

■ Nutrition for Childbearing

■ Summer 08



■ Learning Objectives

■ Explain the importance of adequate nutrition and weight gain during pregnancy

■ Describe common factors that influence a woman's nutritional status and choices

■ Describe how common nutritional risk factors affect nutritional requirements during pregnancy

■ Compare the nutritional needs of the postpartum woman who is breastfeeding with those of one who is not breastfeeding

■ Concepts

■ Nutrition/Fluids

■ Health Maintenance/Promotion

■ Psychosocial

■ Elimination

■ Introduction

■ Nutrition of utmost importance in pregnancy and during lactation

■ Nurse has ongoing contact with client during pregnancy, can provide education about nutritional needs on continuing basis

■ Research shows that many women do not understand nutritional needs of pregnancy

■ Weight Gain

■ Is important determinant of fetal growth

■ Insufficient weight gain associated with low birth weight, preterm labor and increased risk of fetal morbidity and mortality

■ Excessive gain correlated to increased birth weight, prolonged labor, birth trauma, asphyxia and cesarean birth

- Complex CHO should be major source
 - Slows gastric emptying, give feeling of fullness
 - Proteins have 4 per gram
 - Needed for metabolism, tissue growth and repair
 - Need increases by 25 g daily in pregnancy
 - Fats have 9 calories per gram
 - Provide fat soluble vitamins
 - Important for brain, visual and placental development and function
- Energy and Calories
- Dieters often eliminate or reduce fats and CHO, causes body to burn protein for energy
 - Results in less protein for building and repairing tissue
 - Extra calories needed in pregnancy
 - For production and maintenance of fetus, placenta, added maternal tissues and increased basal metabolic rate
 - Should increase by 300 calories/day after first trimester
 - Nutrient density and quantity and quality of food important
 - As opposed to empty calories
- Vitamins
- True deficiency uncommon in U.S.
 - Pregnant women unlikely to get enough B6, D, E and folic acid
 - Fat soluble vitamins A, D, K, and E can become toxic
 - Water soluble vitamins B6, B12, C, folic acid, thiamine, riboflavin and niacin need to be included in diet daily
 - Foods should be steamed, microwaved to avoid loss of vitamins
- Folic Acid
- Also called folate
 - Can decrease occurrence of neural tube defects (NTD) in newborns
 - Most important the month before conception and first trimester after conception

- Since most pregnancies unplanned, all women of childbearing age should consume at least 400 mcg daily

- If had previous neural tube defect, then should take higher dose

- Minerals

- Intake usually adequate with exception of iron, calcium, zinc and magnesium

- Iron

- Woman uses for production of RBCs and the fetus stores for use in first 6 months of life

- Considered anemic if Hgb < 11 g/dL

- Difficult to get enough iron in foods during pregnancy

- Recommend iron supplements of 30 mg/day beginning in second trimester

- Taken on empty stomach increases GI problems

- Taking with OJ increases absorption

- Calcium

- Needed for bone formation, coagulation, neuromuscular function

- Transferred to fetus at higher rate in 3rd trimester for bone and teeth mineralization

- May take from mother's bones for fetus in pregnancy

- Calcium in teeth not affected

- Calcium needs unchanged in pregnancy and lactation

- Can use supplement if intake inadequate

- Make sure has vitamin D too

- Take on empty stomach and not with iron

- Table on pages 304-306 give recommended intake, sources and function for vitamins, minerals

- Nutritional Supplements

- Food is best source for nutrients, with exception of iron and folate

- Mothers who are vegetarians or lactose intolerant or who have problems in obtaining nutrient thru diet may need supplements

- Excessive use of some vitamins and minerals can cause harm

- Vitamins A, B6, C, D, iron, selenium and zinc

- Food Guide Pyramid

- Provides guide for healthy eating

- Whole grains – 7 servings/daily

- Fruits and vegetables – 5 servings daily with at least one with Vitamin C, one with Vitamin A

- Dairy – pregnant women need 3 serving/day

- Protein – 7 ounces daily if pregnant or lactating

- Should restrict fish intake in pregnancy to 6-12 ounces weekly d/t mercury which can damage fetal CNS

- Factors Influencing Nutrition

- Culture

- Foods may have special meanings

- May believe that foods are “hot” or “cold”

- Must maintain balance to preserve health

- May have food taboos in pregnancy

- Some foods customary in pregnancy or after birth

- Please read text for information on specific cultures

- Age

- Adolescents need nutritional support for her own growth as well as growth of fetus

- Nutritional knowledge

- Some women lack basic understanding about nutrition, may have misconceptions

- Nurses can be helpful in giving correct information

- Nutritional Risk Factors

- Socioeconomic Status

- Poverty

- Deficient diets d/t

- Lack of financial resources
- Lack of nutritional education
- CHO cheap
 - Diet high in calories, but low in vitamins and minerals
- Food stamps and WIC helpful
 - WIC provides vouchers for certain food items

■ Adolescence

- At greatest risk are those who are still growing
 - Need more calories and nutrients if still growing
 - Fat added during pregnancy goes to mom's body instead of supporting fetus, result is small baby even if good weight gain
 - Weight gain should be at upper end of range

■ Common problems

- Diets often low in vitamins C and A, folic acid, calcium, iron and zinc
 - May not take supplements properly
- Peer pressure influences nutrition
 - Tries to keep weight gain to minimum r/t body image
 - Skips meals, eat fast foods or out of snack machines

■ Teaching the adolescent

- Is challenge
 - Take time to listen to teens' concerns
 - Lifestyle, pattern of eating, likes and dislikes explored
- Make only necessary changes, include snacks in plan
 - Asking for teens' input increases compliance

■ Vegetarianism

- Types of vegetarians
 - Vegans- avoid all animal products
 - Lactovegetarians – consume milk products

- Ovovegetarians – consume eggs
- Lacto-ovovegetarians – eat eggs and use milk products
- Vegans most likely to be unable to meet nutritional needs

■ Vegetarian diets

■ Energy

- Low in calories
- High in fiber
 - Causes feeling of fullness before caloric needs met, body then burns protein for energy

■ Protein

- Concern about complete proteins
 - Plants don't contain all essential amino acids
 - Can combine foods to make complete
 - Tofu excellent substitute

■ Calcium

- High fiber diet may interfere with calcium absorption
- Calcium fortified soy milk, tofu ok
- Calcium supplements with vitamin D

■ Iron

- Lack animal source of iron which improves absorption
- Eat with vitamin C to increase absorption
- Iron supplements

■ Zinc

- Best sources fish and meat
- Vegan may need supplement

■ Vitamin B12

- Found only in animal products
- Should eat fortified foods or take supplements

■ Vitamin A

- Abundant in vegan diet
- If takes supplement with A in it, may experience toxic effects

- Lactose intolerance
 - Caused by lack of enzyme lactase needed to absorb milk sugar lactose
 - Many ethnic groups have problems
 - AA, Hispanic, Asian, Native American and Middle eastern peoples
 - Symptoms may cause avoidance of dairy products
 - Can use soy milk, low lactose milk or milk with lactase added
 - Can also take enzyme as supplement
 - May need calcium supplements
- Eating disorders
 - Increases likelihood that will have problems
 - Must have counseling
- Pica
 - Is the eating of non-nutritive substances not considered food
 - Seen more in women of southeastern U.S., AA, women in poverty with poor nutrition
 - Culturally related
 - Often done secretly
 - Pica decreases nutritional intake
 - Substances may have toxins, organisms/parasites
- Multiparity
 - Spacing and number of pregnancies, fetuses
 - > 5 pregnancies r/t nutritional deficit
 - Closely spaced, no time to make up deficit from previous pregnancy
 - Multi-fetal pregnancy requires more nutrients esp iron, folic acid, calcium
 - Should also gain 10-20 more pounds than singleton pregnancy
- Substance use/abuse
 - Often accompanies lifestyle that does not promote healthy eating
 - Smoking
 - Increases maternal metabolic rate, decreases appetite
 - Birth weight of fetus decreases in spite of adequate diet
 - Decreases availability of some vitamins, minerals
 - Caffeine

- Effect on nutrition during pregnancy controversial
- Changes absorption or excretion of calcium, zinc and iron
- Should limit intake to
 - 2-3 cups coffee
 - 6 cups of tea
 - 5 carbonated sodas with caffeine
- Alcohol
 - Should be avoided completely in pregnancy
 - Interferes with absorption of protein, thiamine, folic acid and zinc
 - Impairs metabolism
 - Often takes place of food
- Drugs
 - Marijuana – increases appetite, but usually junk food
 - Heroin interferes with insulin response to glucose
 - Cocaine, amphetamines depress appetite
- Nutrition After Birth
- Nutritional requirements depends whether mother is nursing or formula feeding
- Lactating mother
 - Needs higher for almost every nutrient
 - Mother needs additional 500 calories/day above pre-pregnancy diet
 - Should also continue PN vitamins and iron
 - Special concerns
 - Dieting
 - Maternal fat is used to meet portion of energy need of lactation
 - Should not diet for 3 months after birth in order to establish milk supply
 - Gradual loss with exercise and diet high in nutrients
 - Must have at least 1800 calories/day
 - Avoid appetite suppressants
 - Adolescents
 - Problems r/t diet continues to be concern during lactation

- Vegans
 - Breast milk may be low in B12, mom/baby need supplements
 - Vitamin D and calcium may also be low
- Avoidance of dairy products
 - Calcium of breast milk not affected by maternal intake, less calcium excreted by kidneys during lactation
 - Gets some from mother's bones
 - Should use calcium supplement
- Inadequate diet
 - Those with cultural food restrictions may need help in choosing diet adequate for lactation
 - If inadequate income – refer for food stamps, WIC
- Alcohol
 - Occasional single drink probably not detrimental
 - Alcohol in larger amounts interfere with milk ejection reflex and harmful to infant
- Caffeine
 - Should be limited, excessive amount may make infant irritable, decreases iron content of milk
- Fluids
 - 8-10 glasses of fluids/day
- Foods to avoid
 - If family history places infant at risk for allergies, avoid cow's milk, eggs, fish and nuts
 - If infant reacts to something in diet, mom should review what she ate in last 8-12 hours, then eliminate suspected food

■ Nutrition for the Non-Lactating Mother

- Can return to pre-pregnancy diet since not breastfeeding, providing it meets the RDA requirements
- Decrease calories by 300/day
- Continue PN vitamins and iron until gone

- Nurse should assess mother's understanding of food groups and required servings
- Dieting should be delayed for 3 weeks after delivery
 - Accomplish with sensible calorie reduction and exercise

- Weight Loss
- Immediately after delivery loss is about 10-12 lbs.
- Will lose another 8 lbs in first few weeks
- Will return to pre-preg weight faster if weight gain was within limitations for her