

## Hypertension in Pregnancy

\*Sarvamangala S.

### INTRODUCTION

High blood pressure may not cause noticeable symptoms, so you must attend all your prenatal appointments so your pregnancy care provider can take your blood pressure. High blood pressure during pregnancy can lead to complications. Your provider will monitor you and the fetus more closely and help you manage your blood pressure for the remainder of your pregnancy. (<https://my.clevelandclinic.org/health/diseases/4497-gestational-hypertension>)

Gestational hypertension is blood pressure greater than or equal to 140/90 that begins during the latter half of pregnancy (typically after 20 weeks). During pregnancy, high blood pressure can affect your body in different ways than it normally would. If high blood pressure goes unmanaged, both you and the fetus are at risk for complications.

Hypertensive disorders of pregnancy, including chronic hypertension, with or without superimposed pre-eclampsia/eclampsia, gestational hypertension, HELLP syndrome, and preeclampsia with or without severe features or eclampsia present a significant risk of morbidity to both mother and fetus. Although appropriate prenatal care with close observation to detect signs of pre-eclampsia and prompt delivery to reduce or avoid adverse effects have produced reduced morbidity and mortality, they still exist. While hypertension itself presents concerns during pregnancy, adverse effects from progression to pre-eclampsia/eclampsia present the primary concern. (Fisher SC et al 2018)

### TYPES OF BLOOD PRESSURE DURING PREGNANCY

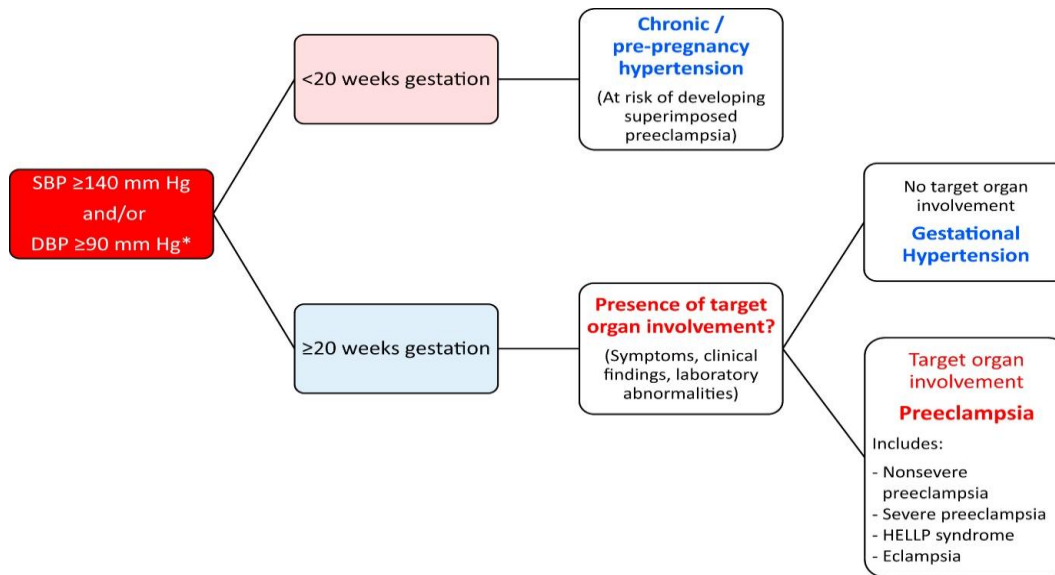
- **Chronic hypertension.** In chronic hypertension, high blood pressure develops either before pregnancy or during the first 20 weeks of pregnancy. Because high blood pressure usually doesn't have symptoms, it might be hard to know exactly when it began.
- **Chronic hypertension with superimposed preeclampsia:** Superimposed preeclampsia complicates about 20% of pregnancies in women with chronic hypertension and is associated with increased maternal and perinatal morbidity compared with preeclampsia alone. Distinguishing superimposed preeclampsia from chronic hypertension can be challenging because, in chronic hypertension, the traditional criteria for the diagnosis of preeclampsia, hypertension, and significant proteinuria can often predate the pregnancy. Furthermore, the prevalence of superimposed preeclampsia is unlikely to be uniformly distributed across this high-risk group but is related to the severity of preexisting endothelial dysfunction.

---

### Hypertension in Pregnancy

*Sarvamangala S.*

- Gestational hypertension:** Gestational hypertension is high blood pressure in pregnancy. It occurs in about 3 in 50 pregnancies. This condition is different from chronic hypertension. Chronic hypertension happens when a woman has high blood pressure before she gets pregnant. It's also different from preeclampsia and eclampsia. These are other blood pressure problems in pregnancy. Gestational hypertension often starts in the second half of pregnancy. It normally goes away after your baby is born. (<https://cedars-sinai.org/health-library/diseases-and-conditions/g/gestational-hypertension.html>)
- Preeclampsia:** Preeclampsia is a complication of pregnancy. With preeclampsia, you might have high blood pressure, high levels of protein in urine that indicate kidney damage (proteinuria), or other signs of organ damage. Preeclampsia usually begins after 20 weeks of pregnancy in women whose blood pressure had previously been in the standard range. Left untreated, preeclampsia can lead to serious — even fatal — complications for both the mother and baby. (<https://www.mayoclinic.org/diseases-conditions/preeclampsia/symptoms-causes/syc-20355745>)



**CAUSES OF HYPERTENSION DURING PREGNANCY**

- being overweight or obese
- not getting enough physical activity
- smoking

---

**Hypertension in Pregnancy**

*Sarvamangala S.*

- drinking alcohol
- first-time pregnancy
- a family history of pregnancy-related hypertension
- carrying more than one child
- age (over 35)
- assistive reproductive technology (such as in vitro fertilization, or IVF)
- having diabetes or certain autoimmune diseases

### **EPIDEMIOLOGY**

The incidence of hypertensive disorders of pregnancy increased from 16.30 million to 18.08 million globally, with a total increase of 10.92 % from 1990 to 2019. The age-standardized incidence rate decreased, with an estimated annual percent change of -0.68 (95 % confidence interval [CI] -0.49 to -0.86). The number of deaths due to hypertensive disorders of pregnancy was approximately 27.83 thousand in 2019, representing a 30.05 % decrease from 1990. Based on the incidence and prevalence, the number of deaths and years lived with disability were highest in the group aged 25–29 years, followed by the groups aged 30–34 and 20–24 years, while the lowest estimated incidence rate was observed in the group aged 25–29 years and higher incidence rates were observed in the youngest and oldest groups. Positive associations between incidence rates and the sociodemographic index and human development index were found for all countries and regions in 2019. Age-standardized incidence rates were higher in countries/regions with lower sociodemographic indices and human development indices.

### **RISK FACTORS OF HYPERTENSION DURING PREGNANCY**

Risk factors and causes The causes of HPD are largely unknown, except secondary chronic hypertension, which is commonly caused by chronic renal disease. The cause of pre-eclampsia is subject to debate. Most theories propose that the condition is initiated by an abnormal inflammatory/immune response; however, the exact cause remains unclear (**Eiland et al. 2012**).

Pre-existing hypertension is a strong risk factor for the development of pre-eclampsia, with numerous other susceptibility factors also implicated in the development of the condition The most significant of these are:

- antiphospholipid syndrome
- previous history of pre-eclampsia
- pre-gestational diabetes and gestational diabetes
- null parity

---

## **Hypertension in Pregnancy**

*Sarvamangala S.*

- multi parity
  - family history of pre-eclampsia
  - obesity
  - systolic blood pressure >130 mmHg before 20 weeks
  - age ≥40 years
  - overweight
- diastolic blood pressure >80 mmHg before 20 weeks. The risk of developing pre-eclampsia appears to be increased if a combination of these risk factors is present. Studies suggest that ethnicity may also be a risk factor for developing HPDs (**Chappell et al. 2008; Jacobs et al. 2003**); however, the link is not well understood (**Eiland et al. 2012**).

**\*Principal**  
**Shree Sapthagiri Institute of Nursing Sciences**  
**Hosapete, Bellari, Karnataka**

#### REFERENCES

1. <https://my.clevelandclinic.org/health/diseases/4497-gestational-hypertension>
2. <https://cedars-sinai.org/health-library/diseases-and-conditions/g/gestational-hypertension.html>
3. Eiland E, Nzerue C & Faulkner M 2012. Preeclampsia 2012. Journal of Pregnancy 2012:586578.
4. Chappell L, Enye S, Seed P, Briley A, Poston L & Shennan A 2008. Adverse perinatal outcomes and risk factors for preeclampsia in women with chronic hypertension: a prospective study. Hypertension 51:1002-9.
5. <https://www.mayoclinic.org/diseases-conditions/preeclampsia/symptoms-causes/syc-20355745>
6. Jacobs D, Vreeburg S, Dekker G, Heard A, Priest K & Chan A 2003. Risk factors for hypertension during pregnancy in South Australia. Australian and New Zealand Journal of Obstetrics and Gynaecology 43:421-8.
7. Fisher SC, Van Zutphen AR, Werler MM, Romitti PA, Cunniff C, Browne ML., National Birth Defects Prevention Study. Maternal antihypertensive medication use and selected birth defects in the National Birth Defects Prevention Study. Birth Defects Res. 2018 Nov 15;110(19):1433-1442.

---

#### Hypertension in Pregnancy

*Sarvamangala S.*