INCREASING CONFIDENCE IN THE MEDICAL MANAGEMENT OF WEIGHT

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Endocrinologist and Obesity Medicine Specialist

Canadian Obesity Weekend: May 7th 2022

Name: Dr. Megha Poddar - “Canadian Obesity Weekend – May 2022”

FINANCIAL DISCLOSURES (OVER PAST 24 MONTHS)

	Speaker	Advisory	Research	Consultant
Bausch Health	√	√		
Novo Nordisk	√	√	√	
Sanofi	√			
Eli Lilly	√	√		
Janssen	√			
Merck	√			
Antibody	√			
CPD Network	√			
Boeringher Ingelheim	√		√	

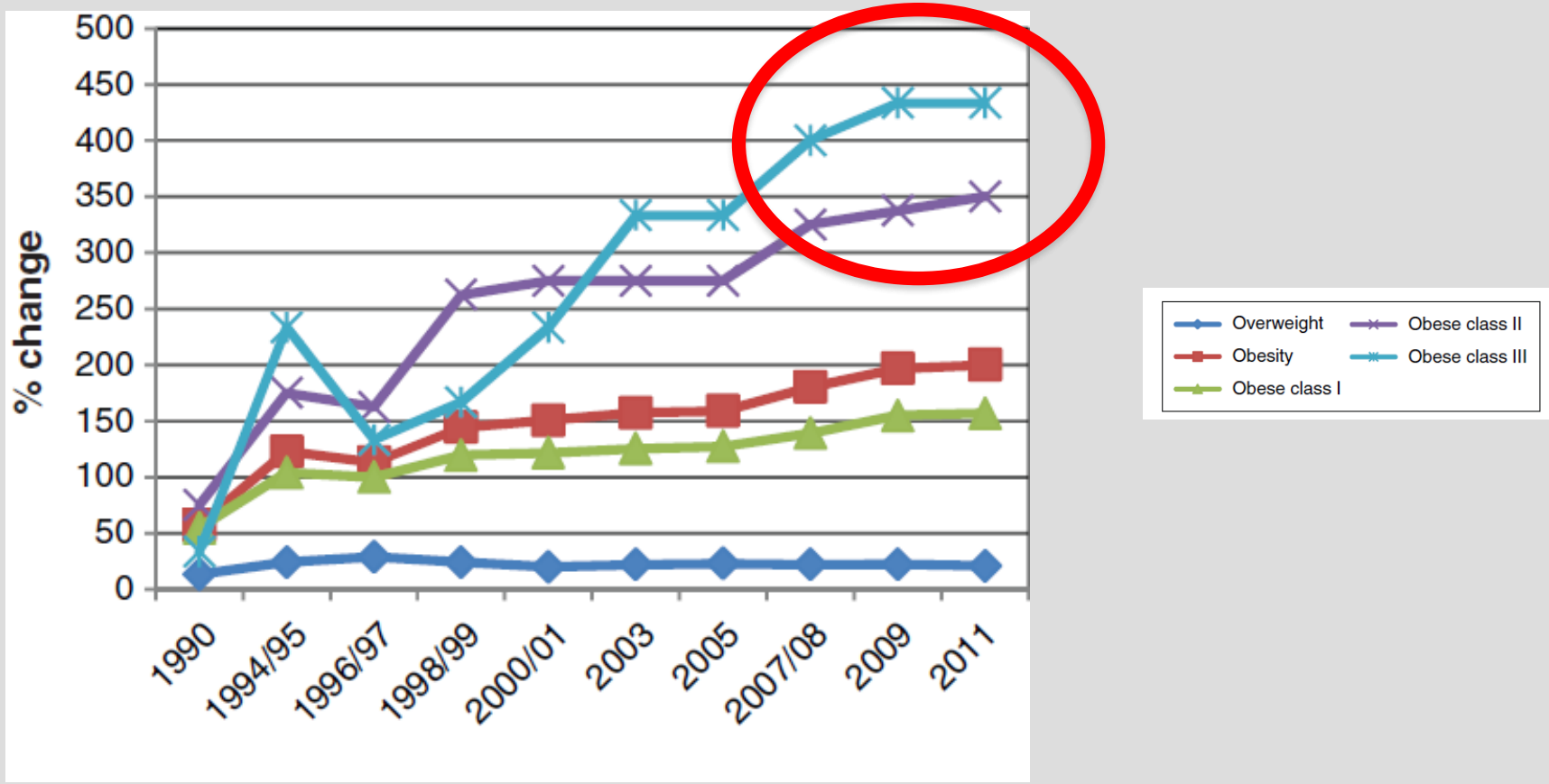
CanMEDS Roles Covered: Poddar - “Canadian Obesity Weekend 2022”

X	**Medical Expert** (as *Medical Experts*, physicians integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills, and professional values in their provision of high-quality and safe patient-centered care. *Medical Expert* is the central physician Role in the CanMEDS Framework and defines the physician’s clinical scope of practice.)
	Communicator (as Communicators, physicians form relationships with patients and their families that facilitate the gathering and sharing of essential information for effective health care.)
	Collaborator (as *Collaborators*, physicians work effectively with other health care professionals to provide safe, high-quality, patient-centred care.)
	Leader (as *Leaders*, physicians engage with others to contribute to a vision of a high-quality health care system and take responsibility for the delivery of excellent patient care through their activities as clinicians, administrators, scholars, or teachers.)
X	**Health Advocate** (as *Health Advocates*, physicians contribute their expertise and influence as they work with communities or patient populations to improve health. They work with those they serve to determine and understand needs, speak on behalf of others when required, and support the mobilization of resources to effect change.)
	Scholar (as *Scholars*, physicians demonstrate a lifelong commitment to excellence in practice through continuous learning and by teaching others, evaluating evidence, and contributing to scholarship.)
	Professional (as *Professionals,* physicians are committed to the health and well-being of individual patients and society through ethical practice, high personal standards of behaviour, accountability to the profession and society, physician-led regulation, and maintenance of personal health.)

OBJECTIVES

1. Review the mechanisms of action and efficacy of available anti-obesity medications
2. Identify and discuss underlying factors associated with obesity and the targeted benefits of different pharmacotherapy options
3. Understanding the role of pharmacotherapy as part of a comprehensive strategy for weight management

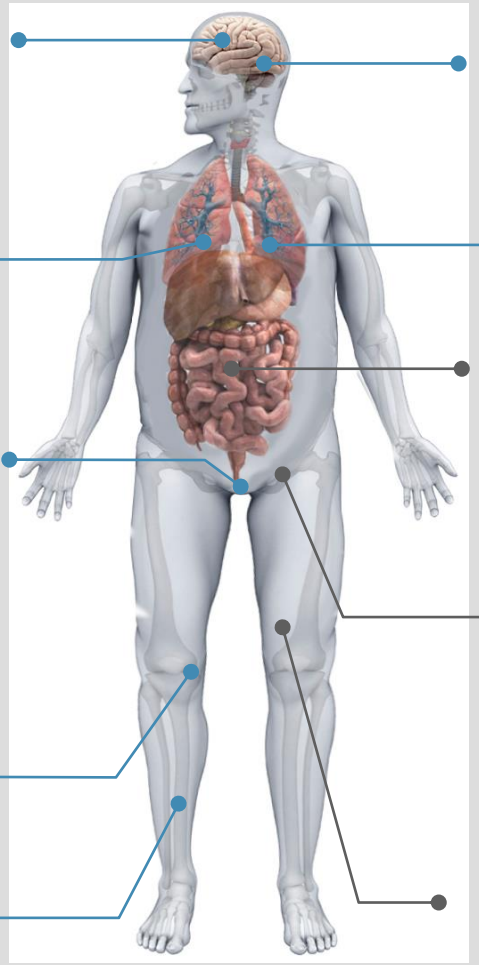
"Obesity is a chronic disease, prevalent in both developed and developing countries, and affecting children as well as adults"[1]



1. WHO Technical Report Series 894. Obesity: Preventing and Managing the Global Epidemic. 2000.

2. Twells et al., CMAJ ; March 2014

OBESITY: A MAJOR CONTRIBUTOR TO DISEASE



Psychiatric & Psychological[1]
Depression
Anxiety
Poor self-image
Poor quality of life
Eating disorder

Neurologic[1]
Stroke
Intracranial hypertension
Dementia

Pulmonary[1]
Obstructive sleep apnea
Hypoventilation syndrome
Asthma
Pulmonary hypertension
Dyspnea

Cardiovascular[1]
Atherosclerosis
Hypertension
Dyslipidemia
CHF

Gastrointestinal[1]
Nonalcoholic fatty liver disease
Gall bladder disease
GERD
Hernia

Genitourinary[1,2]
PCOS
Abnormal menses
Infertility
Urinary incontinence
Low testosterone
Proteinuric kidney disease

Cancer[3]
Esophagus
Stomach
Colorectal
Liver
Gallbladder
Pancreas
Breast
Endometrial
Ovary
Kidney
Meningioma
Thyroid
Multiple myeloma

Musculoskeletal[1]
Low back pain
Osteoarthritis
Restrictive mobility

Metabolic[1]
Diabetes
Gout
Insulin resistance
Metabolic syndrome

Dermatologic[1]
Venous stasis
Cellulitis

CHF = congestive heart failure; GERD = gastroesophageal reflux disease; PCOS = polycystic ovarian syndrome.

Adapted from: 1. Catenacci VA et al. Clin Chest Med. 2009;30:415-444. 2. Wang C et al. Diabetes Care. 2011;34:1669-1675. 3. Lauby-Secretan B et al. N Engl J Med. 2016;375:794-798.

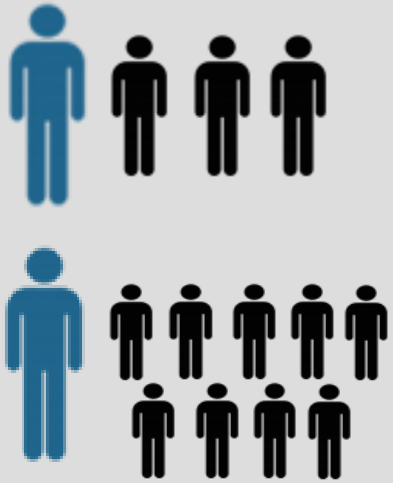
A LOOK AT THE CURRENT OBESITY LANDSCAPE

Worldwide obesity has more than **DOUBLED** since 1980[1]

MORE THAN HALF of the world's adult population was living with overweight/obesity in 2014[2]

2.8 MILLION die/year from overweight or obesity[2]

6 MILLION Canadians are living with obesity[3,4]



Canadian adults

Canadian children

1. WHO. 2015. Obesity and overweight fact sheet. Available at: http://www.who.int/mediacentre/factsheets/fs311/en/. 2. WHO. 2014. 10 facts on obesity. Available at: http://www.who.int/features/factfiles/obesity/en/# 10 facts on obesity. 3. Canadian Obesity Network. 2015. Obesity in Canada. Available at: http://www.obesitynetwork.ca/obesity-in-Canada CON. 4. Public Health Agency of Canada. 2011. Obesity in Canada. A joint report from the Public Health Agency of Canada and the Canadian Institute for Health Information. Available at: http://www.phac-aspc.gc.ca/hp-ps/hl-mvs/oic-oac/assets/pdf/oic-oac-eng.pdf.

Medical Nutrition Therapy (MNT)

MNT is used in managing chronic diseases and focuses on nutrition assessment, diagnostics, therapy and counselling. MNT should:

a. be personalized and meet individual values, preferences and treatment goals to promote long term adherence

b. be administered by a registered dietitian to improve weight-related and health outcomes

Physical Activity

30-60 mins of aerobic activity on most days of the week, at moderate to vigorous intensity, can result in:

a. small amount of weight and fat loss

b. improvements in cardiometabolic parameters

c. weight maintenance after weight loss

ⓘ **Remember nutrition and physical activity recommendations are important for all Canadians regardless of body size or composition.**

The Three Pillars of Obesity Management that Support Nutrition and Activity

Psychological Intervention

a. Implement multicomponent behaviour modification

b. Manage sleep, time, and stress

c. Cognitive behavioural therapy and/ or acceptance and commitment therapy should be provided for patients if appropriate

Pharmacological Therapy

a. liraglutide

b. naltrexone/bupropion *(in a combination tablet)*

c. orlistat

CRITERIA

BMI ≥30kg/m² or

BMI ≥27 kg/m² with obesity (adiposity) related complications

Bariatric Surgery

ⓘ Procedure should be decided by surgeon in discussion with the patient.

a. Sleeve gastrectomy

b. Roux-en-Y gastric bypass

c. Biliopancreatic diversion with/without duodenal switch

CRITERIA

BMI ≥40 kg/m² or

BMI ≥35 - 40 kg/m² with an obesity (adiposity) related complication or

BMI ≥30 kg/m² with poorly controlled type 2 diabetes

Treating the root causes of obesity is the foundation of obesity management - refer to the 4M framework - ***mechanical, metabolic, mental and social milieu***

THERE ARE 5 STEPS IN THE PATIENT ARC TO GUIDE A HEALTH CARE PROVIDER IN THE CARE OF PEOPLE LIVING WITH OBESITY.

Step 1: Recognition of obesity as a chronic disease and obtaining patient permission

Step 2: Assessment: using appropriate measurements, and identifying the root causes, complications and barriers to obesity treatment.

Step 3: Discussion of treatment options : medical nutrition therapy and physical activity and adjunctive therapies that may be required, including psychological, pharmacologic and surgical interventions.

Step 4: Agreement regarding goals of therapy: focusing mainly on the value that the person derives from health-based interventions.

Step 5: Follow-up and advocacy: Engagement by health care providers with the person with obesity in continued follow-up and reassessments, and encouragement of advocacy to improve care for this chronic disease.

WHAT IS IMPORTANT TO REFLECT ON PRIOR TO STARTING THE CONVERSATION?[1]

Highlight that obesity is a serious, chronic, complex disease which is influenced by a number of factors including:[1,2]

Genetic

Physiological

Psychological

Environmental

Socioeconomic

1. Mayo Clinic. Obesity. 2015. Available at: https://www.mayoclinic.org/diseases-conditions/obesity/symptoms-causes/syc-20375742. Retrieved July 10, 2019. 2. Pi-Sunyer F, et al. Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults. NHLBI. 1998:98-4083.

DIFFERENT TYPES OF BIAS IN OBESITY

- **Explicit**
  - Overtly negative attitudes towards PwO
- **Implicit**
  - Unconscious negative attitudes towards PwO
- **Internalized**
  - PwO endorse negative weight related attitudes and beliefs about themselves
  - 52% of PwO endorse this belief
  - Negative impact on outcomes associated with obesity management and can promote/exacerbate the obesity
  - Few studies have explored these relationships

HEALTH CONSEQUENCES OF INTERNALIZED WEIGHT BIAS

- Poorer mental health outcomes compared to the experience itself
- ⬇ in HRQoL independent of obesity related health issues
- Leads to unhealthy coping strategies
  - binge eating
  - Avoidance of healthcare settings
  - Exercise avoidance

INTERNALIZED BIAS

What does this sound like in your office?

"I don't like who I am at this weight"

"When I see someone else who is higher weight eating ice cream I feel disgusting"

"I don't want to go to this social event until my weight is down"

PRE-OPERATIVE PSYCHOSOCIAL FACTORS MAY PREDICT POST-BARIATRIC SURGERY OUTCOMES – TORONTO BARI-PSYCH

- Prospective cohort study of 156 bariatric surgery patients found:
  - 46.2% of participants met criteria for history of mood disorder
  - Pre-surgery weight ($p < 0.001$) and a history of a mood disorder ($p = 0.047$) were significant predictors of weight loss 2 years post-surgery
  - History of a mood disorder ($p = 0.032$) significantly predicted mental QOL ($p = 0.006$) 2 years post-surgery

QOL = quality of life

Sockalingam S et al. Gen Hosp Psych. 2017; 47:7-13

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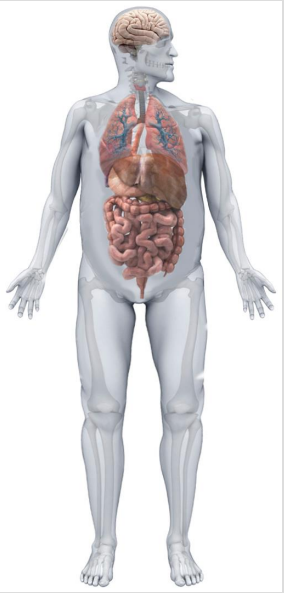
THE ROLE OF THE BRAIN IN CONTROL OF EATING

Homeostatic eating



POMC neurons
decrease hunger

Ghrelin
increases hunger

Leptin
decreases hunger

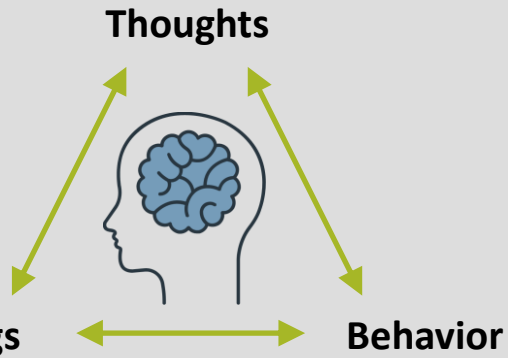
GLP-1
increases satiety

Hedonic eating

Dopamine:
the motivation/drive to eat

Opioid and cannabinoid receptors:
the pleasure associated with food

Cognitive function

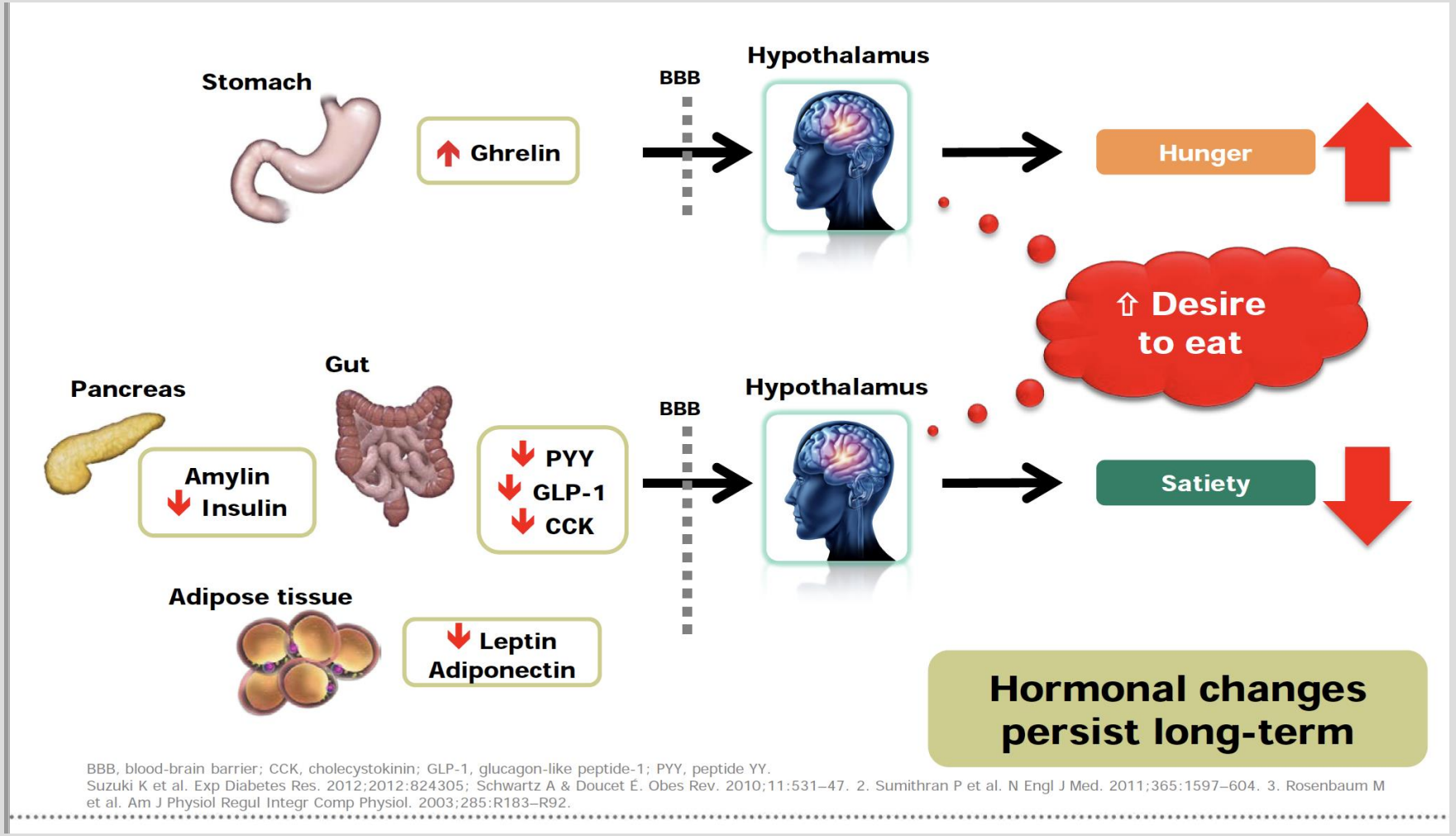


Prefontal cortex:
regulates eating behaviour
and controls the decision to eat
certain foods over others

Significant crosstalk mediated by endocrine signals

1. Reproduced from the Canadian Adult Obesity Clinical Practice Guidelines [The Science of Obesity. Lau, C.W., Wharton, S. 1-7, copyright notice] with permission from Obesity Canada/ Obésité Canada. 2. Berridge KC, et al. The American psychologist 2016; 71(8): 670-679

LONGTERM WEIGHT MAINTENANCE



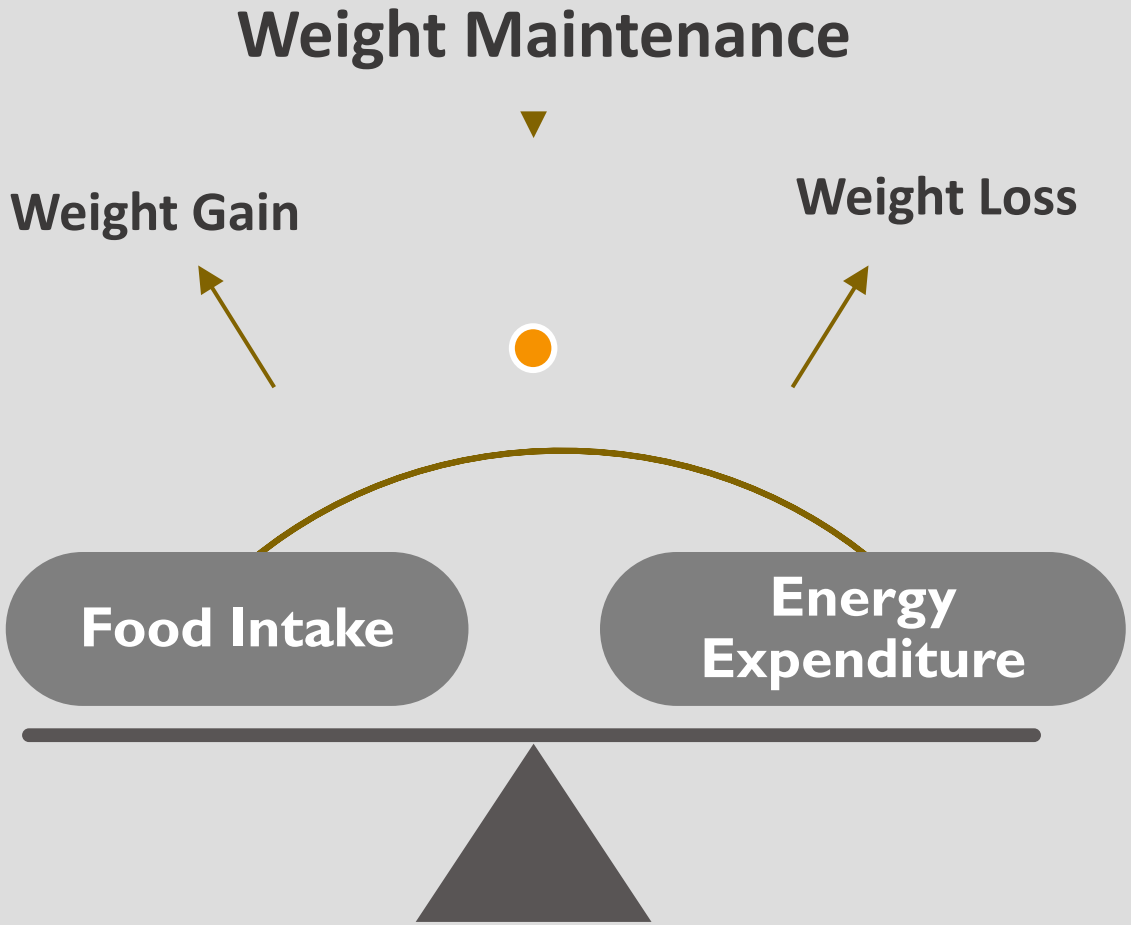
BBB, blood-brain barrier; CCK, cholecystokinin; GLP-1, glucagon-like peptide-1; PYY, peptide YY.

Suzuki K et al. Exp Diabetes Res. 2012;2012:824305; Schwartz A & Doucet É. Obes Rev. 2010;11:531–47. 2. Sumithran P et al. N Engl J Med. 2011;365:1597–604. 3. Rosenbaum M et al. Am J Physiol Regul Integr Comp Physiol. 2003;285:R183–R92.

BODY'S RESPONSE TO WEIGHT REDUCTION

Hormonal Adaptation

Levels of hunger hormone increase,
and satiety hormones decrease with weight loss, resulting in an increase in hunger
and desire to eat as well as increased risk
of weight regain



Thermogenic Adaptation

Energy expenditure decreases with weight loss to a greater extent than what would be expected, increasing risk of weight regain. It may not increase to the same extent with weight regain.

Weight conservation is an evolutionary protective mechanism to defend against food shortage
The nervous system plays a role in conserving weight by balancing energy intake and expenditure

Morton GJ, et al. *Nature*. 2006;443:289-295; Leibel RL, et al. *N Engl J Med*. 1995;31:621-628; Schwartz A & Doucet É. *Obes Rev*. 2010;11:531–547; Sumithran P et al. *N Engl J Med*. 2011;365:1597–1604; Rosenbaum M et al. *Am J Physiol Regul Integr Comp Physiol*. 2003;285:R183–R192; Rosenbaum M & Leibel R. L. *Int J Obes (Lond)*. 2010 October ; 34(0 1): S47–S55.

CRAVINGS ARE COMMON: ESPECIALLY IN THOSE TRYING TO LOSE WEIGHT

	FOOD CRAVINGS
General population (n=1532)	62.6%
Healthy weight (n=556)	31.0%
Overweight (n=894)	68.5%
Overweight and not trying to lose weight (n=554)	59.8%
Overweight and trying to lose weight (n=331)	73.5%

In a survey of Canadian adults:

- Almost **2/3** experience food cravings that impact their eating behaviours
- **Cravings are increased in those who are overweight and trying to lose weight**

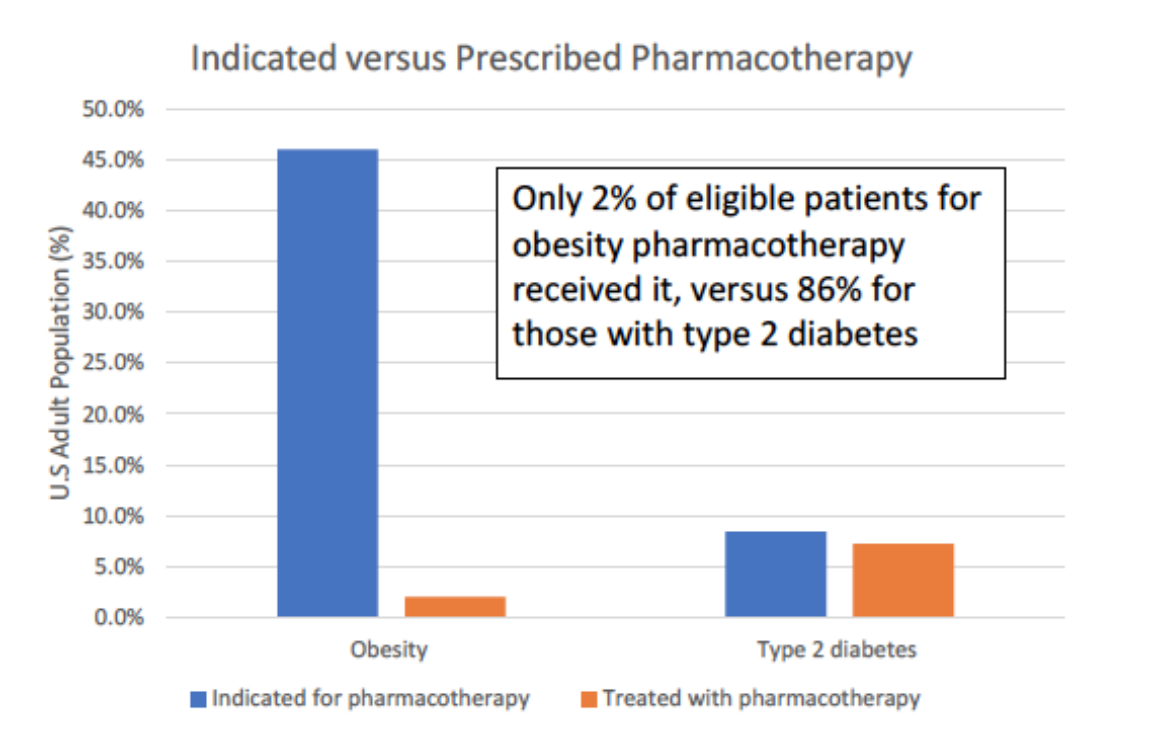
Vallis M. *Clin Obes.* 2019;e12299.

WHY CONSIDER PHARMACOTHERAPY FOR OBESITY?

- Modest (5-10%) and sustained weight loss is associated with improvements in comorbidities associated with obesity
- Behavioural interventions (nutrition and physical activity) generally achieves only a 3-5% weight loss, which is most often not sustained over the long term
- Pharmacotherapy for obesity should be considered to decrease weight and improve metabolic parameters, when behavioural interventions alone has been ineffective, insufficient, or without sustained benefit

Pedersen et al. Obesity Canada (http://obesitycanada.ca/wp-content/uploads/2020/08/Pharmacotherapy-v4-with-links-1.pdf)

PHARMACOTHERAPY IS STILL NOT COMMONLY PRESCRIBED



- No options are currently covered by OHIP
- 20-30% of private drug plans cover these medications
- Cost is prohibitive for effective therapies
- Advocate for your patients!

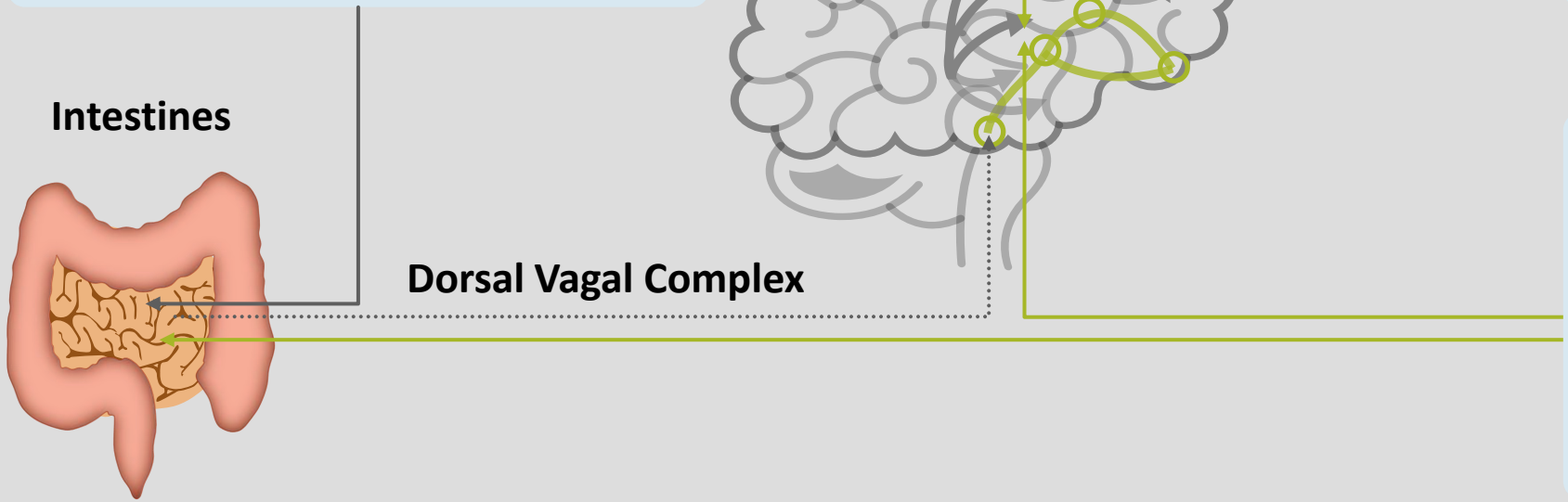
https://obesitycanada.ca/public-resources/tools-accessing-health-benefits/

Thomas CE, Mauer EA, Shukla AP, Rathi S, Aronne LJ. Low Adoption of Weight Loss Medications: A Comparison of Prescribing Patterns of Antiobesity Pharmacotherapies and SGLT2s. Obesity (Silver Spring). 2016;24(9):1955-1961. doi:10.1002/oby.21533

CURRENT OBESITY PHARMACOTHERAPY APPROVED FOR LONG-TERM USE IN CANADA

Orlistat[4]
Lipase inhibitor

Naltrexone/bupropion[1]
μ-opioid antagonist +
DA/NE reuptake inhibitor



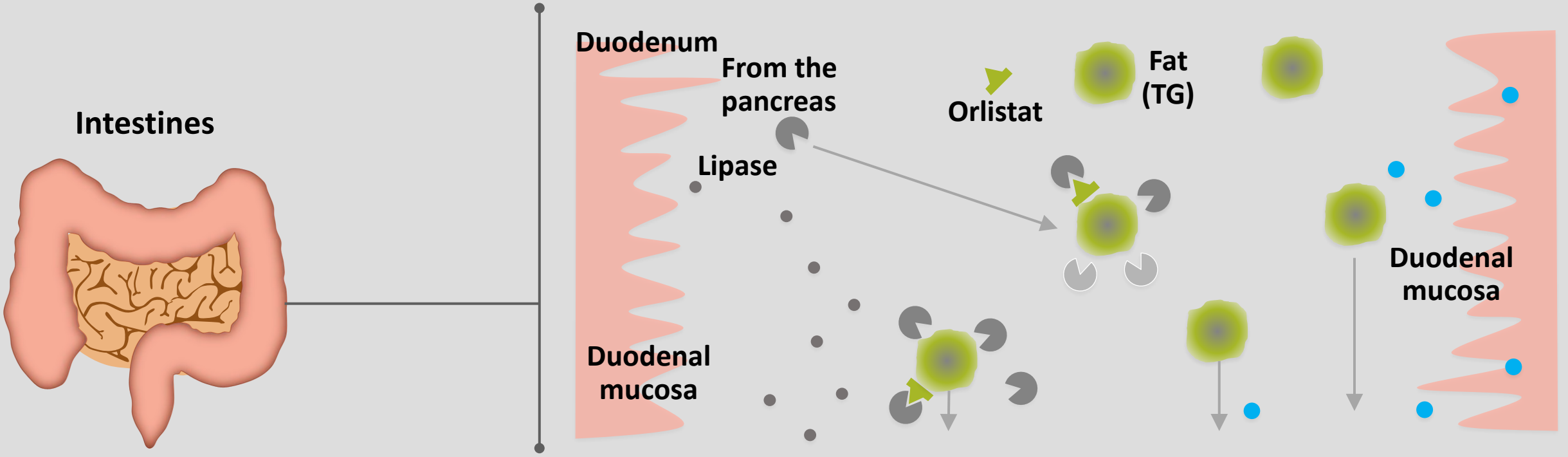
Liraglutide[2]
Semaglutide[5]
GLP-1 receptor agonists

DA=dopamine; GLP-1=glucagon-like peptide-1; NE=norepinephrine

1. Ornellas T, Chavez B. P T. 2011;36(5):255–262; 2. Shah M, Vella A. Rev Endocr Metab Disord. 2014;15(3):181–187; 3. Reproduced from the Canadian Adult Obesity Clinical Practice Guidelines [The Science of Obesity. Lau, C.W., Wharton, S. 1-7, copyright notice] with permission from Obesity Canada/ Obésité Canada; 4. Yanovski SZ et al. JAMA. 2014;311:74-86; 5. Knudsen LB & Lau J. Front Endocrinol (Lausanne) 2019; 10:155.

ORLISTAT

Lipase Inhibitor

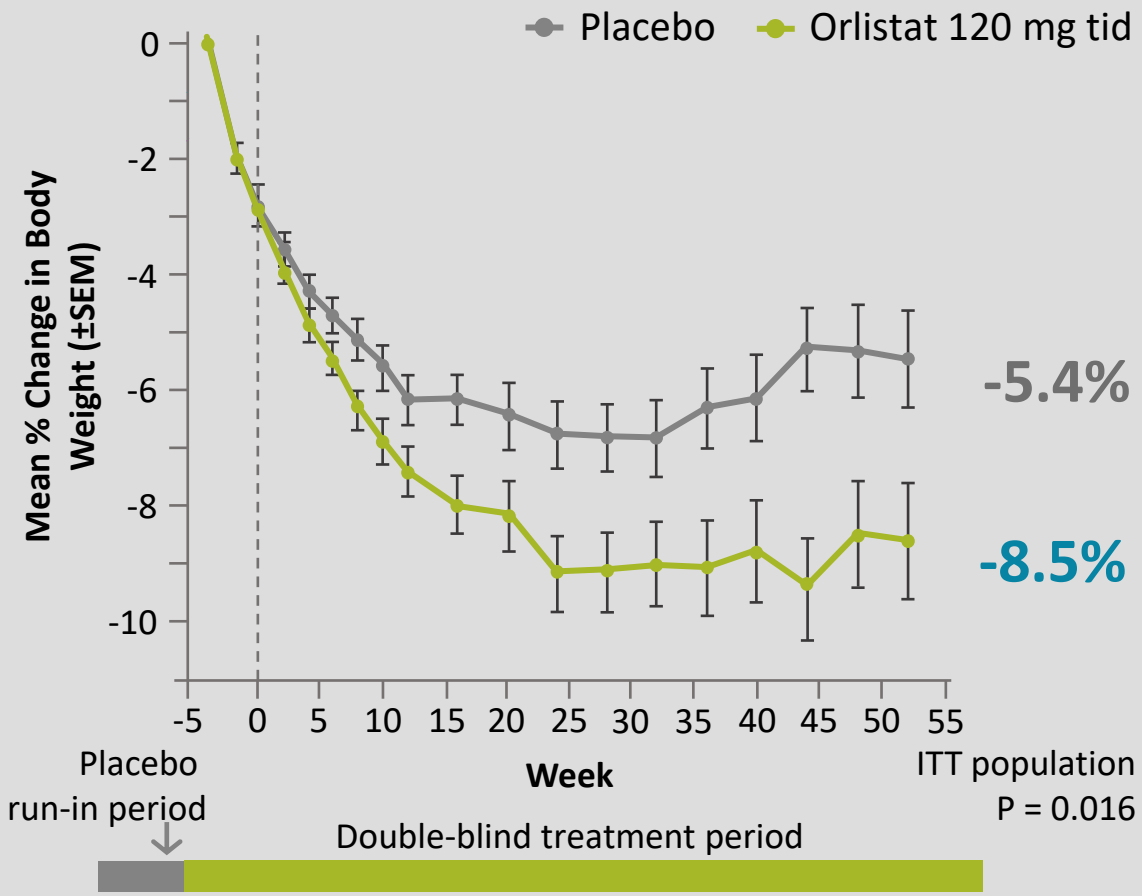


Orlistat inhibits the action of gastrointestinal and pancreatic lipases, blocking the hydrolysis of triglycerides and absorption of fatty acids

TG = triglyceride

Heck AM et al. Pharmacotherapy. 2000;20(3):270-279. Hadvary et al. J Biol Chem. 1991;266(4):2021-2027

ORLISTAT PHASE 3 EFFICACY STUDY



ITT population; completer data for categorical weight loss was not provided
Finer et al, Int J Obesity, 2000;24(3):306-313

ORLISTAT PHASE 3 – SAFETY DATA

Adverse Event (AE)	Orlistat 120 mg n = 1913 (%)	Placebo n = 1466 (%)
Oily spotting	26.6	1.3
Flatus with discharge	23.9	1.4
Fecal urgency	22.1	6.7
Fatty/oily stool	20.0	2.9
Oily evacuation	11.9	0.8
Increased defecation	10.8	4.1
Fecal incontinence	7.7	0.9

Finer et al, Int J Obesity, 2000;24(3):306-313

NALTREXONE/BUPROPION

Opioid antagonist/dopamine reuptake inhibitor

DOPAMINE RECEPTORS

Bupropion is an NDRI with a dopaminergic effect that controls "wanting"

OPIOID RECEPTORS

Naltrexone blocks mu-opioid receptors to ↓ "liking"

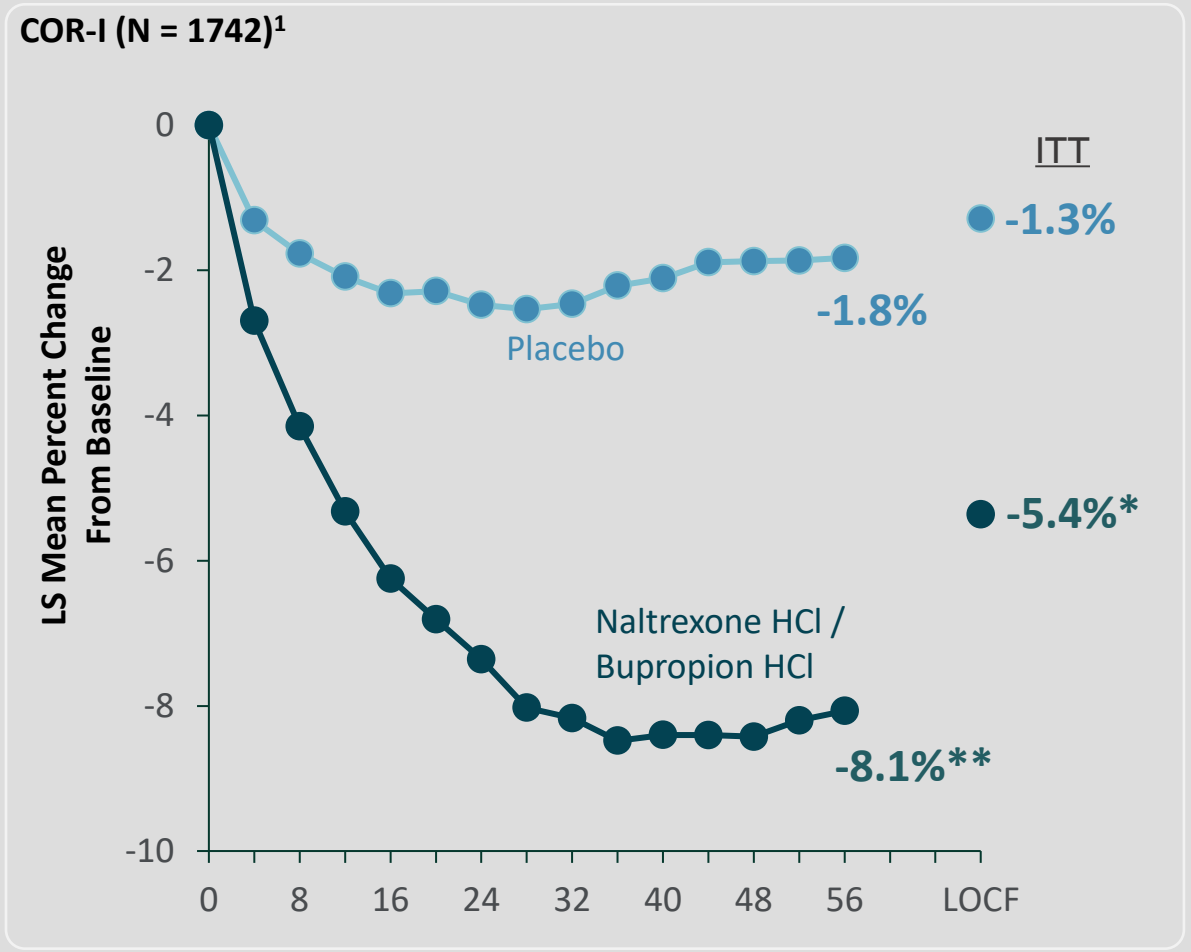
POMC/ CART

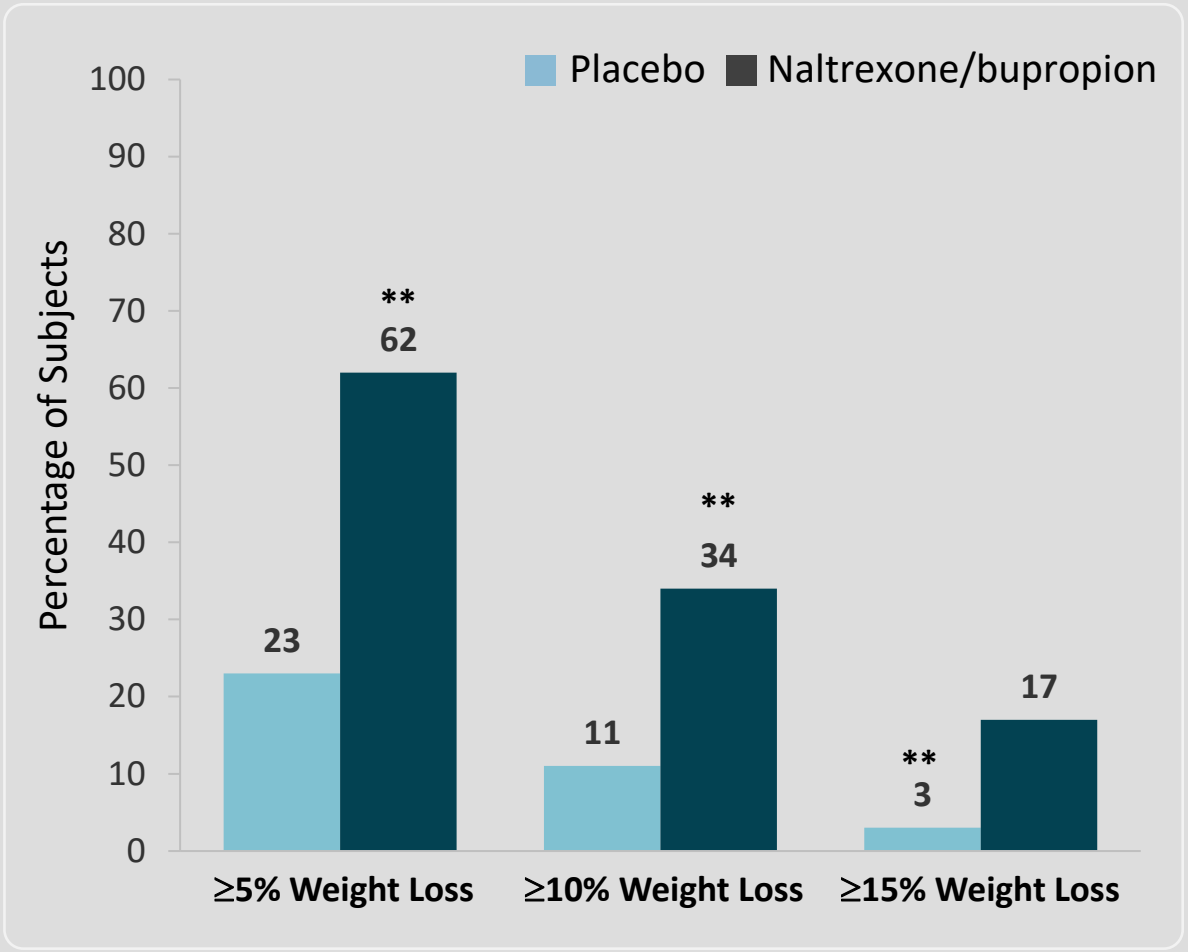
Activates POMC neurons to ↓ hunger

AgRP = agouti-related peptide; CART = cocaine- and amphetamine-regulated transcript; NDRI = norepinephrine–dopamine reuptake inhibitor; NPY = neuropeptide Y; POMC = proopiomelanocortin

CONTRAVE® (product monograph), February 12, 2018, Valeant Canada LP, Laval, QC. Rebello CJ and Greenway FL. Adv Ther. 2016;33(11):1853-1866. Cameron JD et al. Annu Rev Nutr. 2017;37:183-205.

NALTREXONE/BUPROPION PHASE 3 EFFICACY STUDY – COR-I





ITT = intent-to-treat, *P<0.001 vs placebo; **P<0.0001 vs placebo; Completers: Patients who have a baseline and a post-baseline body weight measurement and completed 56 weeks of treatment

1. CONTRAVE® Product monograph, February 12, 2018, Valeant Canada LP; Laval, QC 2. Apovian CM, et al. Obesity..2013;21:935-943; Greenway FL, et al. Lancet. 2010;376:595-605.

NALTREXONE/BUPROPION PHASE 3 - SAFETY DATA

Adverse Event (AE)[2]	Naltrexone HCl / Bupropion HCl n = 2545 (%)	Placebo n = 1515 (%)
Nausea	32.5	6.7
Constipation	19.2	7.2
Headache	17.6	10.4
Vomiting	10.7	2.9
Dizziness	9.9	3.4
Insomnia	9.2	5.9
Dry mouth	8.1	2.3
Diarrhea	7.1	5.2

1. CONTRAVE® Product monograph, February 12, 2018, Valeant Canada LP; Laval, QC 2. Apovian CM, et al. Obesity..2013;21:935-943

LIRAGLUTIDE & SEMAGLUTIDE

GLP-1 receptor antagonists

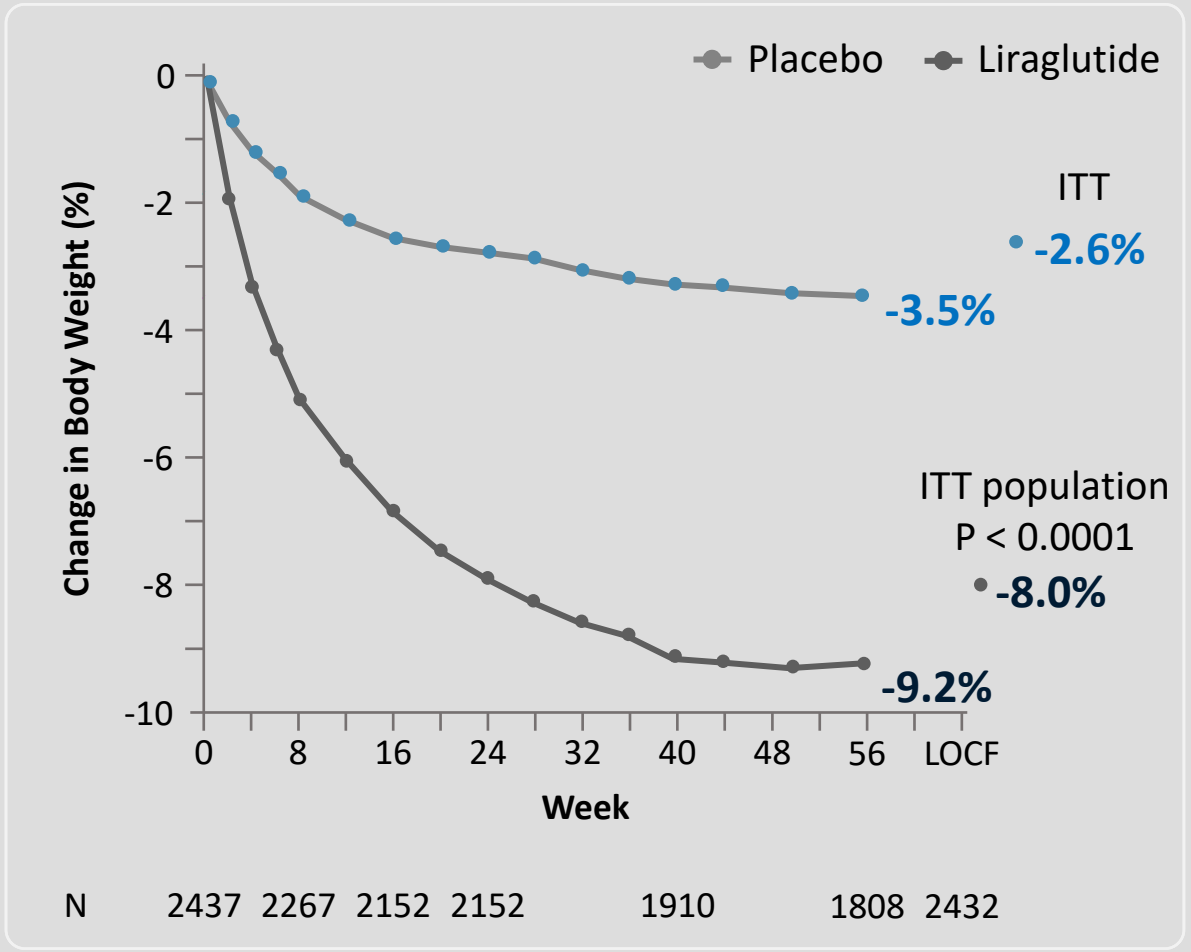
GLP-1

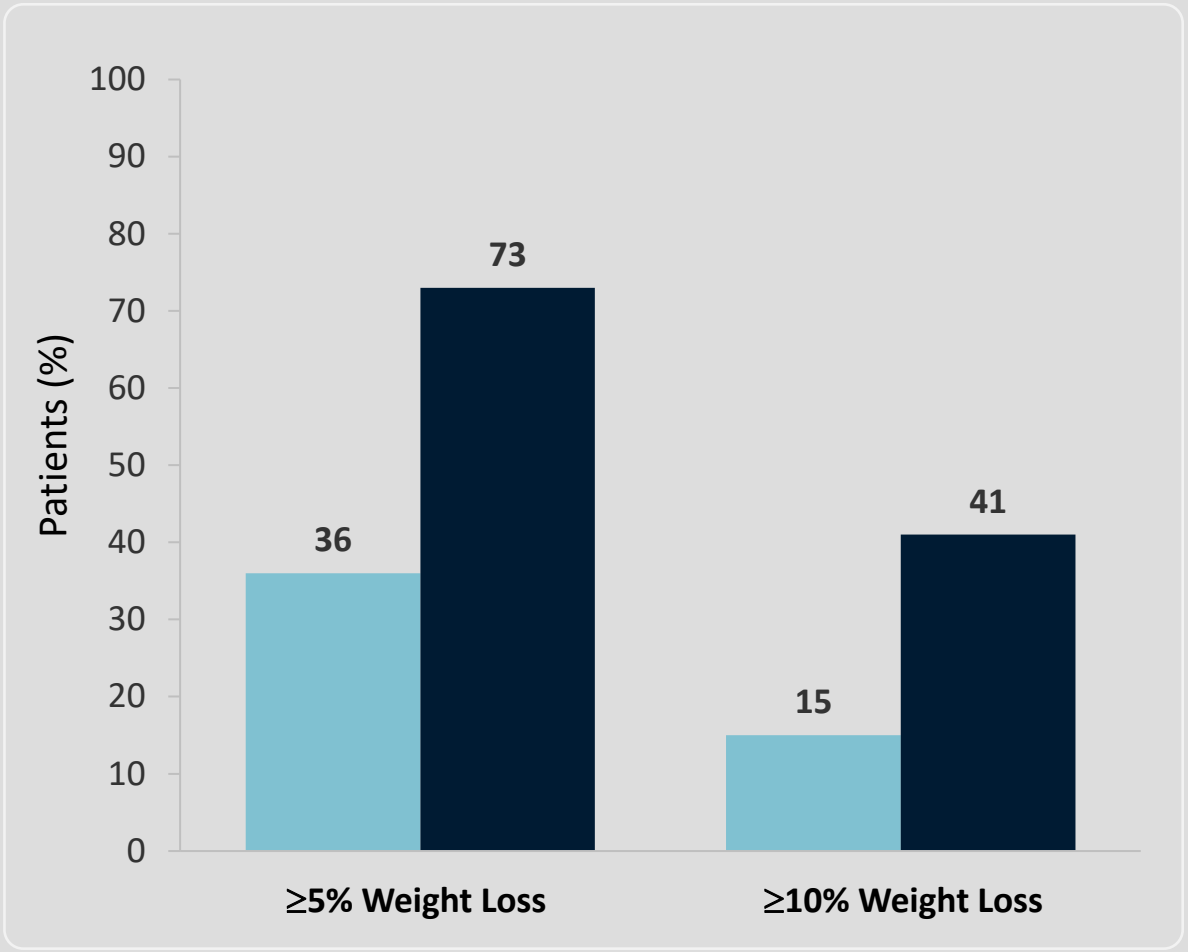
- ↓ Gastric emptying
- ↑ Insulin
- ↓ Glucagon
- ↑ Satiety

TG = triglyceride

Heck AM et al. Pharmacotherapy. 2000;20(3):270-279. Hadvary et al. J Biol Chem. 1991;266(4):2021-2027

LIRAGLUTIDE PHASE 3 EFFICACY STUDY – SCALE 1





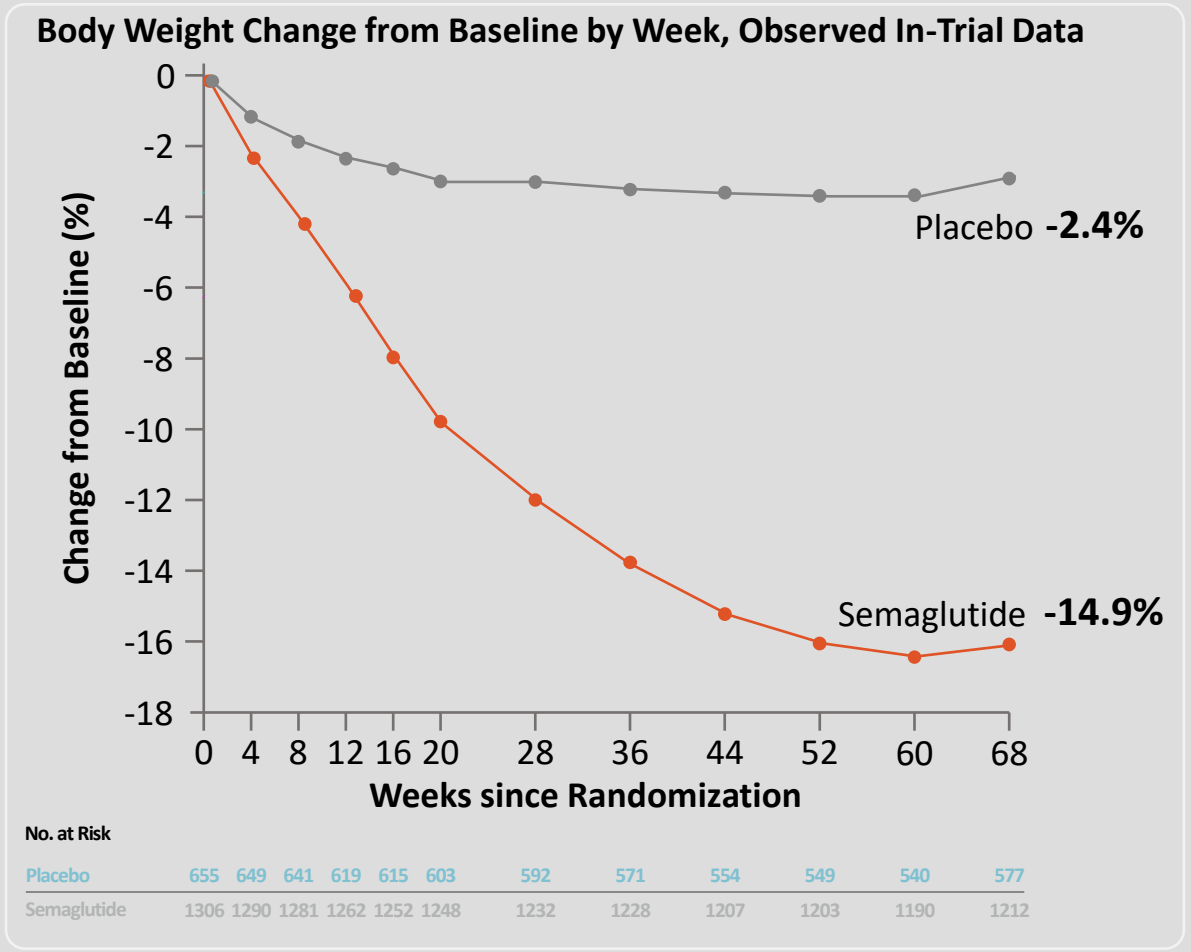
Saxenda® Product monograph, July 12, 2017, Novo Nordisk Canada Inc, Mississauga, ON; Pi-Sunyer X et al. NEJM 2015; 373(1): 11-22.

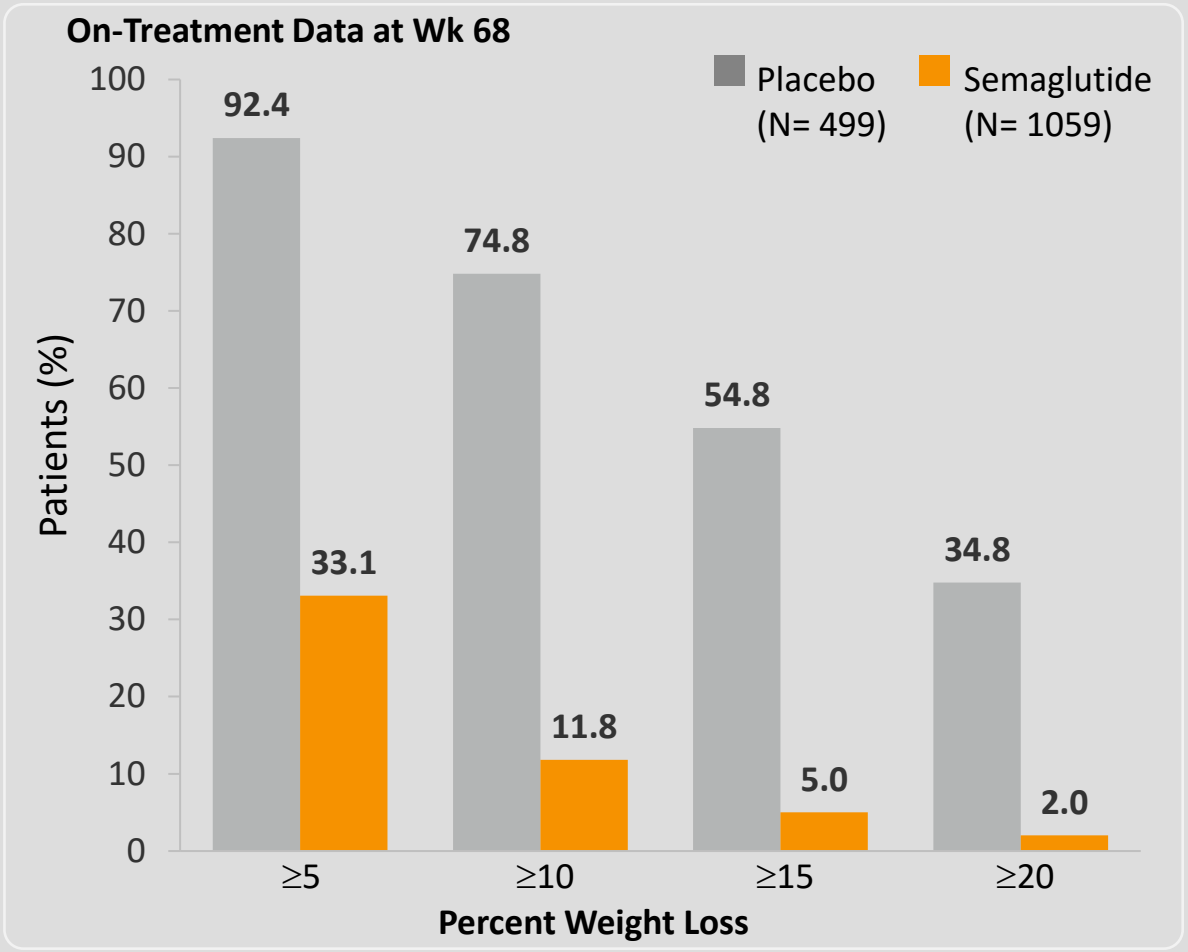
LIRAGLUTIDE PHASE 3 - SAFETY DATA

Adverse Event (AE)	Liraglutide n = 3384 (%)	Placebo n = 1466 (%)
Nausea	39	14
Diarrhea	21	10
Constipation	19	9
Vomiting	16	4
Decreased appetite	10	2
Dyspepsia	10	3
Fatigue	8	5
Dizziness	7	5
Abdominal pain	5	3
Increased lipase	5	2
Upper abdominal pain	5	3

Saxenda® Product monograph, July 12, 2017, Novo Nordisk Canada Inc, Mississauga, ON.

SEMAGLUTIDE PHASE 3 EFFICACY STUDY – STEP-1





P<0.001 for the 5%, 10%, and 15% thresholds; the 20% threshold was not part of the statistical testing hierarchy

Wilding JPH et al. NEJM 2021; DOI: 10.1056/NEJMoa2032183

SEMAGLUTIDE PHASE 3 – SAFETY DATA

Adverse Event (AE)	Semaglutide 2.4 mg n = 1306 (%)	Placebo n = 655 (%)
Nausea	44.2	17.4
Diarrhea	31.5	15.9
Vomiting	24.8	6.6
Constipation	23.4	9.5
Headache	15.2	12.2
Dyspepsia	10.3	3.5
Abdominal pain	10.0	5.5

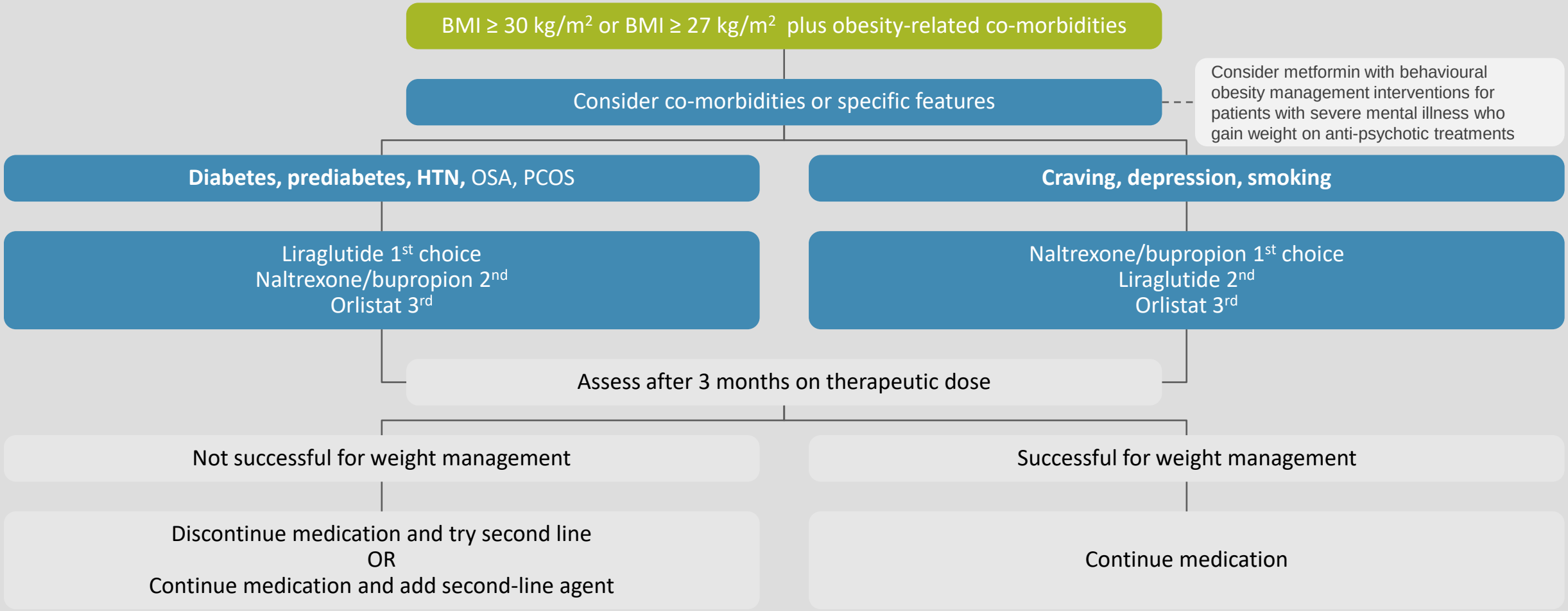
Wilding JPH et al. NEJM 2021; DOI: 10.1056/NEJMoa2032183

PHARMACOTHERAPY AVAILABLE IN CANADA

	Orlistat	Liraglutide	Naltrexone/Bupropion
Mode of administration	Oral	Subcutaneous	Oral
Dose/frequency	120 mg TID	3.0 mg daily	16/180 mg BID
Effect on % weight loss at 1 year, placebo subtracted	-2.9%[5]	-5.4%1	-4.8%[4]
Effect on weight over longer term, placebo subtracted	-2.8kg at 4 years[10]	-4.2% at 3 years[2]	Not studied
% of patients achieving ≥ 5% weight loss at 1 year	54% (vs 33% in placebo)[5]	63.2% (vs 27.1% in placebo)[1]	48% (vs 16% in placebo)[4]
% of patients achieving ≥ 10% weight loss at 1 year	26% (vs 14% in placebo)[5]	33.1% (vs 10.6% in placebo)[1]	25% (vs 7% in placebo)[4]
Effect on maintenance of previous weight loss	2.4kg less weight regain vs placebo over 3 years[6]	-6.0% additional placebo-subtracted weight loss at 1 year[3]	Not studied

Pedersen SD, Manjoo P, Wharton S. Canadian Adult Obesity Clinical Practice Guidelines: Pharmacotherapy in Obesity Management. Published online August 4, 2020. Accessed August 4, 2020. https://obesitycanada.ca/guidelines/pharmacotherapy

SELECTING THE PHARMACOTHERAPY THAT BEST SUITS YOUR PATIENTS

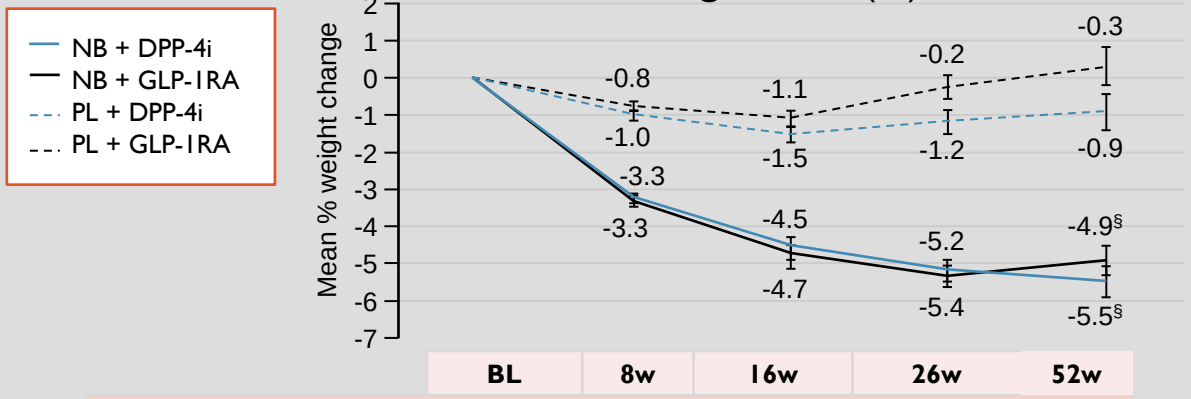


Note: Semaglutide was not approved at the time this algorithm was developed.

COMBINATION PHARMACOTHERAPY - EFFICACY

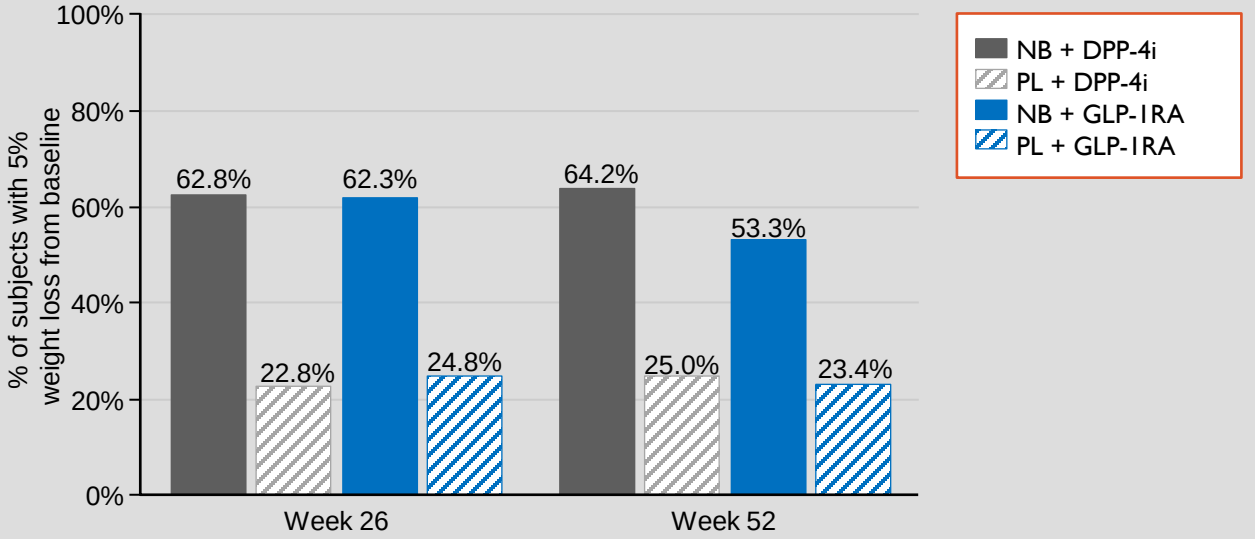
- Post-hoc analyses assessed the safety and efficacy of combining Naltrexone/Bupropion and Incretin therapy in subjects with overweight/obesity and T2DM

Total weight loss (%)



	BL	8w	16w	26w	52w
Number of patients in the model					
NB + DPP-4i	313	313	291	199	165
NB + GLP-1RA	300	300	270	200	170
PL + DPP-4i	305	304	285	124	96
PL + GLP-1RA	307	307	284	104	85

Categorical weight loss



NB: naltrexone/bupropion; DPP-4i: dipeptidyl peptidase 4 inhibitor; GLP1-RA: glucagon-like peptide-1 receptor agonist; PL: placebo. *All subjects taking a DPP-4i or GLP-1RA at baseline. §Statistically significant difference, NB vs. PL at week 52.

Wharton S, Yin P, Burrows M, Gould E, Blavignac J, Christensen R, Kamran E, Camacho F, Barakat M. Extended-release naltrexone/bupropion is safe and effective among subjects with type 2 diabetes already taking incretin agents: a post-hoc analysis of the LIGHT trial. Int J Obes. 2021 April 15; https://doi.org/10.1038/s41366-021-00831-4.

COMBINATION PHARMACOTHERAPY - SAFETY

- No significant increase in SAEs reported between groups

Adverse Event Summary: Total Population

Adverse events	PL		NB	
	DPP4 (n=317)	GLP1 (n=316)	DPP4 (n=345)	GLP1 (n=339)
Serious AE	29 (9.1%)	35 (11.1%)	46 (13.3%)	42 (12.4%)
Severe AE	16 (5.0%)	18 (5.7%)	28 (8.1%)	32 (9.4%)
Mild AE	7 (2.2%)	12 (3.8%)	35 (10.1%)	38 (11.2%)
Study-drug-related	15 (4.7%)	9 (2.8%)	57 (16.5%)	65 (19.2%)

AEs with frequency >1% in any treatment group, n (%)

Body system	AE	PL		NB	
		DPP4 (n=317)	GLP1 (n=316)	DPP4 (n=345)	GLP1 (n=339)
Cardiac	Unstable angina	1 (0.3%)	2 (0.6%)	4 (1.2%)	8 (2.4%)
Gastrointestinal	Constipation	—	—	7 (2.0%)	7 (2.1%)
	Diarrhea	1 (0.3%)	1 (0.3%)	2 (0.6%)	4 (1.2%)
	Nausea	2 (0.6%)	—	24 (7.0%)	32 (9.4%)
	Vomiting	—	—	5 (1.4%)	10 (2.9%)
General disorders	Non-cardiac chest pain	—	2 (0.6%)	1 (0.3%)	5 (1.5%)
Musculoskeletal/connective tissue	Osteoarthritis	1 (0.3%)	6 (1.9%)	—	4 (1.2%)
Nervous system	Headache	—	1 (0.3%)	—	4 (1.2%)
	Tremor	—	—	4 (1.1%)	8 (2.4%)

Wharton S, Yin P, Burrows M, Gould E, Blavignac J, Christensen R, Kamran E, Camacho F, Barakat M. Extended-release naltrexone/bupropion is safe and effective among subjects with type 2 diabetes already taking incretin agents: a post-hoc analysis of the LIGHT trial. Int J Obes. 2021 April 15; https://doi.org/10.1038/s41366-021-00831-4.

KEY POINTS ABOUT PHARMACOTHERAPY

The effect is variable, some people lose more, some people lose less

5% of body weight loss in first 3 months of medication (at full dose/max tolerated dose)**

GUIDELINES for starting: BMI>30 or BMI>27 with a medical issue related to weight

Support programs:

Saxendacare

Contrave support program

Long term strategy

Medical Nutrition Therapy (MNT)

MNT is used in managing chronic diseases and focuses on nutrition assessment, diagnostics, therapy and counselling. MNT should:

a. be personalized and meet individual values, preferences and treatment goals to promote long term adherence

b. be administered by a registered dietitian to improve weight-related and health outcomes

Physical Activity

30-60 mins of aerobic activity on most days of the week, at moderate to vigorous intensity, can result in:

a. small amount of weight and fat loss

b. improvements in cardiometabolic parameters

c. weight maintenance after weight loss

ⓘ **Remember nutrition and physical activity recommendations are important for all Canadians regardless of body size or composition.**

The Three Pillars of Obesity Management that Support Nutrition and Activity

Psychological Intervention

a. Implement multic onent behaviour modi n

b. Manage slee

c. Cognitive and/ or acce commitment t be provided for p ts if appropriate

Pharmacological Therapy

a. liraglutide

b. naltrexone/bupropion

BMI ≥30kg/m² or

BMI ≥27 kg/m² with obesity (adiposity) related complications

Bariatric Surgery

ⓘ Procedure should be decided by surgeon in discussion with the patient.

a eve gastrectomy

en-Y gastric bypass

creatic diversion

ut duodenal switch

≥40 kg/m² or

MI ≥35 - 40 kg/m² with an obesity (adiposity) related complication or

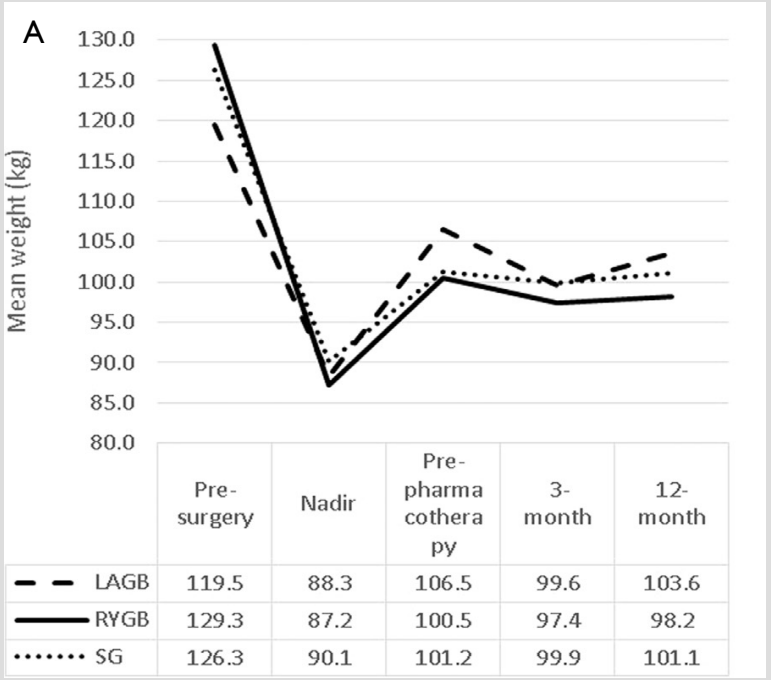
BMI ≥30 kg/m² with poorly controlled type 2 diabetes

Support options should be considered concurrently

Treating the root causes of obesity is the foundation of obesity management - refer to the 4M framework - *mechanical, metabolic, mental and social milieu*

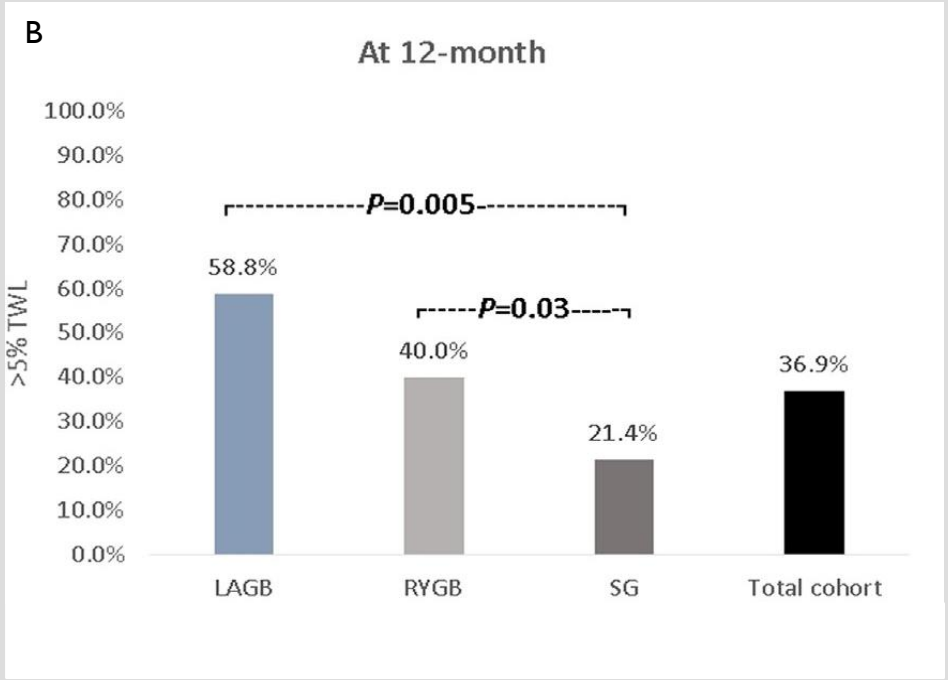
PHARMACOTHERAPY MAY PROVIDE BENEFIT AS AN ADJUNCTIVE THERAPY IN POST-BARIATRIC PATIENTS

A



	Pre-surgery	Nadir	Pre-pharmacotherapy	3-month	12-month
LAGB	119.5	88.3	106.5	99.6	103.6
RYGB	129.3	87.2	100.5	97.4	98.2
SG	126.3	90.1	101.2	99.9	101.1

B



Z. N. Hanipah et al. 2018.Surgery for Obesity and Related Diseases 14:93–98

SETTING EXPECTATIONS: HOW CAN WE SELECT REALISTIC GOALS?

Provide education on the concept of "best weight":

"I understand that you may have a certain amount of weight which you would like to lose, but this goal may not actually be sustainable. Every individual has their own "best weight", which is the weight which you can achieve and maintain while living your happiest and healthiest life. Would you like to discuss this more?"

Focus on *individualized* goals! Everyone is different, and so is their best weight.

THANK YOU!