

Pregnancy-Induced Cardiovascular Risk

A Resource For Providers

What to Know

Cardiovascular disease (CVD) is the #1 killer of women.

However, until recently, very little attention has been paid to the risk that pregnancy plays in developing CVD. Pregnancy is often thought of as a woman's first "stress test" that can unmask underlying heart and vascular problems and future risk.

It's critical that women are educated on these risks. As an OBGYN or other women's health provider, you have a unique opportunity to increase awareness of pregnancy-induced cardiovascular risk factors and how they can be addressed. Roughly 30 to 40 percent of pregnant women (and 90 percent of all women) have at least one risk factor that can lead to long-term health concerns. This makes early detection and intervention vital.

Pregnancy-Induced Cardiovascular Risk Factors

Gestational Hypertension and Preeclampsia

Women who develop gestational hypertension are two to three times more likely to develop chronic hypertension with onset greatest within the first five years after their first birth. It also substantially increases the risk of type 2 diabetes and dyslipidemia even when adjusted for other factors.

Preeclampsia, which affects roughly 10 percent of pregnancies, nearly doubles the risk of ischemic heart disease, stroke and deep vein thrombosis.

Gestational Diabetes (GDM)

Women who develop gestational diabetes are at 43 percent higher risk of developing CVD and may be at risk for early atherosclerosis in midlife (even before the onset of type 2 diabetes).

Placental Abruption, Preterm Birth, Small for Gestational Age

All of these pregnancy-related complications increase a woman's risk of CVD. A medically indicated preterm birth puts a woman at significantly higher risk of CVD than a spontaneous preterm birth, but even a spontaneous preterm delivery is associated with increased risk.



Preeclampsia and gestational hypertension share risk factors with CVD. These include hypertension, obesity, insulin resistance and diabetes, dyslipidemia (increased LDL and triglycerides), inflammation, oxidative stress, increased coagulation and thrombotic factors, increased body weight and weight circumference and platelet aggregation.

Many of these can be either prevented or treated and lower a patient's overall risk for developing CVD. Polycystic ovary syndrome, menopause, autoimmune disorders (such as rheumatoid arthritis and lupus), mental stress and depression, and medical treatments (such as chemo and radiation therapy for cancer) also increase risk and should be considered when estimating cardiovascular risk.

Follow-Up Recommendations



The American College of Obstetricians and Gynecologists published a committee opinion on optimizing postpartum care.

The recommendations advise that women who had pregnancies complicated by preterm birth, gestational diabetes, gestational hypertension, preeclampsia or eclampsia should be counseled on their increased cardiovascular disease risk, and their pregnancy complications should be documented in their electronic medical record.

CVD Risk Factor Screening in Women With Pregnancy-Induced Complications

CVD Risk Factor	Time For Initial Screening	Time For Follow-Up Screening
Hypertension	Within 6 to 12 months post-partum	Preferably check blood pressure at each visit or minimally as follows: Annually If: • Hypertension during pregnancy • BP >120-139/80-90 Every 2 Years If: • BP <120/80
Hyperlipidemia	Within 12 weeks post-partum and post-lactation	If hypertension during pregnancy or elevated CVD risk, check lipids and screen annually
Diabetes	If GDM, check glucose and screen 4 to 12 weeks post-partum	Check glucose and screen annually if impaired fasting glucose at 6 weeks or hypertension during pregnancy; otherwise screen every 3 years
Obesity/BMI	Annually	Annually
Tobacco Use	At first post-partum visit	At each visit
Nutrition and Physical Activity	Assess at first post-partum visit	Assess at each visit depending on risks

Adapted from Mehta, P.K., Minissian, M., & Merz, C.N.B. (2015, June). Adverse pregnancy outcomes and cardiovascular risk factor management. In *Seminars In Perinatology* (Vol. 39, No. 4, pp. 268-275). WB Saunders.



Screening should include taking a complete pregnancy and medical history along with estimating cardiovascular risk for patients age 40 and older using a CVD risk estimator, such as the ASCVD Risk Estimator Plus.

The CVD risk estimator does not include pregnancy-induced risk factors, so these will provide supplemental information. By factoring in both, you will have a better picture of a patient's overall risk and will be able to talk together about appropriate next steps for lowering risk.

★ Key Messages About Lifestyle Habits for Patients



Research Finding

Young women who follow a healthy lifestyle have an almost 75% reduction in heart disease and medical conditions that increase their risk for it (high blood pressure, diabetes, and high cholesterol).

Heart Healthy Habits to Share With Your Patients



Breastfeed, If Possible

Breastfeeding may help you lose pregnancy weight and it lowers your risk for heart disease and diabetes. The longer you breastfeed, preferably one year, the more cardio-protective it is.



Be Tobacco-Free

Quitting smoking drops your risk dramatically and it continues to drop over days, weeks, and years. Within five years, most smokers cut their risk of stroke to nearly that of a nonsmoker.



Eat Healthy

Choosing whole foods like vegetables, fruits, and whole grains, and limit processed foods, added sugars, and foods high in sodium will help prevent high blood pressure and high cholesterol. The DASH (Dietary Approaches to Stop Hypertension) and Mediterranean diet are evidence-based heart healthy eating plans.



Move More, Sit Less

Being moderately physically active for 30 minutes, five days a week or more decreases your risk of heart disease and it can be fun for you and your family. Engaging in less screen time and other sedentary activities improves your heart health.



Maintain a Healthy Weight

Losing 5-10% of your body weight will reduce your risk. More importantly, you'll feel better and have more energy to do the things you enjoy.



Follow-Up With Patients

At their next visit, ask your patients how they are doing with making healthy lifestyle choices. Studies have shown that when providers follow up on lifestyle advice, outcomes improve (e.g., weight loss). It also enhances patient satisfaction, the patient-provider relationship, and treatment adherence. This encouragement may be just what a patient needs to make the necessary changes to lower their risk.

Don't Let Your Patients Fall Through the Cracks



Refer patients with complex cases to an internist/family practice provider to initiate aggressive risk factor modification or a cardiologist as appropriate.

Referral Guidelines

Risk Factor	Exam/Screening Results	Refer Patient To:
CVD Symptoms	Cardiovascular symptoms (shortness of breath, dyspnea, chest pain, feeling faint, exertional intolerance, palpitation, swelling or syncope) are present.	Cardiologist
Cholesterol	LDL is >190 mg/dL on initial screen.	Cardiologist
	LDL is >130 with either family history or premature CAD (first degree relative with CV event age 60 or younger) or diagnosis of diabetes.	Cardiologist
	LDL is >130 mg/dL with no additional risk factors.	Internist or Family Practice Provider
Blood Pressure	Blood pressure is >130/80 mmHg, especially if their CVD risk score is >10%. In this case, chronic anti-hypertensive therapy should be initiated.	Internist or Family Practice Provider
	Blood Pressure is >140/90 regardless of their CVD risk score. Anti-hypertensive therapy should be initiated, keeping in mind that they may need to be on more than one medication to achieve blood pressure goal.	Internist or Family Practice Provider
	Blood pressure remains >140/90 despite being on 3 anti-hypertensive medications.	Cardiologist
Blood Glucose	Blood Glucose remains elevated and/or screening A1c is >6.5%.	Internist or Family Practice Provider
CVD Risk Score	In patients 40 or older, calculate CVD risk score. If score is >7.5% or their cholesterol is high, aggressive risk factor modification is likely needed.	Internist or Family Practice Provider
Healthy Eating and Weight Management		Dietitian
Increasing Physical Activity		Exercise Specialist

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