





## OVERVIEW

The American College of Cardiology (ACC) and its collaborating partners are teaming up to help educate clinicians and patients alike about the link between type 2 diabetes and CVD, both of which carry heavy costs and burdens. There is also quickly emerging research and new treatment options, including two novel classes of antiglycemic medications, that should ideally be integrated into disease management plans to more optimally manage CV risk in some patients, thereby reducing morbidity and mortality.

This toolkit, ***Getting to the Heart of the Matter: What You and Your Patients Need to Know About Managing Diabetes and CV Risk***, offers tips for talking with patients about diabetes and cardiovascular risk, as well as the heart-related benefits of two classes of antiglycemic medications. It provides a roadmap for what's needed to more optimally manage CV risk in people with diabetes, as well as tools to help facilitate conversations with patients at the point of care that can empower them to take action. Also included is a quick snapshot on when to consider using Sodium-glucose Cotransporter-2 (SGLT2) Inhibitors or Glucagon-Like Peptide-1 Receptor Agonists (GLP-1RAs).

These resources are part of the ACC's **Succeed in Managing Cardiovascular Risk in Diabetes (SIM – CVRiD)**. SIM-CVRiD is an initiative aimed at building awareness around approaches to comprehensive CVD risk reduction management in patients with type 2 diabetes.

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# GETTING TO THE HEART OF THE MATTER:

## What You and Your Patients Need to Know About Managing Diabetes and CV Risk

Despite advances in medical care, CVD remains the leading cause of morbidity and mortality in people with type 2 diabetes. Yet many patients remain unaware of the clear-cut connection between these two conditions and, in turn, may not be taking appropriate steps to reduce their CV risk. Additionally, both conditions share risk factors and require targeted treatment approaches, making quality care coordination even more essential.

### A GROWING ISSUE

Globally, diabetes continues to rise at alarming rates. The prevalence of diabetes (type 2 diabetes and type 1 diabetes) is expected to jump by 54 percent to more than 54.9 million Americans between 2015 and 2030.

Today, more than 120 million U.S. adults are living with diabetes or prediabetes, a precursor to full-blown type 2 diabetes, which typically manifests within 5 years without efforts to prevent it.

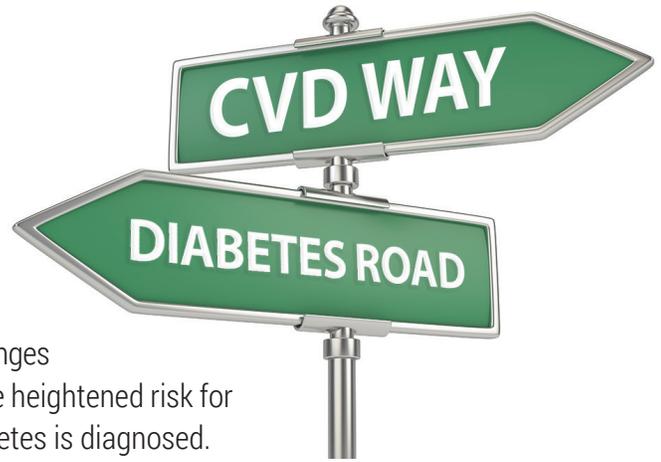
### SOBERING STATISTICS

- **2-4x** – how much greater the risk of coronary artery disease (CAD) and stroke is in someone with diabetes compared to those without it
- **2 out of 3** – the number of deaths in people with diabetes attributed to CVD
- **Nearly two-thirds** – people with diabetes who also develop some form of heart failure
- **54 percent** – the expected jump in the prevalence of diabetes between 2015 and 2030
- **Half of women** who have gestational diabetes, which affects 1 out of 10 pregnancies, will go on to develop type 2 diabetes, and possibly heart disease as a result, but most don't follow up on this risk factor



## AT A CROSSROADS: A CALL-TO-ACTION TO IMPROVE CV RISK MANAGEMENT

Diabetes is among the strongest risk factors for heart disease. Because the macrovascular and microvascular changes associated with elevated blood sugar levels start early, the heightened risk for heart disease begins years, possibly decades, before diabetes is diagnosed.



People with type 2 diabetes are at increased risk for developing atherosclerotic cardiovascular disease (ASCVD) and microvascular complications. These can include:

- Myocardial infarction
- Stroke
- Coronary artery disease (CAD)
- Peripheral artery disease (PAD)
- Heart failure
- Declines in renal function
- Eye problems, including blindness
- Neuropathies

Similarly, many people with established CVD could have undiagnosed type 2 diabetes, or be at risk for developing it, but not know it due to a lack of routine blood glucose testing. As such, there are missed opportunities to intensify CV risk reduction strategies and an urgent need to step up efforts to clinically manage CV risk in patients with diabetes or prediabetes.

It's important to keep the following in mind:

- **Many people aren't aware that they have diabetes or prediabetes.** Even when they have been diagnosed with diabetes, they may not have been told about the related CV risk.
- **CV insults from elevated glucose levels often start well before someone is diagnosed with glycemic abnormalities.** Some patients will present with chest pain or a myocardial infarction prior to receiving a diabetes diagnosis.
- **Based on what we know, there is an urgent need to shift the predominant focus on glucose control to one that incorporates a comprehensive and ongoing assessment of patients' CV risk and recommendations for aggressive risk reduction.** Cardiology clinicians will need to play a more active role in educating patients and managing this risk.
- **For patients at high CV risk, consider adding one of the novel antidiabetic agents shown to reduce major adverse cardiovascular events, hospitalizations and related mortality.** Use follow-up visits as an ideal time to review each patient's overall management and consider whether these agents should be recommended to favorably impact patient care and outcomes.



## IMPROVING OUTCOMES, MANAGING CV RISK IN THE CONTEXT OF DIABETES: WHAT'S NEEDED

To improve outcomes related to diabetes and concomitant CV risk and meaningfully enhance patients' quality of life, there's an urgent need to:

- ✓ **Shift and expand the predominant focus on glucose control** to include a comprehensive and ongoing assessment of patients' CV risk and recommendations for aggressive risk reduction. ACC has developed tips and suggested talking points about diabetes and CV risk.
- ✓ **Encourage a collaborative, multidisciplinary approach** that can help bridge the gap between diabetes care and cardiology. Clinicians involved in CV care will need to play a larger, more active role in helping to risk stratify patients and optimally manage their CV health.

This can help guard against missed opportunities to better manage CV risk in patients with type 2 diabetes. A significant proportion of patients seen for CV disease management also have type 2 diabetes, undiagnosed diabetes or prediabetes. One study revealed only 13 percent of people with CAD who are cared for by cardiologists are screened for diabetes.

- ✓ **Step up efforts to screen for diabetes or heart problems** among people living with or at high risk of either disease and with the assistance of guidelines and [expert consensus pathways](#).
- ✓ **Talk with patients about their personal CV risk.** Simply telling patients with diabetes that they may also be at risk for heart issues isn't enough to encourage them to take action. See *How to Talk About Diabetes and CV Risk in 5 Minutes* for conversation starters to commonly asked questions on (Page 5).

It's also important to build in opportunities during appointments and follow-up visits to revisit their CV risk and make risk reduction an ongoing conversation. CV risk and treatments frequently change over time.

- ✓ **When appropriate consider adding an SGLT2 inhibitor or GLP-1RA** to lifestyle changes and other antidiabetes treatments. Tell patients you are doing so for their heart. In clinical outcomes trials, these glucose-lowering medications have been shown to significantly reduce the risk of major atherosclerotic CVD events and related deaths in patients with type 2 diabetes and who are at high risk for heart disease or stroke. There is growing evidence that some of these medications may be kidney protective too.

See the *Quick Snapshot: When and What to Consider in Prescribing SGLT2 Inhibitors or GLP-1RAs for Risk Reduction* (Page 15).



"It's important to convey to patients that cardiovascular disease can and often does happen. I didn't understand just how likely it was or what it really meant. Patients need information to help them take the elevated risk seriously – for example, what does it look like to live with heart failure? – and also know there are things they can do to manage their health. But they need to be compliant to do so."

*Robin Driscoll, diagnosed with diabetes in 2014, a heart attack in on New Year's Day 2017 and heart failure later that same year.*



# TALKING ABOUT DIABETES AND CV RISK: IT'S NOT JUST ABOUT GLUCOSE

It's important to talk to patients with diabetes – as well as those who have both diabetes and existing heart disease – about their risk of heart disease, including heart attacks, stroke and heart failure. We know from surveying patients that simply saying, “you’re at higher risk for heart issues” isn’t enough.

Try to set aside sufficient time to explain the connection between these conditions and help empower your patients to lower their CV risk.

Below are some general discussion points that might help. We have also developed *At-a-Glance: Talking Points About Diabetes and CV Risk and the Role of Novel Diabetes Medications* (Page 8) that provide suggested language for answering and addressing common questions about diabetes and CV risk.

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## HOW TO TALK ABOUT DIABETES AND CV RISK IN 5 MINUTES

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The old adage “Knowledge is power” is particularly salient when it comes to discussions about diabetes and CV risk. Patients need to be informed enough about how diabetes affects the heart and blood vessels to be able to take action and help optimize their CV health and prevent further complications.

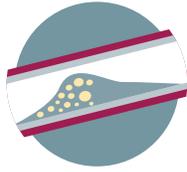
✓ **The risk for heart disease or stroke is real.**



*Almost 7 in 10 people with type 2 diabetes over age 65 will die of some type of heart disease.*

- Almost 7 in 10 people with type 2 diabetes over age 65 will die of some type of heart disease. About 1 in 6 will die of stroke.
- Most people with diabetes – 9 out of 10 – also have one or more additional risk factors for heart disease (for example, smoking, high cholesterol, high blood pressure). These also need to be discussed and managed.
- Sadly, many people with diabetes don’t know they have heart disease until they have a heart attack or notice chest pain and shortness of breath with simple exercise or when walking.
- Some studies suggest that compared to men, women with diabetes are at greater risk of having a heart attack or developing heart failure.





- ✓ **Diabetes can change or injure the inside lining of blood vessels often long before someone knows that they have prediabetes or diabetes.** These changes make someone more likely to develop various forms of heart or vascular problems.

These may include:

- Blockages in the arteries of the heart or related chest pain or tightness, as well as in the extremities (PAD)
- Heart attacks
- Stroke
- Heart failure – this is when the heart becomes weakened or stiff so it may not pump well enough to meet the body's needs

In addition, plaque in the heart's arteries appears to be less stable and more likely to rupture in people with diabetes. This can lead to heart attack or stroke.

The good news is that patients can take steps to help optimize their heart health and lower the risk of CVD.



- ✓ **Bottom line: Managing diabetes doesn't and can't stop with monitoring blood glucose levels.**

- In addition to yearly eye exams, daily foot care, and routine blood sugar testing, patients also need to be mindful of their heart health and risk of heart attack or stroke.
- Even when glucose levels are reasonably controlled, there can still be ongoing CV risk and inflammation (swelling) in the blood vessels that must be monitored.
- Reinforce the need to work together to carefully assess and track individual patient's heart and vascular health over time.

Having diabetes and CVD without one or both being well managed can also result in poorer outcomes, or may make another heart attack, stroke or related complications more likely.

- ✓ **There are steps patients can take to lower the risk of developing heart disease or stroke, having repeat heart attacks or stroke, or dying.**



For example, making a commitment to:

- Heart-healthy eating
- Regular exercise
- Achieving and maintaining a healthy weight



- Avoiding tobacco, including exposure to other peoples' smoke
- Monitoring key health risk factors, including blood pressure, cholesterol, A1c levels
- Reducing stress and feeling more in control
- Taking medications as prescribed
- Committing to regular follow-up visits to check blood sugar levels and other CV risk factors

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### KEY QUESTIONS PATIENTS SHOULD BE ASKING AND HAVE THE ANSWERS TO

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Again, it's important to encourage open and ongoing dialogue about the interplay between type 2 diabetes and CVD.

If your conversation about diabetes and CVD and risk factors is effective, your patient should ideally have the answers to the following questions:

- What exactly does having type 2 diabetes mean for my heart health?
- What can I reasonably do to lower this risk (taking into account individual preferences and risk tolerance)?
- How can we best keep tabs on my heart health while also managing my blood sugar level?
- When and how often should I have exams or tests to check my heart and vessels?
- I heard there are medications initially developed to treat diabetes that have added heart benefits, cutting the chance of heart attack, stroke or related death or hospitalizations. What are these therapies and how do they work?
- What signs would suggest developing or worsening CVD?
- If my blood sugars are well controlled, does that mean I can breathe easy about my heart health?



Answers to some of these and other questions are provided in the next section (Page 8). Many also help to address some common misconceptions about diabetes and CV risk reduction. When patients understand what may be at stake for their cardiovascular health and how they can mitigate these risks, they feel more empowered to make changes and consider additional therapies.

## AT-A-GLANCE: TALKING POINTS ABOUT DIABETES AND CV RISK AND THE ROLE OF NOVEL DIABETES MEDICATIONS

Patients consistently share that they want accurate and hopeful messages about their health and health risks. Below are some questions your patients may ask – or should be asking – about diabetes and CV risks, along with suggested answers. As always, your advice should be tailored to each individual patient and be based on your professional clinical assessment and judgment.



QUESTIONS PATIENTS MAY ASK RELATED TO DIABETES AND HEART DISEASE	SUGGESTED LANGUAGE TO CONSIDER WHEN TALKING WITH AND ENGAGING PATIENTS
<p><b>I've heard diabetes and heart disease are related. But how?</b></p> <p><b>I was told that having diabetes means heart issues are more likely. How does diabetes hurt the heart?</b></p>	<p>It's true. People with diabetes are much more prone to developing heart issues.</p> <ul style="list-style-type: none"> <li>• <b>Diabetes is one of the strongest risk factors for heart and vascular disease</b> – it's right up there with smoking and high cholesterol or blood pressure.</li> <li>• <b>Heart disease is also by far the most common cause of death in people with diabetes.</b></li> </ul> <p>What's the connection?</p> <ul style="list-style-type: none"> <li>• First, diabetes and heart disease share important risk factors – things that make a disease more likely. These include: <ul style="list-style-type: none"> <li>– High cholesterol</li> <li>– High blood pressure</li> <li>– Being overweight</li> <li>– Not exercising regularly or sitting for long periods of time</li> <li>– Tobacco use/secondhand smoke</li> </ul> </li> <li>• Second, over time, high levels of sugar (or glucose) in the blood can: <ul style="list-style-type: none"> <li>– <b>Change the way your heart works, and</b></li> <li>– <b>Damage the inside of your blood vessels, acting like shards of glass.</b></li> </ul> <p>This can result in swelling (inflammation) and also create an environment that makes it easier for plaque and other fatty substances to build up, stick to and harden in the blood vessels.</p> <p>When this happens, the blood vessels supplying the heart can become narrowed or blocked. This can disrupt or stop the normal flow of blood.</p> </li> </ul>



QUESTIONS PATIENTS MAY ASK RELATED TO DIABETES AND HEART DISEASE	SUGGESTED LANGUAGE TO CONSIDER WHEN TALKING WITH AND ENGAGING PATIENTS
<i>(continued)</i>	<p>Diabetes is also linked to:</p> <ul style="list-style-type: none"><li>• Stroke</li><li>• Heart failure – (nearly 2 out of 3 people with diabetes will develop some type of heart failure)</li><li>• Peripheral artery disease (blockages in the arteries of the legs and arms)</li></ul> <p><b>The good news is that knowing about the heightened risks that come with diabetes, we can map out a plan that works for you to help protect your heart health.</b></p>
<b>How does diabetes worsen existing heart or vascular disease?</b>	<p>It does so in several ways. For example, it can:</p> <ul style="list-style-type: none"><li>• Damage the inside lining of the blood vessels</li><li>• Affect how well your body circulates blood to vital organs</li><li>• Place added stress on the heart</li></ul> <p>That’s why it is so important that we encourage collaboration among all of your providers, your endocrinologist, primary care provider and cardiology specialists to be able to optimally manage both diseases.</p>
<b>How high is my risk of heart disease?</b>	<p>Even by itself, diabetes puts you at greater risk for heart disease. Damage to the blood vessels often occurs well before someone finds out they have diabetes, and those changes help set the stage for heart disease.</p> <p>But just how likely you are to develop heart disease will depend on other factors too. We use risk estimators to help us gauge how likely someone is to have a heart attack or stroke in the next 10 years. This includes things like:</p> <ul style="list-style-type: none"><li>• Blood pressure</li><li>• Cholesterol levels</li><li>• Body weight</li><li>• How often you exercise</li><li>• Tobacco use</li><li>• Family history</li></ul> <p>These risks can be managed by focusing on lifestyle changes, medications and other treatments, if needed.</p>



QUESTIONS PATIENTS MAY ASK RELATED TO DIABETES AND HEART DISEASE	SUGGESTED LANGUAGE TO CONSIDER WHEN TALKING WITH AND ENGAGING PATIENTS
<p><b>Besides keeping my blood sugar – and blood pressure and cholesterol – numbers down, what other things can I do to curb my risk of a heart attack or stroke?</b></p>	<p>You can take steps to boost your heart health, and lower your chance of having a heart attack or stroke or developing heart failure.</p> <ol style="list-style-type: none"><li><p>An important step – for preventing new or worsening heart disease – is to <b>focus on lifestyle changes</b>. Making healthy choices every day is at the heart of preventing heart disease.</p><p>For example:</p><ul style="list-style-type: none"><li>– Getting regular exercise</li><li>– Eating heart-healthy foods</li><li>– Losing weight, if needed, or staying at your current weight</li><li>– Avoiding tobacco</li><li>– Coping with stress</li></ul><p>It may seem overwhelming, but there are resources and people available to help. You don't need to tackle all of these changes at the same time; every little bit helps.</p><p>It's also essential to <b>tell us about any barriers that might make it difficult for you to adopt or keep up with healthy behaviors</b>.</p><p>For example:</p><ul style="list-style-type: none"><li>– Lack of time</li><li>– Feeling overwhelmed (not knowing where or how to start, setting realistic goals, enlisting support from others)</li><li>– Cost</li><li>– Factoring in other health issues you are managing</li><li>– Not fully understanding the link between diabetes and heart disease</li></ul></li><li><p><b>When you think about diabetes, think about your heart too.</b> That means, in addition to yearly eye exams and, daily foot care and routine blood sugar testing, you must also be mindful of your heart health.</p></li><li><p><b>Take your medications as directed.</b></p><p>Well controlled diabetes is better for your heart.</p><p>There are several medications initially used to lower blood sugar that have now been shown to have clear heart benefits. They can cut the likelihood of heart attack or stroke, especially among those with existing heart disease. Some may also protect the kidneys.</p></li></ol>



QUESTIONS PATIENTS MAY ASK RELATED TO DIABETES AND HEART DISEASE	SUGGESTED LANGUAGE TO CONSIDER WHEN TALKING WITH AND ENGAGING PATIENTS
<p><b>If my blood sugar level is well controlled, I don't have to worry about developing (or worsening) heart problems.</b></p>	<ul style="list-style-type: none"><li>• Diabetes can change or “scuff up” the lining of the blood vessels often well before you know you have it. Unfortunately, this promotes heart and vascular problems.</li><li>• Even when your blood sugar is reasonably controlled, the risk of cardiovascular problems can still persist. But good control of diabetes can lower the likelihood of problems.</li><li>• It's important to:<ul style="list-style-type: none"><li>– <b>Monitor your blood sugar</b></li><li>– <b>Aggressively manage your:</b><ul style="list-style-type: none"><li>◦ Blood pressure</li><li>◦ Cholesterol</li></ul></li><li>– <b>Take your medications as directed</b></li><li>– <b>Ask for help if you need assistance with:</b><ul style="list-style-type: none"><li>◦ Meal planning</li><li>◦ Weight loss</li><li>◦ Learning what exercise you should engage in and how often</li><li>◦ Avoiding tobacco</li><li>◦ Coping and stress management</li></ul></li></ul></li></ul>
<p><b>What heart and vascular disease warning signs should I look out for?</b></p>	<ul style="list-style-type: none"><li>• <b>Signs of a heart attack may include:</b><ul style="list-style-type: none"><li>– Pressure, squeezing, fullness, and pain in the chest or upper body</li><li>– Shortness of breath.</li></ul></li></ul> <p>Women may feel a heart attack differently, and sometimes have:</p> <ul style="list-style-type: none"><li>– Nausea and vomiting</li><li>– Fatigue perhaps for days</li><li>– Pain in the back, shoulders and/or jaw</li></ul> <p>Call 911 immediately if you suspect you are having a heart attack or stroke. It can save your life.</p>



QUESTIONS PATIENTS MAY ASK RELATED TO DIABETES AND HEART DISEASE	SUGGESTED LANGUAGE TO CONSIDER WHEN TALKING WITH AND ENGAGING PATIENTS
<p><i>(continued)</i></p>	<ul style="list-style-type: none"><li>• <b>Signs of heart failure may include:</b><ul style="list-style-type: none"><li>– Shortness of breath (even when doing simple tasks like dressing or walking up a flight of stairs)</li><li>– Swelling in the ankles, feet, legs, abdomen, or veins in the neck (edema)</li><li>– Extreme tiredness (fatigue)</li><li>– Feelings of weakness</li><li>– Rapid or irregular heartbeat</li><li>– Fast weight gain (usually 3 lbs in on day or 5 lbs in one week), or rapid fluctuations in weight</li><li>– Pressure or heaviness in the chest when lying flat</li></ul><p>If you experience any of these symptoms, let us know right away.</p></li><li>• <b>Signs of blockages in your extremities (called peripheral artery disease or PAD) may include:</b><ul style="list-style-type: none"><li>– Pain, tiredness or numbness in the legs with or without exercise</li><li>– Issues with circulation in your legs or arms</li></ul><p>It's important to know. If you have PAD, because you can't take an SGLT2 inhibitor.</p></li></ul>



 QUESTIONS PATIENTS MAY ASK ABOUT MEDICATIONS	SUGGESTED LANGUAGE TO CONSIDER WHEN TALKING WITH AND ENGAGING PATIENTS
<p><b>Am I taking the right medications to manage my CV risk?</b></p>	<p>There are a number of medications that can be used to lower your likelihood of having a heart attack or stroke if you already have blockages in your arteries and diabetes. These may include:</p> <ul style="list-style-type: none"><li>• <b>Statins</b> are advised for most people with diabetes</li><li>• <b>Low-dose aspirin therapy</b> may be used to thin the blood so it is less likely to clot and clog blood vessels, but whether this is recommended depends on your age and risk of bleeding problems</li><li>• <b>Metformin</b>, which is first-line treatment for diabetes and also seems to help lower the risk of heart disease</li><li>• <b>Two classes of diabetes drugs</b> that have recently been shown to help lower the risk of heart attack or stroke in people who also have heart disease</li><li>• <b>ACE-inhibitors or ARBs</b> to help lower blood pressure and/or kidney complications</li></ul>
<p><b>I'm already on three diabetes medications. Why do we need to add another?</b></p>	<ul style="list-style-type: none"><li>• Having diabetes makes you very likely to develop heart disease or vascular problems, and many patients with diabetes also have heart disease.</li><li>• Certain medications that were originally developed to help control glucose have also been shown in clinical trials to help patients with both diabetes and heart disease reduce their risk for heart attack, stroke or cardiovascular-related death.</li><li>• So if you have heart disease – even if you've already had a heart attack or stroke – and your blood sugar is well-controlled, these medications can help lower your heart risk to prevent future events.</li><li>• Based on studies, these therapies can also lower blood pressure and help with weight loss, which also benefits the heart.</li></ul>



 <b>QUESTIONS PATIENTS MAY ASK ABOUT MEDICATIONS</b>	<b>SUGGESTED LANGUAGE TO CONSIDER WHEN TALKING WITH AND ENGAGING PATIENTS</b>
<b>How do these novel medications work to lower heart disease and stroke?</b>	<p>We're not entirely sure, but they've been shown to have secondary effects that benefit how the heart functions.</p> <p>With SGLT2 inhibitors, we know there are secondary benefits of weight loss, lowering blood pressure and circulating fluid levels. This also means less stress on the heart and kidneys.</p> <p>GLP-1RAs also have been linked to weight loss and lowering blood pressure, which can be heart protective. These may also have direct action within the lining of the blood vessels themselves.</p>
<b>Do I need to adjust my other diabetes medications if I start on an SGLT2 inhibitor or GLP-1RA?</b>	<p>If we decide to start you on one of these medications to reduce your cardiovascular risk to reduce your cardiovascular risk, we will review your other diabetes medications and decide whether you should stop taking any and/or if we need to adjust the amount (dose) you take.</p>
<b>Are there any special considerations I should be aware of in taking an SGLT2 inhibitor or GLP-1RA?</b>	<p>Always report any concerns that you have related to taking these and other medications.</p> <p>GLP-1RAs can slow how quickly food leaves your gut and is processed into glucose in your bloodstream. If you eat too much or too quickly when taking this medicine, you may feel overly full or nauseous.</p> <p>Make sure to report any vomiting. You will be started on a lower dose or amount of the medication. As the amount is increased, you may want to eat smaller meals to see how it affects you. Typically, these symptoms get better once you've been on the medications for a period of time.</p> <p>With SGLT2 inhibitors, it's important to:</p> <ul style="list-style-type: none"><li>• Stay hydrated</li><li>• Report any dizziness or faint feelings or foot ulcers that don't seem to be healing</li><li>• Watch for signs of yeast or urinary tract infections – burning or traces of blood with urinating – and practice good hygiene to prevent problems</li></ul>



# QUICK SNAPSHOT: WHEN AND WHAT TO CONSIDER IN PRESCRIBING SGLT2 INHIBITORS OR GLP-1RAs FOR RISK REDUCTION

## WHEN THESE MEDICATIONS MIGHT BE CONSIDERED FOR CV RISK LOWERING

These medications should be used:

1. In concert with guideline-directed medical therapy including lifestyle changes, antiplatelet, blood pressure, lipids and
2. In the context of guideline-directed diabetes care.

Many people with type 2 diabetes and existing heart or blood vessel disease benefit from adding a novel diabetes medicine to help manage blood sugar and heart risks.

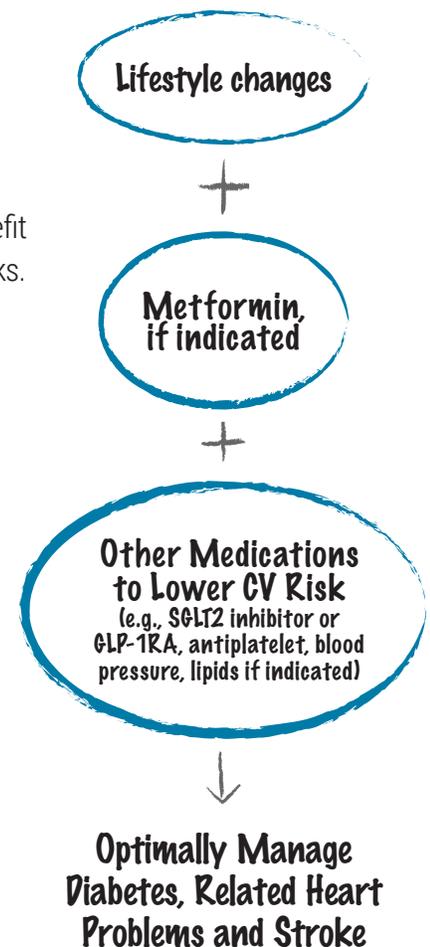
Opportunities to initiate these therapies within this context include:

- At the time of type 2 diabetes diagnosis in patients with clinical ASCVD
- At the time of diagnosis with ASCVD in a patient with type 2 diabetes
- In a patient with type 2 diabetes who is not meeting glycemic targets and has clinical ASCVD
- At hospital discharge after admission for an ASCVD- or diabetes-related clinical event

In patients with type 2 diabetes and additional risk factors for CVD, it may be reasonable to initiate these two classes of medications for primary prevention of CVD. Factors to consider include:

- Age > 65 years
- Poorly controlled hypertension (BP > 140/90 mm Hg)
- Hyperlipidemia (LDL-C >100mg/dl or non-HDL >130mg/dl)
- Ongoing tobacco use
- Known heart failure
- Presence of significant subclinical atherosclerosis (coronary artery calcium score >100)
- Chronic kidney disease stage III or higher

While current evidence for these medications is relevant to people with type 2 diabetes and heart disease, there are data to suggest these medications may have an added benefit, even among those people living with diabetes without currently diagnosed or known heart disease.



## HOW TO CHOOSE BETWEEN AN SGLT2 INHIBITOR OR GLP-1RA

- **Factor in patient and clinician preferences and priorities**

For appropriate patients, engage in an informed discussion to determine if one of these medications could be a suitable option within the context of patient and clinician preferences and priorities.

- **What to think about when initiating and monitoring each**

In addition to factoring in patient preference and medical history to guide decisions about these medications, the tables below from the *2020 Expert Consensus Decision Pathway on Novel Therapies for Cardiovascular Risk Reduction in Patients With Type 2 Diabetes: A Report of the American College of Cardiology Solution Set Oversight Committee* provide some additional things to consider:

**TABLE 6**

**Patient and Clinician Preferences and Priorities for Considering SGLT2 Inhibitors With Demonstrated CV Benefit Versus GLP-1RAs With Demonstrated CV Benefit**

Preference or Priority	Consider Using an SGLT2 Inhibitor First When Patient and Clinician Priorities Include:	Consider Using a GLP-1RA First When Patient and Clinician Priorities Include:
MACE prevention	+++	+++
HF prevention	+++	
Weight loss	+	+++
Renal disease progression prevention	+++	+
Mode of administration	Oral	Subcutaneous
Considerations that may prompt use of an alternative class	<ul style="list-style-type: none"> <li>■ Severely reduced kidney function*,†</li> <li>■ History of prior amputation, severe peripheral arterial disease, or active diabetic foot ulcers (caution with canagliflozin)</li> <li>■ History of recurrent genital candidiasis</li> <li>■ History of diabetic ketoacidosis</li> <li>■ History of fracture (caution with canagliflozin)</li> <li>■ The patient is considering pregnancy</li> <li>■ The patient is breast feeding</li> </ul>	<ul style="list-style-type: none"> <li>■ Persistent nausea, despite appropriate dietary education and low doses</li> <li>■ History of gastroparesis</li> <li>■ Active gallbladder disease</li> <li>■ History of MEN2 or medullary thyroid cancer</li> <li>■ History of proliferative retinopathy (caution with semaglutide or dulaglutide)</li> <li>■ The patient is considering pregnancy</li> <li>■ The patient is breast feeding</li> </ul>

\*eGFR <45 ml/min/1.73 m<sup>2</sup> is currently a caution due to a decrease in glycemic efficacy (not due to safety), but ongoing studies are testing whether SGLT2 inhibitors offer renal benefits in these patients. The FDA label for canagliflozin allows use of canagliflozin to an eGFR of 30 ml/min/1.73m<sup>2</sup> specifically for patients with DKD.

†Use clinical judgement when initiating an SGLT2 inhibitor in a patient who will be starting or up-titrating an ACE inhibitor or ARB if the patient's renal function is impaired

ACE = angiotensin-converting enzyme; ARB = angiotensin receptor blocker; CV = cardiovascular; DKD = diabetic kidney disease; eGFR = estimated glomerular filtration rate; FDA = Food and Drug Administration; GLP-1RA = glucagon-like peptide-1 receptor agonist; HF = heart failure; MACE = major adverse cardiovascular event; MEN2 = multiple endocrine neoplasia type 2; SGLT2 = sodium-glucose cotransporter-2.

**TABLE 8** Considerations for Drug Initiation and Monitoring in Patients Starting a GLP-1RA With Demonstrated CV Benefit

- If HbA1c is well-controlled at baseline or known history of frequent hypoglycemic events, wean or stop sulfonylurea and consider reducing total daily insulin dose by ~20% when starting therapy.
- Instruct patients to more closely monitor glucose at home for the first 4 weeks of therapy. Consider discontinuing any sulfonylurea or glinide. For patients taking insulin, consider modestly reducing total daily insulin dose (by up to 20%).
- Discontinue DPP-4 inhibitor before starting.
- To mitigate nausea, recommend small portion sizes for meals, start at the lowest dose, and up-titrate as tolerated toward the goal doses used in CV outcome trials.
- Advise patients to undergo appropriate, guideline-recommended eye examinations before starting therapy if not done within the last 12 months.
- Discuss potential risk of diabetic retinopathy complications (for dulaglutide or injectable semaglutide).
- Avoid in patients with diabetic gastroparesis or active gallbladder disease.

CV = cardiovascular; DPP4 = dipeptidyl peptidase-4; GLP-1RA = glucagon-like peptide-1 receptor agonist; HbA1c = hemoglobin A1c.

# HELPFUL RESOURCES FOR CLINICIANS AND PATIENTS



## American College of Cardiology

2020 Expert Consensus Decision Pathway on Novel Therapies for Cardiovascular Risk Reduction in Patients With Type 2 Diabetes: A Report of the American College of Cardiology Solution Set Oversight Committee  
[ACC.org/CVDinDMDecisionPathway](https://www.acc.org/CVDinDMDecisionPathway)

Clinician Tool: Key Considerations in use of GLP-1RAs and SGLT2 is for CV Risk Reduction in Patients with ASCVD and T2D  
[ACC.org/CVDinDMClinicianTool](https://www.acc.org/CVDinDMClinicianTool)

ASCVD Risk Estimator Plus App  
[ACC.org/Apps](https://www.acc.org/Apps)



## ACC's CardioSmart.org

For more about Diabetes and Heart Disease, including patient infographics, go to [CardioSmart.org/DiabetesandHeartDisease](https://www.cardiosmart.org/DiabetesandHeartDisease).



## Centers for Disease Prevention and Control

Diabetes and Your Heart  
<https://www.cdc.gov/diabetes/library/features/diabetes-and-heart.html>

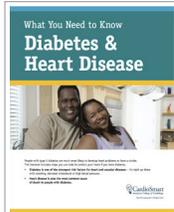


## National Institute of Diabetes and Digestive and Kidney Diseases

Diabetes, Heart Disease, & Stroke  
<https://www.niddk.nih.gov/health-information/diabetes/overview/preventing-problems/heart-disease-stroke>

# PATIENT TOOLS FOR USE IN YOUR PRACTICE

Here are several resources you can give to your patients with type 2 diabetes to help them manage their treatment plans.



## Diabetes and Heart Disease: What You Need to Know

This worksheet helps patients understand how having type 2 diabetes puts them at greater risk of heart disease. They will learn tips to manage diabetes and lower their heart risk.



## Your Action Plan for Managing Diabetes and Protecting Your Heart

Patients use this workbook to write down their goals and map out a plan to lower their risk of diabetes-related heart problems.



## 10 Steps to Lower Your Chance of Diabetes-Related Heart Problems

This checklist outlines practical steps patients can take to help lower their risk of diabetes-related heart problems.