

# 304 History of Preeclampsia

## Definition/Cut-off Value

History of diagnosed preeclampsia.

Presence of condition diagnosed, documented, or reported by a physician or someone working under a physician's orders, or as self reported by applicant/participant/caregiver. See Clarification for more information about self-reporting a diagnosis.

## Participant Category and Priority Level

| Category                | Priority         |
|-------------------------|------------------|
| Pregnant Women          | I                |
| Breastfeeding Women     | I                |
| Non-Breastfeeding Women | III, IV, V or VI |

## Justification

Preeclampsia is defined as pregnancy-induced hypertension (> 140mm Hg systolic or 90mm Hg diastolic) with proteinuria developing usually after the twentieth week of gestation (1, 2). Clinical symptoms of preeclampsia may include: edema, renal failure, and the HELLP (Hemolysis, Elevated Liver enzymes and Low Platelets) syndrome.

Preeclampsia is a leading cause of maternal death and a major contributor to maternal and perinatal morbidity (3). Women who have had preeclampsia in a prior pregnancy have an increased risk of recurrence (about 20% overall) (4). The risk is greater in women who have had preeclampsia occurring early in pregnancy or who have had preeclampsia in more than one pregnancy. Additionally, maternal pre-pregnancy obesity with BMI  $\geq$  30 is the most prevalent risk factor for preeclampsia (4).

Risk factors for preeclampsia include (2, 4, 5):

- Pre-pregnancy obesity BMI  $\geq$  30
- Preeclampsia in a prior pregnancy
- Nulliparity (no prior delivery)
- Maternal age > 35 years
- Endocrine disorders (e.g., diabetes); autoimmune disorders (e.g., lupus); renal disorders
- Multi-fetal gestation
- Genetics
- Black race

There are few established nutrient recommendations for the prevention of preeclampsia. However, vitamin D may be important because it influences vascular structure and function, and regulates blood

pressure (4). Also, calcium may prevent preeclampsia among women with very low baseline calcium intake (4).

There is no treatment for preeclampsia. The condition resolves itself only when the pregnancy terminates or a placenta is delivered (4). Early prenatal care, therefore, is vital to the prevention of the onset of the disease.

WIC is well poised to provide crucial strategies during the critical inter-conceptual period to help reduce the risk of recurrence of preeclampsia in a subsequent pregnancy.

WIC nutrition education encourages practices shown by research to have a protective effect against developing preeclampsia (2, 4, 5). These include:

- Gaining recommended weight based on pre-pregnancy BMI, in order to help return to a healthy post-partum weight
- Scheduling early prenatal care visits
- Consuming a diet adequate in calcium and vitamin D
- Taking prenatal vitamins
- Engaging in regular physical activity
- Discontinuing smoking and alcohol consumption

#### **Post-Partum Women**

Women who have had preeclampsia should be advised that they are at risk for recurrence of the disease and development of cardiovascular disease (CVD) later in life (4, 7). WIC nutrition education can emphasize measures that support the prevention of preeclampsia in a future pregnancy such as reaching or maintaining a healthy BMI and lifestyle between pregnancies, consuming a nutritionally adequate diet consistent with the Dietary Guidelines for Americans, and engaging in regular physical activity.

#### **Pregnant Women**

The WIC Program provides supplemental foods rich in nutrients, especially calcium and Vitamin D, which research has shown to have a protective effect on preeclampsia (4). During nutrition education, WIC can encourage actions or behaviors that also have been shown to have a protective effect against preeclampsia: early prenatal care, taking a prenatal vitamin, and engaging in physical activity (6). WIC can also discourage smoking and alcohol consumption (2) and counsel pregnant women to gain recommended weight based on pre-pregnancy BMI (8) and to return to pre-pregnancy weight or a healthy BMI of < 25 for the benefit of future pregnancies.

#### **References**

1. American Dietetic Association. Nutrition Care Manual. Hypertension; 2006. <http://www.nutritioncaremanual.org>. Accessed May 2009.
2. National Heart, Lung, and Blood Institute, 2000, Working group report on high blood pressure in pregnancy; 2000 Jul. NIH Publication No. 00-3029.
3. Irani RA, Xia Y. The functional role of the renin-angiotensin system in pregnancy and preeclampsia. Placenta. 2008; 763-771.

4. Roberts JM, Bodnar LM. Report on the WIC nutrition risk criterion for hypertension in pregnancy. July 2007. Unpublished.
5. National Heart Lung and Blood Institute: [www.nhlbi.gov](http://www.nhlbi.gov). Accessed May 2009.
6. U.S. Department of Health and Human Services. 2008 Physical activity guidelines for Americans. [www.health.gov/paguidelines](http://www.health.gov/paguidelines). p. 41-42. Accessed May 2009.
7. Gaugler-Senden, I, Berends A, deGroot C, Steegers E.: Severe, very early onset preeclampsia: subsequent pregnancies and future cardiovascular health. *European Journal of Obstetrics and Gynecology and Reproductive Biology*. 2008:171-177.
8. Institute of Medicine. Weight gain during pregnancy: reexamining the guidelines (Prepublication Copy). National Academy Press, Washington, D.C.;2009

### Clarification

Self-reporting of “History of ...” conditions should be treated in the same manner as self-reporting of current conditions requiring a physician’s diagnosis, i.e., the applicant may report to the CPA that s/he was diagnosed by a physician with a given condition at some point in the past. As with current conditions, self-diagnosis of a past condition should never be confused with self-reporting.