic cancer
Pinto LC, et al	Meta-analysis	No increased risk for pancreatic cancer
Wang L, et al.	Retrospective cohort	Decreased risk for pancreatic cancer

Endocrinology, Diabetes & Metabolism

WILEY

Endocrinology, Diabetes
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Open Access

REVIEW ARTICLE OPEN ACCESS

Evaluating the Rates of Pancreatitis and Pancreatic Cancer Among GLP-1 Receptor Agonists: A Systematic Review and Meta-Analysis of Randomised Controlled Trials

Jimmy Wen¹  | Denise Nadora¹ | Ethan Bernstein¹  | Christiane How-Volkman¹ | Alina Truong¹ | Bethany Joy¹ | Megan Kou¹ | Zohaer Muttalib¹ | Arsh Alam² | Eldo Frezza¹

- Systematic Review and Meta-analysis
- Dulaglutide had highest documented risk of pancreatitis and pancreatic cancer
- No significant association with GLP-1 RA and pancreatic cancer (RR = 1.30 [95% CI: 0.86-1.97])
- GLP-1 RA use associated with increased risk of pancreatitis (RR = 1.44 [95% CI: 1.09-1.89])

JAMA
Network | **Open**™

Lower hazard of all-cause mortality in GLP-1 group with obesity (HR 0.35 [95%CI, 0.21-0.58]), and recurrence-free survival (HR 0.4 [95% CI, 0.3-0.64])

 Taylor & Francis
Taylor & Francis Group Check for updates

School of Medicine, University of California, San Diego, San Diego, California, USA

Retrospective cohort design: GLP-1s associated with lower odds of five-year mortality (OR 0.38 [95% CI: 0.21-0.64])

A 10x10 grid of dots. The dots are arranged in 10 rows and 10 columns. A solid red vertical bar is positioned to the right of the grid, spanning the height of the 10 rows. The bar is located between the 9th and 10th columns of dots.

JAMA | Open™

Rotana M. Radwan, PhD; Ying Lu, MS; Hao Dai, PhD; Thomas J. George, MD; Yi Guo, PhD; Jingchuan Guo, MD, PhD; Jiang Bian, PhD

Retrospective cohort design: mortality did not differ between GLP-1s and SGLT2i's, but GLP-1s associated with lower mortality than DPP4i (HR 0.6 [95% CI: 0.51-0.7])

JAMA Netw Open. 2026;9(5):e2612133
Cancer Investigation, 43(10), 982-991.
JAMA Netw Open. 2025 Jul 18;8(7):e2521887.

Monitoring for GLP-1s

Adverse effects

Weight

Appetite

Nutrition

Hemoglobin A1c

Glucose

Concomitant medications

diabetes meds, anti-hypertensives,
heart failure therapies, oral
contraceptives?, chemo?

A 10x10 grid of dots. Horizontal lines are drawn across rows 3, 6, and 9. A vertical red bar is positioned to the right of the grid, spanning from the top of row 3 to the bottom of row 9.

ADVERSE EVENTS, PRECAUTIONS, & CONTRAINDICATIONS

Black Box: Medullary thyroid carcinoma, multiple endocrine neoplasia 2

Gastrointestinal (nausea, vomiting, constipation, diarrhea)

Pancreatitis

Gallbladder disease

Gastroparesis

Weight loss

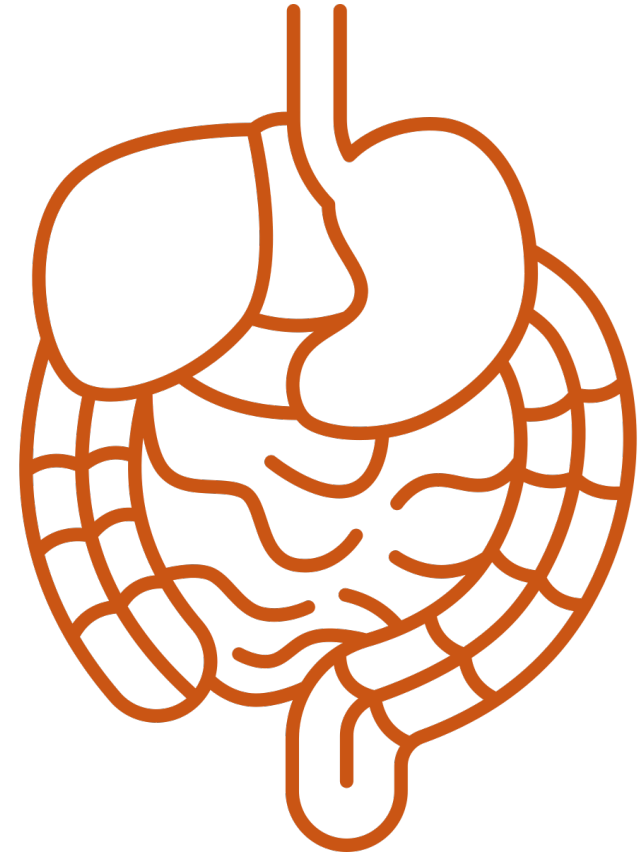
Retinopathy worsening

Suicidal thoughts?
Alopecia?



GASTROINTESTINAL & APPETITE EFFECTS

- MOST commonly nausea, vomiting, constipation, diarrhea, decreased appetite
- GI side effects typically temporary, can be minimized by:
 - Start a low doses
 - Slow dose titration
 - Decreased meal size
 - Mindful eating
 - Decreasing high-fat or spicy food
- Appetite effects:
 - Consider risks of disordered eating
 - Need emphasis on quality nutrition sources
 - Weight loss may be beneficial, malnutrition is not
- Concerning GI adverse effects to watch for:
 - Pancreatitis
 - Gastroparesis
 - Bowel obstruction



MALNUTRITION IN THE ONCOLOGY PATIENT

- 40% of patients experience weight loss prior to diagnosis/treatment
- 40-80% of cancer patients experience malnutrition at some point during treatment
 - Dose reductions
 - Hospitalization and treatment interruption
 - Treatment toxicity
- Weight loss → decreased performance status → reduced response to treatment → reduced survival and quality of life

CRITERIA FOR MALNUTRITION

Indicator	Chronic illness				Acute illness			
	Moderate		Severe		Moderate		Severe	
Energy intake	< 75% of energy needs for > 7 days		≤ 50% of energy needs for ≥ 5 days		< 75% of energy needs for ≥ 1 month		≤ 75% of energy needs for ≥ 1 month	
Weight loss	1-2%	1 week	> 2%	1 week	5%	1 month	> 5%	1 month
	5%	1 month	> 5%	1 month	7.5%	3 months	> 7.5%	3 months
	7.5%	3 months	> 7.5%	3 months	10%	6 months	> 10%	6 months
					20%	1 year	>20%	1 year
Loss of subcutaneous fat	Mild		Moderate		Mild		Severe	
Muscle mass	Mild		Moderate		Mild		Severe	
Fluid accumulation	Mild		Moderate to severe		Mild		Severe	
Grip strength	N/A		Measurably reduced		N/A		Measurably reduced	

NUTRITION ASSESSMENT

Anthropometrics

- Height, weight
- Weight change (significant?)
- Weight history

Lab values

- Endocrinology
- Electrolytes
- GI panels

Oral intake

- Appetite
- % of meal intake

Past medical history

- Co-morbidities
 - DM
 - CVD
 - CKD

Past surgical history

- Bowel resection
- ENT/oral surgery

Medication and treatment

- Chemotherapy
- Radiation
- BMT

Symptoms

- Therapy related side effects
 - N/V/D
 - **Constipation**
 - Appetite change
 - Change in taste and smell
 - Feeding difficulties

ESTIMATED NUTRITION NEEDS IN THE ADULT ONCOLOGY PATIENT

Kcal

- Cancer, repletion, weight gain
 - 30-35
- Cancer, inactive, non-stressed
 - 25-30
- Cancer, hypermetabolic, stressed
 - 35
- Sepsis
 - 25-30
- Hematopoietic cell transplant
 - 30-35
- Non-critically ill and critically ill, obese
 - 11-14 (actual body weight)
 - 22-25 (ideal body weight)

Protein

- Cancer
 - 1.0-1.5
- Cancer cachexia
 - 1.5-2.5
- Hematopoietic stem cell transplant
 - 1.5

NUTRITION-RELATED SIDE EFFECT MANAGEMENT

- Individualized with diet modification based on symptoms
- Smaller, more frequent meals
 - Nausea/vomiting/diarrhea
 - Gastroparesis
 - Reflux
- GI soft foods
 - Easier to tolerate and digest, such as low fat and fiber
- Fiber
 - Increase or decrease
- Balancing meals
 - Protein and carbohydrates for blood glucose control
 - Consistency of meal intake

SPECIFIC CONCERNS IN PATIENT WITH CANCER



Avoid in pancreatic cancer due to increased risk of pancreatitis

This condition usually requires a restricted diet already



Caution with adverse effects worsened by cancer or cancer therapy

Nausea, vomiting, diarrhea, constipation
Weight loss, sarcopenia



Caution with side effects that hinder adequate oral intake

GERD
Gastroparesis
Decreased appetite
Nausea
Constipation



ONCOLOGY CASE STUDY

RD VISIT 1/20/26

Assessment

- 56 y/o male with cT3, cN2c, cM0 SCC of the epiglottis beginning chemoradiation
- Dysphagia and weight loss 20# since 10/2025
 - PEG placement planned 1/29/26
 - Note: HNRC PEG tube screening includes question: Is patient on any GLP-1 agonists?
- PMHx DMII with diabetic foot ulcers s/p debridement and neuropathy on insulin and **Ozempic**

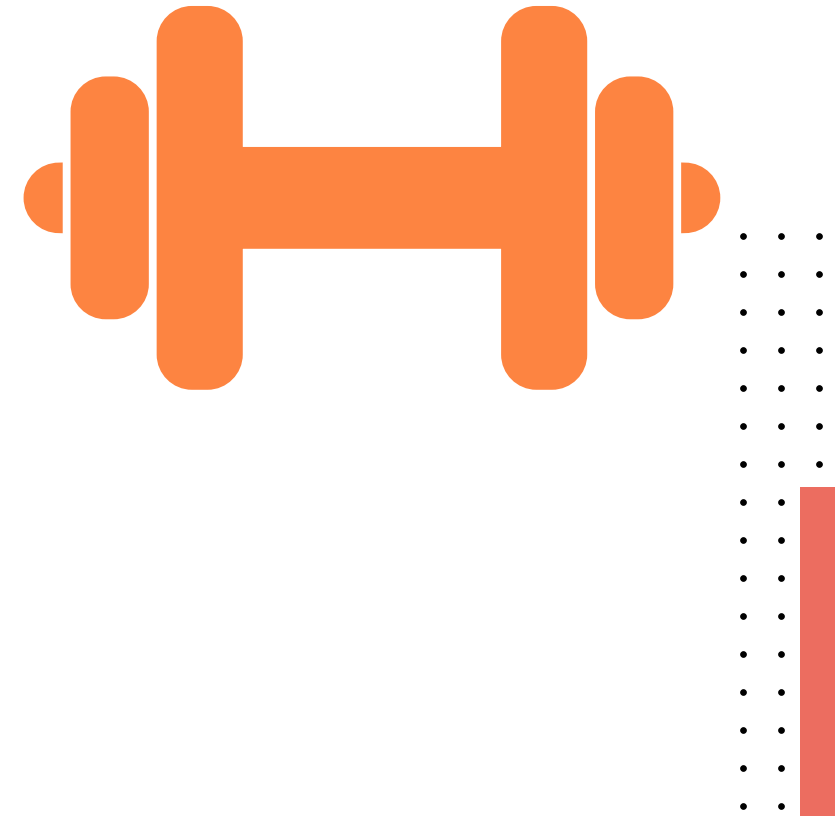
Plan

- D/C Ozempic upon initiation of chemotherapy per oncology
 - MD discussed risk of gastroparesis which may worsen nausea and GI side effects
 - Endocrinology follow up 1/22/26
- RD to monitor po/enteral nutrition



GLP-1 WEIGHT LOSS POTENTIALLY BENEFICIAL DURING ACTIVE THERAPY?

- Healthy weight loss 1-2 pounds per week
 - Maintenance therapy
 - Stable weight and muscle mass
- Evaluation of individual nutrition related risk and benefit
 - Calorie restriction without incurrence of malnutrition --> glucose control, decreased inflammation, reduction of circulating hormones



DIETARY SUPPLEMENT RECOMMENDATIONS WITH GLP-1S

- Protein
 - Animal or plant based
- Creatine monohydrate AND β -Hydroxy β -Methylbutyrate (HMB) supplementation
 - Increase muscle building and decreasing breakdown
 - Positively affect testosterone/cortisol ratios
- Multivitamin
- Fiber
 - Manage constipation/GI motility
- Work with registered dietitian for individual needs

DIETARY SUPPLEMENT CONSIDERATIONS DURING GLUCAGON-LIKE PEPTIDE-1 RECEPTOR AGONIST TREATMENT: A NARRATIVE REVIEW

BACKGROUND:

To our knowledge, no comprehensive, evidence-based review has addressed the topic of dietary supplementation considerations in conjunction with Glucagon-like-peptide 1 receptor agonists (GLP1-RA) for optimizing treatments.

METHOD:

We review available literature of dietary supplementation interventions among individuals with obesity, weight loss clinical trials, and adiposity-related complications. This review is meant to help guide clinicians on advantageous supplementation to combine with GLP1-RA treatment.

KEY RESULTS:

Robust data from meta-analyses provide justification for a variety of dietary supplements that may help improve unintended consequences of GLP1-RA treatments.

The road to durable obesity treatment with dietary supplementation considers the following:

- Optimizing nutrient status
- Preserving muscle mass and strength
- Healthier metabolic outcomes
- Improved side effect management

CONCLUSION:

Healthcare providers play a critical role in offering comprehensive nutritional guidance to support long-term health and potentially mitigate unintended consequences of medical weight loss.

TUNE-UP

- Optimize metabolic health with antioxidants and anti-inflammatory supplements to go the extra mile



HORSE POWER

- Help maintain muscle strength with resistance training and creatine and HMB supplementation



INSURANCE

- Fill dietary gaps and optimize nutrients with a daily multivitamin



PLAN YOUR TRIP

- Find co-pilots for your journey with medical providers, dietitians, and family support

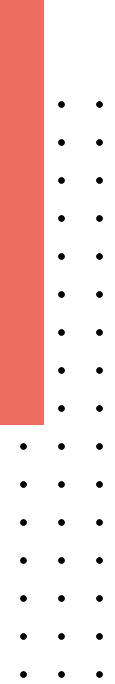
USE OF GLP-1S IN SURVIVORSHIP

Achieving healthier
body weight -->
ability to increase
physical activity -->
reduce cancer risk

Improved dietary
choices such as
whole grains, fruits,
vegetables, etc.
-->reduce cancer risk

Blood glucose
management and
longevity





GLP-1 Therapy in Cancer Patients: Current Evidence & Practical Applications

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