

# NUTRITIONAL NEEDS OF INDIVIDUALS AND FAMILIES ACROSS THE LIFESPAN

## Nutrition Issues and Adolescents

Grade Levels: 9-12

**Concept:** Prenatal Nutrition

**Comprehensive Standard:** 6.2 Evaluate the nutritional needs of individual and families in relation to health and wellness across the lifespan

**Technical Standard:** 6.2.2 Examine the relationship of nutrition and wellness to individual and family health throughout the life span

### LESSON COMPETENCIES:

- Discuss the nutritional needs of pregnancy
- Plan meals appropriate for meeting the nutritional needs of pregnancy

### ANTICIPATED BEHAVIORAL OUTCOMES:

- Students recognize that food choices now impact their future health, including prenatal health.
- Students choose foods following the guidelines of *MyPyramid*.

### Resources Needed:

- Copies of the article “Eat Wisely for You and Your Baby” (see reference list)
- Copies of the “Food Guide Pyramid for Pregnant Women and/or Pregnant Teens”
- Copies of the current Dietary Reference Intakes (DRI) and Recommended Dietary Allowances (RDA) for each student (see reference section)
- White paper plates

### References for teachers and students:

**NEW** The U.S. *Department of Health and Human Services* ([www.hhs.gov/](http://www.hhs.gov/)) webpage has up-to-date (2006) information on the nutritional needs and exercise needs of pregnant women at their website <http://www.4women.gov/pregnancy/pregnancy/eat.cfm> The site includes a list of food dos and don'ts for pregnant women and the guidelines for changes in diet during pregnancy based on recommendations from the *American Dietetic Association*.

**NEW** The *American Dietetic Association* ([www.eatright.org/](http://www.eatright.org/)) has a position paper on nutrition during pregnancy which could serve as a good background reference for teachers available at [http://www.eatright.org/cps/rde/xchg/ada/hs.xsl/advocacy\\_adar1002b\\_ENU\\_HTML.htm](http://www.eatright.org/cps/rde/xchg/ada/hs.xsl/advocacy_adar1002b_ENU_HTML.htm)

Two fact sheets, “Nutritional Needs During Pregnancy” (<http://ohioline.osu.edu/mob-fact/0001.html>), “Staying Healthy During Pregnancy” (<http://ohioline.osu.edu/mob-fact/0002.html>) and other articles on nutrition during pregnancy are available at the *Ohio State University Cooperative Extension Service*

website at <http://ohioline.osu.edu> Click on “Food” and then search under “General Nutrition”. Most have been updated to include *MyPyramid*.

Another fact sheet, *Eat Wisely for You and Your Baby*, is available from the *Iowa State University Cooperative Extension Service* (reference to Food Guide Pyramid however) at <http://www.extension.iastate.edu/Publications/PM813.pdf>.

The *March of Dimes* ([www.marchofdimes.com](http://www.marchofdimes.com)) website has information on nutrition and birth defects especially on folic acid. The website is <http://www.marchofdimes.com/159.asp>.

A reprint of an article from the *FDA Consumer*, “How Folate Can Help Prevent Birth Defects” is available at the site [www.fda.gov/fdac/features/796\\_fol.html](http://www.fda.gov/fdac/features/796_fol.html).

The Centers for Disease Control and Prevention (CDC) has an article, “Folic Acid Now: Before You Know You’re Pregnant” and other resources on folic acid and birth defects which can be accessed at [www.cdc.gov/ncbddd/fact/folnow.htm](http://www.cdc.gov/ncbddd/fact/folnow.htm).

Two booklets, *A Good Start, Nutrition During Pregnancy* and *Eating for Two-Nutrition Needs During Pregnancy* can be downloaded at <http://www.beefnutrition.org/matedownloadsforpatientsandclients.aspx>.

Copies of the RDI and RDA tables are accessible at the *Food and Nutrition Information Center* at [www.nal.usda.gov/fnic/etext/000105.html](http://www.nal.usda.gov/fnic/etext/000105.html). Click on “Table of 1989 RDS and 1997-98 DRI” for a comparison of previous requirements.

**NEW** The *KidsHealth* website in the section for parents also has a good article, “Eating During Pregnancy” ([http://www.kidshealth.org/parent/pregnancy\\_newborn/pregnancy/eating\\_pregnancy.html](http://www.kidshealth.org/parent/pregnancy_newborn/pregnancy/eating_pregnancy.html)), reviewed in 2006; this and other related articles are available at [http://www.kidshealth.org/parent/pregnancy\\_newborn/pregnancy/eating\\_pregnancy.html](http://www.kidshealth.org/parent/pregnancy_newborn/pregnancy/eating_pregnancy.html).

## **Background Information**

Pregnancy is a nutritionally demanding time. A woman’s body needs enough nutrients to support the growth of the baby as well as personal nutritional needs. Pregnant women need more calories and essential nutrients than other women. If the nourishment to the baby is inadequate, the baby may not develop normally.

Nutritional status impacts an individual’s ability to grow, to learn, to work, and to fight disease. Research studies have found that children born to mothers with inadequate diets are more likely to be born premature and underweight, to die within the first year of life and to have physical defects (Berk, L. 1996. *Infants and Children Prenatal Through Middle Childhood*, Second Edition, Allyn & Bacon, Boston, MA)

According to a report from The March of Dimes Task Force on Nutrition and Optimal Development, *Nutrition Today Matters Tomorrow*, women’s nutritional status before conception may contribute to positive or negative outcomes during pregnancy and in the infant. For example,

- Women with low folate status in the periconceptual period are at significantly elevated risk of giving birth to a child with spina bifida or a related neurological defect.
- Women who are underweight before pregnancy particularly immature adolescents have a higher risk of giving birth to a low birth weight infant.

- Women who are obese before conception may experience complications during pregnancy and childbirth. In addition, they are at higher risk of having babies with congenital malformations.

According to the report, an adequate amount of vitamins and minerals is particularly important for adolescent girls in preparation for motherhood. Problems of deficiencies are best documented for 7 micronutrients: iron, iodine, vitamin A, zinc, folate, vitamin D and calcium. These vitamins and minerals enable us to use the energy provided by foods; build, maintain and repair cell and tissue structures; and perform critical biochemical transformations. For a full copy of the report, go to the *March of Dimes* website at [www.marchofdimes.com](http://www.marchofdimes.com); click on “professionals and researchers”, click on “medical references” and then click on “nutrition”.

### Learning Activities:

#### High School Level

- Ask students to complete the pretest on [Nutrition and a Healthy Baby](#)
- Students read the article “Eat Wisely for You and Your Baby”. (See Resource List) After reading the article, ask students to look over the pretest again and make any changes. Discuss the information in the article with students.
  - Why is it so important for women to eat right before and during pregnancy?
  - Why is good nutrition important even before pregnancy?
  - Why do pregnant women have increased nutritional needs for their own bodies as well as for the needs of the baby?
  - What factors influence the amount of weight a woman should gain during pregnancy?
  - Why should foods such as cookies, cakes, doughnuts, chips, soft drinks and pie be avoided?
  - Why would a doctor be concerned if a pregnant woman had gained less than 10 pounds during pregnancy?
  - What things need to be considered when taking prenatal vitamins?
  - What are some things that help “morning sickness”?
  - Why should smoking, drinking and taking drugs be avoided?
  - What about caffeine and aspartame?
- Working in groups of two and using *MyPyramid* ([www.mypyramid.gov/](http://www.mypyramid.gov/)) and considering increased nutritional needs during pregnancy as well as the Dietary Guidelines (<http://www.health.gov/dietaryguidelines/>), give each team a paper plate. Ask students to plan a daily meal plan for a pregnant woman and/ or a pregnant teen and write it on the paper plate.
- Upon completion of the menu, ask students to see if their choices will meet the DRI/RDA for key nutrients for a pregnant woman using the DRI/RDA tables. Use the [Measuring Up Your Menu Plan](#) handout.

## **NUTRITION AND A HEALTHY BABY**

Name \_\_\_\_\_

For each question, select the answer that you think is correct.

- \_\_\_\_\_ 1. When is it important for a pregnant woman to get prenatal care?
- by the fourth month
  - by the fifth month
  - as early as possible
  - when she thinks she needs it
- \_\_\_\_\_ 2. The best advice on what to eat while pregnant is:
- eat whatever you like
  - eat for two
  - eat a variety of foods
  - eat what you crave
- \_\_\_\_\_ 3. Foods from the milk group are a good source of:
- fiber
  - iron
  - Vitamin C
  - calcium
- \_\_\_\_\_ 4. Small babies are:
- healthy babies
  - babies at risk
  - easier to deliver and care for
  - okay, just small
- \_\_\_\_\_ 5. The appropriate weight gain for a healthy woman is about:
- 10-15 pounds
  - 15-20 pounds
  - 25-35 pounds
  - depends on weight of mother
- \_\_\_\_\_ 6. During pregnancy, weight gain should occur:
- only in the last few months
  - gradually all through the pregnancy
  - mostly in the middle of the pregnancy
  - depends on current weight of woman

- \_\_\_\_\_ 7. As long as pregnant women take a prenatal vitamin, they don't need to worry about what I eat:
- a. true
  - b. false
- \_\_\_\_\_ 8. Smoking mothers have a greater chance of miscarriage or stillbirth
- a. true
  - b. false
- \_\_\_\_\_ 9. Using alcohol and drugs in moderation is safe while pregnant.
- a. true
  - b. false
- \_\_\_\_\_ 10. Good nutrition is important even before you are pregnant.
- a. true
  - b. false



Adapted from the *Have a Healthy Baby Survey Two*, Iowa State University Cooperative Extension Service, September, 1996.

# NUTRITION AND A HEALTHY BABY ANSWER KEY

Name \_\_\_\_\_

For each question, select the answer that you think is correct.

- \_\_\_c\_\_\_ 1. When is it important for a pregnant woman to get prenatal care?  
e. by the fourth month  
f. by the fifth month  
g. as early as possible  
h. when she thinks she needs it
- \_\_\_c\_\_\_ 2. The best advice on what to eat while pregnant is:  
e. eat whatever you like  
f. eat for two  
g. eat a variety of foods  
h. eat what you crave
- \_\_\_d\_\_\_ 3. Foods from the milk group are a good source of:  
e. fiber  
f. iron  
g. Vitamin C  
h. calcium
- \_\_\_b\_\_\_ 4. Small babies are:  
e. healthy babies  
f. babies at risk  
g. easier to deliver and care for  
h. okay, just small
- \_\_\_c\_\_\_ 5. The appropriate weight gain for a healthy woman is:  
e. 10-15 pounds  
f. 15-20 pounds  
g. 25-35 pounds  
h. Depends on weight of mother (NOTE to teacher – this should be discussed and could be considered correct as well; see “Eating for Two: Healthy Weight Gain During Pregnancy” ([http://www.eatright.org/cps/rde/xchg/ada/hs.xsl/home\\_4201\\_ENU\\_HTML.htm](http://www.eatright.org/cps/rde/xchg/ada/hs.xsl/home_4201_ENU_HTML.htm))).
- \_\_\_d\_\_\_ 6. During pregnancy, weight gain should occur:  
e. only in the last few months  
f. gradually all through the pregnancy  
g. mostly in the middle of the pregnancy  
h. depends on pre-pregnancy weight of woman

- \_\_\_b\_\_\_ 7. As long as pregnant women take a prenatal vitamin, they don't need to worry about what I eat:
- c. true
  - d. false
- \_\_\_a\_\_\_ 8. Smoking mothers have a greater chance of miscarriage or stillbirth
- c. true
  - d. false
- \_\_\_b\_\_\_ 9. Using alcohol and drugs in moderation is safe while pregnant.
- c. true
  - d. false
- \_\_\_a\_\_\_ 10. Good nutrition is important even before you are pregnant.
- c. true
  - d. false



Adapted from the *Have a Healthy Baby Survey Two*, Iowa State University Cooperative Extension Service, September, 1996.

