



NUTRITIONAL SUPPORT IN COMPLICATIONS DURING PREGNANCY – PREECLAMPSIA

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PREECLAMPSIA PREECLAMPSIAFOUNDATION.ORG 2016 & HYPERTENSION IN PREGNANCY 2013

- Preeclampsia is a disorder of widespread **vascular endothelial malfunction and vasospasm** that occurs after 20 weeks' gestation and can present as late as 4-6 weeks post partum.
- It is clinically defined by **hypertension** and **proteinuria**, with or without pathologic **edema**.
- Affecting at least 5-8% of all pregnancies, it is a rapidly progressive condition **characterized by high blood pressure and the presence of protein in the urine**. Swelling, sudden weight gain, headaches and changes in vision are important symptoms; however, some women with rapidly advancing disease report few symptoms.
- Globally, preeclampsia and other hypertensive disorders of pregnancy are a **leading cause of maternal and infant illness and death**. By conservative estimates, these disorders are responsible for 76,000 maternal and 500,000 infant deaths each year.

DIAGNOSTIC CRITERIA FOR PREECLAMPSIA HYPERTENSION IN PREGNANCY 2013

Blood pressure	<ul style="list-style-type: none">• Greater than or equal to 140 mm Hg systolic or greater than or equal to 90 mm Hg diastolic on two occasions at least 4 hours apart after 20 weeks of gestation in a woman with a previously normal blood pressure• Greater than or equal to 160 mm Hg systolic or greater than or equal to 110 mm Hg diastolic, hypertension can be confirmed within a short interval (minutes) to facilitate timely antihypertensive therapy
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and

Proteinuria	<ul style="list-style-type: none">• Greater than or equal to 300 mg per 24 hour urine collection (or this amount extrapolated from a timed collection) or <ul style="list-style-type: none">• Protein/creatinine ratio greater than or equal to 0.3*• Dipstick reading of 1+ (used only if other quantitative methods not available)
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Or in the absence of proteinuria, new-onset hypertension with the new onset of any of the following:

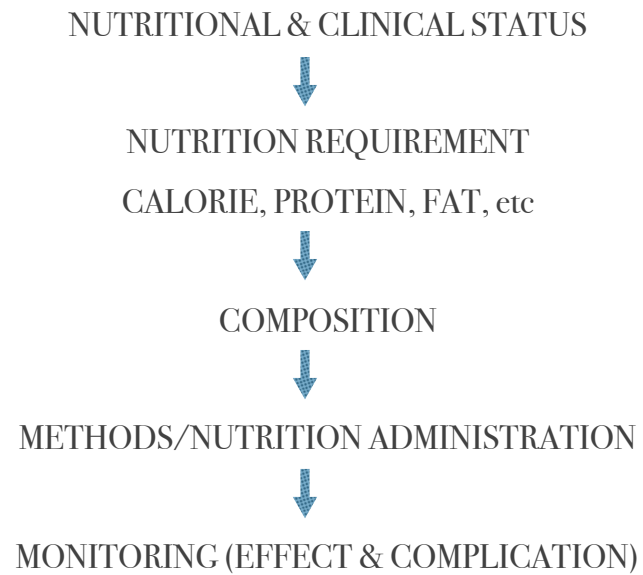
Thrombocytopenia	<ul style="list-style-type: none">• Platelet count less than 100,000/microliter
Renal insufficiency	<ul style="list-style-type: none">• Serum creatinine concentrations greater than 1.1 mg/dL or a doubling of the serum creatinine concentration in the absence of other renal disease
Impaired liver function	<ul style="list-style-type: none">• Elevated blood concentrations of liver transaminases to twice normal concentration
Pulmonary edema	
Cerebral or visual symptoms	

* Each measured as mg/dL.

ICU

- ❖ A 26 year-old P1 female with post cesarean section due to severe preeclampsia, and edema, was admitted to the ICU
- ❖ Anthropometry: height: 158 cm, weight: 85 kg.
- ❖ How is the nutritional management of patients?

NUTRITIONAL MANAGEMENT



NUTRITIONAL STATUS

BODY MASSA INDEX=
BODY WEIGHT / HEIGHT²
NORMAL CRITERIA: 18,5-22,9 (Asia Pacific)
18.5 – 24.9 (WHO)

BROCA INDEKS=
NORMAL BODY WEIGHT = TB-100 (± 10%)

WEIGHT GAIN DURING PREGNANCY INSTITUTE OF MEDICINE 2009

TABLE 1 NEW RECOMMENDATIONS FOR TOTAL AND RATE OF WEIGHT GAIN DURING PREGNANCY, BY PREPREGNANCY BMI

Prepregnancy BMI	BMI* (kg/m ²) (WHO)	Total Weight Gain Range (lbs)	Rates of Weight Gain* 2nd and 3rd Trimester (Mean Range in lbs/wk)
Underweight	<18.5	28–40	1 (1–1.3)
Normal weight	18.5–24.9	25–35	1 (0.8–1)
Overweight	25.0–29.9	15–25	0.6 (0.5–0.7)
Obese (includes all classes)	≥30.0	11–20	0.5 (0.4–0.6)

CALORIE REQUIREMENT

- ❖ In general, pregnant women need between 2,200 calories and 2,900 calories a day
 - ❖ First trimester does not require any extra calories.
 - ❖ Second trimester an additional 340 calories a day are recommended.
 - ❖ Third trimester, the recommendation is 450 calories more a day than when not pregnant.

- ❖ INDONESIA:
 - ❖ Non pregnant woman: 2250 kCal/KgBW/ day.
 - ❖ Pregnant trimester 1 = 2250 + 180 kCal/KgBW/ day.
 - ❖ Pregnant trimester 2 & 3 = 2250 + 300 kCal/KgBW/ day.

PROTEIN REQUIREMENT

- ❖ DRI = 46 grams/day (g/d)
- ❖ Pregnant = 71 g/d

- ❖ RDA = 0.8 g/ Kg of body weight/day
- ❖ Pregnant = 1.1/Kg of body weight/day.

- ❖ INDONESIA (2013):
- ❖ Non pregnant woman: 56 g/KgBW/day
- ❖ Pregnant = 56 + 20 g/KgBW/day.

PREVENTION OF PREECLAMPSIA HYPERTENSION IN PREGNANCY 2013

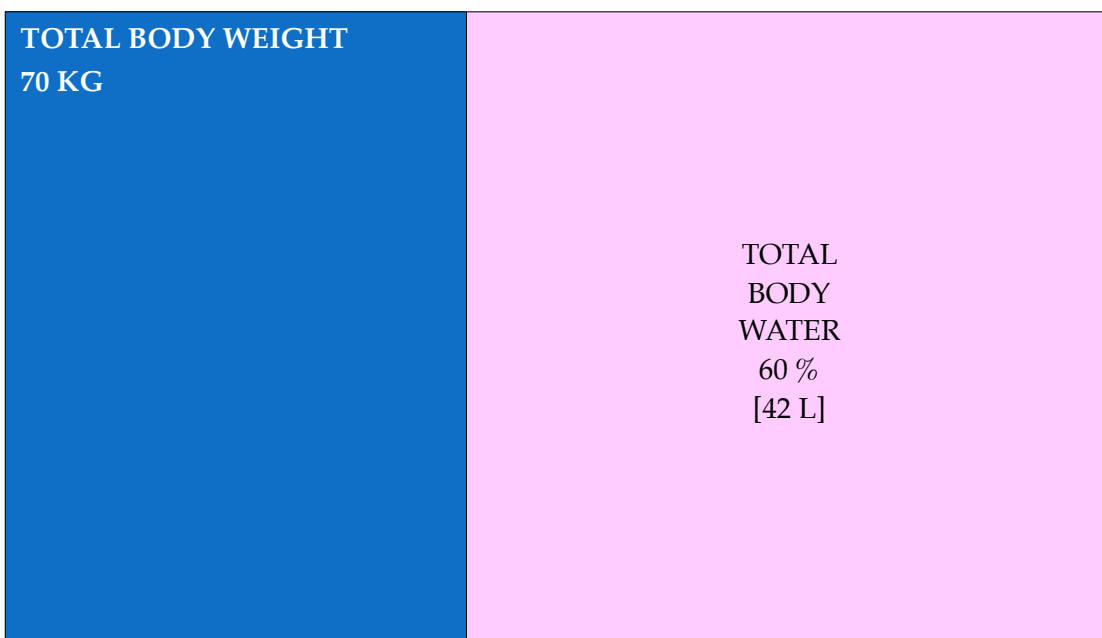
- The administration of **vitamin C or vitamin E to prevent preeclampsia is not recommended.**
Quality of evidence: High
Strength of recommendation: Strong

- It is suggested that **dietary salt not be restricted** during pregnancy for the prevention of preeclampsia.
Quality of evidence: Low
Strength of recommendation: Qualified

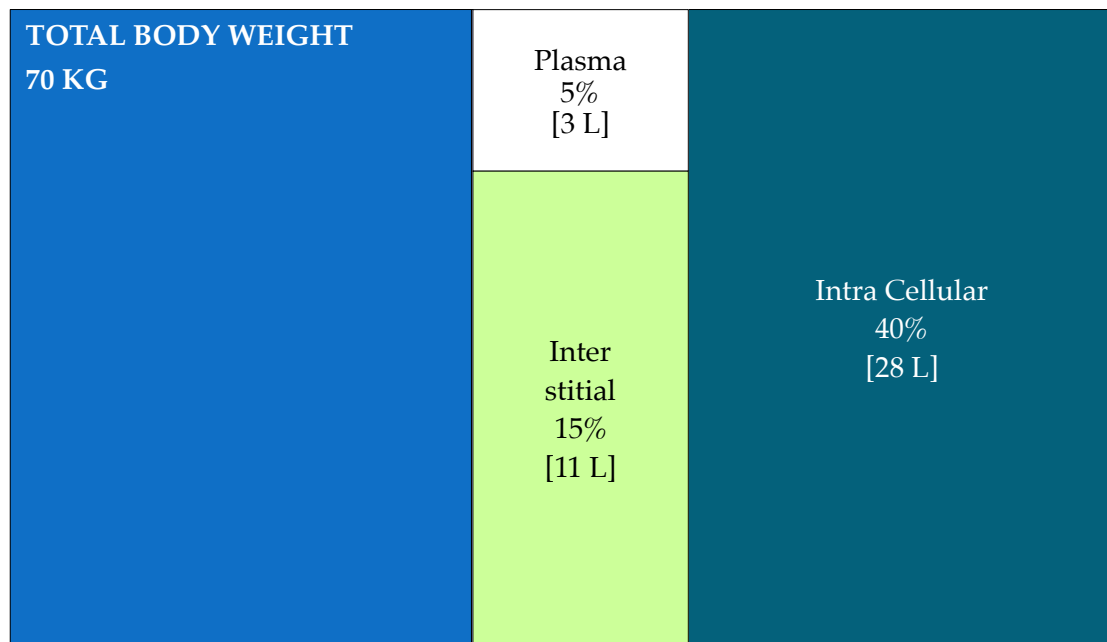
FLUID REQUIREMENT

- ❖ **Emergency phase**
To maintain cardiac filling volume
- ❖ **Replacement phase**
Administer fluid during dehydration
- ❖ **Maintenance phase**
Replacing normal ongoing losses
 - ❖ 25 – 55 year-old : 35 mL/kg BW
 - ❖ 56 – 65 year-old : 30
 - ❖ > 65 year-old : 25

BODY FLUID COMPARTMENT



BODY FLUID COMPARTMENT



CALORIE REQUIREMENT DURING PREGNANCY

IDEALLY: Indirect Calorimetry

ESPEN guidelines 2006

- 20–25 kcal/kg BW/day, during the acute and initial phase of critical illness
- 25–30 kcal/kg BW/day, during the anabolic recovery phase

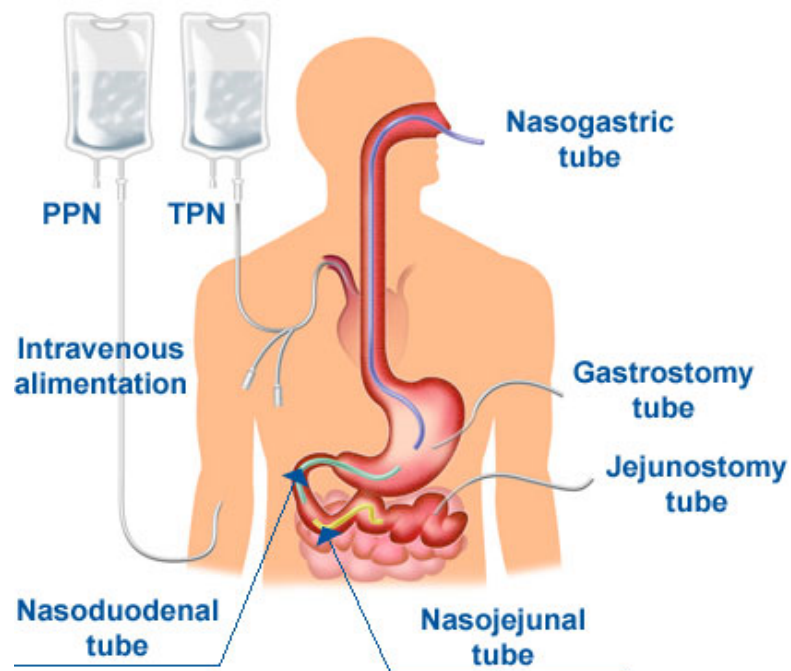
ASPEN guidelines 2009

25–30 kcal/kg BW/day

PROTEIN REQUIREMENT

❖ ICU	1.2 - 2.0	g/kg BW
❖ Vascular surgery/major cardiothoracic	1.5	
❖ Multiple trauma	1.5 - 2.0	
❖ Luka bakar berat	1.5 - 2.5	
❖ ARF (without dialysis)	1.0 - 1.2	
❖ ARF (with dialysis)	1.5	
❖ CRRT	1.5 - 1.8	
❖ Liver failure	1.0 - 1.2	
❖ IBD	1.0 - 1.5	
❖ Pancreatitis	1.0 - 1.5	

NUTRITION ADMINISTRATION



NUTRITION THERAPY

- Calories :
- Protein :
- Fluid :
- ORAL / ENTERAL / PARENTERAL
- Monitoring :



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