

# NUTRITION IN PREGNANCY & LACTATION



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# OBJECTIVES

1. To know the prevalent nutritional problems of mothers in the Philippines and their implications.
2. To know the factors that influence the nutritional state of mothers.
3. To know the nutritional adjustments needed.
4. To know the indices of proper nutrition of a mother during pregnancy and lactation.
5. To know the effects of good nutrition on the mother, the fetus and the infant.

# I. Nutritional problems

1. Filipino diet: inadequate in food energy or calories
2. Protein deficiencies common among the lowest income groups
3. Nutritionally vulnerable sectors are the pregnant women
4. Iron deficiency anemia is ↑
5. ↑ prevalence of goiter

## II. Factors that influence the nutritional state of mothers

1. Nutritional status prior to conception
2. Economic factors
3. Alteration in diet – PICA
4. Cultural beliefs / taboos
5. Underlying pathophysiologic conditions
6. Complications of pregnancy

# NUTRITIONAL ADJUSTMENTS NEEDED



# NUTRITIONAL ADJUSTMENTS NEEDED

REQUIREMENT	DURING PREGNANCY	DURING LACTATION
CALORIES	↑ ( BMR ↑ )	↑
PROTEIN	↑ 14 grams/day	↑
MINERALS:		
<i>IRON</i>	↑	↑
<i>CALCIUM</i>	↑	↑
<i>PHOSPHOROUS</i>	↑	↑
<i>IODINE</i>	↑	
<i>ZINC</i>	↑	
<i>MAGNESIUM</i>		

# NUTRITIONAL ADJUSTMENTS NEEDED

REQUIREMENT	DURING PREGNANCY	DURING LACTATION
VITAMINS		
VITAMIN A	↑	↑
VITAMIN D	↑	↑
VITAMIN E	↑	
VITAMIN K	↑	
THIAMINE (B1)	↑	↑
RIBOFLAVIN (B2)	↑	↑
NIACIN		↑
ASCORBIC ACID		↑
WATER	↑	↑

## II. Indices of Good Nutritional State of Mothers

1. Proper pre-pregnant weight for height
2. Adequate weight gain of 1-2 lbs during the first trimester, and average increase of 350-400 grms weekly during the last 2 trimesters or approximately 20-25 lbs weight during the entire pregnancy
3. Progressive increase in the fundic height of the uterus at a rate of approx 0.8 cm/wk of gestation
4. Hemoglobin level of not less than 11 gm/100 ml

# V. Effects of Good Nutrition

## ON THE MOTHER

1. Absence or reduced chances of complications during pregnancy
2. Reduced incidence of premature deliveries
3. Normal spontaneous deliveries are more likely
4. Reduced incidence of morbidity & mortality
5. Successful lactation favored
6. Reduced incidence of maternal depletion

# V. Effects of Good Nutrition

## ON THE FETUS

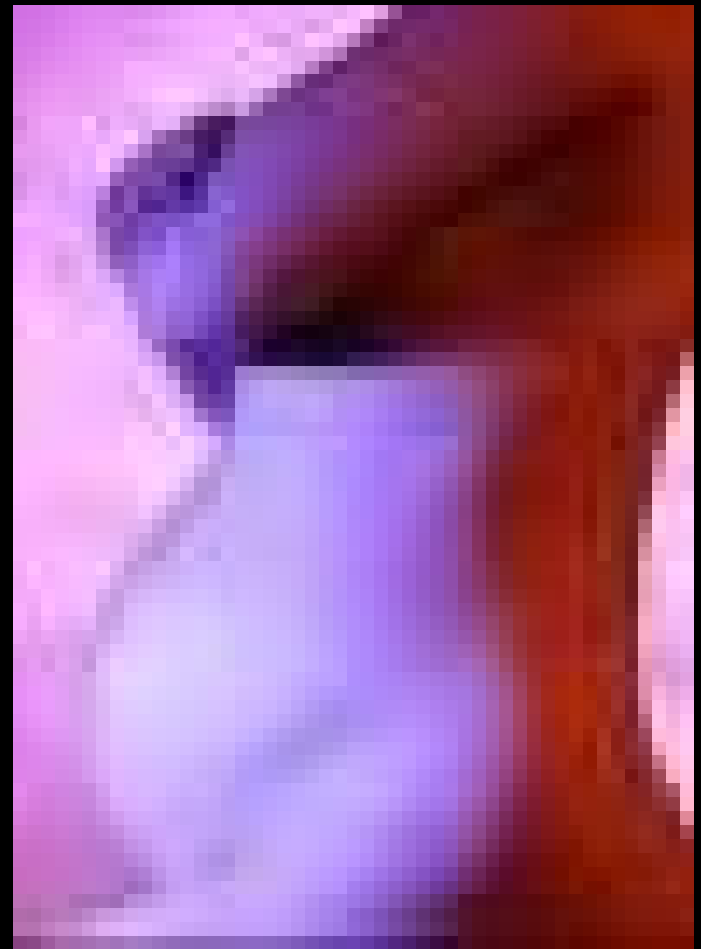
1. Adequate weight gain
2. Adequate nutrient stores like iron and calcium
3. Normal growth and development
4. Reduced incidence of intrauterine growth retardation (IUGR)

# V. Effects of Good Nutrition

## ON THE INFANT

1. Normal birth weight
2. Normal birth length
3. Reduced incidence of large, sickly babies
4. Adequate nutrient reserves
5. Reduced tendency to still births and neonatal deaths
6. Strong & healthy infant with strong resistance to infections and diseases
7. Good chance of obtaining adequate milk during breastfeeding

ANATOMIC  
AND  
PHYSIOLOGIC  
CHANGES  
IN  
PREGNANCY  
AND  
LACTATION



# ANATOMIC CHANGES DURING PREGNANCY

1. Enlargement of the uterus
2. Enlargement of the abdomen caused by the enlarging uterus
3. Enlargement of the breast
  - Estrogen → ductal development*
  - Progesterone → alveolar enlargement*
4. Weight gain

# PHYSIOLOGIC CHANGES DURING PREGNANCY

## GIT

Loss of appetite

Heartburn

Nausea & vomiting

Disturbed GIT equilibrium

Hypotonia

Delayed gastric emptying time

## EXCRETORY

GFR ↓

Renal plasma flow ↓

## ENDOCRINE

BMR ↑

Estrogen ↑

Progesterone ↑

## CIRCULATORY

Blood Volume ↑

Hemoglobin ↓

Plasma protein conc ↓

# PHYSIOLOGIC CHANGES DURING PREGNANCY

## RESPIRATORY

Total volume ↑  
Minute ventilatory volume ↑  
Minute oxygen reuptake ↑  
Oxygen requirements ↑  
Functional residual capacity ↓  
Residual volume of air ↓

## MUSCULAR

Muscle Movement ↑  
Muscle numbness and cramps → due to fetal ↓ of maternal thiamine and calcium aggravated by ↓ intake

## SKELETAL

↑ concentration of ALKALINE PHOSPHATE  
→ influences calcium homeostasis and vit D nutriture  
→ bones and teeth of the mother become vulnerable

# PHYSIOLOGIC CHANGES DURING LACTATION

1. Involution
2. Colostrum – 2 to 5<sup>th</sup> day postpartum
3. Lactation – stimulated by the infant's sucking

# NUTRITIONAL IMPLICATIONS

- PREGNANCY

- A. Good Nutrition → healthy mother → healthy baby

- B. In the pregnant teenager

- maternal-fetal relationship is complicated because the mother not only has the problem of meeting the nutritional needs of her own growth and dev't but also that of the growing fetus

- ∴ children born to teenage mothers have higher health risks at birth and through infancy

# NUTRITIONAL IMPLICATIONS

- LACTATION

- A. Maternal diet during this period must be adjusted to provide for the mother's

- personal needs, to support increased activity in the care of the infant and to ensure an optimum quantity and quality of breast milk



