TEEN PARENTS

Lesson 4
Special Nutrient Needs

Knowledge objectives
Students will identify the benefits of nutrients during pregnancy, including iron, folate, calcium and protein.

Behavioral objectives
Students will choose foods that are good sources of iron, folate, calcium and protein.

Review of Lesson 3

Distribute the short ***Lesson 3 Quiz*** to review weight gain during pregnancy. Have students work individually or in small groups.

Doing the lesson

Growing a healthy baby is like building a house. Good materials make a strong house; the right nutrients make a strong, healthy baby. Today we are going to talk about some nutrients that are very important during pregnancy.

Do ***How Do You Get Your Nutrients?*** activity

All nutrients are important for a healthy pregnancy, but four are worth special mention: iron, folate, calcium and protein. Let's zero in on each of them.

Iron

Iron is a very important nutrient for teens. Your iron needs increase during the teen years because of the increase in lean body mass (muscle) and red blood cell mass. The menstrual cycle also increases iron needs for females. Iron needs are increased even more during pregnancy because of the growth of the fetus and placenta, and because the mother's blood volume increases.

If you don't get enough iron, your growing baby will use the iron in your blood. That's a problem because it could make you feel weak and tired. Make sure you get enough iron for both of you!

Supplies needed
(also see activities for supplies needed)
- optional: *Pregnant and Growing** video (note: old Food Guide Pyramid is shown briefly)

Core activities
- *How Do You Get Your Nutrients?*
- *Take a Taste for You and Your Baby*

Student handouts
- *Lesson 3 Quiz* (H-17)
- *Teen Parents Newsletter: Special nutrient needs* (N701)*

Teacher references
- *Lesson 3 Quiz Answer Key*
- *American Dietetic Association's Complete Food and Nutrition Guide**, Chapters 4 & 21

Advance preparation
- Make copies of the handout for each student.

Additional activities
- Watch *"Pregnant and Growing"* video
- *Lab Experiment with Iron*

Direct students' attention to pages 4 and 5 in the ***Teen Parents Newsletter***, *Iron: How to pump up your intake*. Read and discuss each of the questions. Be sure to cover why iron is needed, iron supplements and iron absorption.

Look at page 5, *Counting iron in food.* Talk about the combinations at the bottom of page 4. Brainstorm some combinations the students would like to try.

Pregnant teens need about 30 milligrams of iron a day. It's hard to get this amount from food. This is why your health-care provider will probably recommend taking an iron supplement.

Folate

How many of you have heard of folate? You may have also heard it called folic acid or folacin. Direct students' attention to pages 6 and 7, *Give your baby a boost with folate* and *Plan your meals with folate*.

Discuss the questions and the foods that are good sources of folate. Using the space provided on page 7, have the students work individually or in groups to plan a meal containing at least 150 micrograms of folate.

Folate and Neural Tube Defects (NTDs)

In the first 4 to 6 weeks of pregnancy, the neural tube forms in the developing baby and then closes. The neural tube later becomes the baby's spinal cord, brain and skull.

A neural tube defect (NTD) occurs when the neural tube fails to close properly, leaving the developing brain or spinal cord exposed to the amniotic fluid. The two most common NTDs are:

- Anencephaly, when the baby is born without a brain. Babies with this condition usually are miscarried, stillborn or die shortly after birth.
- Spina bifida, when the lower end of the neural tube fails to close. The spinal cord and backbone do not develop properly. Disabilities associated with spina bifida include paralysis of the infant's legs, loss of bowel and bladder control, water on the brain, and learning disabilities.

NTDs are very serious conditions. Isn't it amazing that you can reduce your baby's risk of developing an NTD by taking folic acid? Although folic acid is important throughout pregnancy, it's especially important to get plenty of folic acid before you become pregnant and early in your pregnancy.

Calcium

You need enough calcium during pregnancy to grow strong, healthy bones for you and your baby. If you don't get enough calcium, your growing baby will use the calcium in your bones. This will make your bones weaker.

Getting enough calcium while you are pregnant will make sure that your bone mass is protected while your baby's skeleton develops. If you don't get enough calcium while you are pregnant, calcium will be drawn from your bones to meet your baby's needs. This will weaken your bones and can lead to osteoporosis (brittle bones) when you are older.

High-calcium foods will keep your bones strong and help your baby grow a strong skeleton. To make sure you get enough calcium for you and your baby, be sure to include low-fat milk, yogurt and cheese in your meals and snacks.

Skim or 1 percent milk contain the same amount of calcium as higher-fat milk. Yogurt, cheese and pudding made with milk can also help you meet your calcium needs.

Other sources of calcium include calcium-fortified foods like orange juice, cereal and some breads. Broccoli, dried beans and peas, leafy greens like spinach, and fish with edible bones also contain calcium.

Caffeine and other substances in coffee, tea and soft drinks interfere with calcium absorption. Teens who drink soft drinks every day have lower calcium intakes because they tend to drink soft drinks instead of milk. Your health-care provider may prescribe a calcium supplement if you consume inadequate amounts of calcium because of lactose intolerance, a vegetarian diet or other reasons.

Lactose intolerance

Direct students' attention to the last page of the newsletter, *What if I'm lactose intolerant?* Discuss the questions and answers. Ask students:

- Has anyone been diagnosed with lactose intolerance?
- Do you use any of the suggestions on the handout to make sure you get enough calcium?
- What are some other techniques you use?

Protein

Protein foods have grow power. Protein needs increase during pregnancy. You need enough protein to support growth and development for you and your baby. To help you get enough protein for you and your developing baby, have meals and snacks each day that include lean meats, lean fish, lean poultry, eggs, milk, yogurt, cheese, dried beans and peas, and peanut butter and other nuts and seeds.

Do ***Take a Taste for You and Your Baby*** activity

The theme is calcium-, folacin-, protein- and iron-rich foods. Suggested foods for tasting include Banana Shake-Up, Tex-Mex Bean Dip and Tuna Wraps.

Review of Lesson 4

Break the class into small groups of three to four students. Have each group plan a meal that contains a good source of iron, folate, protein and calcium. Tell the groups to choose foods they enjoy eating and know how to prepare. Come back together and share the meal ideas.

Teacher reference

Lesson 3 Quiz Answer Key

Circle True or False:

1. True (False) You should try to lose weight while you are pregnant.

2. (True) False Your health-care provider will determine how much weight you should gain during pregnancy

3. True (False) It is okay to skip meals while you are pregnant.

4. (True) False If you do not gain enough weight, your baby may be born small and have a greater risk for health problems.

5. (True) False If you need to slow down weight gain, you can substitute low-fat ingredients for high-fat ingredients in recipes.

Core activity

How Do You Get Your Nutrients?

1 Direct students' attention to pages 1 to 3 of the newsletter. Tell the class that all of these nutrients are important, whether they are pregnant or not. Briefly discuss each nutrient.

2 Then, toss each student a bean bag. Start the game by saying: Name a function or food source of: *(name of a nutrient)*.

3 The student with the matching bean bag then tosses the bean bag into the box and names a food source or function of the nutrient. Continue until you have covered all nutrients and all the bean bags are in the box.

4 Summarize this activity by asking the students what they think is the best way to make sure they get all of the nutrients. Accept all their answers, making notes on the chalkboard or flip chart. Be sure to stress that eating a variety of foods from each food group on MyPyramid is a great way for the students to get all the nutrients they need to have a healthy baby.

Purpose

Teaches students the functions and food sources of various nutrients needed during pregnancy.

Supplies needed

- bean bags, one per student
- permanent markers
- poster board
- food pictures
- large box
- chalkboard or flip chart and markers

Student handouts

- *Teen Parents Newsletter: Special nutrient needs**

Advance preparation

- You will need one bean bag per student. Be sure to have enough bean bags for each student to have one. Write the name of each nutrient on a bean bag.
- Make a poster for each nutrient on the handout. List the nutrient's functions and best food sources. Collect pictures of some of the best food sources and attach them to the posters. Food models displayed with each poster will also add color. Display the posters in prominent places around the room.

Core activity

Take a Taste for You and Your Baby

All nutrients are important for you and your developing baby. Calcium, folate, iron and protein are especially important during pregnancy.

Tex-Mex Bean Dip

Makes 3 cups, about 12 servings

Equipment:

- blender or food processor (optional)
- fork
- cutting board
- knife
- measuring spoons
- measuring cups
- microwave-safe serving bowl

Ingredients:

- 1 (15-ounce) can black beans, drained
- ¾ cup salsa
- ¼ cup chopped onion
- ⅛ teaspoon garlic powder
- ¼ cup grated cheese
- baked taco chips

Instructions:

1. Blend all ingredients except cheese and taco chips in a blender or food processor. Or, mash with a fork. Pour into microwave-safe serving bowl.
2. Heat in a microwave oven on medium (50 percent power) for 2 to 3 minutes. If not warm, heat 1 to 2 minutes more.
3. Sprinkle with cheese and cover. Let stand until cheese melts.
4. Serve with baked taco chips.

Banana Shake-Up

Makes 1 serving

Equipment:

- blender
- measuring cups
- measuring spoons
- small cups

Ingredients:

- 1 cup low-fat milk
- 4 ice cubes
- 1 teaspoon vanilla (optional)
- 1 banana

Instructions:

1. Blend all ingredients until smooth.

Tuna Wraps

Makes 4 large or 8 small servings

Equipment:

- mixing bowl
- measuring cups
- knife
- cutting board
- plates

Ingredients:

- 1 (9-ounce) can tuna packed in water, drained
- ¼ cup light mayonnaise
- ½ cup chopped tomatoes
- ½ cup chopped cucumber
- 2 green onions, chopped
- 2 tablespoons sweet pickle relish
- salt and pepper to taste
- 4 whole-wheat tortillas

Instructions:

1. Mix first seven ingredients.
2. Spread tuna mixture thinly on tortillas. Roll tortillas and cut in half if desired.

Additional activity
Lab Experiment with Iron

1 Have the students gather around the table. Tell them that if the juice contains iron, the tannic acid in the tea will combine with the iron in the juice and the mixture will become cloudy.

2 Pour about 1 inch of the strong tea into each glass of juice. Observe the change in the mixtures. (Note: It may be hard to observe this change in some juices.)

3 Tell the students that prune juice, apple juice and pineapple juice contain more iron than most fruit juice. Look at the labels on the juice containers and see the chart below. Ask students if this is what the class observed.

What can we conclude from our experiment? (If they don't mention it, be sure to mention that this experiment shows that tea decreases the body's ability to absorb iron. So, it's best not drink tea with iron-rich foods.)

1 cup juice	milligrams of iron
prune	2.5
apple	0.9
pineapple	0.7
grape	0.6
cranberry	0.4
orange	0.2

Purpose

Shows students the effects of tea on iron absorption in our bodies.

Supplies needed

- ½ cup of six different fruit juices (orange, apple, grape, prune, pineapple and cranberry)
- 6 clear glasses, one for each juice
- 2 cups strong tea
- chalkboard or flip chart and markers

Advance preparation

- Prepare the juice glasses by pouring juice into each to fill about 1 inch of the glass. Write the juice names on tape and label each glass.
- Prepare the tea by placing 4 tea bags in 2 cups of hot water. Let the tea steep for five minutes.
- Put the glasses of juice and the juice containers on a table where everyone can see them.