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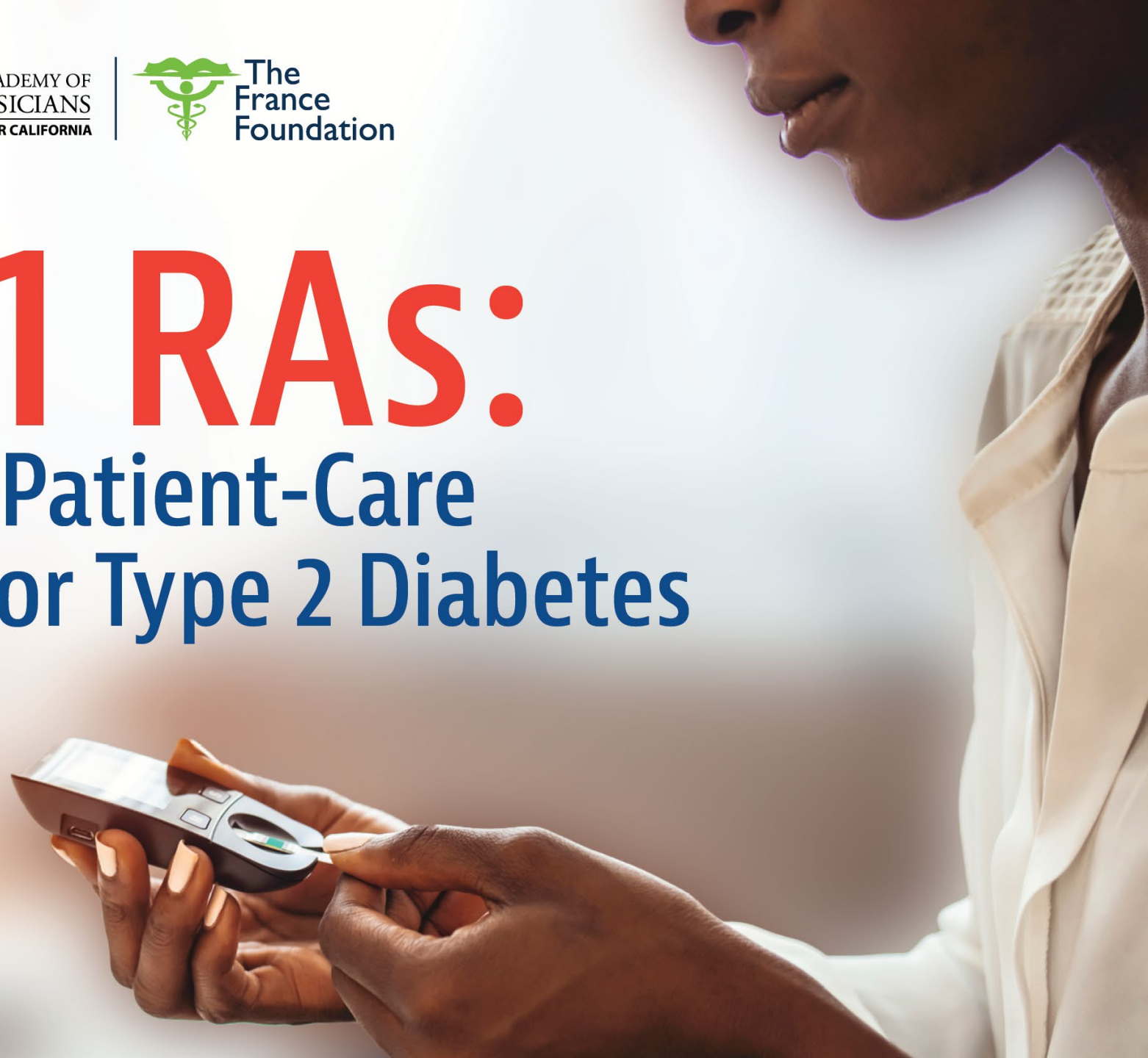
CALIFORNIA ACADEMY OF FAMILY PHYSICIANS
STRONG MEDICINE FOR CALIFORNIA

The France Foundation

GLP-1 RAs:

Real-World Patient-Care Strategies for Type 2 Diabetes



Expert Faculty

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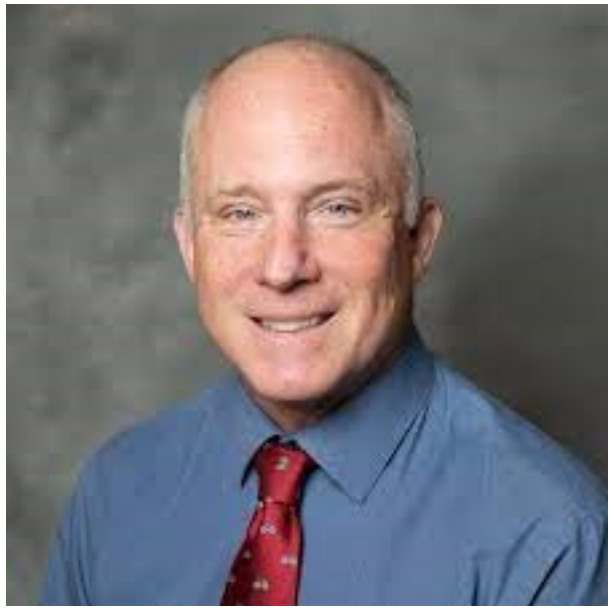

Planning Committee

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Disclosures

Planning Committee

- **Jay Shubrook, DO,** serves on the advisory board of AstraZeneca, Eli Lilly, and Nevro. He also serves as a consultant for Abbott Pharmaceuticals, Bayer, and Novo Nordisk
- **Leslie Goldstein, PharmD,** has no relevant financial relationships to disclose

Activity Staff Disclosures

The planners, reviewers, editors, staff, CME committee, and other members at The France Foundation, American College of Osteopathic Family Physicians, and the California Academy of Family Physicians who control content have no relevant financial relationships to disclose.

Educational Support

This activity is supported by an educational grant from Novo Nordisk

Learning Objectives

After engaging in this education, learners will demonstrate improved confidence and abilities to:

- Differentiate available GLP-1 RAs based on therapy characteristics
- Utilize patient preferences and available treatment guidelines to select optimal GLP-1 RA for patients with T2D
- Implement strategies to manage potential side effects of GLP-1 RAs in the management of T2D

Follow Along Using the Clinical Companion Guide

Download the guide by scanning the QR code to follow along during the presentation

Fully Participate in the Polls

FIRST start a new **text** message to this number: **22333**

THEN send a message that says **TFF550** and hit **Send**

You're ready to go!

Simply text your response when prompted.
Do not click the link in the reply text.

How many of your patients are being managed for type 2 diabetes (T2D) each week?

0

0	0%
1- 5	0%
6-10	0%
11-15	0%
16-20	0%
21-25	0%
> 25	0%
N/A, not a clinician	0%

Which guidelines do you follow when treating your patients with T2D? If multiple, send each answer as a separate text response.

1

Glucagon-like Peptide-1 Receptor Agonist (GLP-1 RA)

Case: Dennis Is A 52-Year-Old Male

- A 52-year-old male presents for a routine evaluation for his diabetes
- **Med Hx**: type 2 diabetes 6 years, hypertension, dyslipidemia, and MASLD
- **Meds**: Metformin 1,000 mg bid, glipizide 10 mg bid, losartan 100 mg daily, and atorvastatin 40 mg daily
- Takes medicine regularly—sets timers on phone to keep up the schedule
- Gained 5.4 kg (12 lbs) during the pandemic—more access to food, overwhelmed and did less activity; stopped checking glucose—always bad news

Case: Dennis (52-Year-Old Male) Vitals and Patient Goals

Vitals

- 170.2 cm (5’7”), 93 kg (205 lbs)
- BMI: 32.1
- BP 128/78,
- HbA1c 9.6%
- Lipids at goal
  - Total cholesterol 178
  - HDL 38
  - LDL 80
  - Trigs 206

Patient Goals

- Wants a regimen that is a bit simpler—“No more phone alerts”
- Is unhappy with weight gain—“It must be the metformin”
  - Options for weight loss
- Cannot have lows—worried about being low while up in a tree

What is your HbA1c goal for this patient?

0

< 6.5%	0%
< 7.0%	0%
< 7.5%	0%
< 8.0%	0%
< 8.5%	0%
< 9.0%	0%

What adjustment do you recommend for his pharmacotherapy?

0

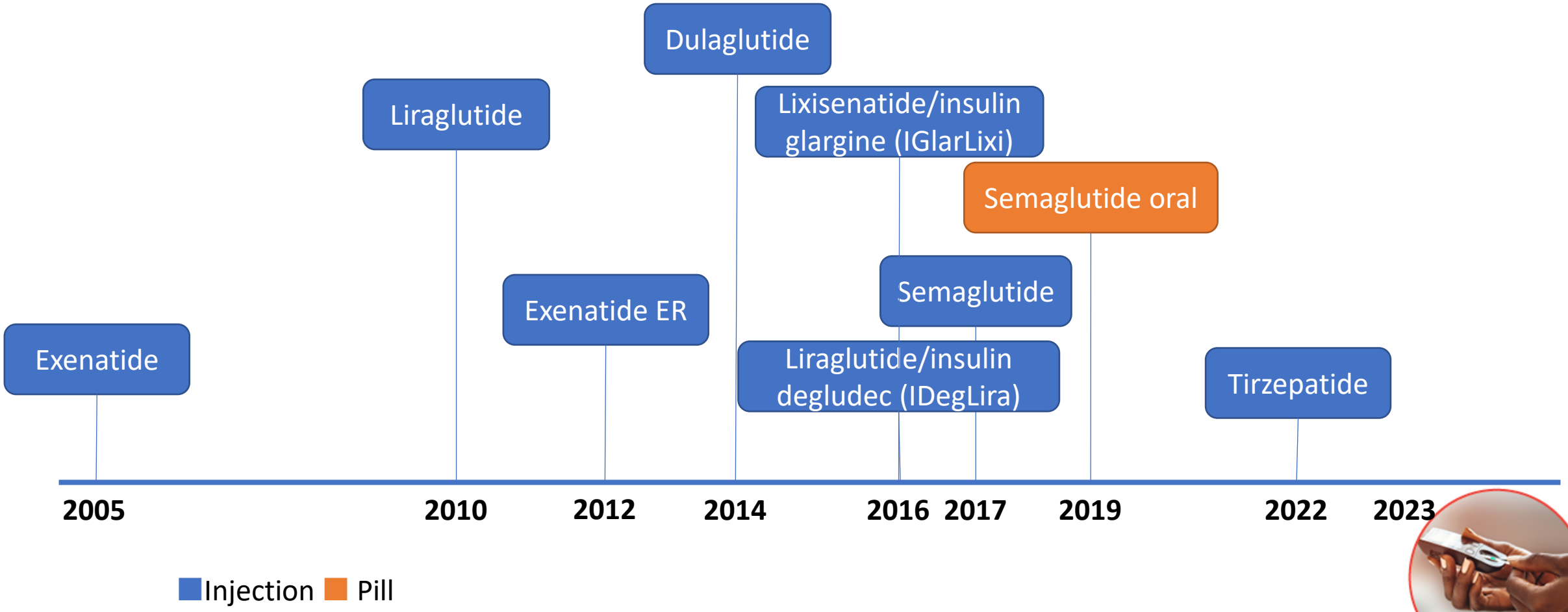
Increase glipizide	0%
Increase metformin	0%
Add a basal insulin	0%
Add a DPP-4 inhibitor	0%
Add a GLP-1 RA	0%
Add a SGLT-2 inhibitor	0%

KNOWLEDGE CHECK: Which of the following is a GLP-1 RA that is dosed daily independent of food?

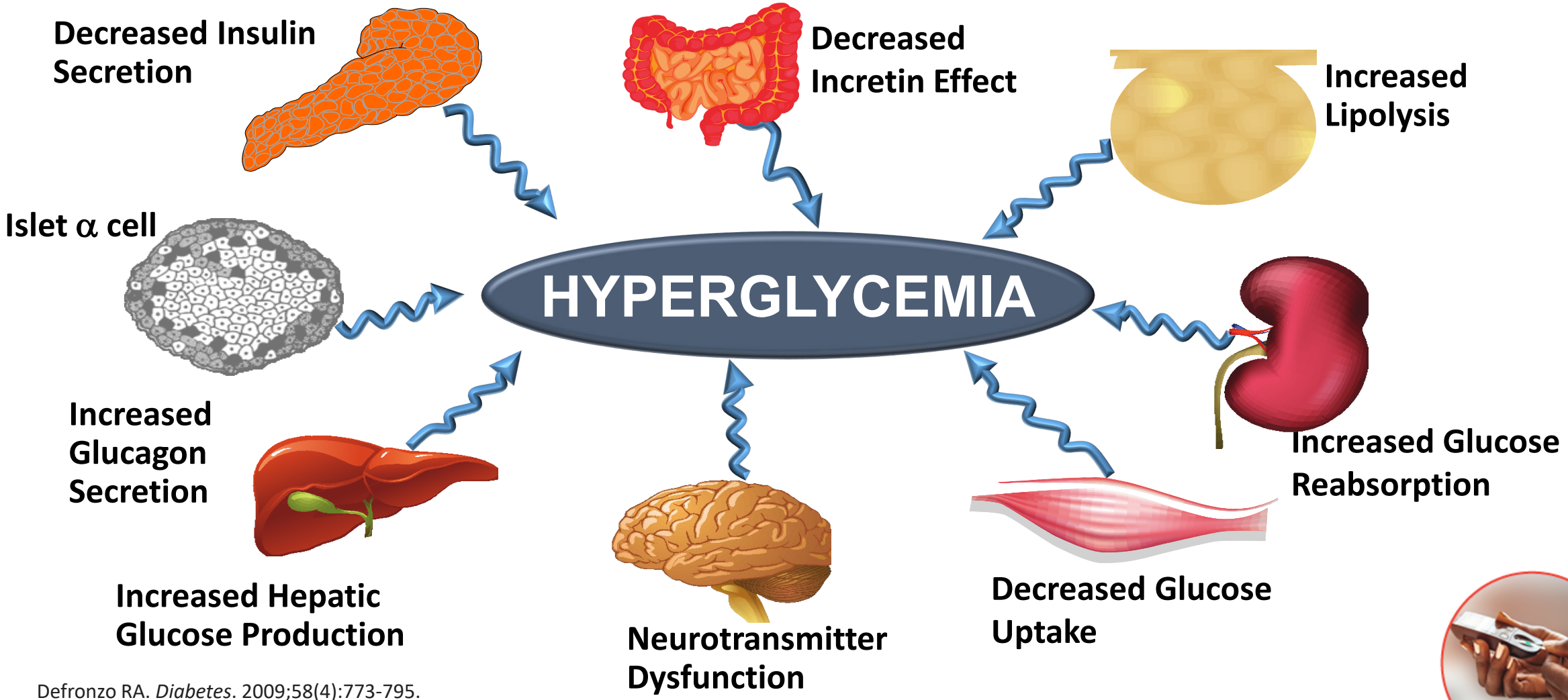
0

- Dulaglutide
- Exenatide
- Liraglutide
- Semaglutide

FDA-approved GLP-1 RAs

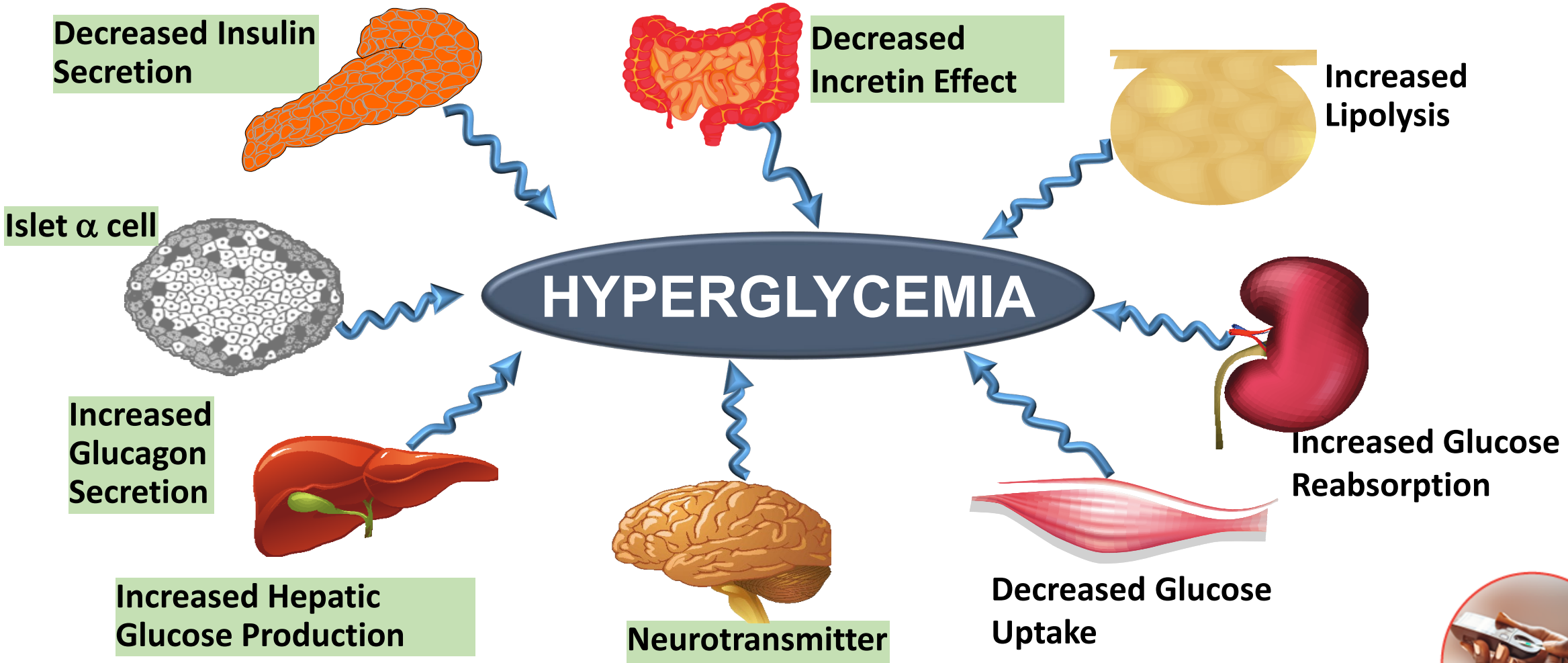


Multiple Metabolic Defects in T2D



Defronzo RA. *Diabetes*. 2009;58(4):773-795.

GLP-1 RAs Address Multiple Metabolic Defects



Defronzo RA. *Diabetes*. 2009;58(4):773-795.

GLP-1 Receptor Agonists

Medication	Dose	HbA1c Lowering at Max Dose	Weight Loss at Max Dose
Exenatide	5-10 µg	-0.9%	-2.9 kg
Exenatide ER	2 mg	-1.4%	-1.4 kg
Dulaglutide	0.75-4.5 mg	-0.8% (at 1.5 mg)	-2.3 kg (at 1.5 mg)
Liraglutide	0.6-1.8 mg	-1.1%	-2.5 kg
Semaglutide (SQ)	0.25-2 mg	-1.6% (at 1 mg)	-4.7 kg (at 1 mg)
Semaglutide (oral)	3, 7, 14 mg	-1.4%	-3.7 kg

Not conducted as head-to-head trials

Please refer to the Clinical Companion Guide downloadable resource

Data from Prescribing Information (monotherapy, results at 24-30 weeks, except liraglutide which was 52 weeks)

GLP-1 RA Options

Drug/FDA approval	Dosing Frequency	Route of Administration
Exenatide (2005)	Twice daily with meals	Multiuse pen (SQ)
Exenatide ER (2012)	Weekly	Single use pen (SQ)
Dulaglutide (2014)	Weekly	Single use pen (SQ)
Liraglutide (2010)	Daily	Multiuse pen (SQ)
Semaglutide (2017)	Weekly	Multiuse pen (SQ)
Semaglutide (2019)	Daily (empty stomach first in the morning)	Oral

Please refer to the Clinical Companion Guide downloadable resource

Which of the following is a GLP-1 RA that is dosed daily independent of food?

0

- Dulaglutide
- Exenatide
- Liraglutide
- Semaglutide

Which of the following is a GLP-1 RA that is dosed daily independent of food?

0

Dulaglutide

0%

Exenatide

0%

Liraglutide

0%

Semaglutide

0%

Diabetes Guidelines

- **AAFP:** www.aafp.org/family-physician/patient-care/clinical-recommendations/clinical-guidance-diabetes.html
- **ADA:** diabetesjournals.org/care/issue/46/Supplement_1
- **AACE:** pro.aace.com/clinical-guidance/diabetes
- **Endocrine Society:** www.endocrine.org/clinical-practice-guidelines/diabetes-mellitus-and-glucose-metabolism
- **Veterans Affairs (VA):** www.healthquality.va.gov/guidelines/cd/diabetes/
- **Primary Care Diabetes Europe:** www.primary-care-diabetes.com/article/S1751-9918(22)00031-6/fulltext
- **NICE:** www.nice.org.uk/guidance/ng28

USE OF GLUCOSE-LOWERING MEDICATIONS IN THE MANAGEMENT OF TYPE 2 DIABETES

TO AVOID THERAPEUTIC INERTIA REASSESS AND MODIFY TREATMENT REGULARLY (3–6 MONTHS)

HEALTHY LIFESTYLE BEHAVIORS; DIABETES SELF-MANAGEMENT EDUCATION AND SUPPORT (DSMES); SOCIAL DETERMINANTS OF HEALTH (SDOH)

Goal: Cardiorenal Risk Reduction in High-Risk Patients with Type 2 Diabetes (in addition to comprehensive CV risk management)*

+ASCVD†

Defined differently across CVOTs but all included individuals with established CVD (e.g., MI, stroke, any revascularization procedure). Variably included: conditions such as transient ischemic attack, unstable angina, amputation, symptomatic or asymptomatic coronary artery disease.

+Indicators of high risk

While definitions vary, most comprise ≥55 years of age with two or more additional risk factors (including obesity, hypertension, smoking, dyslipidemia, or albuminuria)

+ASCVD/Indicators of High Risk

GLP-1 RA# with proven CVD benefit

EITHER/ OR

SGLT2i§ with proven CVD benefit

If HbA_{1c} above target

- For patients on a GLP-1 RA consider adding SGLT2i with proven CVD benefit or vice versa
- TZD^

+HF

Current or prior symptoms of HF with documented HFrEF or HFpEF

+HF

SGLT2i§ with proven HF benefit in this population

+CKD

eGFR <60 mL/min per 1.73 m^2 OR albuminuria (ACR ≥3.0 mg/mmol [30mg/g]). These measurements may vary over time; thus, a repeat measure is required to document CKD.

+CKD (on maximally tolerated dose of ACEi/ARB)

PREFERABLY

SGLT2i§ with primary evidence of reducing CKD progression

Use SGLT2i in people with an eGFR ≥20 mL/min per 1.73 m^2; once initiated should be continued until initiation of dialysis or transplantation

OR

GLP-1 RA with proven CVD benefit if SGLT2i not tolerated or contraindicated

If HbA_{1c} above target, for patients on SGLT2i, consider incorporating a GLP-1 RA or vice versa

Goal: Achievement and Maintenance of Glycemic and Weight Management Goals

Glycemic Management: Choose approaches that provide the efficacy to achieve goals:

Metformin OR Agent(s) including COMBINATION therapy that provide adequate EFFICACY to achieve and maintain treatment goals

Consider avoidance of hypoglycemia a priority in high-risk individuals

In general, higher efficacy approaches have greater likelihood of achieving glycemic goals

Efficacy for glucose lowering

Very High:
Dulaglutide (high dose), Semaglutide, Tirzepatide

Insulin

Combination Oral, Combination Injectable (GLP-1 RA/Insulin)

High:
GLP-1 RA (not listed above), Metformin, SGLT2i, Sulfonylurea, TZD

Intermediate:
DPP-4i

Achievement and Maintenance of Weight Management Goals:

Set individualized weight management goals

General lifestyle advice: medical nutrition therapy/eating patterns/ physical activity

Intensive evidence-based structured weight management program

Consider medication for weight loss

Consider metabolic surgery

When choosing glucose-lowering therapies:

Consider regimen with high-to-very-high dual glucose and weight efficacy

Efficacy for weight loss

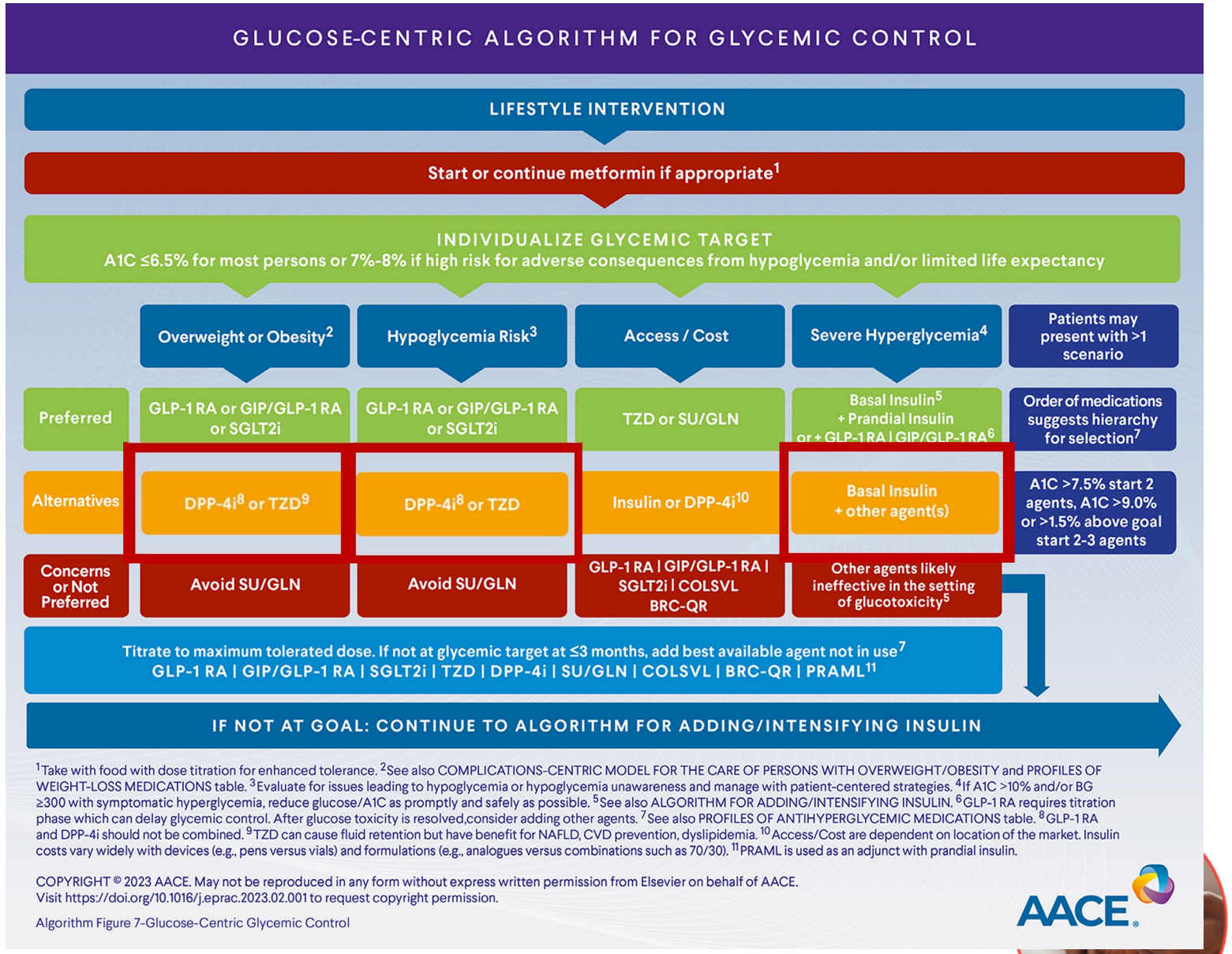
Very High:
Semaglutide, Tirzepatide

High:
Dulaglutide, Liraglutide

Intermediate:
GLP-1RA (not listed above), SGLT2i

Neutral:
DPP-4i, Metformin

AACE 2023 Glucose Centric Algorithm



Samson SL, et al. *Endocr Pract*. 2023;29(5):305-340.

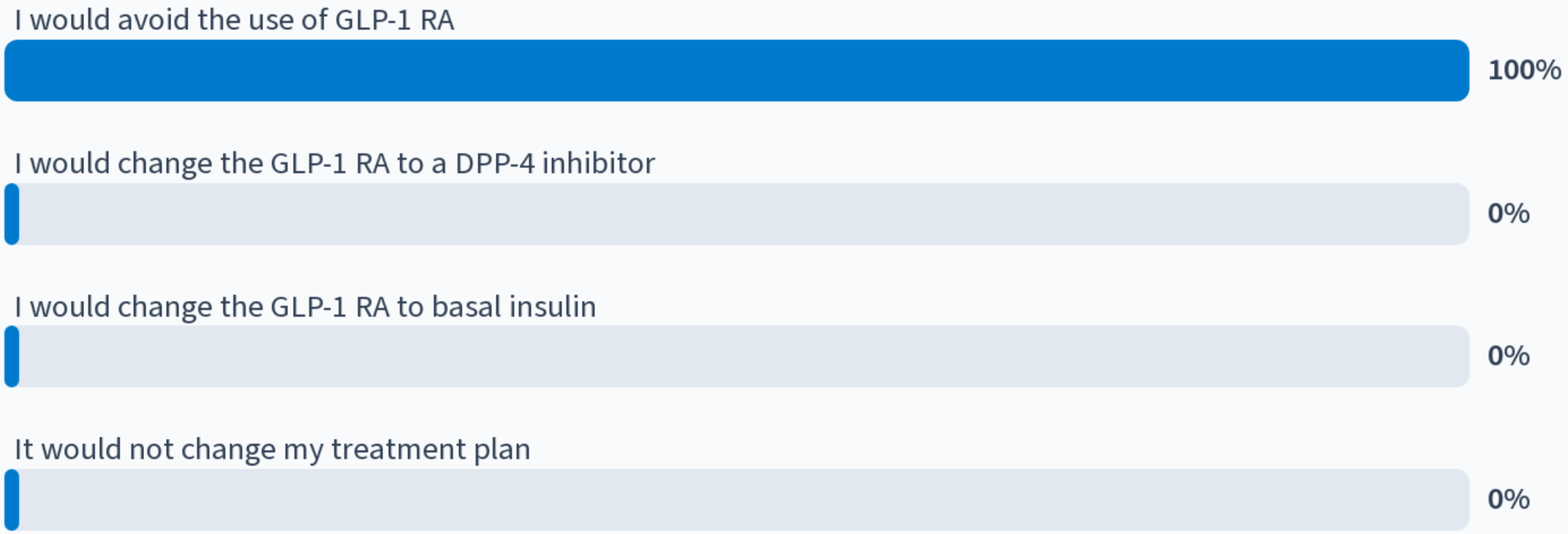
Case: Dennis (52-Year-Old Male) Treatment Choice

- A 52-year-old male named Dennis presents for a routine evaluation for his diabetes
  - A1c now 9.6% on max effective dose of metformin and glipizide
- Patient goals:
  - Wants a regimen that is a bit simpler—no more phone alerts
  - Is unhappy with weight gain
  - Cannot have lows—worried about being low up in a tree
- Need > 2% A1c decline and weight loss and no lows
  - **GLP-1 RA weekly would meet these goals and simplify care**
  - Eventually would replace the glipizide as well
  - Meets ADA/AACE guidelines based on efficacy and extraglycemic benefits

Clinical Curveball: What if your patient was a female of reproductive age?

How would this change your treatment plan? Send a separate text response for each answer that applies.

1



GLP-1 RA: Clinical Pearls

- Glucose-dependent insulin secretion (VERY IMPORTANT)
- Extra-glycemic benefits
  - Lower glucose, blood pressure and weight
- Better than insulin for meal coverage*
- Recommended as first injection by ADA and AACE
- Always give the first injection in the office*
- Challenges with GLP-1 RA
  - EXPENSIVE

*Important information

Key Takeaways

- GLP-1 RAs address 5 of the 8 pathophysiologic pathways in T2D
- Several FDA approved GLP-1 RAs are available to meet the treatment goals and preferences of patients
- Use diabetes management guidelines and algorithms to guide disease management and therapy selection

Clinical Curveballs: Keys to Initiating GLP-1 RAs

Case: Denise is a 55-Year-Old Female

- Dennis' sister, a 55-year-old female named Denise, presents for a routine evaluation for diabetes
- **Med Hx**: type 2 diabetes 12 years, hypertension, dyslipidemia, CKD, Hashimoto's thyroiditis, MI 2 years ago
- **Meds**: Insulin glargine 60 units daily, sitagliptin 25 mg daily, losartan 100 mg daily, atorvastatin 40 mg daily, ASA 325 mg daily, and metoprolol tartrate 100 mg bid
- Tried metformin multiple times but could not get above 500 mg daily due to GI side effects
- Checks glucose daily
  - Fasting range: 72-140 mg/dl (mean 128 mg/dl)
  - Post dinner glucose 140-228 (mean 206 mg/dl)

Case: Denise (55-Year-Old Female) Vital Signs and Patient Goals

Vital Signs

- 170.2 cm (5’7”), 93 kgs (205 lbs)
- BMI: 32.1*
- BP 128/78,
- HbA1c 8.6%*
- Lipids at goal
- eGFR 40 ml/min*
- UACR: 206 mg/g*

Patient Goals

- Wants to feel like she can be in control
- Not sure what these pills do and she really thought once she started insulin things would get better
- Does not want to have to add more medicines—“can any of these be stopped?”
- She is still relatively young
- Her HbA1c goal is between 7.5%-8.0%

*Important information

KNOWLEDGE CHECK: What adjustment do you recommend for her pharmacotherapy?

2

- Increase basal insulin
- Increase the DPP-4 I dose
- Add a GLP-1 RA
- Add a SGLT-2 Inhibitor
- Retry metformin

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Current or prior symptoms of HF with documented HFrEF or HFpEF

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SGLT2i§ with proven HF benefit in this population

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Insulin

Combination Oral, Combination Injectable (GLP-1 RA/Insulin)

High:
GLP-1 RA (not listed above), Metformin, SGLT2i, Sulfonylurea, TZD

Intermediate:
DPP-4i

Achievement and Maintenance of Weight Management Goals:

Set individualized weight management goals

General lifestyle advice: medical nutrition therapy/eating patterns/ physical activity

Intensive evidence-based structured weight management program

Consider medication for weight loss

Consider metabolic surgery

When choosing glucose-lowering therapies:

Consider regimen with high-to-very-high dual glucose and weight efficacy

Efficacy for weight loss

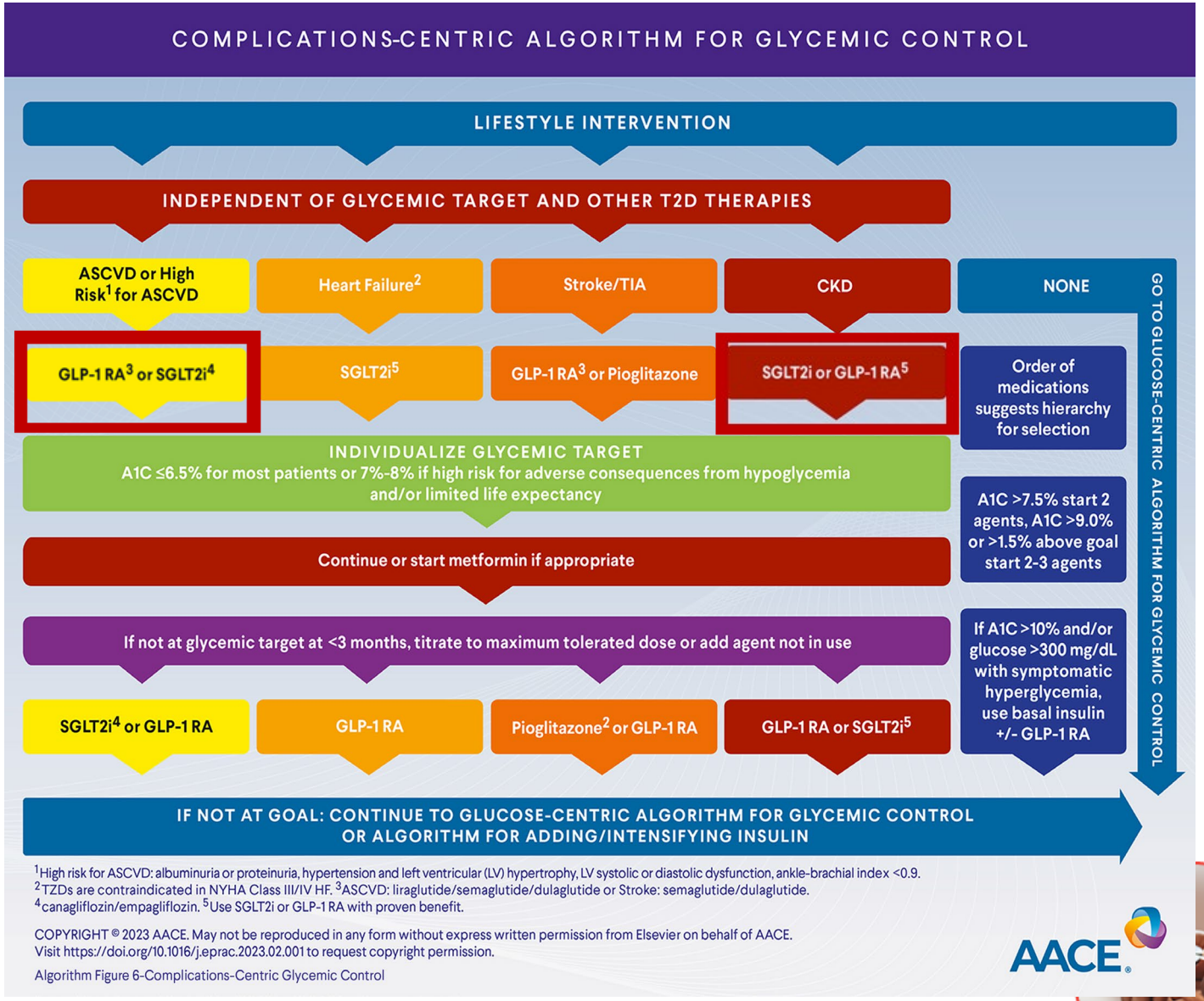
Very High:
Semaglutide, Tirzepatide

High:
Dulaglutide, Liraglutide

Intermediate:
GLP-1RA (not listed above), SGLT2i

Neutral:
DPP-4i, Metformin

AACE 2023 Complication Centric Algorithm



Endocrine Practice 2023 29305-340DOI: (10.1016/j.eprac.2023.02.001)

GLP-1 RA Options

Medication	Dose	Dosing Frequency	Route of Administration	HbA1c Lowering at Max Dose	Weight Loss at Max Dose
Exenatide	5-10 µg	Twice Daily with Meals	Multiuse pen (SQ)	-0.9%	-2.9 kg
Exenatide ER	2 mg	Weekly	Single use pen (SQ)	-1.4%	-1.4 kg
Dulaglutide	0.75-4.5 mg	Weekly	Single use pen (SQ)	-0.8% (at 1.5 mg)	-2.3 kg (at 1.5 mg)
Liraglutide	0.6-1.8 mg	Daily	Multiuse pen (SQ)	-1.1%	-2.5 kg
Semaglutide	0.25-2 mg	Weekly	Multiuse pen (SQ)	-1.6% (at 1 mg)	-4.7 kg (at 1 mg)
Semaglutide	3, 7, 14 mg	Daily (empty stomach first in the morning)	Oral	-1.4%	-3.7 kg

Data from Prescribing Information (monotherapy, results at 24-30 weeks, except liraglutide which was 52 weeks)
Not conducted as head-to-head trials

Extraglycemic Effects of GLP-1 RAs

Drug	3pt MACE	Stroke	CKD	MASH	Cognition
Exenatide ER			↓		Parkinson's*
Dulaglutide	↓	↓	↓		Dementia*
Liraglutide	↓		↓	↓	
Semaglutide (SQ)	↓	↓	↓	↓	Dementia*
Semaglutide (oral)			not reported		

↓ = FDA indication ↓ = Studies and Recommended * = Exploratory

Nørgaard CH, et al. *Alzheimers Dement (NY)*. 2022;8(1):e12268.
Armstrong MJ, et al. *Lancet (London England).* 2016;387(10019):679-90.
Newsome PN, et al. *N Engl J Med.* 2021;384:1113-1124.
Vijiaratnam N, et al. *BMJ Open.* 2021;11(5):e047993.
Chang YF, et al. *J Clin Neurosci.* 2020;81:234-239.
Cukierman-Yaffe T, et al. *Lancet Neurology.* 2020;19(7):582-590.

GLP-1 RA Meta-analysis of CVOTs

Outcome	3-point MACE	CV mortality	All cause mortality	Renal composite
Risk reduction	12%	16%	12%	17%
Hazard Ratio	0.88	0.84	0.88	0.83
Confidence interval	0.82-0.94	0.76-0.93	0.83-0.95	0.78-0.89
P value	P < 0.001	P < 0.001	P < 0.001	P < 0.001
NNT	75		113	62

Safety Outcome	Thyroid cancer	Pancreatitis	Pancreatic Cancer	Retinopathy
Risk		2%	-1%	7%
Hazard Ratio		1.02	0.99	1.07
Confidence interval		0.77-.136	0.56-1.70	0.92-1.25
P value	NS	NS p = 0.88	NS p = 0.93	NS
	Event too few to analyze			

Includes 7 trials: ELIXA, LEADER, SUSTAIN-6, EXSCEL, Harmony Outcomes, REWIND, PIONEER 6

Kristensen SL, et al [published correction appears in *Lancet Diabetes Endocrinol*. 2020 Mar;8(3):e2]. *Lancet Diabetes Endocrinol*. 2019;7(10):776-785.

Case Summary: Denise

- A 55-year-old female presents for a routine evaluation for diabetes
- **Med Hx**: T2D 12 years, hypertension, dyslipidemia, CKD, Hashimoto's thyroiditis, MI 2 years ago
- **Meds**: insulin glargine 60 units daily, sitagliptin 25 mg daily, losartan 100 mg daily, atorvastatin 40 mg daily, ASA 325 mg daily, and metoprolol tartrate 100 mg bid.
- Tried metformin multiple times but could not get above 500 mg daily due to GI side effects
- BMI 32.1, eGFR 40 ml/min, UACR 206 mg/g
- She wants to feel like she can be in control and wants to reduce the number of medications.
- Her HbA1c goal is between 7.5%-8.0% (currently 8.6%)

What adjustment do you recommend for her pharmacotherapy?

1

- Increase basal insulin
- Increase the DPP-4 I dose
- Add a GLP-1 RA
- Add a SGLT-2 Inhibitor
- Retry metformin

What adjustment do you recommend for her pharmacotherapy?

1

Increase basal insulin	0%
Increase the DPP-4 I dose	100%
Add a GLP-1 RA	0%
Add a SGLT-2 Inhibitor	0%
Retry metformin	0%

Do These Before Initiating GLP-1 RAs

Confirm no current history of:

- Pancreatitis
- Gastroparesis
- Medullary thyroid cancer/MEN-2

Discuss with patients:

- Contraindications
- Expected glucose changes and weight changes
- Different routes of administration and dosing schedules to best match patient preference
- Ensure alignment with patient goals
- Provide support with RD and/or CDCES

Discuss with the patient

- Loss of incretin effect
  - Loss of normal hunger and satiety
  - Will return with GLP-1 RA–trust when you feel full
  - Dietary intake modification
- Need to adjust other medications upon initiation
  - Risk of hypoglycemia if on insulin and/or sulfonylurea
- Common side effects and how to reduce them
  - Titration will be based on symptoms
  - Most symptoms resolve over weeks
  - Do not increase dose if still symptomatic

Case Study Wrap-up: Denise

- A 55-year-old female presents for a routine evaluation for diabetes (previous patient's sister)
- **Med Hx**: T2D 12 years, hypertension, dyslipidemia, CKD, Hashimoto's thyroiditis, MI 2 years ago
- You stopped the DPP-4 inhibitor and started a once weekly GLP-1 RA
- She did well—liked that she lost 2.7 kg (6 lbs) and only takes this once a week
- Had lows but you were able to reduce her insulin to 30 units and now she is motivated to lose more weight to see if she can reduce or stop insulin

Clinical Curveball:
Denise reports that she is unwilling to take any additional injections and says she has too many medications.

What treatment do you recommend in this scenario? Use the Clinical Companion Guide to find the right option for this patient.

0

Do not use a GLP-1 RA and raise the DPP-4 inhibitor dose

0%

Do not use a GLP-1 RA and raise the basal insulin dose

0%

Prescribe an oral GLP-1 RA and stop the DPP-4 inhibitor

0%

Consider a different class of medication

0%

Patient's Choice of Treatment

- Option 1: Prescribe oral semaglutide
  - 3 mg daily for 1 month
  - Then 7 mg daily
  - Then 14 mg daily
- She had to adjust her medication schedule so oral semaglutide was taken on an empty stomach, but it was worth it to her to take fewer injections

Key Takeaways

- GLP-1 RA have been available since 2005
- There are options in terms of route of administration, injection tool and dosing schedules
- This allows for individualization of therapy
- GLP-1 RA can be added to any other medication except DPP-4 inhibitor
- Insulin or SU doses may need to be adjusted when starting a GLP-1 RA

Clinical Curveballs: Managing Patients on GLP-1 RAs

Case: 52-Year-Old Male Patient on High-dose Weekly GLP-1 RA

A 52-year-old male tree trimmer presents for a routine evaluation for his diabetes therapy. He started high-dose weekly GLP-1 RA 3 weeks ago.

He complains of diarrhea for 3 weeks—since starting the GLP-1 RA

He drinks a liter of sports drink with electrolytes daily “to prevent dehydration.” He denies abdominal pain and nausea.

Meds: metformin 1,000 mg bid, semaglutide 2.0 mg subQ weekly, losartan 100 mg daily, and atorvastatin 40 mg daily

- Takes medicine regularly
- Lost 2.5 kg (5.5 lb) since beginning GLP-1 RA 3 weeks ago
- BP 128/78
- HbA1c 8.2%
- Lipids at goal

KNOWLEDGE QUESTION: In addition to short-term therapy with OTC antimotility agent, what do you recommend for managing our patient's T2D and treatment related side-effects?

- Discontinue metformin
- Reduce dose of GLP-1 RA
- Continue current high-dose GLP-1 RA
- Change weekly GLP-1 RA to a GLP-1 RA administered subQ once daily
- Discontinue GLP-1 RA and replace with an SGLT-2 inhibitor

GLP-1 RA: Adverse Reactions

Adverse Reactions

- Nausea, vomiting, diarrhea, or constipation

Contraindications/Warnings

- Medullary thyroid cancer/MEN-2
- Acute pancreatitis or Hx of pancreatitis or pancreatic cancer
- Exenatide and lixisenatide are renally excreted
  - Careful with renal impairment
- Worsening of gastroparesis
- **Pregnancy**: GLP-1 RAs are not recommended for pregnant patients or patients planning to become pregnant
- Hypersensitivity to the drug or any component of the formulation

Some Strategies for Managing Side Effects

- Individualize therapy
- Address baseline GI disorders prior to starting GLP-1 therapy
- Gradual, individualized dose escalation may help reduce GI side effects
- If GI symptoms are persistent:
  - **Pause GLP-1 RA dose escalation** and identify any underlying disorders
  - **Consider lower doses** for those unable to tolerate standard maintenance dose
  - **Stop GLP-1 RA** until after symptoms resolve, then consider initiating a different GLP-1 RA

In addition to short-term therapy with OTC antimotility agent, what do you recommend for managing our patient's T2D and treatment related side-effects?

2

- Discontinue metformin
- Reduce dose of GLP-1 RA
- Continue current high-dose GLP-1 RA
- Change weekly GLP-1 RA to a GLP-1 RA administered subQ once daily
- Discontinue GLP-1 RA and replace with an SGLT-2 Inhibitor

In addition to short-term therapy with OTC antimotility agent, what do you recommend for managing our patient's T2D and treatment related side-effects?

2

Discontinue metformin	0%
Reduce dose of GLP-1 RA	0%
Continue current high-dose GLP-1 RA	100%
Change weekly GLP-1 RA to a GLP-1 RA administered subQ once daily	0%
Discontinue GLP-1 RA and replace with an SGLT-2 Inhibitor	0%

Patient on High-dose GLP-1 RA: Managing Side Effects

- The patient was advised that the diarrhea typically resolves after the first four weeks of therapy
- He was advised to stop the sports drink as it can worsen diarrhea and to avoid high-fiber foods, juices that have a laxative effect, and dairy products while experiencing the diarrhea
- OTC loperamide 4 mg starting dose, then 2 mg as needed for loose stools (max 8 doses in 24 hours) was recommended
- By week 5 of the high-dose weekly GLP-1 RA, the diarrhea resolved, and the patient was able to resume a normal diet

Key Takeaways

- Nausea, vomiting, diarrhea, and constipation (typically early in therapy and after dose escalation) are the most common side effects of GLP-1 RA therapy
- Educating patients about the benefits of therapy and explaining the potential side effects and management strategies prior to therapy and during dose escalation can help patients adhere to therapy
- Therapy should be tailored for the individual patient

Discussion/Comments

Please Complete the Evaluation and Claim CME Credit

Thank you to Novo Nordisk for the educational grant that supports this education

Additional Curveballs For Extra Innings

Clinical Curveball:
What if the patient said that both his sisters had thyroid problems (one hyperthyroid and one Grave's)?

How would this change your treatment plan?

0

I would avoid the GLP-1 RA class

0%

I would get a thyroid ultrasound first

0%

I would order blood tests first

0%

This would not change my treatment plan

0%

Clinical Curveball:
Patient is on max dose of GLP-1 RA weekly and basal insulin 60 units per day, but now has some overnight hypoglycemia.

What treatment modification would you recommend?

0

Eat a snack at bedtime	0%
Reduce the dose of basal insulin	0%
Reduce the dose of GLP-1 RA	0%
Stop the basal insulin	0%
Stop the GLP-1 RA	0%

Clinical Curveball:
What if the patient is a 26-year-old female who complains of nausea and vomiting for one week after dosage titration to a moderate dose of once daily injectable GLP-1 RA?

In addition to advising the patient to reduce meal size, which of the following may be helpful in managing the nausea and vomiting in this patient?

0

Change therapy to non-GLP-1 RA

0%

Prescribe serotonin 5-HT3 inhibitor

0%

Stop GLP-1 RA until symptoms subside then consider initiating a once weekly GLP-1 RA

0%

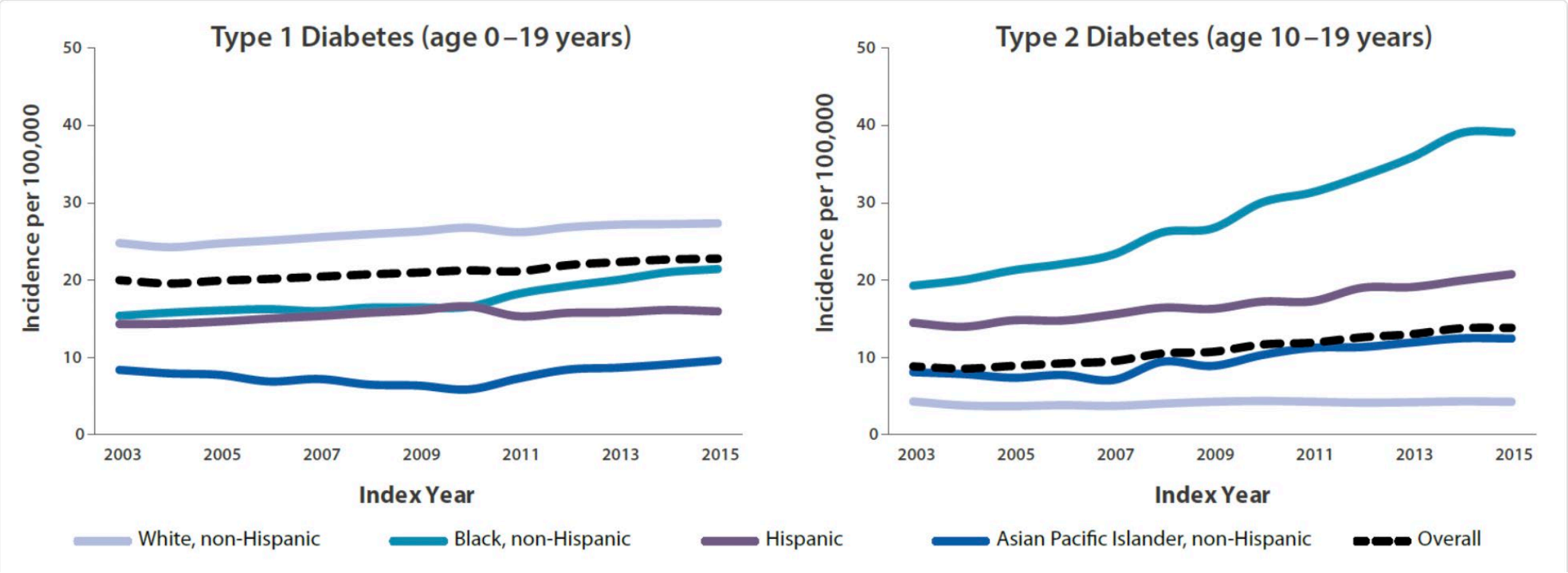
Prescribe GI antimotility agent and continue the GLP-1 RA

0%

Female Patient With Nausea: Managing Side Effects

- The patient opted to stop the daily GLP-1 RA until the symptoms resolve and then start a weekly GLP-1 RA
- The patient was successfully titrated to high-dose weekly GLP-1 RA
- She experienced constipation followed by diarrhea during the dose titrations but was able to manage the symptoms due to patient education provided prior to and during dose escalations
- She has lost 5.4 kg (12 lbs) and her A1c was reduced by > 2%
- She is happy with her progress

Rates of Adolescents With Diabetes



Divers J, Mayer-Davis EJ, Lawrence JM, et al. *MMWR Morb Mortal Wkly Rep.* 2020;69(6):161-165

T2D in Specific Populations

- We are seeing more T2D in…
  - Adolescents and young adults
  - Women of reproductive age and in pregnancy
- Treatment in these groups raise additional challenges
  - Insulin is often the preferred option
  - Some GLP-1 RA have been approved for use in adolescents
    - Dulaglutide
    - Exenatide ER
    - Liraglutide

Prescribing Information: Dulaglutide, Exenatide ER, Liraglutide. Accessed November 16, 2023.

Thank You!

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CALIFORNIA ACADEMY OF FAMILY PHYSICIANS
STRONG MEDICINE FOR CALIFORNIA

The France Foundation

GLP-1 RAs:

Real-World Patient-Care Strategies for Type 2 Diabetes