



Long-Term Follow-up From Pregnancy Complications

Background

- Pregnancy is a window to future health. Pregnancy-related complications predict risk of subsequent diabetes and cardiovascular disease. There are risk factors for cardiovascular disease that appear during pregnancy, and these risk factors are emerging as a predictor to future arteriosclerotic cardiovascular disease (ASCVD) risk. Complications, such as preterm delivery, gestational diabetes, gestational hypertension, and preeclampsia, are associated with greater risk of ASCVD (see table).
- Knowledge regarding these associations presents an opportunity for targeted management in the postpartum period.
- Optimization of health in the postpartum period may improve the health of the woman across the lifespan. For women having a subsequent pregnancy, they may be healthier at the start of the next pregnancy.
- Longer durations of breastfeeding are associated with a reduced cardiometabolic disease risk for women. Health care providers should support women to achieve their breastfeeding goals and optimize medical management using a high-quality resource such as LactMed and prescribing medications that are compatible with breastfeeding.

Resources

American College of Obstetricians and Gynecologists Clinical Guidelines

- ❖ Gestational diabetes mellitus. ACOG Practice Bulletin No. 190. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2018;131:e49–64.

This American College of Obstetricians and Gynecologists' (ACOG) document gives a brief overview of gestational diabetes mellitus, reviews management guidelines that have been validated with clinical research, and identifies gaps in current knowledge to help direct future research.

- ❖ American College of Obstetricians and Gynecologists Task Force Report: Hypertension in Pregnancy. <https://www.acog.org/Clinical-Guidance-and-Publications/Task-Force-and-Work-Group-Reports/Hypertension-in-Pregnancy>

Produced by ACOG's Presidential Task Force on Hypertension in Pregnancy, the report summarizes the current state of knowledge about preeclampsia and other hypertensive disorders in pregnancy, includes practice guidelines for health care providers who treat obstetric disorders, and identifies the most compelling areas of laboratory and clinical research to bridge gaps in current knowledge.

Health Care Provider Resources for Patient Care

- ❖ American College of Obstetricians and Gynecologists. Obesity Toolkit. <https://www.acog.org/About-ACOG/ACOG-Departments/Toolkits-for-Health-Care-Providers/Obesity-Toolkit>

This ACOG toolkit provides information about multiple aspects of obesity care as well as links to additional resources.

- ❖ American Diabetes Association. American Diabetes Association standards of medical care in diabetes—2018. Arlington (VA): ADA; 2018. Available at: <http://diabetesed.net/wp-content/uploads/2017/12/2018-ADA-Standards-of-Care.pdf>. Retrieved March 7, 2018.
This document is intended to provide clinicians, patients, researchers, payers, and other interested individuals with the components of diabetes care, general treatment goals, and tools to evaluate the quality of care.
- ❖ Council on Patient Safety in Women’s Health Care. Postpartum care basics for maternal safety from birth to the comprehensive postpartum visit (+AIM). Washington, DC: American College of Obstetricians and Gynecologists; 2017. Available at: <https://safehealthcareforeverywoman.org/patient-safety-bundles/postpartum-care-basics/>. Retrieved March 6, 2018.
Bundle includes an approach for the recognition of early warning signs and symptoms, how to identify system-improvement opportunities, and support tools for patients, families, and staff.
- ❖ Go AS, Bauman MA, Coleman King SM, Fonarow GC, Lawrence W, Williams KA, et al. An effective approach to high blood pressure control: a science advisory from the American Heart Association, the American College of Cardiology, and the Centers for Disease Control and Prevention [published erratum appears in Hypertension 2014;63:e175]. *Hypertension* 2014;63:878–85.
Summary of 2017 guidelines for prevention, detection, evaluation, and management of hypertension in adults.

Patient Resources

- ❖ American College of Obstetricians and Gynecologists. Patient FAQ: Managing High Blood Pressure. <https://www.acog.org/Patients/FAQs/Managing-High-Blood-Pressure>
Patient FAQs on how to manage high blood pressure including information on how often blood pressure should be checked, recommended lifestyle changes, and treatment options.
- ❖ American Diabetes Association. Patient Resource Page: Living with Diabetes. <http://www.diabetes.org/living-with-diabetes/>
Information on what to do if recently diagnosed with diabetes, how to prevent or delay onset of complications, and treatment strategies.
- ❖ American Heart Association. Patient Resource Page: How to Prevent Heart Disease. <https://www.goredforwomen.org/fight-heart-disease-women-go-red-women-official-site/live-healthy/prevent-heart-disease/>
Information on lifestyle changes to reduce risk of heart disease.
- ❖ Centers for Disease Control and Prevention. Diabetes basics. Atlanta (GA): CDC; 2017. Available at: <https://www.cdc.gov/diabetes/basics/index.html>. Retrieved March 1, 2018.
- ❖ Centers for Disease Control and Prevention. High blood pressure. Available at: <https://www.cdc.gov/bloodpressure/index.htm>. Retrieved March 1, 2018.
- ❖ Centers for Disease Control and Prevention. Preventing high cholesterol. Available at: <https://www.cdc.gov/cholesterol/prevention.htm>. Retrieved March 1, 2018.

- ❖ Take Heart and Take Care: Preeclampsia May Be Associated with Heart Disease and Stroke Later in Life. Available at: <https://www.preeclampsia.org/health-information/heart-disease-stroke>

Patient information from the Preeclampsia Foundation on preeclampsia as an early warning sign for future heart disease.

Coding

See [Coding for Long-Term Follow-up From Pregnancy Complications](#)

Table 1. Pregnancy-Related Complications

Condition and Background	Postpartum Test and Screening	Management Considerations	Long-Term Goals
Gestational Diabetes			
Women with gestational diabetes have a sevenfold increased risk of developing type 2 diabetes.	Fasting plasma glucose or 75-g, 2-hour OGTT at 4–12 weeks postpartum; screening should happen every 3 years. If the initial test in the postpartum shows prediabetes, they should be screened for diabetes yearly.	Encourage breastfeeding Women with impaired fasting glucose, impaired glucose tolerance, or diabetes should be referred for preventive or medical therapy.	Early detection of overt diabetes; diabetes prevention
Diabetes			
Poorly controlled diabetes increases risk of nephropathy, neuropathy, retinopathy, cardiovascular disease, and other chronic morbidity. Poorly controlled diabetes is associated with birth defects in the next pregnancy.	Patients should demonstrate good control of blood sugars with hemoglobin A _{1c} <6.5	Weight management Referral for preventive and medical therapy For women with type 1 diabetes, thyroid screening once if never completed. In subsequent pregnancies, consider low-dose aspirin 81 mg QD to reduce pre-eclampsia risk	Goal Hemoglobin A _{1c} : 6.0–6.5% (42–48 mmol/L) recommended Achieve without hypoglycemia
Preeclampsia and Gestational Hypertension			
Women with preeclampsia have an increased risk of recurrence in subsequent pregnancies. These women also have a two-fold increased risk of subsequent cardiovascular disease.	Blood pressure monitoring for 72 hours postpartum Blood pressure monitoring 7–10 days after delivery Postpartum blood pressure check	In subsequent pregnancies, consider low-dose aspirin 81 mg QD to reduce preeclampsia risk	Maintain blood pressure <120/80 Maintain healthy weight
Chronic Hypertension			
Uncontrolled hypertension in the postpartum period increases risk of stroke. Long-term uncontrolled hypertension leads to end organ damage, renal disease, and cardiovascular disease such as heart attacks and strokes.	Blood pressure monitoring for 72 hours postpartum Postpartum blood pressure check Blood pressure increases above antepartum levels in the first 1–2 weeks postpartum	In subsequent pregnancies, consider low-dose aspirin 81 mg QD to reduce pre-eclampsia risk Postpartum adjust medications to maintain blood pressure in the safe range (less than 160 mmHg systolic and less than 100 mmHg diastolic)	Maintain blood pressure <120/80 Maintain healthy weight
Excessive Gestational Weight Gain and Obesity			
Excessive gestational weight gain is associated with higher weight retention and obesity. Obesity increases the risk of type 2 diabetes, hypertension, certain cancers, arthritis, and heart disease.	Measure BMI Preventive screening for diabetes, hypertension, and dyslipidemia if obese	Screen for modifiable risk factors for cardiovascular disease	Reach prepregnancy weight by 6–12 months postpartum; ultimately achieve near-normal BMI
Preterm Birth or Small-for-Gestational-Age Infant			
Preterm birth is associated with a twofold increased risk of future cardiovascular disease; the highest risk is associated with delivery <32 weeks or indicated preterm birth	Measure BMI	Screen for modifiable risk factors for cardiovascular disease	Reduction of modifiable risk factors for cardiovascular disease
Abbreviations: OGTT, oral glucose tolerance test; BMI, body mass index.			