Advancing Maternal Health:
Exploring the Impact of Hypertension Guidelines in Pregnancy

The Advancing Maternal Health Through Quality Improvement and Professional Education Initiative is supported by Merck for Mothers, Merck's global maternal health effort to help create a world where no woman has to die while giving birth.

THE ALARMING REALITY OF

MATERNAL HEALTH

- Cardiovascular disease is the leading cause of maternal death in the U.S., or more simply put, heart disease is the No. 1 killer of new moms. Pregnancy-related deaths in the U.S. have risen nearly 140% over the last three decades – cardiovascular disease continues to be the leading cause.
- Major disparities exist in maternal health outcomes.
- CVD during pregnancy leaves women with a higher lifetime risk of CVD after delivery and an increased risk for their children.

https://www.heart.org/en/professional/quality-improvement/maternal-health

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Disclaimer

The recommendations and opinions presented by our guest speakers may not represent the official position of the American Heart Association. The materials are for educational purposes only and do not constitute an endorsement or instruction by AHA/ASA. The AHA/ASA does not endorse any product or device.

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Overview of the 2025 AHA/ACC Blood Pressure Guidelines

For Pregnant and Postpartum Persons

American Heart Association.

DISCLOSURES

- Royalties from update authorship related to cardiac arrest in pregnancy
- Honorarium from Grand Rounds on Cardiac Arrest in pregnancy

Hypertension in Pregnancy and Postpartum Patients

ADAPTED FROM:

2025 AHA/ACC/AANP/AAPA/ABC/ACCP/ACPM/AGS/AMA/ASPC/NMA/PCNA/SGIM Guideline for the Prevention, Detection, Evaluation and Management of High Blood Pressure in Adults

American Heart Association.

AHA Clinical Slides PPTX

HERE'S WHAT WE KNOW...

High blood pressure is the most prevalent and modifiable risk factor for the development of cardiovascular diseases, including coronary artery disease, heart failure, atrial fibrillation, stroke, dementia, chronic kidney disease, and all-cause mortality. The overarching blood pressure treatment goal is <130/80 mm Hg for all adults, with additional considerations for those who require institutional care, have a limited predicted lifespan, or are pregnant.

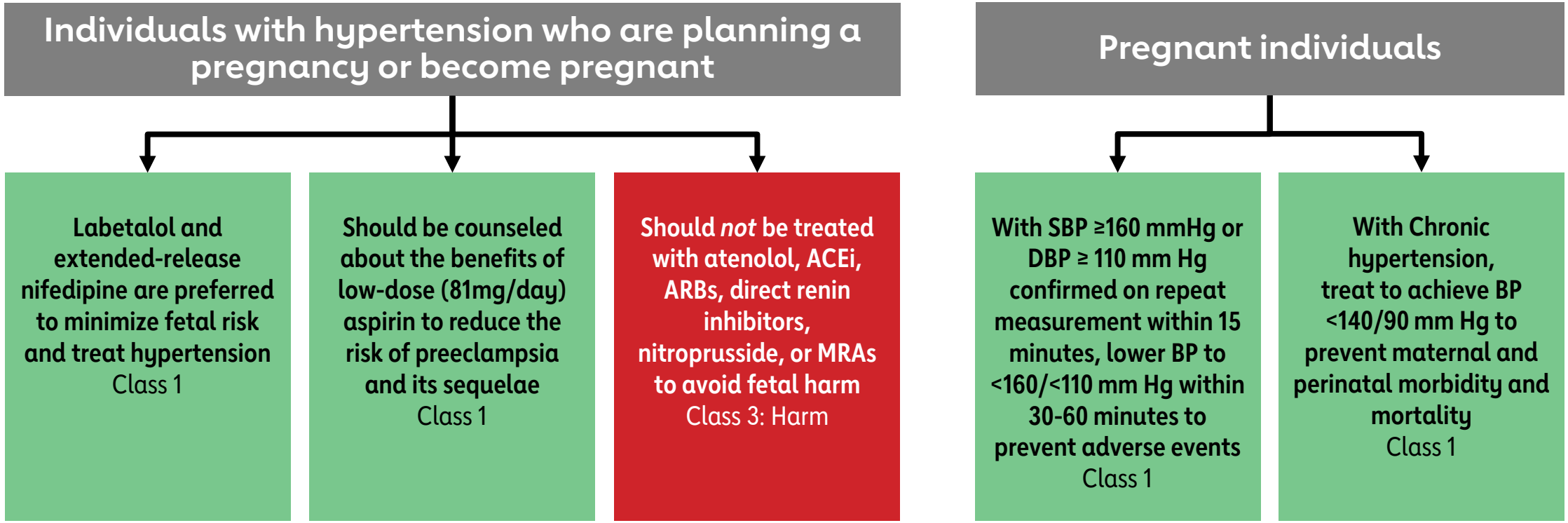
Definition and Classification of Blood Pressure

Blood Pressure Category	SBP		DBP
Normal	< 120 mmHg	and	< 80 mmHg
Elevated	120 to 129 mmHg	and	< 80 mmHg
Stage 1 Hypertension	130 to 139 mmHg	or	80 to 89 mmHg
Stage 2 Hypertension	≥ 140 mmHg	or	≥ 90 mmHg

COR	RECOMMENDATIONS
1	In adults, BP should be categorized as normal, elevated, or stage 1 or stage 2 hypertension to prevent and treat high BP.

Abbreviations: BP indicates blood pressure; DBP, diastolic blood pressure; and SBP, systolic blood pressure.

Hypertension and Pregnancy



Abbreviations: ACEi indicates Angiotensin Converting Enzyme inhibitors; ARB, Angiotensin Receptor Blocker; BP, blood pressure; DBP, diastolic blood pressure; HTN, hypertension; MRA, mineralocorticoid receptor antagonist; SBP, systolic blood pressure; and TX, treatment.

Classification of Hypertensive Disorders of Pregnancy

Condition	Definition
Chronic hypertension	Diagnosis prior to pregnancy or at <20 weeks' gestation
Gestational hypertension	De novo hypertension at ≥20 weeks' gestation in the absence of proteinuria or other signs of preeclampsia
Preeclampsia	Gestational hypertension with proteinuria or other maternal end-organ dysfunction including neurologic findings, pulmonary edema, hematologic findings, acute kidney injury, hepatic dysfunction (Section 5.5.2)
Preeclampsia superimposed on chronic hypertension	Preeclampsia in a woman with a history of hypertension before pregnancy or before 20 weeks' gestation

Derived from American College of Obstetricians and Gynecologists.

ACOG Diagnostic Criteria for Hypertension in Pregnancy

Condition	Definition
Hypertension in pregnancy	SBP ≥140 mm Hg and/or DBP ≥90 mm Hg
Severe-range hypertension	SBP ≥160 mm Hg and/or DBP ≥110 mm Hg

ACOG indicates American College of Obstetricians and Gynecologists; DBP, diastolic blood pressure; and SBP, systolic blood pressure. Derived from American College of Obstetricians and Gynecologists.

Common Oral Antihypertensive Agents in Pregnancy

Drug	Dosage	Comments
Labetalol	200-2400 mg/d orally in two to three divided doses. Commonly initiated at 100-200mg twice daily.	Potential bronchoconstrictive effects. Avoid in women with asthma, preexisting myocardial disease, decompensated cardiac function, and heart block and bradycardia.
Nifedipine	30-120 mg/d orally of an extended-release preparation. Commonly initiated at 30-60 mg once daily (extended release).	Do not use sublingual form. Immediate-release formulation should generally be reserved for control of severe, acutely elevated blood pressures in hospitalized patients. Should be avoided in tachycardia.

Common Oral Antihypertensive Agents in Pregnancy

Drug	Dosage	Comments
Methyldopa	500-3000 mg/d orally in two to four divided doses. Commonly initiated at 250 mg twice or three times daily.	Safety data up to 7 years of age in offspring. May not be as effective as other medications, especially in control of severe hypertension. Use limited by side effect profile (sedation, depression, dizziness).
Hydrochlorothiazide	12.5-50 mg daily	Second-line or third-line agent.

Antihypertensive Agents Used for Urgent Blood Pressure Control in Pregnancy

Drug	Dose	Comments	Onset of Action
Labetalol	10-20 mg IV, then 20-80 mg every 10-30 min to a maximum cumulative dosage of 300 mg; or constant infusion 1-3 mg/min IV	Tachycardia is less common with fewer adverse effects. Avoid in women with asthma, preexisting myocardial disease, decompensated cardiac function, and heart block and bradycardia.	1-2 min
Hydralazine	5 mg IV or IM, then 5-10 mg IV every 20-40 min to a maximum cumulative dosage of 20 mg; or constant infusion of 0.5-10 mg/h	Higher or frequent dosage associated with maternal hypotension, headaches, and abnormal fetal heart rate tracings; may be more common than other agents.	10-20 min
Nifedipine (immediate release)	10-20 mg orally, repeat in 20 min if needed; then 10-20 mg every 2-6 h; maximum daily dose is 180 mg	May observe reflex tachycardia and headaches.	5-10 min

h indicates hour; IM, intramuscular; IV, intravenous; and min, minutes.

Diagnostic Criteria for Preeclampsia

Blood pressure	SBP ≥140 mm Hg or DBP ≥90 mm Hg on two occasions at least 4 hours apart after 20 weeks of gestation in a woman with previously normal BP or SBP ≥160 mm Hg or DBP ≥110 mm Hg (severe hypertension can be confirmed within a short interval [minutes] to facilitate timely antihypertensive therapy).
	AND
Proteinuria	≥300 mg per 24-hour urine collection (or this amount extrapolated from a timed collection) or Protein/creatinine ratio ≥0.3 or Dipstick reading of 2+ (used only if other quantitative methods are not available)

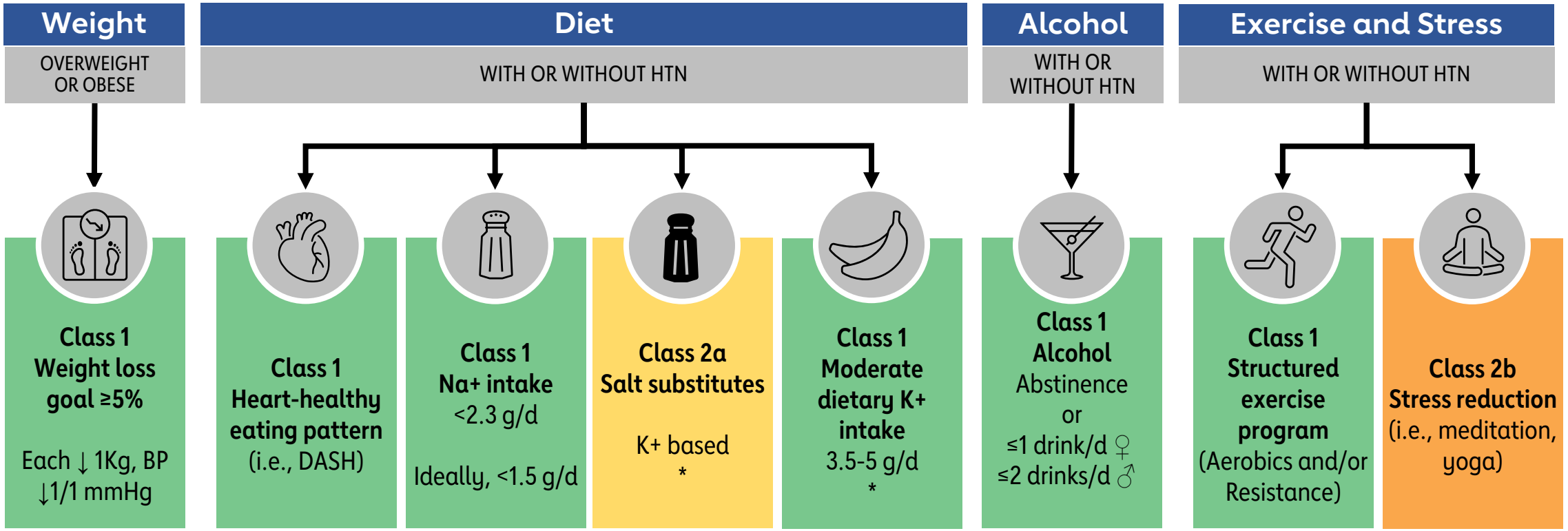
BP indicates blood pressure; DBP, diastolic blood pressure; and SBP, systolic blood pressure.

Diagnostic Criteria for Preeclampsia (cont.)

OR in the absence of proteinuria, new onset hypertension with the new onset of any of the following:
Thrombocytopenia: Platelet count <100 x 10^9/L
Renal insufficiency: Serum creatinine concentrations >1.1 mg/dL or a doubling of serum creatinine concentration in the absence of other renal disease
Impaired liver function: Elevated blood concentration of liver transaminases to twice normal concentration
Pulmonary edema
New-onset headache unresponsive to medication and not accounted for by the alternative diagnoses or visual symptoms

BP indicates blood pressure; DBP, diastolic blood pressure; and SBP, systolic blood pressure.

Blood pressure management:
Lifestyle and psychosocial approaches



***Monitor potassium in those at risk for hyperkalemia**

Abbreviations: BP indicates blook pressure; DASH, Dietary Approaches to Stop Hypertension diet Kg, kilograms; and HTN, hypertension.

Hypertension in Pregnancy: History, Thresholds, and Current Reinforcement

American Heart Association.

For Non-Pregnant Adults

Blood Pressure Categories

BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (top/upper number)	and/or	DIASTOLIC mm Hg (bottom/lower number)
NORMAL	LESS THAN 120	and	LESS THAN 80
ELEVATED	120 – 129	and	LESS THAN 80
STAGE 1 HYPERTENSION (High Blood Pressure)	130 – 139	or	80 – 89
STAGE 2 HYPERTENSION (High Blood Pressure)	140 OR HIGHER	or	90 OR HIGHER
SEVERE HYPERTENSION (If you don't have symptoms*, call your health care professional.)	HIGHER THAN 180	and/or	HIGHER THAN 120
HYPERTENSIVE EMERGENCY (If you have any of these symptoms*, call 911.)	HIGHER THAN 180	and/or	HIGHER THAN 120

*symptoms: chest pain, shortness of breath, back pain, numbness, weakness, change in vision or difficulty speaking

For Pregnant Adults

American Heart Association recommended office blood pressure categories

BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (top/upper number)		DIASTOLIC mm Hg (bottom/lower number)
NON-HYPERTENSIVE	LESS THAN 140	and	LESS THAN 90
HYPERTENSION IN PREGNANCY*	140 OR HIGHER	or	90 OR HIGHER
SEVERE HYPERTENSION* (If you don't have symptoms, call your health care professional immediately)	160 OR HIGHER	or	110 OR HIGHER

*If you have any of these symptoms, call 911: severe headache, change in vision, abdominal pain, chest pain, significant swelling, or shortness of breath

Key Guideline Takeaways for Hypertension & Pregnancy/Postpartum

For pregnant women with chronic hypertension (high blood pressure before pregnancy or diagnosed before 20 weeks of pregnancy):

- New guideline recommends preeclampsia prevention treatment with certain medication (such as aspirin) when systolic blood pressure reaches 140 mm Hg or higher and/or diastolic blood pressure reaches 90 mm Hg or higher.
    - This change reflects growing evidence that tighter blood pressure control for some individuals during pregnancy may help to reduce the risk of serious complications.
- Postpartum care is especially important because high blood pressure can begin or persist after delivery.
- The guideline urges continued blood pressure monitoring and timely treatment during the postpartum period to help prevent complications.
- Patients with a history of pregnancy-associated high blood pressure are encouraged to have their blood pressure measured at least annually.

2025 AHA/ACC/AANP/AAPA/ABC/ACCP/ACPM/AGS/AMA/ASPC/NMA/PCNA/SGIM Guideline for the Prevention, Detection, Evaluation and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines | Hypertension

Final Thoughts

- 2025 AHA/ACC Guidelines emphasize consistent hypertension thresholds across pregnancy and postpartum
- Reinforces early identification, accurate diagnosis, and timely management
- Highlights importance of lifestyle modifications and follow-up care
- Aligns with ACOG and SMFM guidance for continuity and clarity
- Supports equitable, evidence-based care to improve maternal cardiovascular outcomes

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Translating Guidelines into Practice: Postpartum Health

The 4th Trimester
From Birth and 12 weeks

Early Postpartum
Birth–6 weeks

- Early visit (1–3 weeks) if history of HDP or CVD. Facilitate home BP monitoring via telemedicine.
- Consider cardiology or Pregnancy Heart Team referral for individuals with CVD, uncontrolled HTN, or high CVD risk.
- Facilitate postpartum follow-up with OB.
- Glucose screening if history of GDM
- Offer contraceptive planning for those with HTN or CVD.
- Discuss feeding plan. Refer to clinic or community resources for those wishing to breastfeed. Add lactation safe medications as needed
- Education on recognition of signs and symptoms of CVD and postpartum HTN.
- Provide nutritional and exercise counseling.

Mid–late Postpartum
6 weeks–1 year

- At 6-week OB visit, screen and treat for postpartum depression and reinforce the importance of Life's Essential 8
- Close BP monitoring (consider HBPM) with medication adjustment as needed
- Transition of care to longitudinal clinician in primary care, OB, family medicine or preventive cardiology with focus on care of individuals with history of APOs
- Assessment of Life's Essential 8: BMI, BP, Lipids (>3 months), Glucose, Diet, Sleep hygiene, Physical Activity, Nicotine Exposure.
- Imaging of cardiac structure and function based on symptoms and underlying diagnosis
- Education on association of APO and long-term CV risk

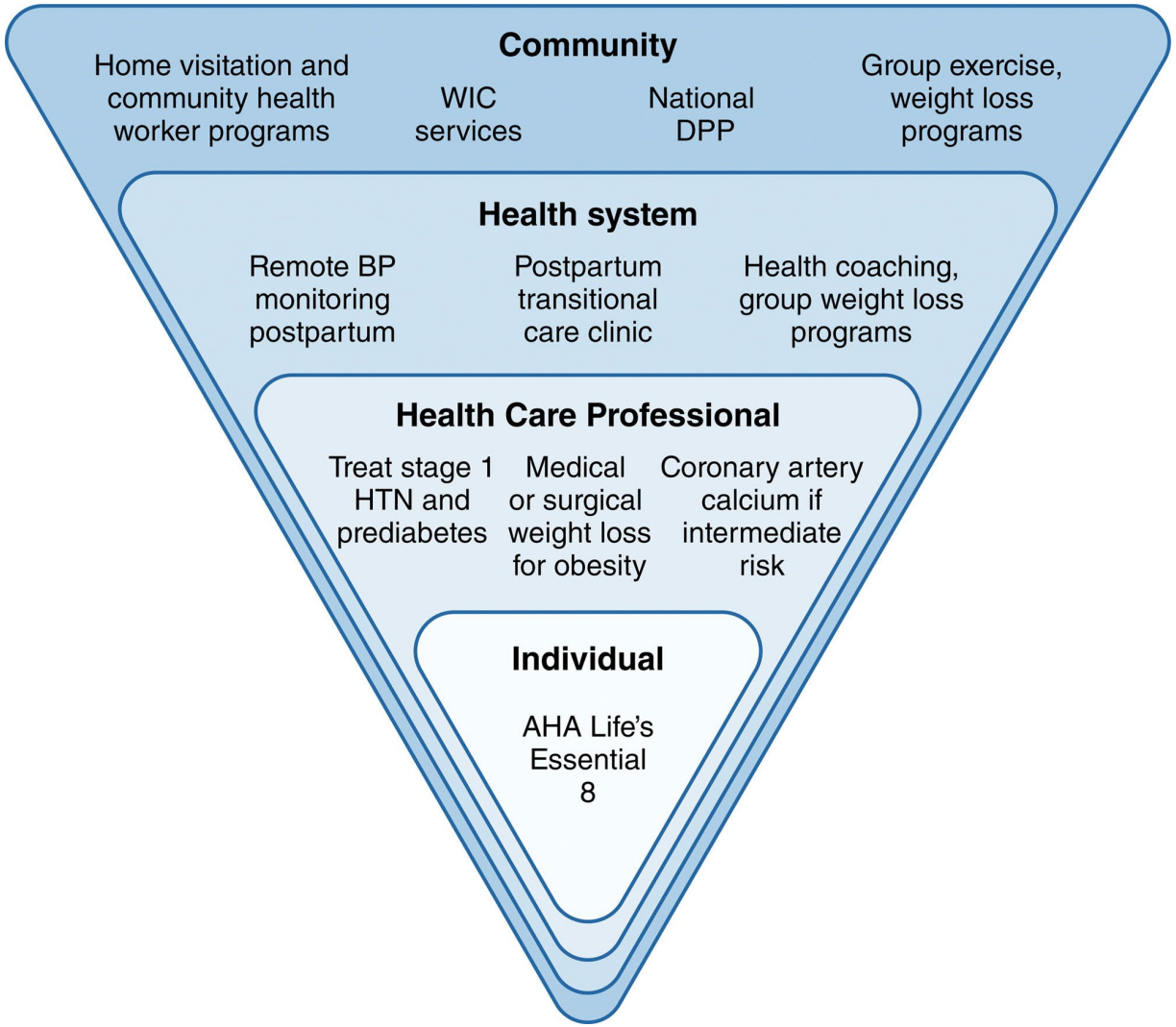
Long-term and interpregnancy
Beyond 1 year

- Annual health assessment with primary care or preventive cardiology.
- Reinforce Life's Essential 8
- CVD risk assessment with lifetime or 10-year risk calculators. Assess sex-specific risk factors and risk enhancers. Consider CAC testing if intermediate ASCVD risk.
- Statins for dyslipidemia, T2D, high ASCVD risk or established ASCVD. Consider statin if multiple risk enhancers (eg, FH of premature ASCVD and LDL-C >160 mg/dL).
- Metformin for T2D, medications for HTN.
- Weight management for individuals with overweight or obesity. Bariatrics referral for high-risk individuals.
- Contraception counseling for those with high-risk CVD.

Strategies and timeline to reduce cardiovascular risk after adverse pregnancy outcome

Opportunities in the Postpartum Period to Reduce Cardiovascular Disease Risk After Adverse Pregnancy Outcomes: A Scientific Statement From the American Heart Association - https://doi.org/10.1161/CIR.0000000000001212

Interventions to reduce CVD risk according to an ecological framework



Opportunities in the Postpartum Period to Reduce Cardiovascular Disease Risk After Adverse Pregnancy Outcomes: A Scientific Statement From the American Heart Association - https://doi.org/10.1161/CIR.0000000000001212

Postpartum Clinical Practice

* Hypertension can begin or continue during this time
* Increase risk of developing hypertension and CVD later in life

* Careful surveillance
* Physiological adjustment
* Timely treatment

* Educate patient & support person on S/S
* Debrief about birth
* Screen for mental health conditions

Discharge education: medications, exercise, nutrition, contraception, and stress management

Instructions on F/U Care

* When to return for a BP check
* When to call a provider

Strongly encourage attendance at postpartum visit

Countouris, M. et al., 2025; Lewey, J. et al., 2024

Planning for Transitional Care

- Address potential barriers to care with patient
- Reinforce life changes and risk factors
- Home blood pressure monitoring and telehealth
- Support individual patient needs regarding hypertension control
- Provide information about postpartum check up (4-6 weeks)
- Review nutrition, exercise, stress management, & medication management if appropriate
- Connect patient with a primary care provider or cardiologist for continued follow-up

Follow-Up and Reducing Risk

- Encourage an annual health assessment with primary care provider
- Stress the importance of lifestyle changes:
  - maintaining or achieving a healthy weight
  - following a heart-healthy diet
  - adopting a moderate physical activity program
  - managing stress
  - reducing or eliminating alcohol and/or tobacco intake
- Share information with family and friends
- Consider preconceptual counseling prior to next pregnancy

Alliance for Innovation on Maternal Health, 2022; Lewey, J. et al., 2024

Taking a BP Correctly

Office Blood Pressure Measurement

1. The patient should avoid caffeine, exercise, and smoking for at least 30 minutes before measurement. Ensure the patient has emptied their bladder.
2. Use a blood pressure device that has been validated for accuracy (validatebp.org).
3. Use the correct cuff size on a bare arm.
4. The patient's arm should be supported at heart level.
5. Have the patient relax, sitting in a chair (feet on floor, legs uncrossed, and back supported) for more than 5 minutes of rest.
6. Neither the patient nor the clinician should talk during the rest period or during the measurement. The patient should not be using their phone.
7. Blood pressure measurement should be taken in a temperature-controlled room.
8. Take 2 or more blood pressure measurements at least 1 minute apart. Average the readings, and provide the patient their blood pressure readings both verbally and in writing.

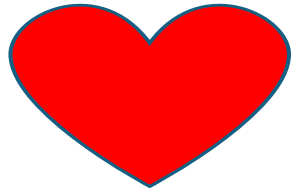
Retrieved from https://www.ahajournals.org/doi/10.1161/CIR.0000000000001356

BP indicates blood pressure; DBP, diastolic blood pressure; and SBP, systolic blood pressure. Sourced from Pickering et al.20 Adapted with permission from Whelton et al.21 Copyright 2018 American College of Cardiology Foundation and American Heart Association, Inc. Adapted from Mancia et al22 by permission of Oxford University Press. Copyright 2013 Oxford University Press. Adapted with permission from Weir et al23 from Annals of Internal Medicine. Copyright 2014 American College of Physicians. All Rights Reserved. Adapted with permission of American College of Physicians. Created by Sceyence Studios.

Community & Society

Collaborate with community leaders to implement BP screenings of all adults in their communities

Share updated information with healthcare personnel and case workers who interact with postpartum women



Showcase cardiovascular health at community events focusing on different populations

Academia

- Teach best practice for taking a BP
- Integrate the latest guidelines into nursing education at all levels (prelicensure to doctorate)
- Engage in simulation exercises and debriefing
- Reinforce the need for clinicians to be up-to-date on current guidelines and EBP
- Have students share guidelines with nursing staff
- During interactions with community members, present the latest information at the level of the learner (i.e. health fairs)

Additional Resources

- Agency for Healthcare Research and Quality (AHRQ) (2023). Toolkits to reduce hypertension in pregnancy and obstetrical hemorrhage. ihttps://www.ahrq.gov/patient-safety/settings/labor-delivery/perinatal-care-2/index.html
- Alliance for Innovations in Maternal Health (AIM) Patient Safety Bundle Severe Hypertension in Pregnancy (2022). https://saferbirth.org/psbs/severe-hypertension-in-pregnancy/
- Countouris, M. et al. (2025). Hypertension in pregnancy and postpartum: Current standards and opportunities to improve care. *Circulation, 151*(7), 490-507.
- Lewey, J. et al. (2024). Opportunities in the postpartum period to reduce cardiovascular disease risk after adverse pregnancy outcomes: A scientific statement from the American Health Association. *Circulation, 149*(7), e330-346.

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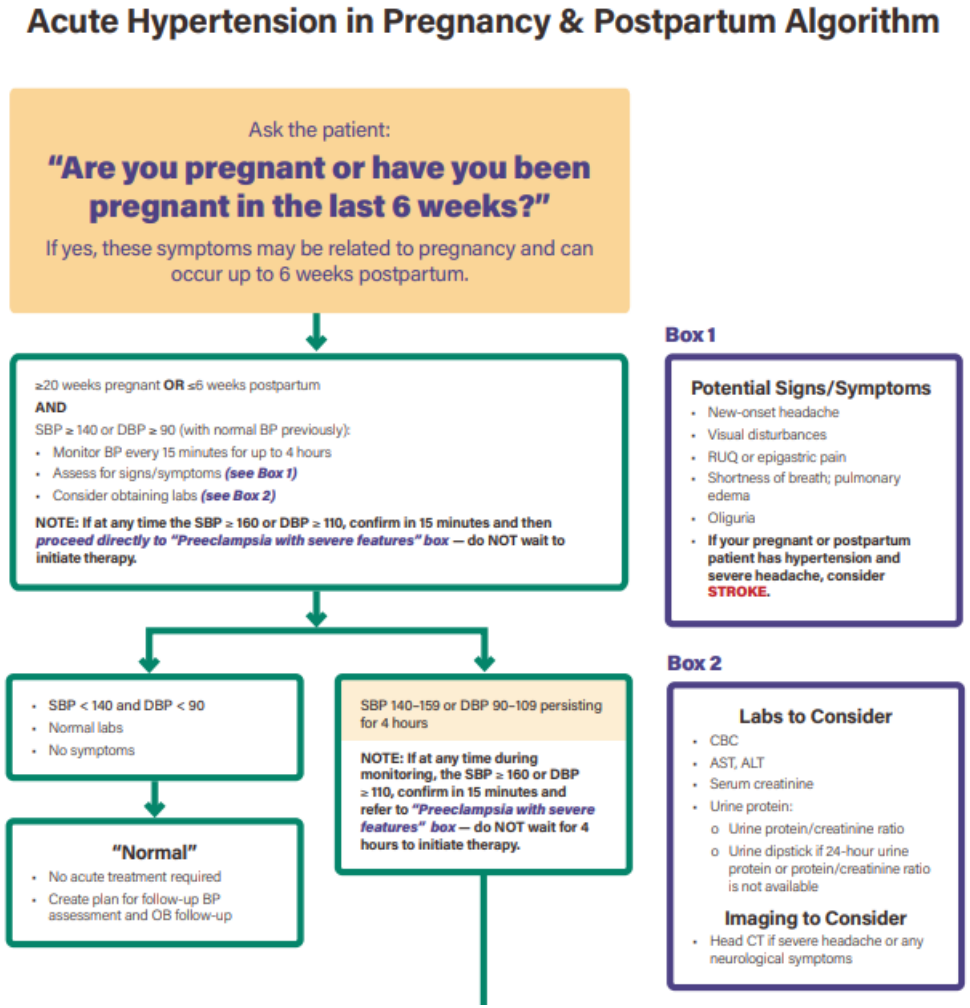
Pregnancy and Postpartum Clinical Workflows in Hypertension

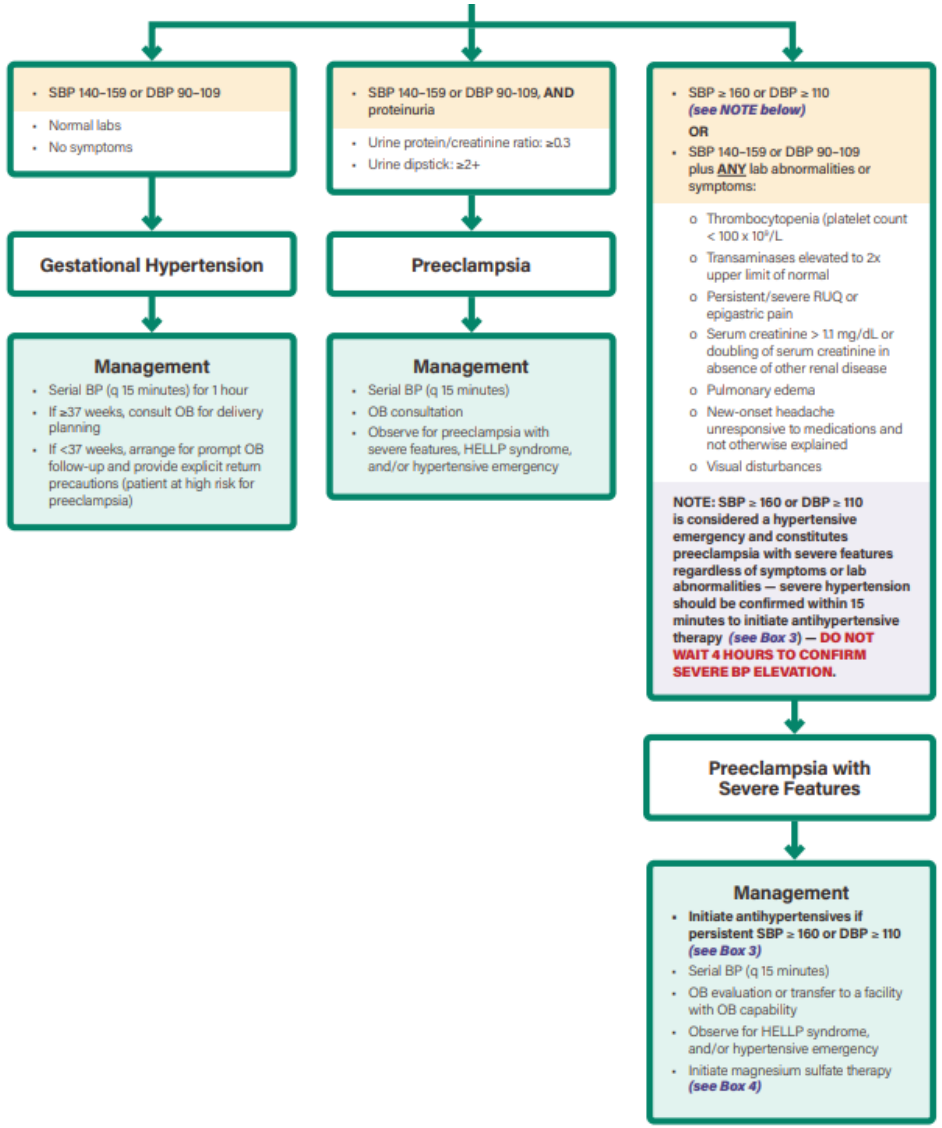
American Heart Association.

Integrating Guidelines into Clinical Workflows

- Utilize evidence-based algorithms as your guide
  - American College of Obstetricians and Gynecologists: *Acute Hypertension in Pregnancy and Postpartum Algorithm*
    - Updated 10/2025



Integrating Guidelines into Clinical Workflows



Box 3

Treatment Recommendations for Sustained Systolic BP ≥ 160 mm Hg OR Diastolic BP ≥ 110 mm Hg*

*Antihypertensive treatment and magnesium sulfate should be administered simultaneously. If concurrent administration is not possible, antihypertensive treatment should be first priority.

Management Considerations — Choose any of the three agents as primary antihypertensive but consider the following:
- If no IV access initially, choose nifedipine.
- If the patient has a history of asthma **OR** is bradycardic, choose hydralazine or nifedipine as the initial agent.

Labetalol IV as Primary Antihypertensive	Hydralazine IV as Primary Antihypertensive	Nifedipine PO as Primary Antihypertensive
Initial dose: 20 mg labetalol IV over 2 minutes	Initial dose: 5–10 mg hydralazine IV over 2 minutes	Initial dose: nifedipine 10 mg PO immediate release (IR)
Repeat BP in 10 minutes	Repeat BP in 20 minutes	Repeat BP in 20 minutes
SBP ≥ 160 or DBP ≥ 110 Give 40 mg labetalol IV over 2 minutes	SBP ≥ 160 or DBP ≥ 110 Give hydralazine 10 mg IV over 2 minutes	SBP ≥ 160 or DBP ≥ 110 Give nifedipine 20 mg PO (IR)
Repeat BP in 10 minutes	Repeat BP in 20 minutes	Repeat BP in 20 minutes
SBP ≥ 160 or DBP ≥ 110 Give 80 mg labetalol IV over 2 minutes	SBP ≥ 160 or DBP ≥ 110 **Convert to labetalol** Give labetalol 20 mg IV over 2 minutes ***Obtain emergent consultation*** *from maternal-fetal medicine, if available, or critical care*	SBP ≥ 160 or DBP ≥ 110 Give nifedipine 20 mg PO (IR)
Repeat BP in 10 minutes	Repeat BP in 10 minutes	Repeat BP in 20 minutes
SBP ≥ 160 or DBP ≥ 110 **Convert to hydralazine** Give hydralazine 10 mg IV over 2 minutes ***Obtain emergent consultation*** *from maternal-fetal medicine, if available, or critical care*	SBP ≥ 160 or DBP ≥ 110 While awaiting additional support, give labetalol 40 mg IV over 2 minutes	SBP ≥ 160 or DBP ≥ 110 **Convert to labetalol** Give labetalol 20 mg IV over 2 minutes ***Obtain emergent consultation*** *from maternal-fetal medicine, if available, or critical care*
Repeat BP in 20 minutes	Repeat BP in 10 minutes	Repeat BP in 10 minutes
SBP ≥ 160 or DBP ≥ 110 While awaiting additional support, give hydralazine 10 mg IV over 2 minutes	SBP ≥ 160 or DBP ≥ 110 While awaiting additional support, give labetalol 80 mg IV over 2 minutes	SBP ≥ 160 or DBP ≥ 110 While awaiting additional support, give labetalol 40 mg IV over 2 minutes
		Repeat BP in 10 minutes
		SBP ≥ 160 or DBP ≥ 110 While awaiting additional support, give labetalol 80 mg IV over 2 minutes

Target BP: 130–150/80–100 mm Hg

Once BP threshold is achieved, stop antihypertensives and monitor BP:
- Q10 minutes for 1 hour then → Q15 minutes for 1 hour then → Q30 minutes for 1 hour then → Q1 hour for 4 hours
- If at any point BP ≥ 160/110, readminister antihypertensives.

Adapted from Druzin ML, Shields LE, Peterson NL, Sakowski C, Cape V, Morton CH. Improving Health Care Response to Hypertensive Disorders of Pregnancy, a California Maternal Quality Care Collaborative Quality Improvement Toolkit, 2021.

Pregnant and Postpartum Patients in the Emergency Room, Urgent Care, EMS, & Clinics

- Have the Acute Hypertension in Pregnancy & Postpartum Algorithm readily available on your unit. Consider creating an order set.
- 2025 AHA/ACC Guidelines, including pregnancy and postpartum thresholds, are a great start to assist our non-obstetric providers in recognizing hypertensive crisis in the perinatal patient.
- Ask anyone with a uterus if they could be pregnant, are pregnant, or have been pregnant in the last year.
- Integrate physical assessment tailored to identify if the patient is showing signs of preeclampsia: DTR, Clonus, Headache, Visual disturbances, etc.
- Simulation to practice the identification and treatment of these low-frequency but high-risk patients.

Questions?

heart.org/maternalhealth

American Heart Association.

Thank you!

heart.org/maternalhealth

American Heart Association.