

Gestational Hypertension

High blood pressure that starts after 20 weeks of pregnancy without protein spilling into the urine.

THE ONE-LINE TRUTH

Blood pressure 140/90 or higher after 20 weeks of pregnancy with no protein in the urine and no organ damage.

The chain — how it unfolds

1. Spiral arteries in the uterus fail to remodel fully between 8 and 18 weeks—they stay narrow and muscular instead of widening into floppy, high-flow pipes. — why: Trophoblast invasion (the process where placenta cells burrow into vessel walls) stops early or stays shallow, so the arteries never lose their muscle layer and never open wide enough for high-volume flow.
2. Blood flow to the placenta drops, and the placenta becomes blood-starved (ischemic) (starved for oxygen). — why: Narrow spiral arteries can't deliver the volume of blood the growing baby needs, so oxygen levels in placental tissue fall.
3. The blood-starved (ischemic) placenta releases inflammatory cytokines (alarm proteins like TNF- α and IL-6), extra sFlt-1 (a protein that blocks vessel-growth signals), and clotting factors into mom's bloodstream. — why: The placenta is signaling distress and trying to recruit more blood flow, but these signals damage the endothelium (vessel lining) all over the body.
4. The endothelium everywhere—not just in the uterus—stops releasing enough nitric oxide (the gas that relaxes vessels) and may release extra endothelin-1 (a peptide that squeezes vessels tight). — why: The inflammatory signals and low PlGF (placental growth factor) injure the endothelium, so it loses its ability to keep vessels open.
5. Systemic vascular resistance (how hard it is to push blood through all the body's vessels) rises, and blood pressure climbs to $\geq 140/90$ after 20 weeks. — why: The heart has to generate more pressure to force blood through stiff, narrow vessels and maintain flow to the placenta and other organs.
6. The kidneys' glomeruli (the tiny filters) are stressed but still intact, so no protein leaks into the urine (urine protein < 300 mg/24 hours), and creatinine stays normal. — why: The endothelial damage hasn't progressed far enough to crack the glomerular filter or kill kidney cells—yet.

7. Platelets, liver enzymes, and neurologic exam remain normal—no headache, visual changes, or right upper quadrant pain. — why: The endothelial injury and inflammatory cascade haven't reached the threshold to trigger consumptive impaired blood clotting (coagulopathy), liver capsule swelling, or cerebral swelling (edema)—this is the key difference from preeclampsia with severe features.
8. The condition can stay stable (chronic gestational high blood pressure (hypertension)) or progress: 15–25% will develop proteinuria and become preeclampsia, and some babies will show fetal growth restriction if placental blood flow stays low. — why: The underlying spiral-artery and endothelial problem may worsen over time (more sFlt-1, more inflammation, more injury) or plateau if the placenta adapts and the baby's oxygen needs stay met.

Spot it — what you see, and why

- Blood pressure 140/90 mmHg or higher on two separate readings at least 4 hours apart after 20 weeks of pregnancy: The placenta (the organ that feeds the baby) releases signals that make the mother's blood vessels squeeze tighter than normal, pushing blood pressure up. We don't fully know why this happens in some pregnancies, but the body treats the placenta like a foreign visitor and the blood vessels overreact.
- No protein in the urine (proteinuria is absent): This is what separates gestational high blood pressure (hypertension) from preeclampsia. The kidneys are not leaking protein because the filter units (glomeruli) are not damaged yet — only the blood pressure is high. If protein starts appearing, the diagnosis changes to preeclampsia.
- Headache (usually in the front or back of the head): High blood pressure stretches the walls of blood vessels in the brain, irritating pain sensors. The brain itself has no pain receptors, but the vessels around it do, so when they are stretched or squeezed, you feel a throbbing or steady ache.
- Vision changes (blurry vision, seeing spots or flashing lights, or temporary vision loss): High blood pressure can make the blood vessels in the retina (the light-sensing layer at the back of the eye) swell or leak fluid. It can also cause spasm (sudden tight squeezing) of these vessels, which interrupts the picture your eye sends to your brain.
- Swelling (edema) in the face, hands, or feet: High blood pressure pushes extra fluid out of blood vessels into the surrounding tissue, like water leaking from a hose under too much pressure. This shows up as puffiness, especially in the hands, face, and ankles. Some swelling is normal in pregnancy, but sudden or severe swelling is a warning sign.
- Upper belly pain (especially under the ribs on the right side): The liver sits under the right ribs and can swell when blood pressure is very high, stretching its capsule (the thin cover around it) and causing a sharp or aching pain. This may mean the condition is starting to affect organs beyond just blood pressure.

Red flags — act now

- Blood pressure 160/110 mmHg or higher (severe high blood pressure (hypertension)) — the mother or baby can be hurt quickly
- New severe headache that does not go away with rest or medicine
- Vision changes: blurry sight, flashing lights, spots, or losing vision for a few seconds
- Pain under the ribs on the right side or in the upper belly
- Signs the baby is in trouble: fewer kicks than usual, or the baby is not growing as expected on ultrasound

Treat it — in this order

1. Measure blood pressure twice, at least 4 hours apart, at rest; confirm $\geq 140/90$ mmHg after 20 weeks; check urine for protein with dipstick or 24-hour collection → Establishes the diagnosis of gestational high blood pressure (hypertension) by confirming persistent elevated pressure without protein in urine (which would mean preeclampsia). Tells you which problem you are dealing with and how to manage it.
2. Start low-dose aspirin 81 mg daily, ideally between 12–28 weeks (preferably before 16 weeks), if the patient has risk factors for preeclampsia (history of preeclampsia, chronic high blood pressure (hypertension), diabetes, kidney disease, autoimmune disease, multiple gestation) → Reduces inflammation in blood vessel linings and improves how the placenta's arteries open and relax, cutting the risk that gestational high blood pressure (hypertension) worsens into preeclampsia by about 15–20%.
3. Start antihypertensive medication (labetalol, nifedipine extended-release, or methyldopa) if blood pressure stays $\geq 140/90$ mmHg; AVOID ACE inhibitors, ARBs, atenolol, and diuretics → Relaxes blood vessel walls or slows the heart to lower pressure safely without harming the baby. Protects mother from stroke and heart strain. Target blood pressure is 120–160/80–105 mmHg.
4. If blood pressure reaches $\geq 160/110$ mmHg (hypertensive emergency), give IV labetalol (20 mg initial bolus) or IV hydralazine (5–10 mg) within 30–60 minutes → Rapidly lowers dangerously high pressure to prevent stroke, seizure (eclampsia), heart failure, or placental separation (abruption) in the mother and sudden loss of oxygen to the baby.
5. Monitor weekly or twice-weekly for signs of preeclampsia: check blood pressure, urine protein, symptoms (headache, vision changes, upper belly pain), and labs (CBC, creatinine, liver enzymes); schedule fetal ultrasound and non-stress tests → Catches progression to preeclampsia early, when intervention (medication adjustment, closer monitoring, or delivery) can prevent seizures, organ failure, or fetal death.

Your top priorities at the bedside

1. Measure blood pressure with the patient sitting after 5 minutes of rest, using the correct cuff size on the upper arm at heart level, and repeat in 4 hours to confirm 140/90 or higher — why: Gestational high blood pressure (hypertension) diagnosis requires two high readings; wrong cuff size or position gives false readings, and stress or movement raises pressure temporarily, so rest and correct technique prevent overtreatment.
2. Check a clean-catch urine sample with a dipstick for protein, and send a protein-to-creatinine ratio lab if dipstick shows 1+ or more protein — why: Protein in urine means the condition has progressed to preeclampsia with kidney damage (the kidneys leak protein when blood vessels are injured), changing treatment to closer monitoring and possible early delivery.
3. If blood pressure reaches 160/110 or higher, notify the provider immediately and prepare IV labetalol or IV hydralazine to give within one hour — why: Severe high blood pressure (hypertension) (blood pressure 160/110 or higher) can cause stroke (brain bleeding) in the mother within hours; rapid treatment within 60 minutes protects the brain from rupturing blood vessels.