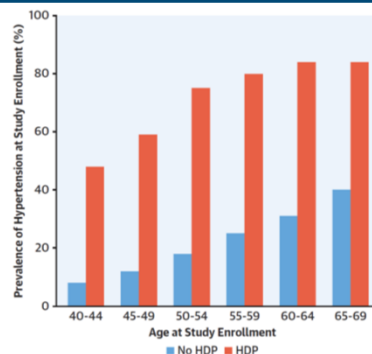


## HYPERTENSIVE DISORDERS OF PREGNANCY AND LONGTERM CV RISK



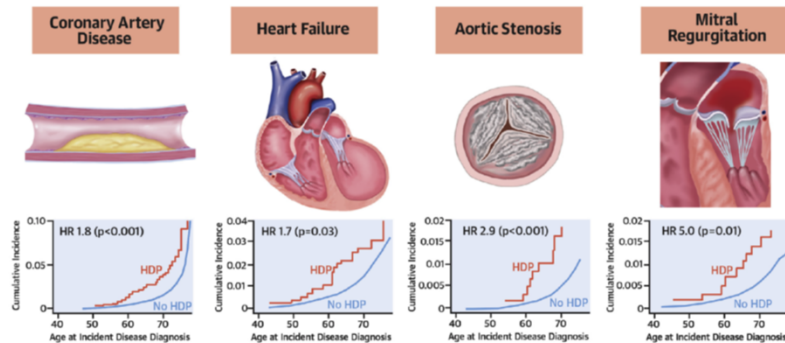
Chronic hypertension accounts for one-half to two-thirds of the excess cardiovascular disease risk in women with prior HDP  
Only about 33% of women with prior HDP are on antihypertensives

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### CENTRAL ILLUSTRATION Hypertensive Disorders of Pregnancy Are Associated With Long-Term Risk of Diverse Cardiovascular Diseases

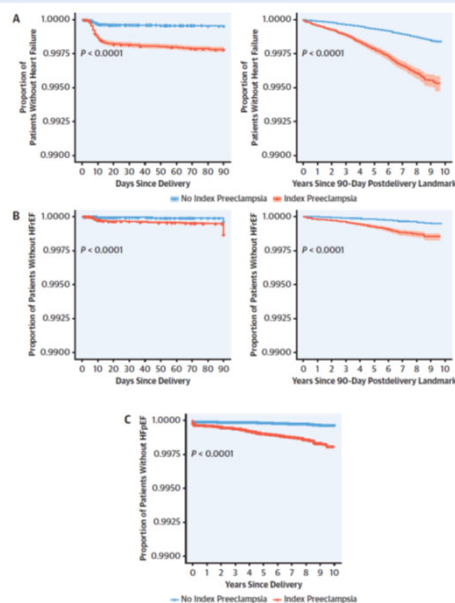


Honigberg, M.C. et al. J Am Coll Cardiol. 2019;74(22):2743-54.

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## PREECLAMPSIA AND HEART FAILURE

### CENTRAL ILLUSTRATION Heart Failure Hospitalizations Following Delivery Complicated by Preeclampsia/Eclampsia



(A) Kaplan-Meier curves for any heart failure hospitalization within the first 90 days and between 90 days and 10 years postpartum. (B) Kaplan-Meier curves for hospitalizations for heart failure with reduced ejection fraction (HFrEF) following delivery within the first 90 days and between 90 days and 10 years postpartum. (C) Kaplan-Meier curve for hospitalizations for heart failure with preserved ejection fraction (HFpEF) following delivery.

**TABLE 2** Risk of Subsequent Hospitalization for Heart Failure With Preserved Ejection Fraction Following Delivery

	Hazard Ratio	Confidence Interval
Preeclampsia or eclampsia	2.09	1.80-2.44
Age 35-39 y vs <35 y	1.78	1.55-2.06
Age ≥40 y vs <35 y	1.59	1.51-1.67
Black	2.89	2.51-3.32
Diabetes mellitus	5.35	5.08-5.64
Gestational diabetes	1.67	1.61-1.74
Cesarean delivery	1.79	1.69-1.89
Chronic hypertension	4.36	3.18-5.98
Preterm delivery	1.51	1.48-1.53
Medicaid insurance	1.41	1.31-1.51
Income Q1 vs Q4 (highest)	1.22	1.07-1.38
Income Q2 vs Q4 (highest)	0.93	0.72-1.19
Income Q3 vs Q4 (highest)	0.97	0.90-1.05
Small metro vs large metro	1.30	1.07-1.58
Micropolitan vs large metro	1.42	1.27-1.59
Nonmetro or micropolitan vs large metro	1.59	1.38-1.84

Model includes all variables listed in table.

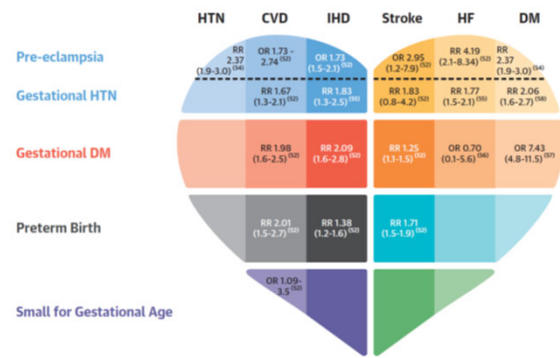
Q1 = lowest income quartile; Q4 = highest income quartile.

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## APO AND FUTURE CV RISK

Years after PE	CVD hospitalization	CVD mortality	All-cause mortality	Hypertension	Dyslipidemia	Metabolic syndrome	Type 2 diabetes mellitus	Ischemic heart disease	Stroke	Heart failure	Dysrhythmia	CKD	ESRD	Peripheral artery disease	Dementia
5-10		++	++	+++		+++		++	+	++	+	+		+	
10-20	+			+++		++		+	+	+/-	+/-	+	+++	+	
>20	++	++	+/-	+	+		+	+	+/-	+	+	+			++

Citations to support level of risk are shown in the Table S1. +/- denotes risk may not be raised. + denotes mildly increased risk (HR<2 in most studies). ++ denotes moderate increased risk (HR>2 in most studies). +++ denotes markedly increased risk (HR>3 in most studies). CKD indicates chronic kidney disease; CVD, cardiovascular disease; ESRD end-stage renal disease; HR, hazard ratio; and PE, preeclampsia.



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Disclosed are the pooled risks of future CVD and CVD risk factor development from systematic reviews of APOs including hypertensive disorders of pregnancy.

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## FOURTH TRIMESTER (DELIVERY-12 WEEKS)

**FIGURE 6** The Fourth Trimester: From Delivery to 12 Weeks Postpartum



Clinicians should ACT during each postpartum visit: Assess, Counsel, and Treat. The fourth trimester includes the first 12 weeks after delivery and serves as an important time period for assessment, counseling, and treatment to reduce the long-term risk of cardiovascular disease. APO = adverse pregnancy outcome; CVD = cardiovascular disease; DM = diabetes mellitus; HF = heart failure; IHD = ischemic heart disease; OR = odds ratio.

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## RISK FACTOR MODIFICATION

CVD risk factor screening in women with pregnancy-induced complications			<p>If no pregnancy related risk: Check BP annually over age 40, every 2 years under 40</p> <p>Check cholesterol in patients &gt; 20 years of age if no risk factors about ever 4-6 years, more frequently with risk factors</p> <p>Screen patients &gt; 40 for DM, if family history, CVD screen more frequently</p>
	Time for initial screening	Time for follow-up screening	
<b>Hypertension</b>	Within 6 to 12 months post-partum	Preferably check blood pressure at each visit or minimally as follows: <ul style="list-style-type: none"> <li>• If hypertension during pregnancy, screen annually</li> <li>• If BP &gt;120-139/80-90, screen annually</li> <li>• If BP &lt;120/80, screen every 2 years</li> </ul>	
<b>Hyperlipidemia</b>	Within 12 weeks post-partum and post-lactation	If hypertension during pregnancy or elevated CVD risk, check lipids and screen annually	
<b>Diabetes</b>	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	
<b>Obesity/BMI</b>	Screen annually	Screen annually	
<b>Tobacco use</b>	Screen at first post-partum visit	Screen at each visit	
<b>Nutrition and physical activity</b>	Assess at first post-partum visit	Assess at each visit depending on risks	

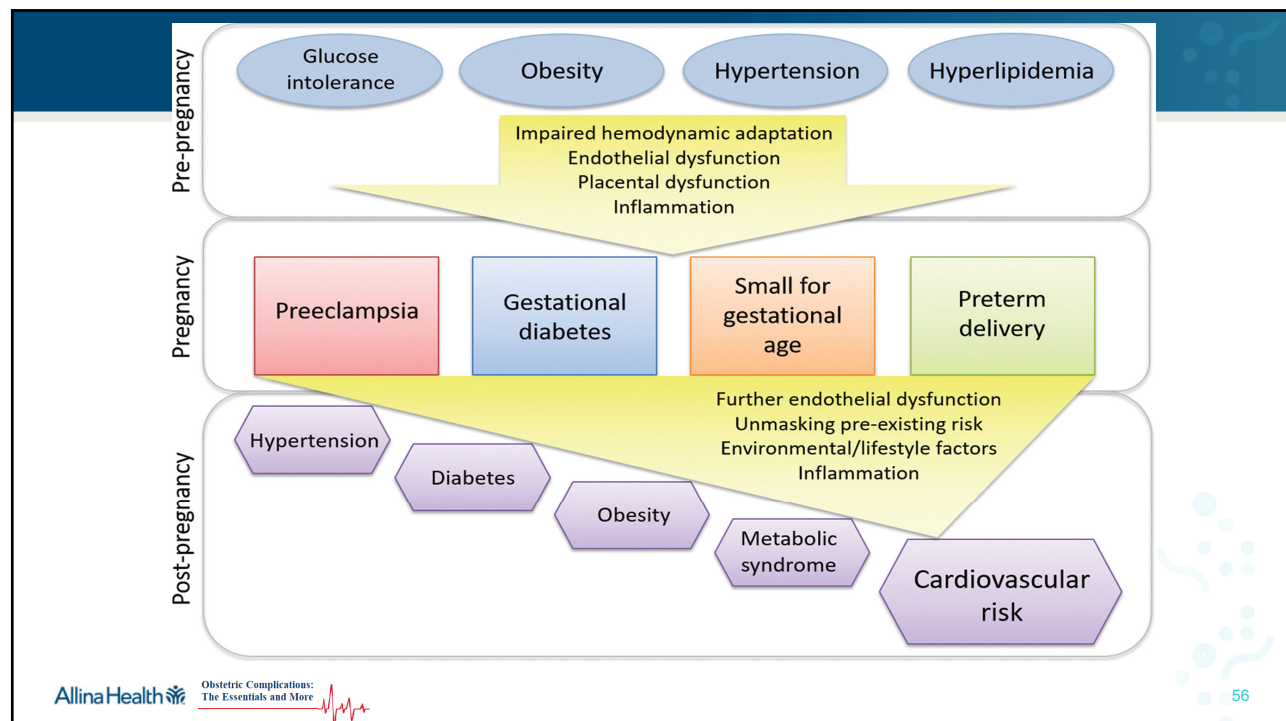
Adapted from Mehta, P. K., Minissian, M., & Merz, C. N. B. (2015, June). Adverse pregnancy outcomes and cardiovascular risk factor management. In *Seminars in perinatology* (Vol. 39, No. 4, pp. 268-275). WB Saunders.

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