MAKING THE CONNECTION BETWEEN PATIENTS AND PROVIDERS

Improving Clinical Care with Modern Treatment Strategies for Type 1 and Type 2 Diabetes

November 7, 2020 · VIRTUAL









Taking Control Of Your Diabetes

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HOW TO RECEIVE CREDIT AND EVALUATE THIS PROGRAM

Evaluations for this course are available online. To claim credit and evaluate this course:

Please visit <u>cpd.ucsd.edu/evaluation</u> to complete the evaluation for this course.

Sign in with your username and password. If you do not have an account with cmecalifornia.com, simply create an account.

Choose "TCOYD Making the Connection 2020 Evaluation – 11.07.20 Virtual" from the selection of courses and use the access code below when prompted:

TCOYD5VIR

Once you complete and submit your evaluation, your certificate will be available immediately for download.

CREDIT DEADLINE:

The last day to submit your evaluation and receive a certificate for the course is December 7, 2020

Pharmacists: You have 50 days to claim your credit online so that it can be submitted to the NABP

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OVERVIEW & STATEMENT OF NEED

Current clinician practice habits are not designed to evolve with the ever-changing standards of care for people with diabetes. One of the major barriers to changing practice habits in the area of diabetes is that physicians and other diabetes professionals do not always understand the physical and emotional issues that people living with diabetes and their family members face on a day-to-day basis; moreover, patients often experience guilt and embarrassment surrounding difficulties with treatment adherence, and may not admit these shortcomings to healthcare providers. The unique Making the Connection Between Patients and Providers: Improving Clinical Care with Modern Treatment Strategies for Type 1 and Type 2 Diabetes (MTC) series, which is in its 15th year, is specifically designed to bring together the educational needs of both the clinician and the patient in an effort to break down these barriers by improving communication and understanding between providers and their patients, ultimately improving long-term patient outcomes.

TARGET AUDIENCE

This course is designed for diabetes healthcare providers including endocrinologists, primary care physicians, nurse practitioners, physician assistants, nurses, certified diabetes educators, pharmacists, and other healthcare providers wanting to expand their knowledge of diabetes management.

CULTURAL AND LINGUISTIC COMPETENCY

Cultural and Linguistic Competency: This activity is in compliance with California Assembly Bill 1195 which requires continuing medical education activities with patient care components to include curriculum in the subjects of cultural and linguistic competency. Cultural competency is defined as a set of integrated attitudes, knowledge, and skills that enables health care professionals or organizations to care effectively for patients from diverse cultures, groups, and communities. Linguistic competency is defined as the ability of a physician or surgeon to provide patients who do not speak English or who have limited ability to speak English, direct communication in the patient's primary language. Cultural and linguistic competency was incorporated into the planning of this activity. Additional resources can be found on the UC San Diego CME website (cme.ucsd.edu).

PROGRAM AGENDA – ALL TIMES ARE PST

9:15am	Program Overview & Introduction
9:30am	Understanding and Addressing Problematic Adherence to Oral and Injectable Cardiometabolic Medications
	William Polonsky, PhD, CDE
10:30am	A Focus on Time in Range, Unmet Needs and Modern Management of Type 1 Diabetes
	Jeremy H. Pettus, MD
	11:45am - Break
12:15pm	Effective Use of Oral Medications for Type 2 Diabetes: Lowering Cardiovascular Risk While Improving Glycemic Control
	Schafer Boeder, MD
	1:45pm - Break
	1
2:15pm	Practical Application of Injectable Agents and Their Cardiovascular Effects: Individualized Treatment Strategies
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2:15pm 3:30pm	Practical Application of Injectable Agents and Their Cardiovascular Effects: Individualized Treatment Strategies
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	Practical Application of Injectable Agents and Their Cardiovascular Effects: Individualized Treatment Strategies Steven V. Edelman, MD Combined Patient-Provider Workshop: Doctors Are From Mars, Patients Are From Venus
3:30pm	Practical Application of Injectable Agents and Their Cardiovascular Effects: Individualized Treatment Strategies Steven V. Edelman, MD Combined Patient-Provider Workshop: Doctors Are From Mars, Patients Are From Venus William Polonsky, PhD, CDE, and Steven V. Edelman, MD Wrap Up: How to Bring Today's Learning

EDUCATIONAL OBJECTIVES

Upon completion of this course, participants should be able to:

- 1. Identify the different pathophysiologic defects associated with type 2 diabetes and how all the pharmacologic agents (oral and injectable) address these specific abnormalities.
- 2. Develop individualized treatment strategies based on the living standards of care and patient characteristics.
- 3. Discuss the recently published cardiovascular-renal outcome trials on oral and injectable type 2 medications.
- 4. Summarize the most up-to-date clinical information on GLP-1 RA and SGLT-2 inhibitors.
- 5. Evaluate the use of SGLT-2 and GLP-1 RA in patients who have cardiovascular risk factors and are at risk or have a history of atherosclerotic cardiovascular disease (ASCVD).
- 6. Discuss approaches to combination therapy with the currently available oral agents, as well as physician and patient-directed insulin titration strategies and the basal-bolus approach.
- 7. Design a treatment plan for multiple daily injection regimens and insulin pump therapy.
- 8. Explain how to interpret continuous glucose monitoring (CGM) data.
- 9. Demonstrate the ability to select effective therapeutic adjustments based on CGM trending or rate of change arrows, time in range, and standard deviation.
- 10. Recognize the physical and emotional barriers that prevent patients with diabetes from being persistent and adherent to their therapeutic regimen(s).
- 11. Employ innovative and dynamic strategies for communication with patients to strengthen provider-patient relations and improve patient outcomes.

ACCREDITATION

This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the University of California San Diego School of Medicine and Taking Control Of Your Diabetes. The University of California San Diego School of Medicine is accredited by the ACCME to provide continuing medical education for physicians.

AMA: The University of California San Diego School of Medicine designates this live activity for a maximum of 6.0 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

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Physician Assistants: The AAPA accepts certificates of participation for educational activities certified for AMA PRA Category 1 Credits™ from organizations accredited by ACCME or a recognized state medical society. Physician assistants may receive a maximum of 6.0 hours of Category 1 credit for completing this program.

Certified Diabetes Educators: The University of California San Diego School of Medicine is accredited by the ACCME, which is on the NCBDE list of approved providers.

Pharmacists: Global Education Group is accredited by the Accreditation Counsel for Pharmacy Education as a provider of continuing pharmacy education.



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This is a knowledge-based activity. A current list of commercial supporters is available at tcoyd.org/cme

Global Contact Information – For information about the ACPE accreditation of this program, please contact Global at 303.395.1782 or CME@globaleducationgroup.com

COURSE DIRECTOR



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(TCOYD)

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DISCLOSURE SUMMARY

Making the Connection Between Patients and Providers
Improving Clinical Care with Modern Treatment Strategies for Type 1 and Type 2 Diabetes

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Schafer Boeder, MD

No financial relationships to disclose.

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DISCLOSURE SUMMARY CONTINUED

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DISCLAIMER: Participants have an implied responsibly to use the newly acquired information to enhance patient outcomes and their own professional development. The information presented in this activity is not meant to serve as a guideline for patient management. Any procedures, medications, or other courses of diagnosis or treatment discussed in the activity should not be used by clinicians without evaluation of patient conditions and possible contraindications on dangers in use, review of any applicable manufacture's product information, and comparison with recommendations of other authorities.

APPENDIX

CHOOSING GLUCOSE-LOWERING MEDICATION IN THOSE WITH ESTABLISHED ATHEROSCLEROTIC CARDIOVASCULAR DISEASE (ASCVD) OR CHRONIC KIDNEY DISEASE (CKD)

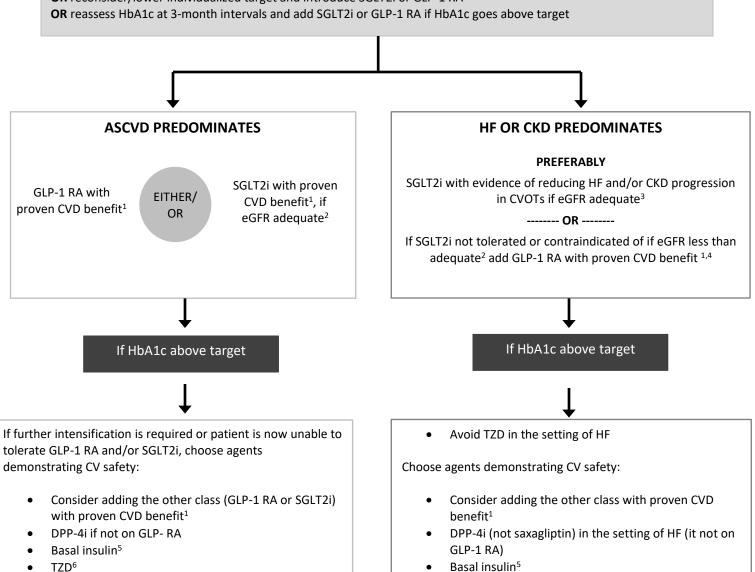
Use metformin unless contraindicated or not tolerated If not at HbA1c target:

- Continue metformin unless contraindicated (remember to adjust dose/stop metformin with declining eGFR)
- Add SGLT2i or GLP-1 RA with proven cardiovascular benefit¹ (see below)

If at HbA1c target:

• If already on dual therapy, or multiple glucose-lowering therapies and not on an SGLT2i or GLP-1 RA, consider switching to one of these agents with proven cardiovascular benefit¹ (see below)

OR reconsider/lower individualized target and introduce SGLT2i or GLP-1 RA



 Proven CVD benefit means it has label indication of reducing CVD events. For GLP-1 RA strongest evidence for liraglutide > semaglutide > exenatide extended release. For SGLT2i evidence modestly stronger for empagliflozin > canagliflozin.

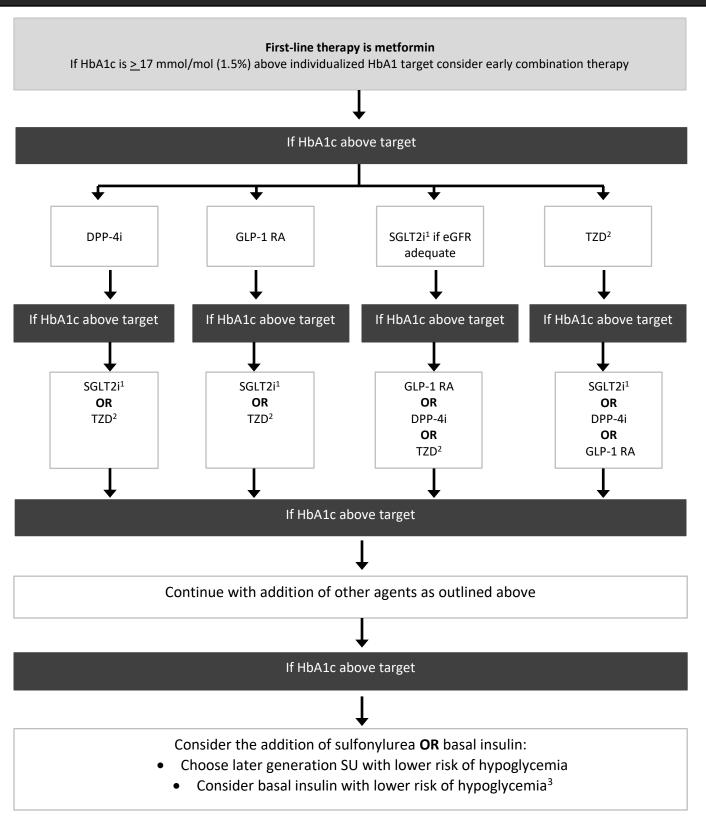
SU⁷

- Be aware that SGLT2i vary by region and individual agent with regard to indicated level of eGFR for initiation and continued use.
- 3. Both empagliflozin and canagliflozin have shown reduction in HF and to reduce CKD progression in CVOTs.
- 4. Caution with GLP-1 RA in ESRD.

SU⁷

- 5. Degludec or U100 glargine have demonstrated CVD safety.
- Low dose may be better tolerated through less well studied for CVD effects.
- 7. Choose later generation SU to lower risk of hypoglycemia. 12

CHOOSING GLUCOSE-LOWERING MEDICATION IF COMPELLING NEED TO MINIMIZE HYPOGLYCEMIA IN THOSE WITHOUT ESTABLISHED ASCVD OR CKD



- Be aware that SGLT2i vary by region and individual agent with regard to indicated level of eGFR for initiation and continued use.
- 2. Low dose TZDs are better tolerated.
- 3. Degludec/glargine U300 < glargine u100 / detemir < NPH insulin .

CHOOSING GLUCOSE-LOWERING MEDICATION IF COMPELLING NEED TO MINIMIZE WEIGHT GAIN OR PROMOTE WEIGHT LOSS

IN THOSE WITHOUT ESTABLISHED ASCVD OR CKD First-line therapy is metformin If HbA1c is > 17 mmol/mol (1.5%) above individualized HbA1 target consider early combination therapy If HbA1c above target GLP-1 RA with good EITHER/ SGLT2i if eGFR efficacy for weight OR adequate² $loss^1$ If HbA1c above target SGLT2i if eGFR GLP-1 RA with good adequate² efficacy for weight loss1 If HbA1c above target If triple therapy required or SGLT2i and/or GLP-1 RA not tolerated or contraindicated use regimen with lowest risk of weight gain **PREFERABLY** DPP-4i (if not on GLP-1 RA) based on weight neutrality If DPP-4i not tolerated or contraindicated or patient already on GLP-1 RA, cautious addition of: •SU³ •TZD⁴ •Basal Insulin

IMPLEMENT STRATEGIES FOR MAXIMIZING WEIGHT LOSS

General lifestyle advice

- •Medical nutritional therapy
- Eating patterns
- Physical activity

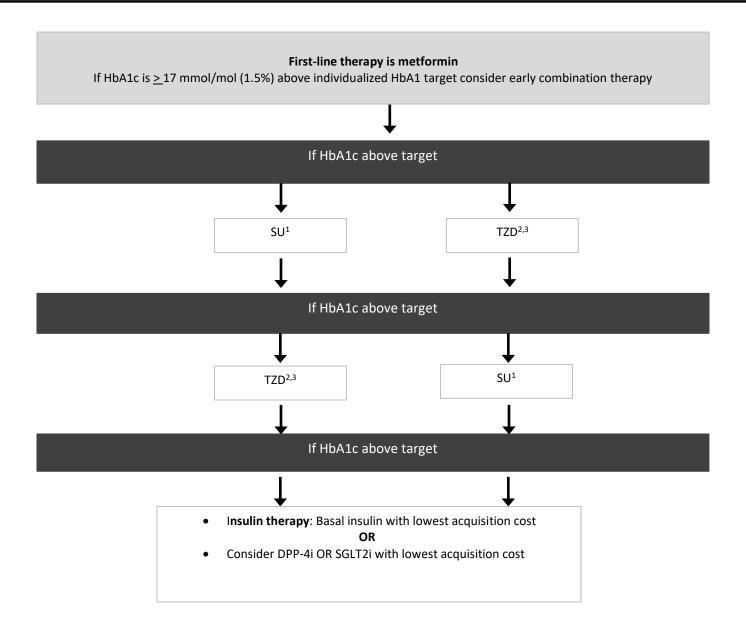
Non-surgical energy restriction for weight loss Weight loss of 15kg can lead to remission of T2DM in patient < 6years' duration, consider evidence-based weight loss programs

Consider medication for weight loss

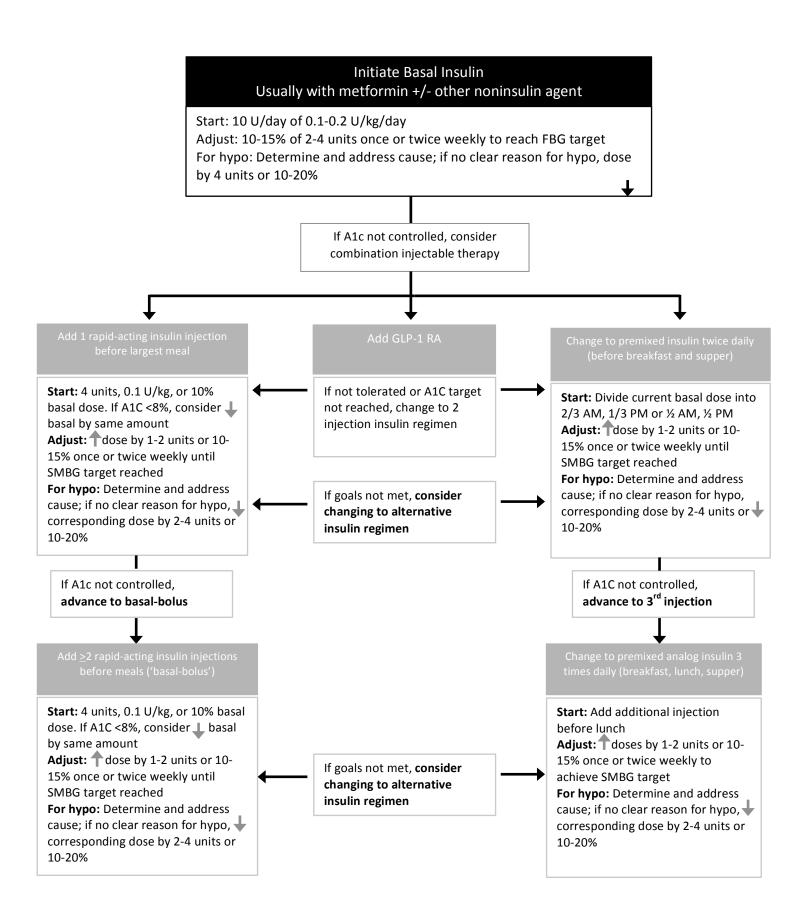
Consider metabolic surgery

- . Semaglutide > liraglutide > dulaglutide > exenatide > lixisenatide
- Be aware that SGLT2i vary by region and individual agent with regard to indicated level ofeGFR for initiation and continued use
- 3. Choose later generation SU with lower risk of hypoglycemia.
- 4. Low dose may be better tolerated though less well studied for CVD effects.

CHOOSING GLUCOSE-LOWERING MEDICATION IF COST IS A MAJOR ISSUE IN THOSE WITHOUT ESTABLISHED ASCVD OR CKD



- ${\bf 1.} \qquad {\bf Choose \ later \ generation \ SU \ to \ minimize \ risk \ of \ hypoglycemia.}$
- Consider country- and region-specific cost of drugs. In some countries, TZD relatively more expensive and DPP-4i relatively cheaper.
- 3. Low-dose TZDs are better tolerated.



Oral Agents - Generic	Oral Agents - Trade
Acarbose	Precose
Miglitol	Glyset
Metformin	Glucophage
	Fortamet
	Glucophage XR
	Glumetza
Colesevelam	Welchol
Bromocriptine mesylate	Cycloset
Linagliptin	Tradjenta
Saxagliptin	Onglyza
Sitagliptin	Januvia
Alogliptin	Nesina
Nateglinide	Starlix
Repaglinide	Prandin
Glimepiride	Amaryl
Glipizide	Glucotrol
Glipizide (extended release)	Glucotrol XL
Glyburide	DiaBeta, Micronase Glynase PressTab
Micronized Glyburide	Glynase
Pioglitazone	Actos
Canagliflozin	Invokana
Dapagliflozin	Farxiga
Empagliflozin	Jardiance
Ertugliflozin	Steglatro
Semaglutide	Rybelsus
	Acarbose Miglitol Metformin Saxagliptin Sitagliptin Alogliptin Nateglinide Repaglinide Glipizide (extended release) Glyburide Micronized Glyburide Pioglitazone Canagliflozin Dapagliflozin Empagliflozin Empagliflozin Empagliflozin Semaglutide

Injectable Agents - Drug Class	Injectable Agents – Generic	Injectable Agents – Trade
Fast-Acting Insulins	Regular	Humulin R, Novalin R
	U-500 Regular	Humulin R U-500
	Aspart	Novolog
	Aspart	Fiasp
	Glulisine	Apidra
	Lispro	Humalog
	Lispro	Admelog
	Lispro-aabc	Lyumjev
	Inhaled Insulin	Afrezza
Basal Insulins	Intermediate-Acting:	
	HAN	HdN
	Long-Acting:	
	Detemir	Levemir
	Glargine (U-100)	Lantus
	Glargine (U-300)	Toujeo
	Degludec (U-100/U-200)	Tresiba
	Follow-On Biologic	
	Glargine (U-100)	Basaglar
	Glargine (U-100)	Semglee
GLP-1 Receptor Agonists	Exenatide:	
	Once-weekly	Bydureon
	Twice-daily	Byetta
	Liraglutide:	
	Once-daily	Victoza, Saxenda
	Lixisenatide	
	Once-daily	Adlyxin
	Dulaglutide:	
	Once-weekly	Trulicity
	Semaglutide:	
	Once-weekly	Ozempic
	Oral Semaglutide:	
18	Once-daily	Rybelsus
Basal Insulin/GLP-1 Receptor Agonist Fixed	Glargine/Lixisenatide	Soliqua, iGlarLixi
Combinations	Degludec/Liraglutide	Xultrophy, iDegLira
Amylin Analog	Pramlintide	Symlin

Combination Pills – Generic Name	Combination Pills – Trade Name	Daily Dose Range (mg)
Pioglitazone & metformin	Actoplus Met	15/500 to 45/2250
Glyburide & metformin	Glucovance	1.25/250 to 20/2000
Glipizide & metformin	Metaglip	2.5/250, 2.5/500, 5/500
Sitagliptin & metformin	Janumet Janumet XR	50/500, 50/1000
Saxagliptin & metformin	Kombiglyze XR	2.5/1000, 5/500, 5/1000
Repaglinide & metformin	Prandimet	1/500, 2/500
Linagliptin & metformin	Jentadueto	2.5/500, 2.5/850, 2.5/1000
Alogliptin & metformin	Kazano	12.5/500 to 12.5/1000
Pioglitazone & glimepiride	Duetact	30/2, 30/4
Linagliptin & empagliflozin	Glyxambi	5/10, 5/25
Alogliptin & pioglitazone	Oseni	25/15, 25/30, 25/45, 12.5/15, 12.5/30, 12.5/45
Dapagliflozin & saxagliptin	Qtern	5/10
Ertugliflozin & sitagliptin	Steglujan	5/100, 15/100
Canafliglozin & metformin	Invokamet	50/500, 50/100, 150/500, 150/1000
Ertugliflozin & metformin	Segluromet	2.5/500, 2.5/1000, 7.5/500, 7.5/1000
Empagliflozin & metformin	Synjardy	5/500, 12.5/500, 5/1000, 12.5/1000
	Synjardy XR	5/1000, 10/1000, 12.5/1000, 25/1000
الم Dapagliflozin & metformin	Xiguo XR	5/500, 10/500, 5/1000, 10/1000
Empagliflozin & linagliptin & metformin	Trijardy XR	5/2.5/1000, 10/5/1000, 12.5/2.5/1000, 25/5/1000

Improving Glucose Control Using Your Continuous Glucose Monitor (CGM) Tips for Type 1 Diabetes

#1: Wear your CGM as much as possible.

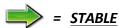
It will not help you if it is sitting in a drawer!

#2: Look at your receiver frequently.

Use your CGM to learn what foods and/or insulin dose works best for you. Also, knowing the direction your glucose is heading and how fast it is moving helps avoid highs and lows.

#3: Maintain reasonable expectations for your CGM.

It is a great device, but it is not perfect. Always confirm with your glucose meter before dosing insulin or if results seem abnormal. Also, twice daily calibrations are important to minimize false readings and alarms. These must be done when the glucose is between 40 and 400 mg/dl. For best results calibrate when the trend arrow is horizontal (meaning blood glucose is stable).



#4: Alerts and alarms should be your friend, not your enemy.

When you get a high or low alert, think about what led to the alert and the actions you should take. Don't give up on your CGM if you are getting too many alerts. Instead, discuss diabetes management changes and/or your alert settings with your healthcare team.

- You can set alerts for high and low blood sugars. Typical high and low alerts would be 200 mg/dl and 80 mg/dl, but these should be individualized.
- There are also Repeat Low and Repeat High alerts. Consider turning these on so you are alerted if glucose remains too low or too high for a period of time.

#5: Reflect on your past decisions and actions.

Many CGM users develop a habit of looking back at their 24-hour trend graph every morning or night. Others regularly download their CGM receivers to their computers to look at patterns that occur over time. Think about your decisions that worked well and what you could do differently to prevent high, low, or rapidly changing glucose.

#6: Know your personal glucose targets and take actions to reach them.

My pre-meal target is	
My post-meal target is < mg/dl (2 hours after start of meal).	

• An alternative post-meal target is no more than 50-80 mg/dl above your pre-meal glucose.

#7: Have a plan for preventing or responding to low glucose.

Don't panic or overreact. Eat some carbs (or drink something with sugar in it) then re-test in 15 minutes. It may take 15 minutes or more for the carbohydrates to reverse the falling glucose and you may not see the trend graph begin to rise for at least 15 minutes.

• Take action rather than waiting for the low glucose alert if your glucose is at target but falling rapidly.

- If exercise contributed to your low glucose, ask yourself if an earlier snack or insulin reduction before exercising would have helped.
- If you "stacked" insulin (taking multiple doses of rapid-acting insulin over a short period of time), be more cautious the next time.

#8: Use your CGM trends to improve your meal insulin dosing decisions.

Learn to adjust your insulin dose using both your blood glucose and the trend arrows. Consider the following mealtime insulin dosing scenarios and how you would react to the glucose trend.

Trend Arrow Scenarios:

Scenario 1 => = STABLE

- Do what you would normally do.
- Try to take your mealtime insulin dose about 15 minutes before eating.

Scenario 2 -
$$\sqrt{n}$$
 or \sqrt{n} = RISING

- Consider increasing your mealtime insulin dose.
- Consider allowing more time between your insulin dose and meal.
- Think about starting your meal with proteins and fats rather than carbohydrates.
- Think back if you should have taken extra insulin for an earlier snack or if you over-treated an earlier low glucose.

- Consider decreasing your mealtime insulin dose.
- Consider allowing less time between your insulin dose and your meal, or even taking your meal insulin after you eat.
- Think about starting your meal with carbohydrates.

#9: Respond to high glucose between meals but avoid "stacking" insulin. Don't overreact.

Rapid-acting insulin can take up to 90-120 minutes to peak and may still be working 4 hours after your injection.

If it is 2+ hours or more since your last mealtime insulin injection and the trend arrow indicates that your glucose is still rising:



- Consider giving an extra dose of rapid-acting insulin.
- Think about what you would do differently next time with your meal timing and/or your mealtime insulin dose to avoid high and rising glucose.

We thank Dexcom® for allowing us to use and edit their 'Guidelines to Improve Glucose Control Using CGM' brochure.

Starting/Adjusting Long-Acting Basal Insulin

, or Detemir once a day at		day(s), adjust your dose based on your fasting blood sugar that morning before eating or drinking:	then increase dose by	then decrease dose by	then keep the same dose	
Give Glargine (U-300), Glargine (U-100), Degludec (U-100/U-200), or Detemir once a day at	Starting dose: units	day(s), adjust your dose based on your fasting	a. If fasting blood sugar is over then incr	b. If fasting blood sugar is under then de	c. If fasting blood sugar is betweenand	
. Give	. Starti	. Every	ö.	à	ن	

IMPORTANT:

The purpose of basal or long-acting insulin is to provide a background amount of insulin throughout the day and at night while you sleep. It is not meant to treat high blood sugars caused by eating food, so you should now change your dose based on blood sugar number during the day when you are eating food.

Check-In Questionnaire for Patients with TYPE 1 DIABETES

Name (First, Last):
Date (MM/DD/YY):
1. Age:
2. Year of diagnosis:
3. Are you currently using an insulin pump? (circle one) YES or NO
If Yes: A. What are your basal rates set at?
B. Do you disconnect your pump? If you do under what circumstances and for how long?
If No:A. What type of basal insulin are you on, how much do you take daily, and at what time of day?
4. How much and what type of bolus or meal-time insulin do you approximately take in a day?
5. What is your insulin to carbohydrate ratio if you use one?
6. What is your correction factor or insulin sensitivity factor (how much will your BS drop with one unit of fast-acting insulin i.e. 1:50)?
7. What else, if anything, do you take for your diabetes?
8. When was your last diabetes eye exam?

If Y	'es:		
A.	What are your upper and lower alert settings?		
В.	What is your snooze alert set at? (This is under Dexcom)	advano	ed alert settings on your
10. Are yo	ou currently having problems with: (please circle	YES or	NO)
Blu Ne Ne Ne	w blood sugars arry vision w neck lumps or swelling w or unusual skin rashes or lesions w urinary or yeast infections mbness, tingling, or pain in your feet	YES YES YES YES YES YES	NO NO NO NO NO
11. What	is/are the BIGGEST issue(s) you want to discuss	today?	
	ou need a renewal prescription today for any months the name of the medication?	edicatio	ons you are currently taking and if

9. Do you wear a CGM (Dexcom or Medtronic)? (circle one) YES or NO

Check-In Questionnaire for Patients with TYPE 2 DIABETES

Name (First, Last):						
Date (MM/DD/YY):						
PLEASE REPORT YOUR BLOOD SUGAR REAL	DINGS AT	r check	-IN.			
Year of diagnosis:						
WHAT ARE YOUR DIABETES MEDICATIONS:				 	T	- 6W /s .
Name of Medication			Dose	Frequency	Need	Refill Y/N
Approximate meal times: Breakfast: Lunch: Dinner: Which is your biggest meal? What type of exercise do you do? How many days per week?				 		
How many minutes each time?						
now many minutes each time:						
Associated Symptoms/ROS: Are you current	ly having	g proble	ms with:			
Low blood Sugars (<80mg/dl)? If yes, How often? Time of day:			□ No			
Date of last diabetes eye exam? Blurry vision? If yes, How long?		□ Yes	□ No			
New neck lumps or swelling?		□ Yes	□ No			
New or unusual skin rashes or lesions? If yes, Describe:		□ Yes	□ No			
New urinary or yeast infections?	□ Yes	□ No				
Numbness, tingling, or pain in your feet? If yes, How long?	□ Yes	□ No 				
Any sexual or erectile dysfunction?	□ Yes	□ No				
What issue (s) would you like to address too	lay (is an	y)?				