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https://ubc.ca1.qualtrics.com/jfe/form/SV_0BaujGaK34koAkK





Ozempic and other GLP-1 Agonists

Current Events and Background
Diabetes and Obesity
Treatments (including Ozempic)
Clinical Advice and Guidelines

Michael Smith

BSc, UBC MD Class of 2026
Island Medical Program

February 3rd, 2024
9:00 AM – 10:30 AM



THE UNIVERSITY OF BRITISH COLUMBIA
Faculty of Medicine



University
of Victoria

Mini Med School Lecture Series 2023/24

~~Nov 18th, 2023 - New Canadian Alcohol Use Guidelines~~

~~Nov 25th, 2023 - Accessing a Family Doctor in BC~~

~~Jan 13th, 2024 - Skin: Conditions and Concerns~~

~~Jan 20th, 2024 - Depression in the Elderly~~

Feb 3rd, 2024 - Ozempic and other GLP-1 Agonists

Feb 10th, 2024 - Artificial Intelligence (AI) in Health Care

About Us

Introduction



Michael Smith



Derek Anderson

Hello! I'm Michael Smith, a 2nd year medical student from UBC's Island Medical Program.

My colleague is Derek Anderson, also a 2nd year medical student at UBC's Vancouver Fraser Medical Program.

Our Research Question

UBC Medicine Flexible and
Enhanced Learning (FLEX)

“To learn about the effectiveness of our virtual Mini Med School (MMS) series of online learning lectures in addressing questions from its participants”

CONSENT FORM FOR PARTICIPANTS:

Virtual Mini Med School (MMS) 2023/2024 Lecture Series: Effectiveness in Addressing Questions from Participants

I. STUDY TEAM

Who is conducting the study?

Principal Investigator: Dr. Jane Gair

Teaching Professor, Division of Medical Sciences

Island Medical Program

Faculty of Medicine, UBC

jgair@uvic.ca

250-472-5543

Co-Investigator(s):

Mr. Michael Smith

Student, Island Medical Program

Undergraduate Medical Education

Faculty of Medicine, UBC

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Mr. Derek Anderson

Student, Vancouver Fraser Medical Program

Undergraduate Medical Education

Faculty of Medicine, UBC

bpl20@student.ubc.ca



Territorial Acknowledgement

I would like to begin by acknowledging that I am joining you from the the unceded territory of the lək̓ʷəŋən (Lekwungen) speaking peoples, including the Songhees, Esquimalt, and W̱SÁNEĆ (hw̱a - say - netch) peoples whose historical relationships with the land continue to this day.





Disclosure

I am a second-year medical student. These talks do not constitute or substitute for medical advice. Please consult with a healthcare provider if you or others you know have any personal health-related concerns.

We are not experts in this topic, and many study statistics and biological mechanisms presented here are complex. To present the information in a simple manner, some details will be glossed over. We will make every attempt to present this information in the clearest way.





Final Notes:

1. Ask questions anytime in the chat box! (will be reviewed by our MMS team, most saved till end).
2. Lecture will be recorded – please turn off camera if you would like to.
3. Copy of these PPT Slides and the recording will be available on Dr. Gair's website (see Resources).
4. There will be a 10-minute break in the middle of the lecture.
5. The lecture content is about 1 hour, leaving approx. 15 minutes of time at the end for questions.
6. **Credit to Dr. Clarissa Wallace (UBC Medicine and Clinical Endocrinology)**





What is Ozempic?

European Car Brand

Winner of “The Voice”

A Baby Ostrich

Medication for Diabetes





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Today's Agenda

OZEMPIC AND OTHER GLP-1 AGONISTS

Current Events and Background

Diabetes and Obesity

10 min BREAK

Treatments (including Ozempic)

Clinical Advice and Guidelines



Today's Agenda

OZEMPIC AND OTHER GLP-1 AGONISTS

Let's Get Started!

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10 min BREAK

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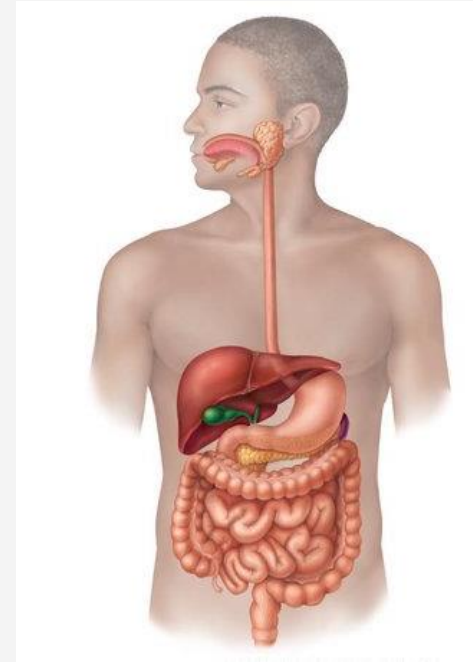
Ozempic!

- Brand name for Semaglutide (GLP1 Receptor Agonist / Analogue)
- Company is Novo Nordisk
- Injectable Medication
- Health Canada approved for Type 2 Diabetes Treatment



Quick Background – Incretins

- Hormones released after meals
- Glucagon-Like Peptide -1 (GLP1), Gastric Inhibitory Peptide (GIP)
- Not new drugs (analogues)!
- Exenatide – FDA 2005 for T2D
- Ozempic – FDA 2017 for T2D
- Wegovy - FDA 2021 for obesity with comorbidities (+ more)



Current Events – Ozempic

- Recent medical and cultural phenomenon
- Off-Label use for Weight Loss
- Drug Shortages
- Medication Side Effects
- Societal Dilemmas (Stigma)
- Future Prospects for GLP-1



The New York Times

Weight Loss Drugs | Ozempic: What to Know | Zepbound: What to Know | What the Drugs Really Cost

What Is Ozempic and Why Is It Getting So Much Attention?

More people are turning to a diabetes medication to induce weight loss — but experts say it's not a miracle drug.



People

SUBSCRIBE

Oprah Winfrey Reveals She Uses Weight-Loss Medication as a 'Maintenance Tool': 'I'm Absolutely Done with the Shaming' (Exclusive)

Shortages & Side Effects

British Columbia

B.C. restricts sale of Ozempic after prescription scheme drives surge in demand from U.S.

The Type-2 diabetes drug has become wildly popular as an off-label treatment for obesity and weight loss



[Karin Larsen](#) · CBC News ·

Posted: Apr 19, 2023 2:35 PM PDT | Last Updated: April 19, 2023

HEALTH

B.C. Ozempic supply strained but more on the way: doctor



By [Cassidy Mosconi](#) & [Darrian Matassa-Fung](#) · Global News

Posted October 20, 2023 12:35 pm

Health Canada

- Nausea, vomiting, stomach pain
- Regaining weight within 1y
- Pancreatitis
- Kidney complications
- Allergic reactions
- Thyroid tumours

First epidemiological study links popular weight-loss drugs to stomach paralysis, other serious gastrointestinal conditions

SCIENCE, HEALTH & TECHNOLOGY

UBC News

Oct 5, 2023 | For more information, contact [Brett Goldhawk](#)

Social Stigma & Future Prospects

The suggestion that we need to think differently about [Ozempic's] prescription is a position that is borne out of societal weight bias.

When Ozempic is prescribed for weight loss, physicians reinforce the idea that being fat is not an allowable way to be in the world.

What's Next for Ozempic?

By [Dani Blum](#) Dec. 20, 2023

Alcohol use disorder

Polycystic ovary syndrome

Cardiovascular issues

[+ more](#)



We need to reframe obesity as a chronic disease where it's not about weight, it's about health.

**Michael Vallis – Psychologist and Associate
Professor of Family Medicine at Dalhousie University**



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OZEMPIC AND OTHER GLP-1 AGONISTS

Current Events and Background

Diabetes and Obesity

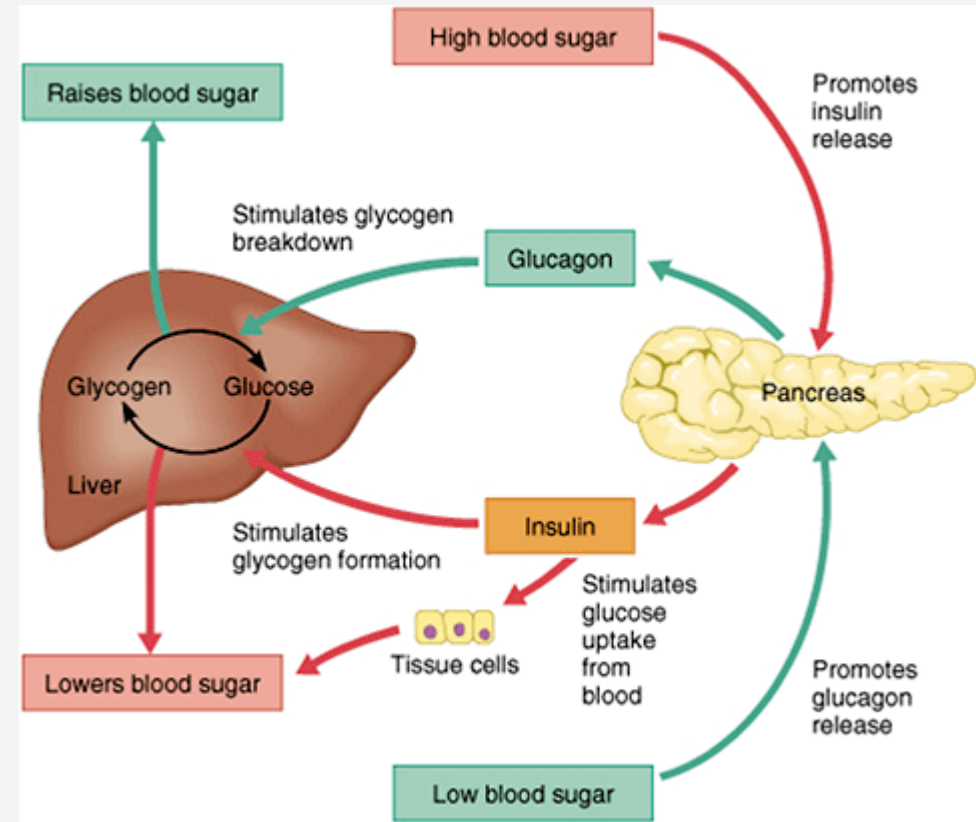
10 min BREAK

Treatments (including Ozempic)

Clinical Advice and Guidelines

Type 2 Diabetes

- Chronic Disease - inability to regulate blood sugar levels
- Impaired secretion and/or response to insulin
- Causes: genetics & lifestyle
 - 90% in identical twins
- Other Forms: Type 1, Gestational, etc.
- T2D most common (>95%)



Type 2 Diabetes

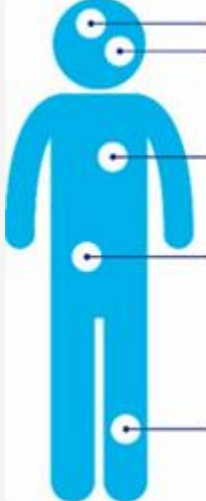
- Symptoms of high blood sugar (freq. urination/thirst, etc.)
- Low blood sugar – confusion, sweating, shaking.
- Screening: adults >40 at least every 3 years (blood tests)
- Complications: eyes, kidneys, nerves, heart, brain, etc.
- Treatment: after the break!

Symptoms of Type 2 diabetes

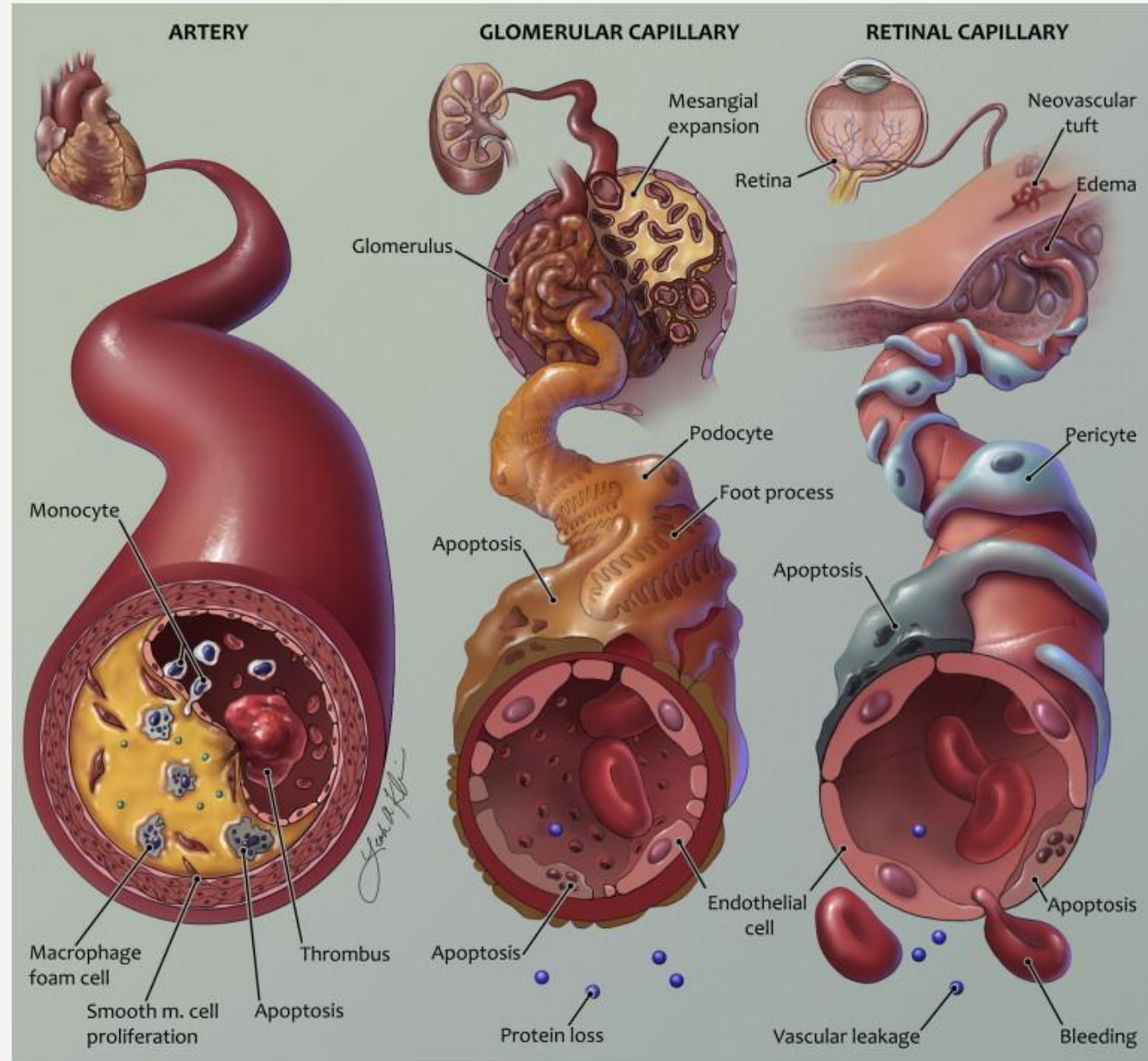
 Increased thirst.	 Unexplained weight loss.	 Increased hunger.
 Fatigue.	 Slow healing.	 Numbness in hands or feet.
 Blurred vision.	 Frequent urination.	 Dry skin.

 Cleveland Clinic

DIABETES CANADA



- 30% of strokes
- Leading cause of blindness
- 40% of heart attacks
- 50% of kidney failure requiring dialysis
- 70% of all non-traumatic leg and foot amputations





What percentage of people in 2018 in Canada were classified as obese?

15%

25%

35%

45%



Statistics
Canada





What percentage of adults in 2018 in Canada were classified as obese?

15%

26.8% - 7.3 million adults

35%

45%

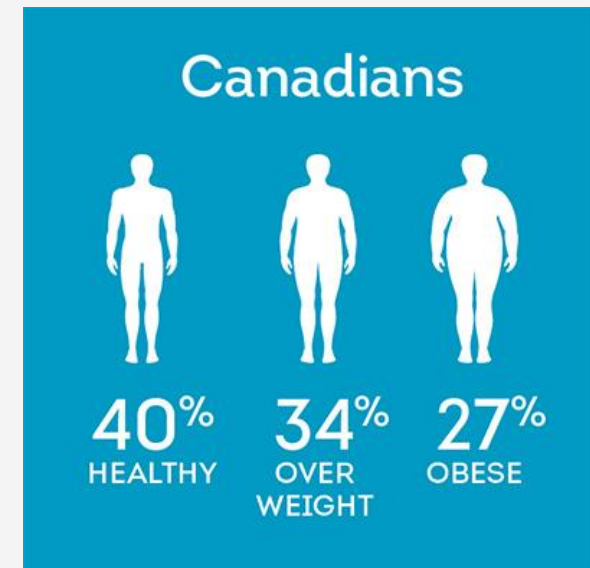
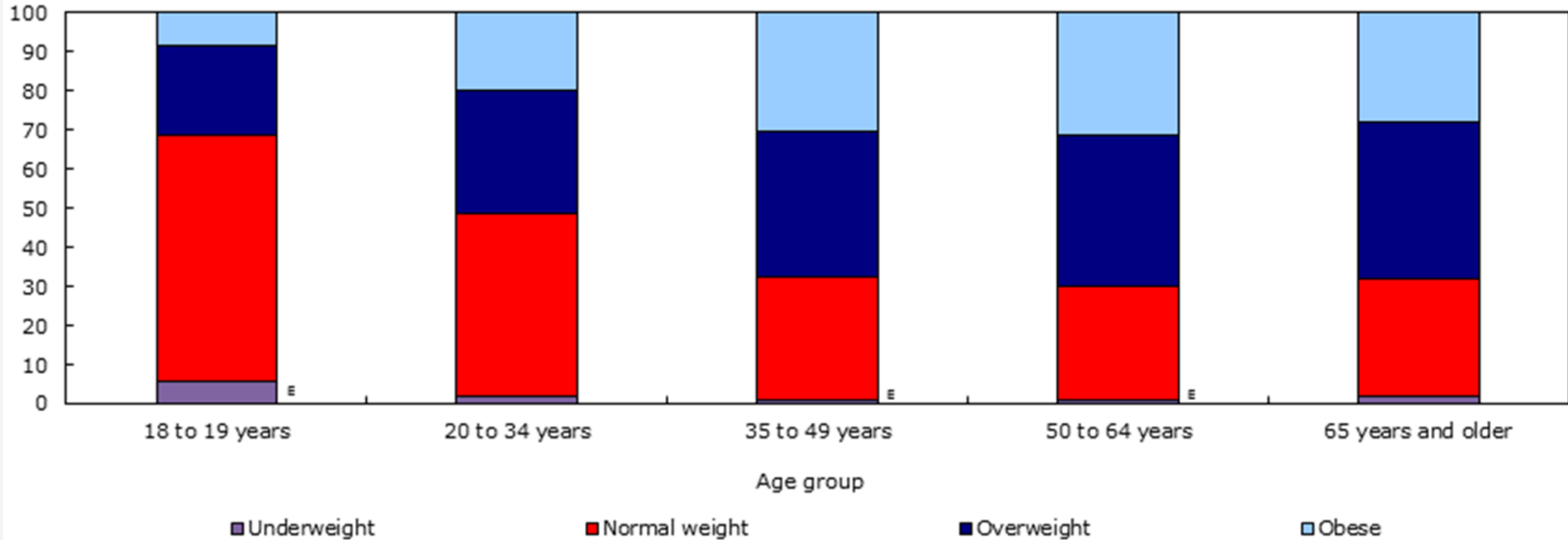


Chart 2
Underweight, normal weight, overweight or obese (adjusted), by age group, population aged 18 and older, Canada, 2018

percent



Ⓜ use with caution

Source: Canadian Community Health Survey, 2018.

Obesity

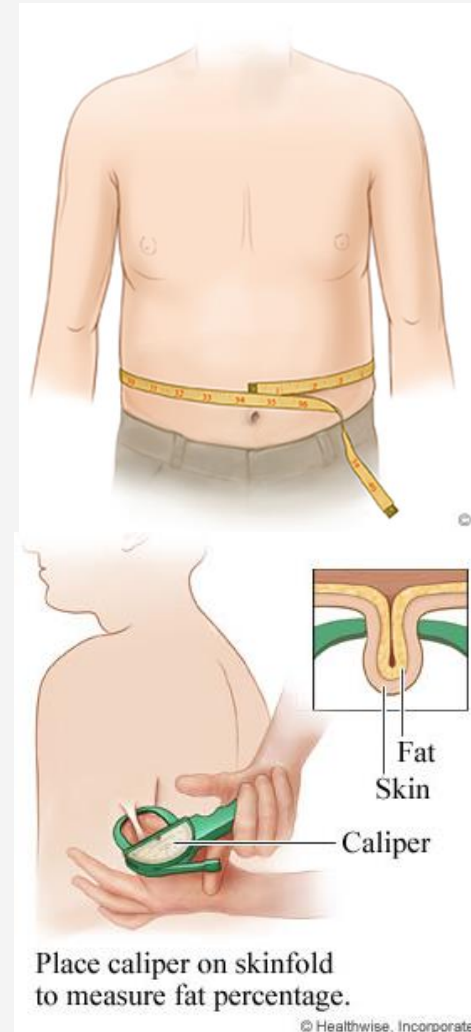
- Obesity Canada: chronic disease, excessive adipose tissue, impairs health
- Population Criteria: body mass index (weight / height²)
- Causes: genetics + lifestyle (physical + psychological)



WHO CLASSIFICATION OF WEIGHT STATUS	
WEIGHT STATUS	BODY MASS INDEX (BMI), kg/m ²
Underweight	<18.5
Normal range	18.5 – 24.9
Overweight	25.0 – 29.9
Obese	≥ 30
Obese class I	30.0 – 34.9
Obese class II	35.0 – 39.9
Obese class III	≥ 40

Obesity

- Symptoms directly from increased adiposity = asthma, sleep apnea, osteoarthritis, etc.
- Complications
 - Type 2 Diabetes, CVD, Fatty Liver, Gall Stones, Kidney Disease, Cancer
 - (Chronic Inflammation)
- Assessment: individualized
 - BMI + waist c. + risk factors

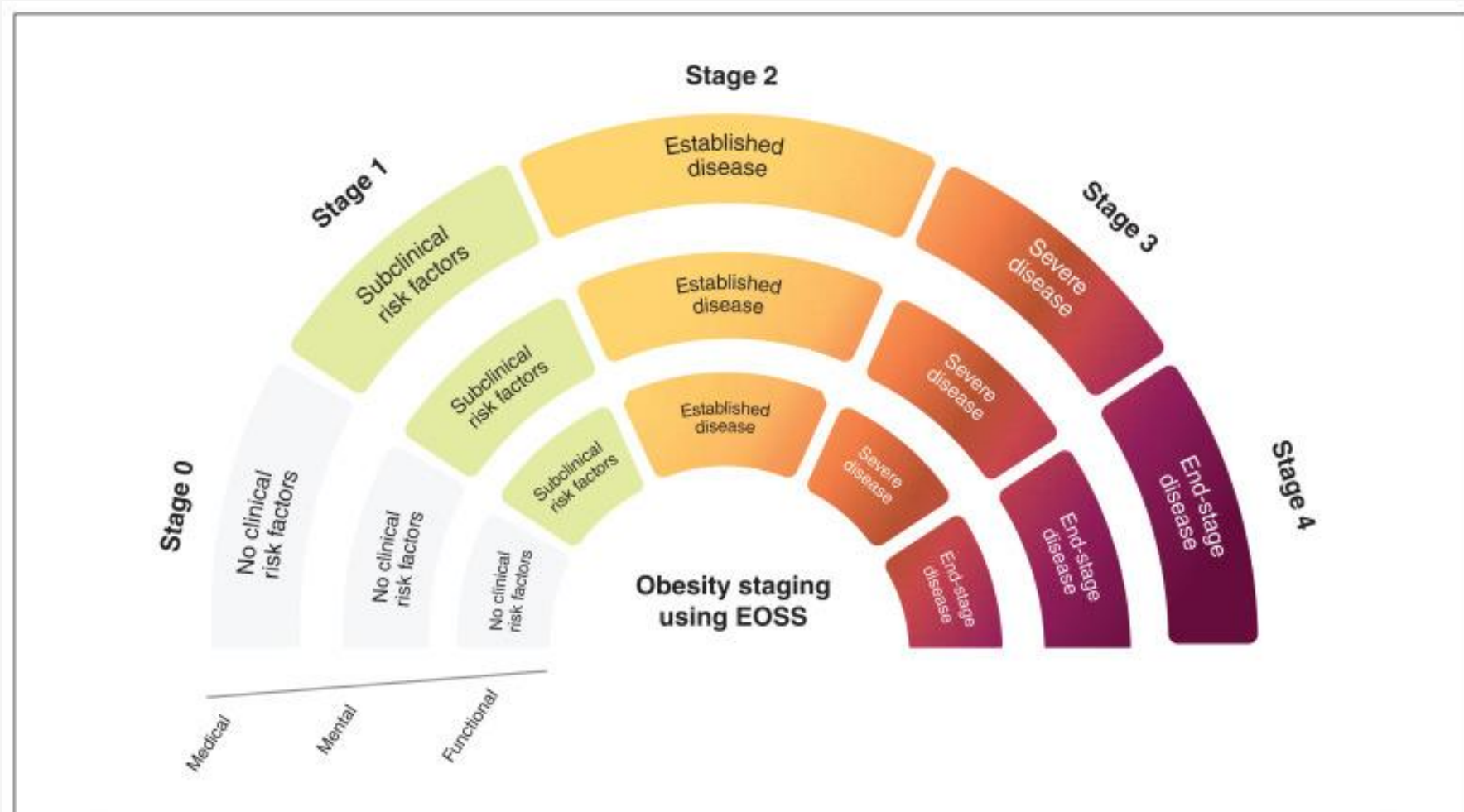


Obesity EFFECTS ON THE BODY

Metabolic Syndrome Risk Factors

<p>Type 2 diabetes.</p>	<p>Cardiovascular diseases.</p>	
<p>Fatty liver disease.</p>	<p>Kidney disease.</p>	<p>Gallstones.</p>

Edmonton Obesity Staging System



Weight Bias

- Stigma contributes to increased morbidity and mortality independent of weight or body mass index. – Obesity Canada
- Recommendations for Doctors
 - Ask for permission
 - Use private areas
 - Inclusive physical spaces & equipment

Overcoming Weight Bias

Do you have it in you?

Weight Bias	Weight Stigma	Weight Discrimination
<p>refers to negative attitudes toward others because of their weight</p>	<p>refers to stereotypes and labels we assign to people who have obesity</p>	<p>refers to actions against people who have obesity that can cause social exclusion and inequities</p>

Weight bias and discrimination is rampant in our schools, workplaces, health systems and media.
The problem is widespread.

Elementary school kids with obesity face a 63% higher chance of being bullied

54% of adults with obesity report being stigmatized by coworkers

64% of adults with obesity report experiencing weight bias from a health care professional

72% of images and 77% of videos stigmatized persons with obesity according to recent media studies



BREAK TIME FOR 10 MIN

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Today's Agenda

OZEMPIC AND OTHER GLP-1 AGONISTS

Current Events and Background

Diabetes and Obesity

10 min BREAK

Treatments (including Ozempic)

Clinical Advice and Guidelines

TREATMENTS (INCLUDING) OZEMPIC)

Treatments

- Lifestyle Interventions
- Medications
- Surgical (obesity)





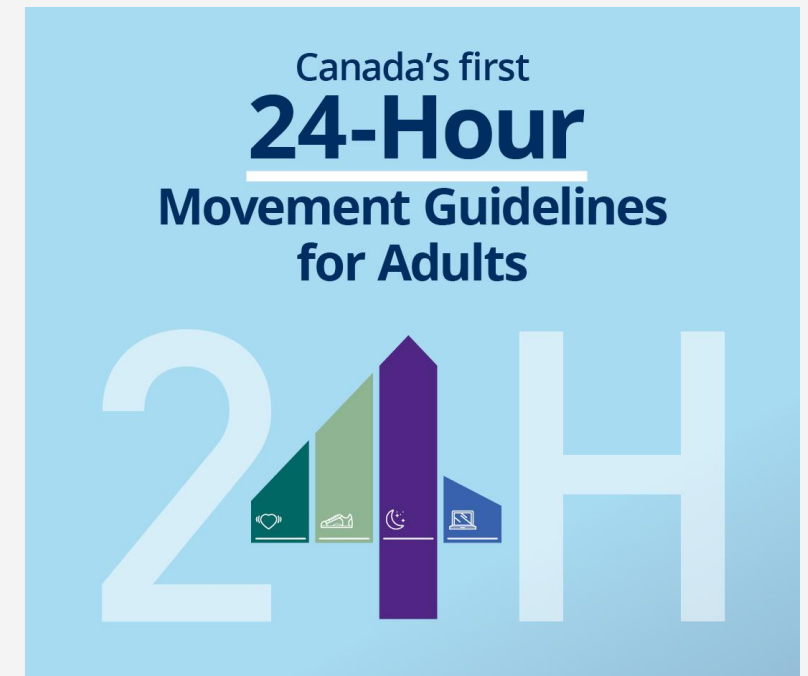
How many minutes of weekly physical activity is recommended for all adults?

150 min/week (2.5h)

180 min/week (3h)

240 min/week (4h)

360 min/week (5h)





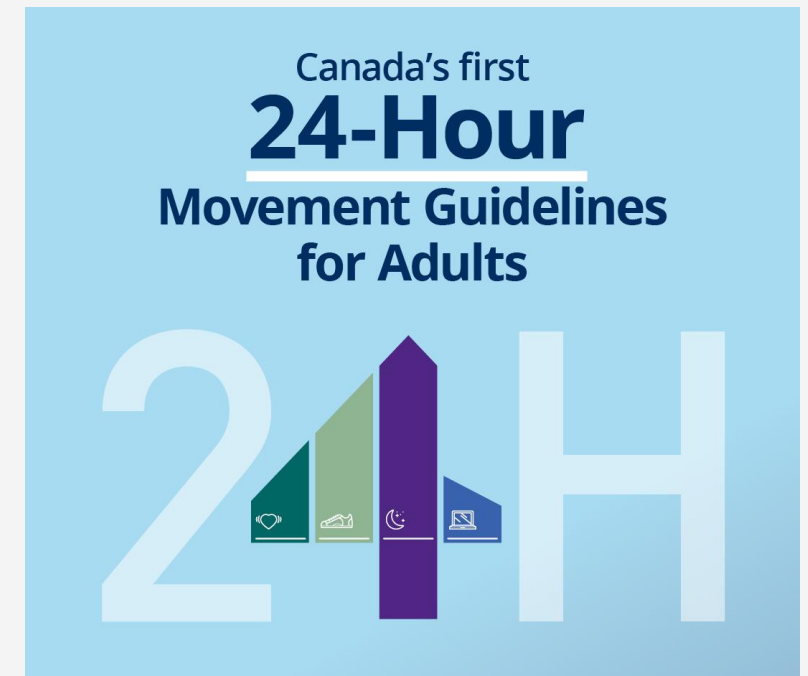
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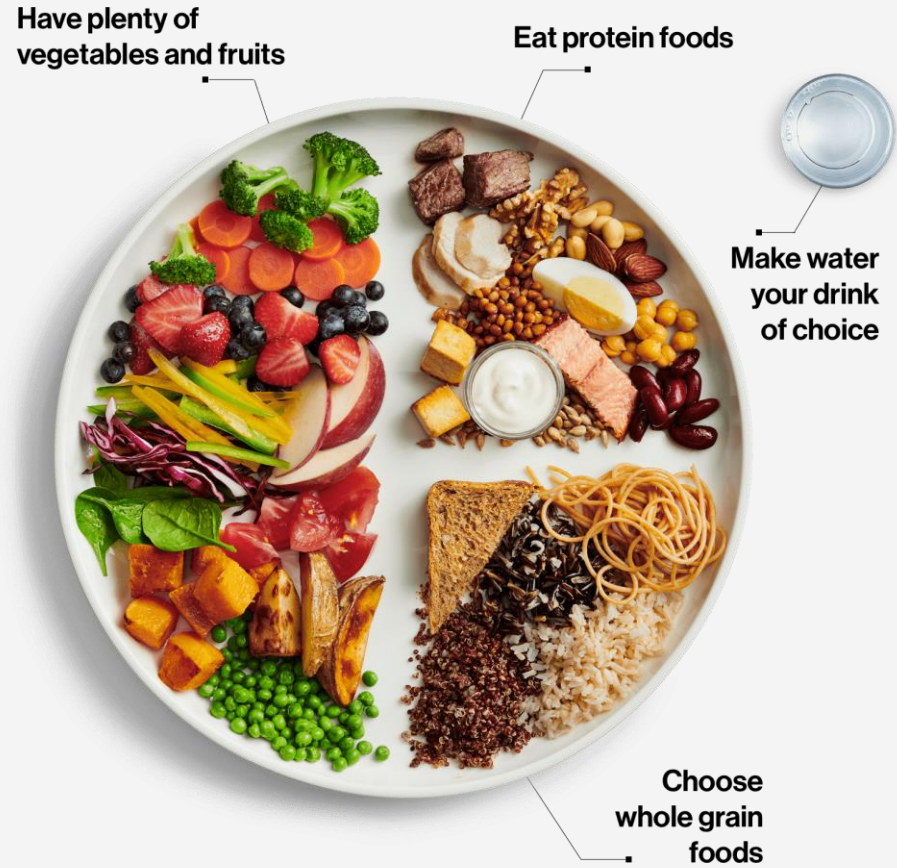


Lifestyle Interventions

- Medical Nutrition Therapy – (Dietitians), caloric deficit, etc.
- Physical activity - 30min/day
- Smoking cessation, reduce alcohol consumption
- Manage other comorbidities (high blood pressure, lipids, etc.)
- Cognitive Behaviour Therapy, etc.
- Goal: sustained $\geq 5\%$ weight loss and improved glycemic control!



Lifestyle Interventions (see Resources)



PHYSICAL ACTIVITY

Performing a variety of types and intensities of physical activity, which includes:



- **Moderate to vigorous aerobic physical activities** such that there is an accumulation of at least 150 minutes per week
- Muscle strengthening activities using major muscle groups at least twice a week



- Several hours of **light physical activities**, including standing

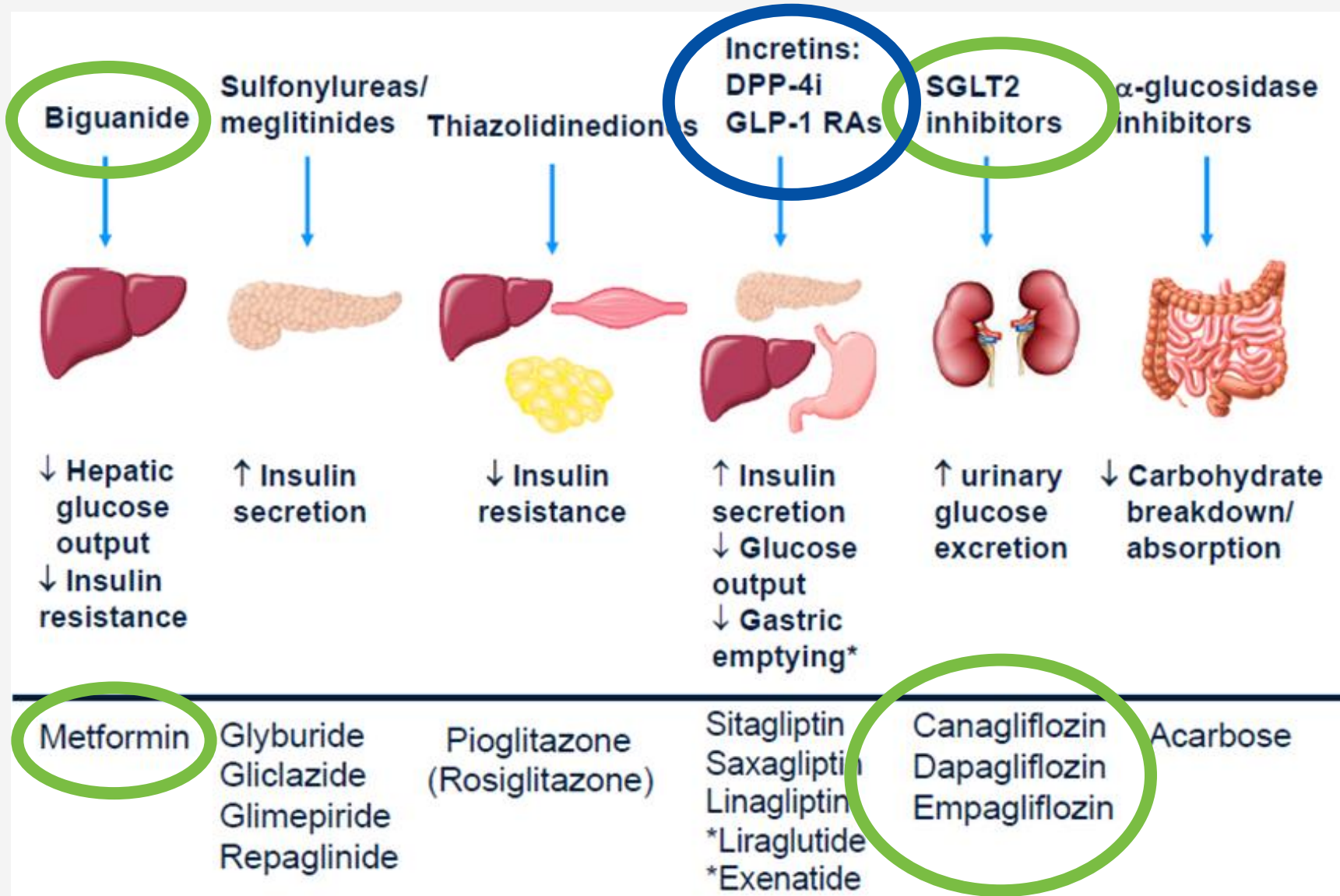
TREATMENTS (INCLUDING) OZEMPIC)

Obesity Medications

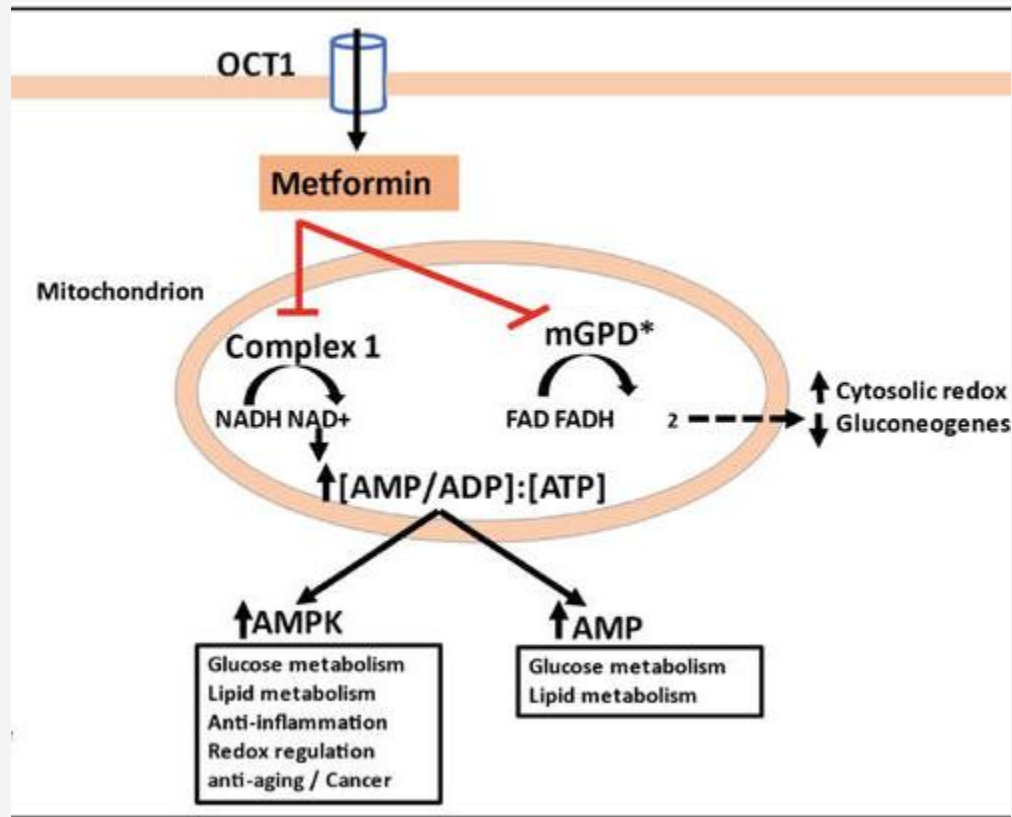
- Availability in Canada varies
- Orlistat – gastrointestinal lipase (fat enzyme) inhibitor
- Bupropion/Naltrexone – reduce cravings
- Liraglutide – daily injection
- Semaglutide (Wegovy) – weekly injection
- = both are incretins, just like Ozempic!



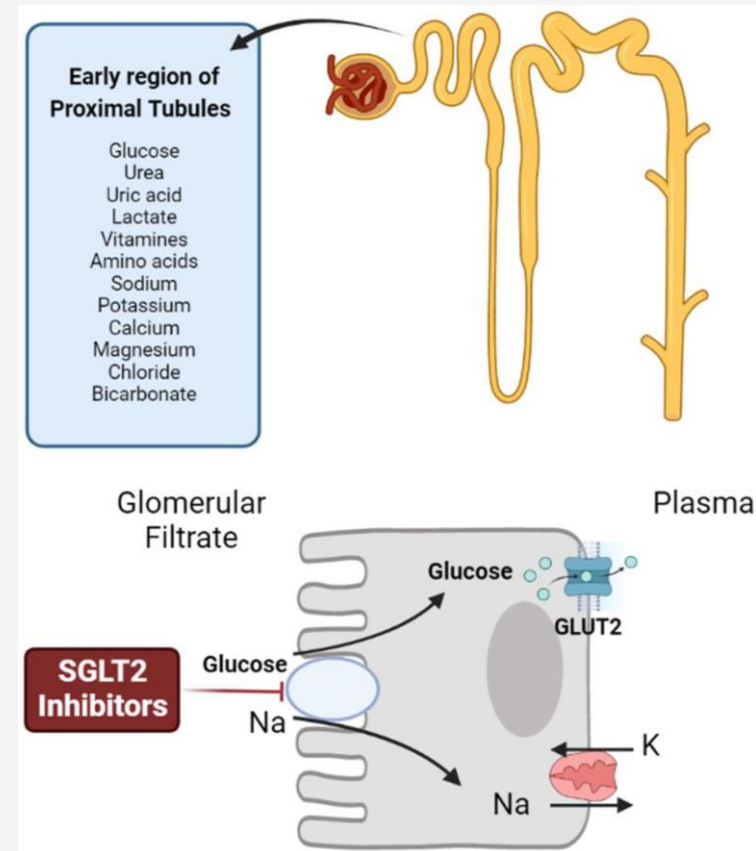
Diabetes Medications

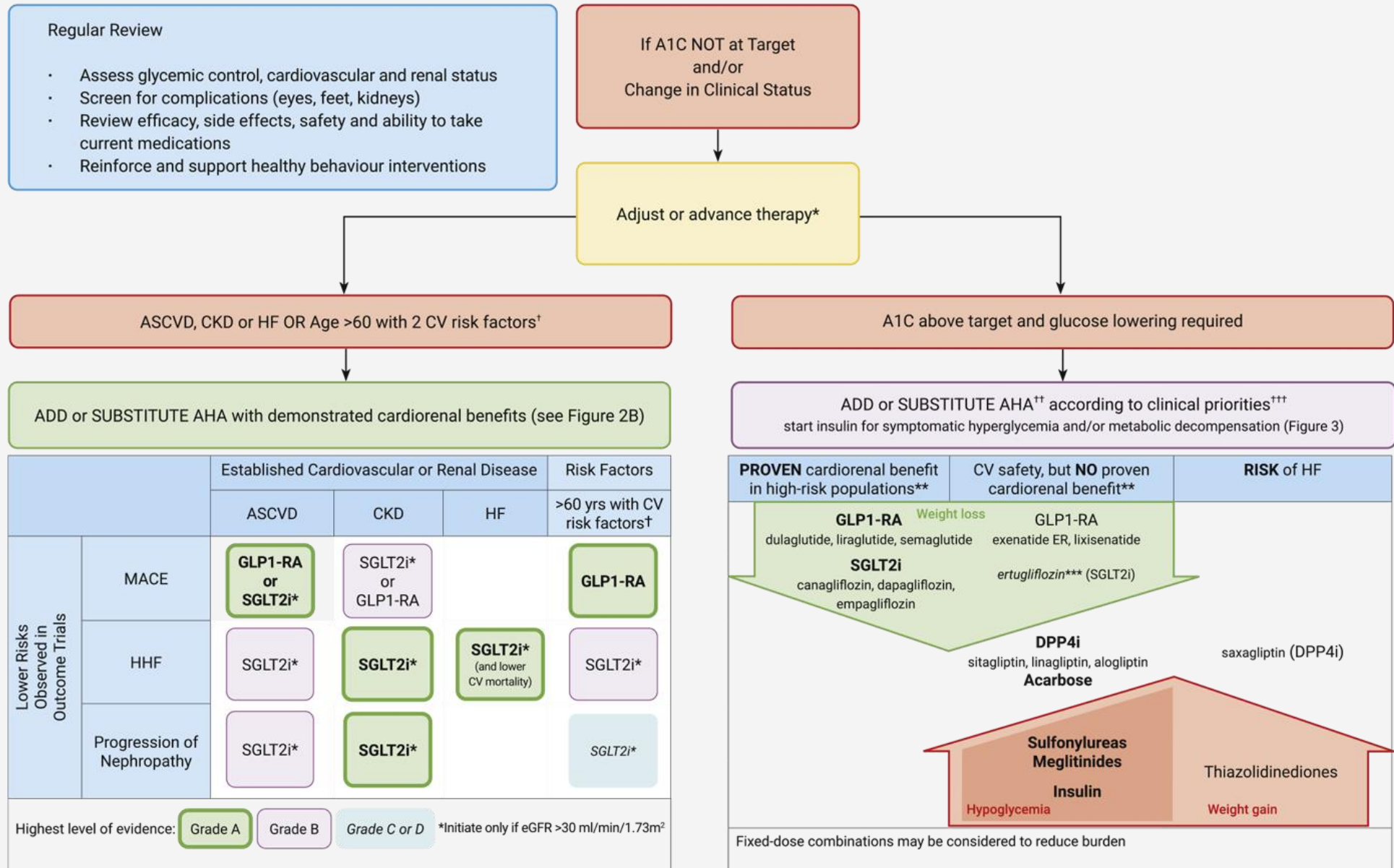


Metformin



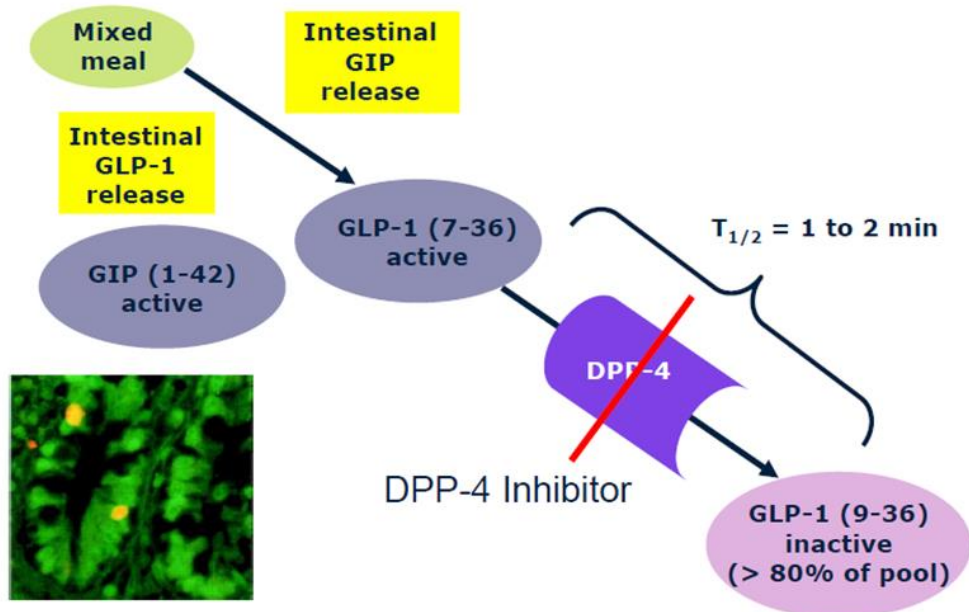
SGLT2 Inhibitors





Ozempic (Semaglutide) – Diabetes and Weight Loss

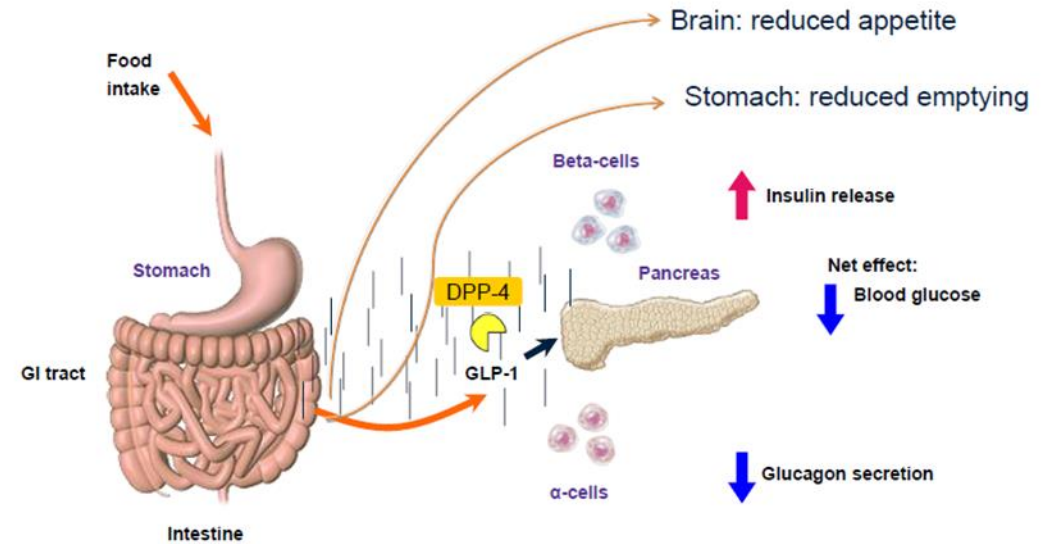
Incretins are GI hormones are stimulated by food and Inactivated by DPP-4



Anini et al. *Diabetes* 52:252–259, 2003

Drucker DJ. *Diabetes Care* 2003;26:2929-2940.

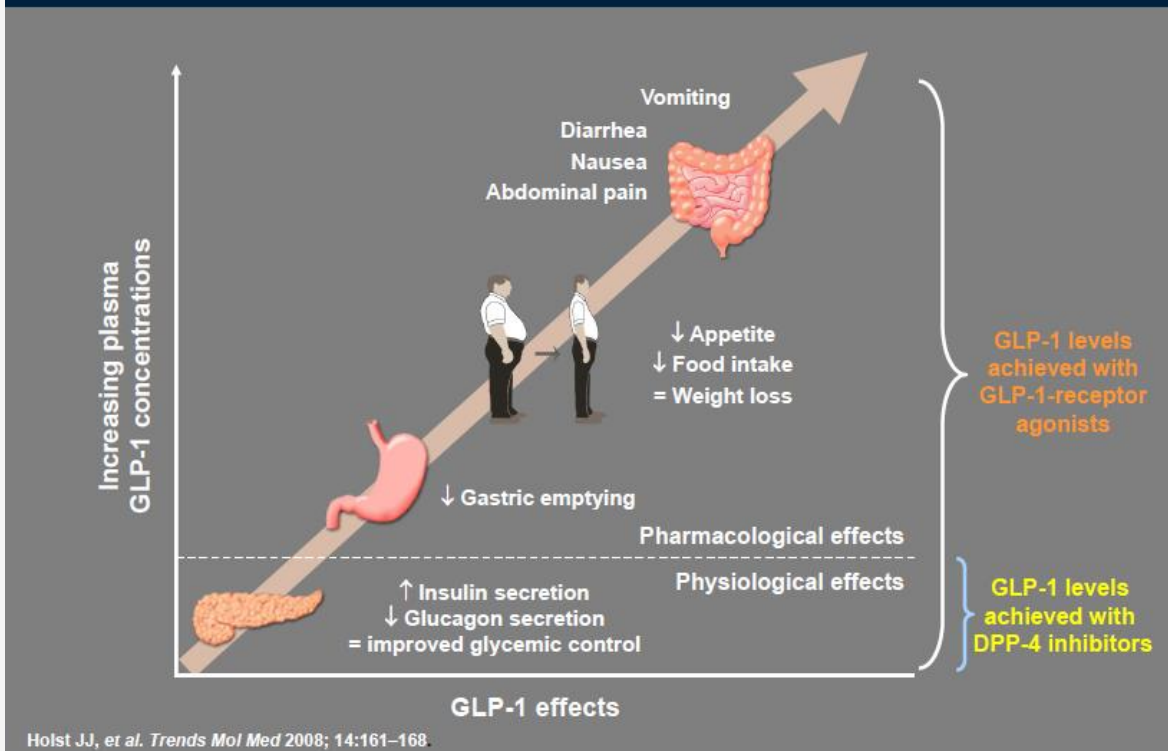
Incretins: GLP-1 Actions



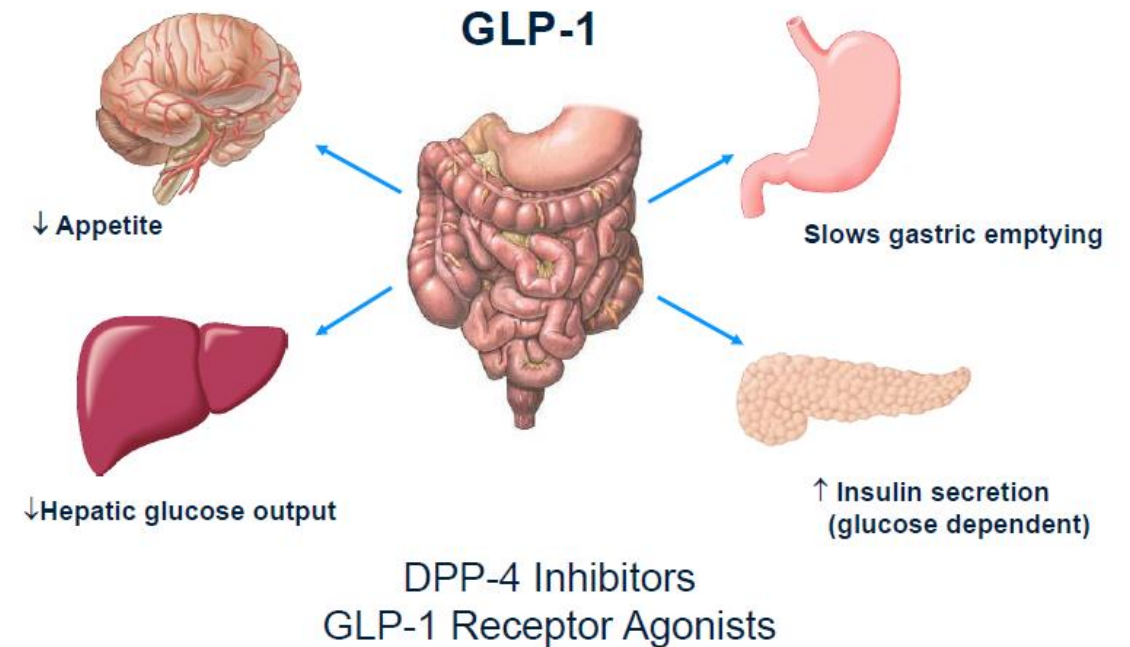
Adapted from: Barnett A. *Int J Clin Pract* 2006;60:1454-70; Drucker DJ, et al. *Lancet* 2006;368:1696-705; and Idris I, et al. *Diabetes Obes Metab* 2007;9:153-65.

Ozempic – Diabetes and Weight Loss

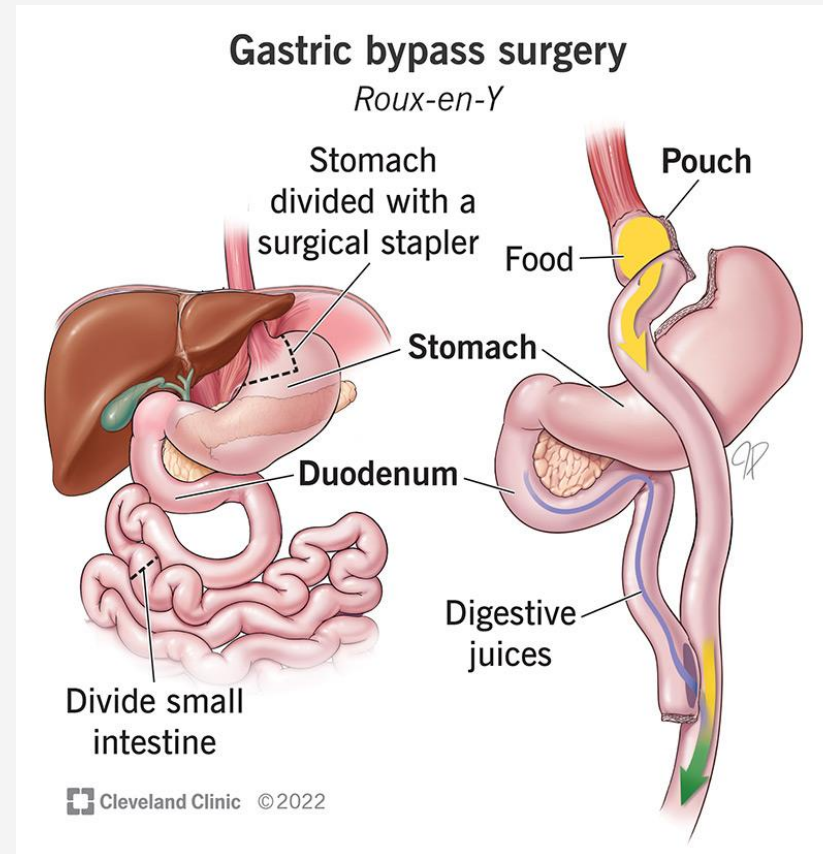
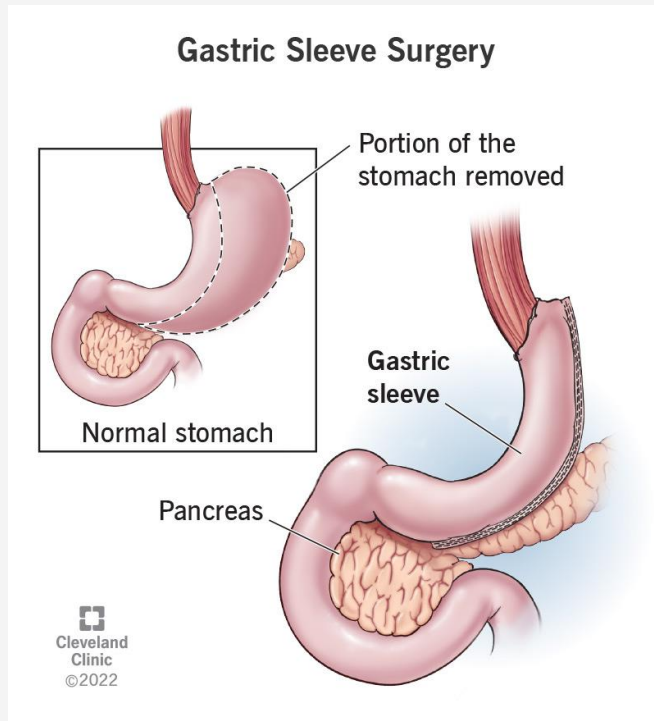
Effects of GLP-1: Dose-response relationship



Summary of GLP-1 Actions on Different Target Tissues



Bariatric (Weight Loss) Surgeries





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Diabetes, Obesity, and Ozempic / Semaglutide*

- Indicated in cases of diabetes and some* instances of obesity (BMI \geq 30 kg/m², etc.)
- Not for everyone, side effects and contraindications
- Not to be used in short term / weight cycling
- We all play a part in reducing weight bias!

Health

Despite social media buzz, Ozempic is not a quick-fix weight loss solution, doctors say

'Nobody should think that they're using this for short term and going to stop it'



[Nicole Ireland](#) · The Canadian Press ·

Posted: Mar 08, 2023 11:11 AM PST | Last Updated: March 8, 2023

The Current

Canadians are taking Ozempic, but stigma around weight stops them talking about it

Diabetes medication Ozempic can be prescribed off label for weight loss, but experts warn it's not a quick fix



[Padraig Moran](#) · CBC Radio ·

Posted: Jun 21, 2023 11:06 AM PDT | Last Updated: June 21, 2023



We need to reframe obesity as a chronic disease where it's not about weight, it's about health.

**Michael Vallis – Psychologist and Associate
Professor of Family Medicine at Dalhousie University**



References

1. New York Times - Ozempic: <https://www.nytimes.com/2022/11/22/well/ozempic-diabetes-weight-loss.html>
2. Ozempic Health Canada : <https://www.canada.ca/en/health-canada/services/drugs-health-products/drug-products/drug-shortages/information-consumers/supply-notice/ozempic.html>
3. GLP1 History / Exenatide : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7042958/>
4. Oprah Article : <https://people.com/oprah-winfrey-reveals-weight-loss-medication-exclusive-8414552>
5. Ozempic Sales Restriction: <https://www.cbc.ca/news/canada/british-columbia/ozempic-canada-british-columbia-sales-down-99-percent-1.6879397>
6. Ozempic Supply Issues : <https://globalnews.ca/news/10039395/bc-ozempic-supply-strained/>
7. Doctor Ozempic Issue : <https://www.cbc.ca/news/canada/british-columbia/b-c-ozempic-restriction-1.6815456>
8. BC Regulations restricting Ozempic sale : <https://news.gov.bc.ca/releases/2023HLTH0085-000957>
9. UBC News Ozempic Side Effects: <https://news.ubc.ca/2023/10/05/diabetes-weight-loss-drug-leads-to-gastrointestinal-issues/>
10. Ozempic Social Stigma and Quotes: <https://healthydebate.ca/2023/07/topic/diabetes-medication-weight-loss-ozempic/>
11. Future Prospects for Ozempic : <https://www.nytimes.com/interactive/2023/12/20/well/live/ozempic-weight-loss-drugs-diseases.html>
12. Healthlink BC Diabetes : <https://www.healthlinkbc.ca/illnesses-conditions/diabetes/type-2-diabetes>
13. Healthlink BC Obesity : <https://www.healthlinkbc.ca/illnesses-conditions/obesity/obesity>
14. Stats Canada: <https://www150.statcan.gc.ca/n1/pub/82-625-x/2019001/article/00005-eng.htm>
15. Obesity Canada Guidelines : <https://obesitycanada.ca/guidelines/chapters/>
16. EOSS: <https://www.ottawahospital.on.ca/fr/documents/2017/05/edmonton-obesity-staging-system-staging-tool.pdf/>
17. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8673483/>



Helpful Resources

1. Canada's Food Guide: <https://food-guide.canada.ca/en/>
2. Canadian 24-Hour Movement Guidelines: <https://csepguidelines.ca/guidelines/adults-18-64/>
3. White Coat Black Art – Ozempic Podcast Episode: <https://www.cbc.ca/listen/live-radio/1-75-white-coat-black-art/clip/16022432-ozempic-the-good-bad-future>
4. UBC/UVic MMS Lecture Recordings: <https://www.uvic.ca/medsci/people/instructors/gair-jane.php>

MINI MED SCHOOL LECTURE SERIES

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