

Obesity, Cancer, and GLP-1RAs

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Disclosures

- Institutionally directed research funding from Novo Nordisk

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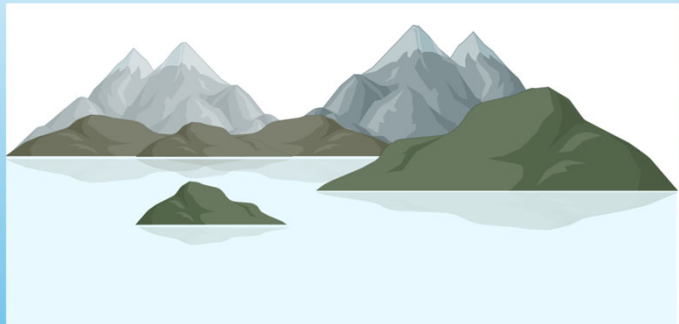
Objectives

- Define obesity
- Recognize appropriate obesity treatment strategies
- Obesity and increased cancer risk
- **Do GLP-1RAs increase risk of cancer?**
- What impact does obesity have on cancer recurrence?
- **What role may GLP-1RAs have in treatment of obesity in cancer survivorship?**

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Meet Jane

- Jane is a 55 year old woman who is an endometrial cancer survivor
- She notes she would like to lose weight to be able to hike with her young adult kids and improve her blood pressure
- She was at a healthy weight in early adult years. She notes that her weight increased with each of her pregnancies and after treatment of the endometrial cancer
- She is 5 ft 4 in tall and weight is 235 lbs (BMI 40.3 kg/m²)

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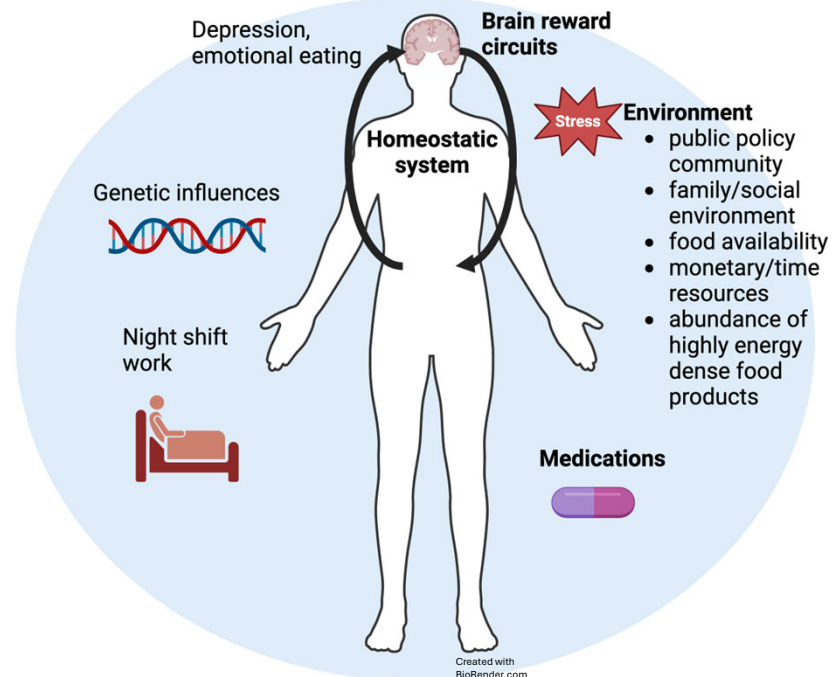
Defining obesity

- Obesity is a chronic complex disease defined by excessive fat deposits that can impair health (per the World Health Organization)
- Body mass index (BMI) is usually used to classify obesity
 - This is a height to weight ratio
 - More interest lately in trying to determine actual body fat percentage or use of other measures such as waist size.



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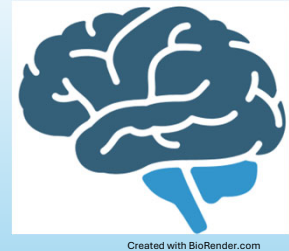
Potential contributors to obesity



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GLP-1RAs

- GLP-1RA= glucagon-like peptide 1 receptor agonist
- GIP-RA= glucose dependent insulinotropic polypeptide receptor agonist
- Both are released from the normal intestine but don't last long
- Medication versions of GLP1 last significantly longer than what our body usually makes
- First version of GLP-1RA was approved for use in diabetes in 2005
- GLP-1RAs help to control blood sugar and also act in the brain to decrease hunger
- There are also GLP-1 receptors in other parts of the body such as some blood vessels and immune cells



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liraglutide → diabetes → Victoza 1.8mg q day
 liraglutide → weight → Saxenda 3mg q day

semaglutide → diabetes, oral → Rybelsus 14mg q day
 semaglutide → diabetes → Ozempic 2mg q wk
 semaglutide → weight → Wegovy 2.4 mg q wk

tirzepatide → diabetes → Mounjaro 15mg q wk
 tirzepatide → weight → Zepbound 15mg q wk

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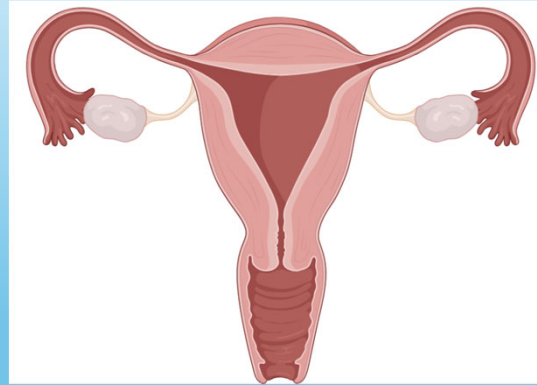
“What’s in a name?”

Shakespeare,
 William. *Romeo and Juliet*

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Higher BMI and increased cancer risk

- Increased risk of 13 cancers
 - Endometrial
 - Esophageal adenocarcinoma
 - Stomach (gastric cardia)
 - Liver
 - Kidney- renal cell
 - Pancreas
 - Multiple myeloma
 - Meningioma
 - Colorectal
 - Gallbladder
 - Post menopausal breast
 - Ovarian
 - Thyroid



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Patel, A. V., Patel, K. S., & Teras, L. R. (2023). Excess body fatness and cancer risk: a summary of the epidemiologic evidence. *Surgery for obesity and related diseases : official journal of the American Society for Bariatric Surgery*, 19(7), 742–745. <https://doi.org/10.1016/j.soard.2023.01.025>

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Do GLP-1RAs increase risk of cancer? **UNLIKELY**

- One study looked at cancer risk in those with type 2 diabetes on GLP1-RA vs insulins or metformin.
 - **No significant increase in risk for those on GLP1-RA** compared to insulin
 - **Significant DECREASE in risk for those on GLP1-RA compared to insulin** for 10 of 13 cancer types including pancreatic cancer, endometrial cancer, esophageal cancer
- Another study grouped randomized trials with use of GLP-1RA for type 2 diabetes and obesity
 - **No overall difference in risk for cancer**
 - Uterine cancer risk decreased when GLP1RA was for obesity
 - Some increased risk for colorectal cancer only seen in short term, not long term trials (potentially due to increased assessment due to symptoms)
 - Some increased risk for thyroid cancer in longer term trials (not adequately controlled for detection bias)

Wang, L., Xu, R., Kaelber, D. C., & Berger, N. A. (2024). Glucagon-Like Peptide 1 Receptor Agonists and 13 Obesity-Associated Cancers in Patients With Type 2 Diabetes. *JAMA network open*, 7(7), e2421305. <https://doi.org/10.1001/jamanetworkopen.2024.21305>
 Silveri, G. A., Marinelli, C., Bettarini, C., Del Vecovo, G. G., Monami, M., & Mannucci, E. (2025). GLP-1 receptor agonists and the risk for cancer: A meta-analysis of randomized controlled trials. *Diabetes, obesity & metabolism*, 10.1111/dom.16489. Advance online publication. <https://doi.org/10.1111/dom.16489>

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What about compounded GLP-1 RAs?



- Compounded medications- not FDA approved (different than generic medication)
- When using compounded products:
 - Potential for contamination
 - Incorrect amount of active ingredient
 - Addition of other ingredients that may change medication properties
- No clear data on differences in cancer risk with compounded, but not monitored directly
- Other adverse events reported
- No longer legal to compound semaglutide and tirzepatide as no longer in shortage

Compounding and the FDA: Questions and Answers | FDA
FDA clarifies policies for compounders as national GLP-1 supply begins to stabilize | FDA

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What impact does obesity have on cancer recurrence?

- Some evidence that relapse rate increased in those living with obesity in :
 - Breast cancer
 - Colorectal cancer
 - Prostate cancer
 - Gastroesophageal cancer

Petrelli, F., Cortellini, A., Indini, A., Tomasello, G., Ghidini, M., Nigro, O., Salati, M., Dottorini, L., Iaculli, A., Varricchio, A., Rampulla, V., Barni, S., Cabiddu, M., Bossi, A., Ghidini, A., & Zaniboni, A. (2021). Association of Obesity With Survival Outcomes in Patients With Cancer: A Systematic Review and Meta-analysis. *JAMA network open*, 4(3), e213520. <https://doi.org/10.1001/jamanetworkopen.2021.3520>

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Weight recommendations in survivorship

- NCCN (National Comprehensive Cancer Network) Survivorship Care for Healthy Living guidelines recommend
 - Achieving a healthy weight
 - Maintaining a healthy weight
 - Striving for metabolic health
- For weight loss- core of lifestyle intervention
 - Note that if needed, may take obesity medications or undergo metabolic-bariatric surgery
 - Note the effects of specific weight reduction medications like semaglutide or tirzepatide are not currently known, prioritize lifestyle changes

NCCN Guidelines for Patients: Survivorship Care for Healthy Living

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What role may GLP-1RAs have in treatment of obesity in cancer survivorship?

- No direct trials looking at rates of cancer **recurrence**
- Generally, consider GLP-1RAs as one of medication options available for obesity treatment with specific exceptions
 - Listed as contraindication for history of multiple endocrine neoplasia type 2 OR personal or family history of medullary thyroid carcinoma given animal study data
 - Typically avoid use in active neuroendocrine cancers given that neuroendocrine cancers may have GLP1 receptors
 - However, unclear whether activation of GLP1 receptors may help or hurt
 - GLP1 receptors may also be present in some other tumor types such as breast and prostate
 - Some evidence that GLP1 receptor agonists may actually decrease cancer cell growth

Shilyansky, J. S., Chan, C. J., Xiao, S., Gribovska-Rupp, I., Quella, D. E., Howe, J. R., Dillon, J. S., & Ear, P. H. (2025). GLP-1R agonist promotes proliferation of neuroendocrine neoplasm cells expressing GLP-1 receptors. *Surgery*, 179, 108943. <https://doi.org/10.1016/j.surg.2024.09.052>

Fawzy, M. S., Alenezy, A., Jishu, J. A., Khan, I., Dessouky, A., Abdelmaksoud, A., Limbach, K. E., & Toraih, E. A. (2025). Survival Benefits of GLP-1 Receptor Agonists in Patients with Neuroendocrine Neoplasms: A Large-Scale Propensity-Matched Cohort Study. *Cancers*, 17(9), 1593. <https://doi.org/10.3390/cancers17091593>

Cuttica, C. M., Briata, I. M., & DeCensi, A. (2023). Novel Treatments for Obesity: Implications for Cancer Prevention and Treatment. *Nutrients*, 15(17), 3737. <https://doi.org/10.3390/nu15173737>

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Back to Jane



- Jane meets with a dietician who works with her on adjusting food patterns
- She starts going on walks 5 days per week and uses resistance bands twice per week
- She starts tracking her food intake and loses 5 lbs, but then feels stuck. She notes hunger and cravings.
- She works with her doctor to start and adjust tirzepatide.
- Her weight trends down further, and she is able to stop one of her blood pressure medications
- She now enjoys going on hour long hikes with her kids and is looking forward to traveling over the summer
- A year later, her weight is still maintaining at 188 lbs, a 20% decrease from her initial weight and she continues on tirzepatide.

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Patient resources dietary

Harvard Healthy Eating Plate

<https://www.hsph.harvard.edu/nutritionsource/healthy-eating-plate/>

ADA Diabetes Food Hub

- Recipe library with multiple filters (example, “Kidney-friendly”, “Quick and Easy”)
- Free live monthly virtual cooking classes (and library of past classes)
- Can create a free account to use Meal Planner and Grocery List features

[Diabetes-Friendly Recipes | American Diabetes Association \(diabetesfoodhub.org\)](https://diabetesfoodhub.org/diabetes-friendly-recipes)

[Recetas aptas para diabéticos | American Diabetes Association \(diabetesfoodhub.org\)](https://diabetesfoodhub.org/recetas-aptas-para-diabeticos)

MyPlate Kitchen

- Recipe library with multiple filters (example, “By Cooking Equipment” and “No Cooking Required”)
- [USDA MyPlate Kitchen](https://myplatekitchen.gov/)
- [USDA MyPlate in Spanish -- MiPlato en español](https://myplatekitchen.gov/mi-plato-en-espanol/)

The Diabetes Prescription

- Website focused on diabetes with great weight related resources including weight loss calculator, recipes and meal plans, created by an endocrinologist:
- <http://thediabetesprescription.com/>

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Patient resources dietary-budget friendly

- **Eat Right When Money's Tight**

Tips to save money on food, recipes, links to food assistance resources:

<https://snaped.fns.usda.gov/nutrition-education/nutrition-education-materials/eat-right-when-moneys-tight>

- **Shop Simple with MyPlate**

Phone app- can enter zip to find rewards/stores that accept SNAP EBT, includes tips for budget friendly foods

www.whatscooking.fns.usda.gov

- **ADA Diabetes Food Hub- Economic Eats section**

More specifically budget friendly websites

[Budget Friendly | American Diabetes Association \(diabetesfoodhub.org\)](http://BudgetFriendly.AmericanDiabetesAssociation.org)

- **Eat Well on \$4 a day-free** pdf on internet (free availability endorsed by author)

<https://cookbooks.leannebrown.com/good-and-cheap.pdf>

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Patient resources behavioral and exercise

- **Physical Activity**

- U.S. Department of Health and Human Services: [Current Guidelines | odphp.health.gov](http://odphp.health.gov)

- **Walk at Home –YouTube channel (free)**

- [Walk at Home - YouTube](#)

- **Overeaters Anonymous** –have in person/telephone/online meetings. Can filter by language (many different languages available) and by specific focus including “neurodivergent/neurodiverse”, “atheist/agnostic/secular”, “LGBTQ+”

- [Find a meeting - Overeaters Anonymous \(oa.org\)](http://Findameeting-OvereatersAnonymous.org)

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Patient resources behavioral and exercise

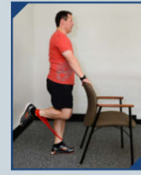
- VA MOVE! Weight Management Workbook-free online for all.
- 16 modules, 3 mini modules
- Address nutrition, exercise, behavior change
- Includes strengthening exercises regimen-body weight, resistance bands/light weights
 - [MOVE! Weight Management Program for Veterans \(va.gov\)](https://www.move.va.gov)
- Information also available with the MOVE! Coach app
 - [MOVE! Weight Management Program for Veterans \(va.gov\)](https://www.move.va.gov)

MODULE NINE

Knee Flexion:

Using resistance bands or tubes.

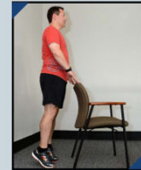
- You may wish to hold onto a wall or chair for this exercise.
- Loop one end of the band or tube around your standing ankle.
- Loop the other end under the moving foot.
- While keeping both knees together, bend the knee of the moving foot and bring the heel toward the gluteus muscle (buttocks). You should feel the hamstring muscle (back of thigh) working.
- Repeat 8 – 12 times for each leg.
- Rest, then do another set of 8 – 12 repetitions per side.



Plantar Flexion (heel raise):

Strengthens calf muscles. Progress to standing on one foot at a time when you feel ready.

- Stand upright, feet flat on the floor hip-width apart, holding onto a table, chair or counter for balance.
- Slowly raise heels, standing on tiptoes, as high as comfortable.
- Hold for 1 -2 seconds.
- Slowly lower heels all the way back down. Pause.
- Repeat 8 – 12 repetitions.
- Rest, then do another set of 8 – 12 repetitions.



Standing Hip Abduction (lateral raise):

Strengthens the hip abductor (side of the hip) muscles.

- Stand upright with arms extended and both hands on a wall or chair for support, feet hip-width apart.
- With standing knee slightly bent, lift the other leg to the side using the muscles at the outside of your hip. Keep your knee and toes pointing forward and your torso upright (do not lean your body to the opposite side).
- Slowly lower the raised leg back to starting position. Repeat for 8-12 repetitions and switch to the other side.
- Rest, then do another set of 8 – 12 repetitions for each side.



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Veteran Workbook

www.move.va.gov

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Questions?

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