

## Abstract

### Connecting the Dots Between Preeclampsia and Subsequent Chronic Kidney Disease

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Preeclampsia is a syndrome characterized by hypertension, proteinuria, and kidney dysfunction which develops during pregnancy. It is a leading cause of maternal and perinatal deaths, affecting between 2-8% worldwide. Although preeclampsia typically resolves shortly after delivery, it can have a significant impact on an affected women's health long term, particularly in relation to a resultant decline in kidney function. To determine if a connection exists between women who have experienced preeclampsia during pregnancy and the development of chronic kidney disease later in life, I conducted a literature review on pregnancy studies conducted on preeclamptic versus non-preeclamptic women, the effects of hypertension on kidneys, the effects of proteinuria on kidneys, and the risk factors associated with chronic kidney disease. I argue that women who experience preeclampsia during pregnancy have an increased risk of developing chronic kidney disease postpartum. During my literature review, I found several significant, decades long studies conducted in Denmark which followed over one million women who experienced at least one pregnancy that lasted a minimum of twenty weeks. These studies concluded that women who had experienced preeclampsia during pregnancy had incidence rates ranging from 3.7 to 15.5 per 100,000 women of chronic kidney disease and eventual kidney failure. The rates vary based on the number of preeclamptic pregnancies a woman experienced, with the higher rates being found in women who had at least 3 affected pregnancies. These numbers may seem small, but they establish preeclampsia as a marker for chronic kidney disease. Additionally, there is overwhelming evidence that hypertension, the hallmark symptom of preeclampsia, is among the leading risk factors for developing chronic kidney disease. The National Institutes of Health estimates that hypertension is the leading cause of kidney dysfunction for 26% of the 37 million individuals with kidney failure in the United States. In addition, while proteinuria is typically a symptom of kidney dysfunction, it also further perpetuates kidney function decline. Women with preeclampsia experience proteinuria which can persist even after the delivery of the fetus, causing physical damage to the filtering units in the kidneys. In sum, this evidence is substantial enough to indicate a strong correlation between women who have experienced preeclampsia during pregnancy being at a higher risk for developing chronic kidney disease later in life. The research shows that women who experience preeclampsia during pregnancy must be educated on the potential health risks, including kidney dysfunction, that can occur later in life. In addition to patient education, the primary care physicians of women who have recently experienced a preeclamptic pregnancy should continue monitoring kidney function through routine bloodwork and urine sampling for a period of at least 12 months following delivery to ensure function returns to and remains normal.