

Health Promotion for Adolescent Mothers

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The transition from pregnant adolescent to mother places greater demands upon the adolescent. Sore breasts, fatigue or depression may replace the discomforts of pregnancy. Weight gain that was encouraged for the health of the baby prompts many adolescents to start restrictive dieting after delivery. Frequent prenatal visits, with attention and support from health care providers, abruptly end with one or two postpartum visits.

Little information is available on the health and nutritional status of adolescents during the postpartum period because there is so little contact with the health care system after delivery and many adolescents miss the postpartum checkup. This is unfortunate, since nutrition and health counseling in the postpartum period has the potential to address the physical needs and emotional concerns of the adolescent, as well as address other health risks of the adolescent mother.¹ Table 1 lists key postpartum health issues faced by postpartum adolescents.

Postpartum Visit

Issues covered by the postpartum visit should include:

- Nutritional guidance to support breastfeeding, when applicable.
- Pregnancy prevention/contraception counseling and nutrition effects of various contraceptive techniques.

- Weight management.
- Correction of nutritional deficiencies resulting from the pregnancy, such as iron deficiency anemia.
- Nutrition information to help optimize the adolescent's intake of folic acid, iron, calcium and zinc in case of another pregnancy, since almost a quarter of primiparous adolescents deliver another baby within 24 months.²
- Counseling regarding substance use, including alcohol, tobacco and "street" drugs.

Assessment for Health Promotion

The evaluation of the postpartum adolescent is similar to prenatal health assessments but should also explore other factors that affect the adolescent mother's health. The following are areas to be assessed in adolescent mothers.

Obtain Medical History

- History of nutrition-related conditions such as iron deficiency anemia.
- History of gestational diabetes or elevated blood glucose levels.
- History of hypertension or pregnancy-induced hypertension.

TABLE 1
**Postpartum Health Issues
 of Adolescent Mothers**

Complications of pregnancy or delivery: hemorrhage/anemia, pre-eclampsia/hypertension, infection, gestational diabetes

Contraception: prevention of repeat pregnancy and sexually transmitted disease

Dietary adequacy and nutrient repletion: especially fluids, protein, calcium, iron, B complex vitamins

Infant feeding choice: breastfeeding or bottle

Physical activity: resumption of pre-pregnancy activity

Psychosocial adjustment: stress and depression, school/career plans, financial situation, social support, parenting skills/attachment, substance use, body image

Weight management: body image, healthy eating, physical activity, unhealthy dieting, rate of weight loss

Determine Current Medical Status

- Repeat blood pressure measurements should be taken, especially in adolescents with a history of hypertension, pregnancy-induced hypertension or preeclampsia, or those starting oral contraceptives.
- Laboratory tests should include:
 - Plasma lipoprotein assessment when there is a family history of cardiovascular disease, personal history of dyslipoproteinemia, or presence of other risk factors.
 - Complete blood count (CBC) when there is a history of anemia or low iron intake, or if adolescent is less than three years post menarcheal.
 - Specific serum nutrient assays when deficiencies are suspected (follow guidelines in Chapter 10).
 - Glucose tolerance test when there is a history of gestational diabetes (see Chapter 10).

Check for Use of Medications and Supplements

- Ask about:
 - Prescription and over-the-counter medications including contraceptive methods
 - Vitamin, mineral and other nutrient supplements
 - Herbs or other botanical products
- Discuss side effects of medications or nutrient or herbal supplements (e.g. constipation, nausea).
- Confirm safety of any medication used if the adolescent is lactating.

Assess Diet, Physical Activity, Smoking and Substance Use

The following components should be included in a complete assessment:

- **Dietary intake** including number of meals and snacks eaten per day, types and amounts of food eaten, and fluids consumed.
- **Food resources** including access to food and participation in food assistance programs.
- **Weight and height history** including prepregnancy, pregnancy and postpartum weight and height values. It is important to include height measurement as some adolescent mothers still show linear growth. Calculate and plot Body Mass Index (BMI) (see Chapter 7). In the evaluation of BMI for an adolescent one or two months postpartum, keep in mind that there is still considerable retention of prenatal weight gain at this point.³
- **Attitude toward body weight and shape;** interest in weight loss and type of weight loss practices used.
- **History of disordered eating behaviors** including restrictive dieting, binge eating, purging (by vomiting, taking laxatives and diuretics, or excessive exercise to lose weight), use of diet pills and fasting.
- **Physical activity** including current frequency, type, and duration of physical activity as well as number of hours of sedentary activity per day (TV watching, computer use, video games).
- **Substance use** including alcohol, narcotics, marijuana and other illicit drugs. Use of these substances places adolescents at medical risk and may be associated with other “risky” behaviors.

- **Smoking or use of chewing tobacco.** Lower nutrient intakes and biochemical indices of nutritional status, independent of contraceptive use,⁴ are seen in smokers.

Psychosocial Issues

In addition to the major hormonal shifts that occur, cultural, emotional, and socioeconomic factors can have a large impact upon the ability to cope with the dual demands of adolescence and motherhood. These and additional stresses such as balancing school and childcare and peer reaction to the pregnancy may put the teen at nutritional risk for weight gain or rapid weight loss, nutrient depletion or anemia. It is important to assess:

- Feelings about motherhood and confidence in parenting skills.
- Financial and living situation.
- Education or employment plans.
- Peer and family relationships and emotional support. Lower rates of depressive symptoms are found when an adolescent mother has family social support or support from the infant's father.⁵
- Emotional health, including feelings of social or physical isolation.
- Postpartum depression.

Evaluation and Counseling of Postpartum Adolescents

A review of the assessment information should identify the teen's strengths as well as warning signs of potential health and nutrition-related problems (see Table 2). The postpartum period is a transitional time where an adolescent is expected to take personal responsibility for her own health, as well as for her infant's. Although this may be perceived as too stressful a time to initiate change, it is really a window of opportunity for the adolescent to receive guidance about her health. Chapter 15 outlines comprehensive counseling techniques for the pregnant adolescent that also can be applied to the adolescent mother. Nutrition-related objectives for the postpartum period are outlined in Table 3 and include:

- Rebuilding nutrient stores depleted by pregnancy and pre-pregnancy dietary inadequacies.

- Meeting increased nutrient needs if breastfeeding.
- Resumption of a physically active lifestyle.
- Appropriate weight management, including a positive body image.

Counseling Regarding Dietary Intake and Nutritional Adequacy

Discuss Daily Energy and Nutrient Needs

The Food Guide Pyramid provides a visual representation of a healthy diet that can be easily understood by postpartum adolescents. Adolescents may be more willing to use the Food Guide Pyramid if the health professional highlights their food choices that do fit into a "healthy diet" before suggesting change.

Discuss the Nutritional Implications of Contraceptive Use

Some issues and recommendations may include:

- **B vitamin intake.** Past studies with higher dose oral contraceptive pills (OCPs) found lower folate levels with use. A recent investigation in adolescents found lower serum B₁₂ levels, but not low levels of serum or red blood cell folate in low dose OCP users.⁴ Serum B₁₂ levels were significantly associated with OCP use and gynecological age (inversely related), but not B₁₂ intake. Other associations between OCP use and nutrients that should be considered include a significantly lower carotenoid intake in adult OCP users.⁶
- **Weight gain.** Research is contradictory regarding contraception and weight. Adolescents using combination OCPs may experience small increases in weight more often than those using progestin-only OCPs.⁷ Weight gain was cited as a major reason for discontinuing contraception by over a third of adolescents surveyed about their use of Depo-Provera[®] or Norplant[®] levonorgestrel implants⁸ and BMI had increased 1.1 and 1.3 units, respectively, since initiating contraception. Enhanced appetite and food intake are commonly associated with the use of progestins.⁷
- **Fluid retention.** A part of the weight retention can often be attributed to fluid retention, which tends to be cyclic and usually associated with estrogens. If fluid retention is present, assess sodium intake, assure adequate fluids, and consider recommending a

TABLE 2
Warning Signs of Potential Nutrition-Related Risk in Postpartum Adolescents

POSTPARTUM ASSESSMENT		Dietary Adequacy	Weight Retention	Eating Disorder
		Medical History	Breastfeeding exclusively Hemorrhage, anemia No vitamin/mineral supplements OCP use	OCP, Norplant®, or Depo-Provera® use Pre-eclampsia, pregnancy-induced hypertension
Diet and Activity	Fluid intake low Lactose intolerance, milk allergy Fewer than recommended servings for one or more food groups Limited food resources Soft drink consumption Meal skipping Sole responsibility for cooking Vegetarian eating style	Food choices high in calorie density Meal skipping or restrictive dieting TV and computer/video games >3 hrs/day Vigorous physical activity <3 times per week	Avoidance of foods Binge-eating Excessive exercise Fasting or restrictive dieting Meal skipping Vomiting, laxatives, diet pills or other purging	
Psychosocial	Depression Limited support from family or baby's father Substance use: alcohol, cigarettes, drugs	Emotion-linked eating Limited support from family or baby's father	Cigarette smoking for weight management Depression Difficulty coping with changes in body shape or size Distorted body image Emotion-linked eating	
Physical	BMI <5th %ile Clinical signs of nutritional deficiencies	BMI >95th %ile Postpartum weight gain	BMI <5th %ile* Bradycardia Hypothermia	

*Although a very low body weight can be a warning sign for anorexia nervosa, eating disorders are seen in all weight/BMI categories.

decrease in salty foods. Adolescents may perceive the fluid retention as weight gain and restrict fluids to lose weight.

- **Nausea** is a common complaint, mainly associated with Norplant®⁹ or estrogen-containing oral contraceptives.¹⁰ Taking the pill after meals or at bedtime may help.
- **Effects upon serum lipids.** Many studies have examined the effects of contraceptives on serum lipids, but limited research has been done with adolescent contraceptive users.⁷

- Norplant® implants have been associated with transient changes in plasma lipids in a positive direction along with the maintenance of stable values for the total cholesterol to HDL-c ratio (TC:HDL).¹¹
- OCP use has been shown to increase total cholesterol (TC), but levels are higher in women taking pills with greater than 50 mcg of estrogens.⁷ Several studies have shown no significant changes in serum lipids when using low dose OCPs with less than 30 mcg of estrogens.⁷ Many of the negative effects upon lipids with OCPs have been attributed to androgenic effects of the progestins

TABLE 3
Health Promotion Goals for
Postpartum Adolescents

Increase dietary adequacy with daily intake of:

- 5+ servings of fruits and vegetables
- 6+ servings of whole grain breads and cereals
- 4 servings of low fat milk and dairy products
- 2 servings of meat and protein foods
- 2 servings of fats and oils

Engage in daily physical activity

Eat regular meals, avoiding meal skipping

Drink plenty of water

Avoid excessive intake of total fat, saturated fat, cholesterol, sugar, and sodium

Refrain from substance use and limit or quit cigarette smoking

If nursing an infant:

- Consume enough energy to support breastfeeding
- Increase fluid and dairy intake

in the OCPs.⁷ Recent introduction of low-androgenic progestins have been associated with an improved lipid profile, lower LDL-c and higher HDL-c levels.¹²

- Depo-Provera[®] use has been shown to elevate LDL-c and reduce HDL-c, which is associated with greater cardiovascular risk.¹³

• **Effects upon blood pressure.**

- Systolic and diastolic blood pressure have been shown to be significantly higher in combination oral contraceptive users in a large sample of adolescents and adults.¹⁴
- A large clinical trial chronicling the health of nurses related OCP use to a greater risk of hypertension, compared with non-use of OCPs.¹⁵
- Progestin-only oral contraceptives, Depo-Provera[®] and Norplant^{®11} were not associated with higher blood pressures.^{9, 14}
- Encouragement of physical activity and weight management can help keep blood pressure lower.

- **Effects on bone density.** Depo-Provera[®] users often experience amenorrhea and have lower levels of

estrogen than non-contraceptive users; therefore some users may risk lowered bone density levels.^{7, 13} Depo-Provera[®] users should be assessed for other risk factors for osteoporosis and counseled to: assure adequate calcium intake, participate in weight-bearing exercise, and avoid cigarette smoking.

Counseling Regarding Physical Activity

The benefits of regular physical activity are well documented.

- The most recent recommendations advise people of all ages to include a minimum of 30 minutes of physical activity of moderate intensity (such as brisk walking) on most, if not all, days of the week. It is also acknowledged that for most people, greater health benefits can be obtained by engaging in physical activity of more vigorous intensity or of longer duration.¹⁶ Table 4 shows examples of physical activities suitable for postpartum mothers who do not have exercise restrictions.
- Weight-bearing exercises, such as walking and running, are more beneficial in preventing osteoporosis than are non-weight bearing exercises and provide similar aerobic benefits.

TABLE 4
Physical Activity Choices for
Postpartum Adolescent

Aerobic dance or exercise program	Jogging or running
Badminton	Martial arts (judo, karate, etc.)
Basketball	Racquetball
Bicycling or exercise bike use	Rollerblading
Circuit training	Rowing or rowing machine
Cross-country skiing	Soccer
Dancing (Hip Hop, jazz dance, etc.)	Swimming laps or water aerobics
Handball	Tennis
Hiking	Volleyball
Ice skating	Walking briskly

- Teens who lack time to develop a formal exercise routine can be encouraged to take their infant for a walk. Pushing a stroller combined with brisk walking is a good form of exercise. Adolescents can be encouraged to enroll in postpartum exercise classes offered by local community centers or community education programs. Many classes are available on a sliding fee scale and are accessible by adolescent mothers.

Counseling Regarding Postpartum Weight Management

Postpartum weight retention is common, but teen mothers often ask, “When will I lose all of this weight?” The myriad of influences on the adolescent mother’s weight include:

- **Amount of weight gained in pregnancy.** Weight gain in excess of recommended amounts might be lost slowly or retained as excess weight, especially if the adolescent was overweight before pregnancy. Gestational weight gain has been shown to be the strongest predictor of postpartum weight change.¹⁷
- **Continued adolescent growth.** Linear growth has been shown to continue for up to five years after menarche. (See Chapter 4 for a more detailed description of adolescent growth.) This growth is accompanied by a concomitant gain in weight.
- **Postpartum eating habits.** In one study postpartum adolescents and adults retained less weight if they ate breakfast and lunch regularly and snacked less than three times a day.¹⁸
- **Activity level.** The adolescent who exercises consistently will have an easier time losing weight. An adolescent with a cesarean delivery may have more of a delay in resuming regular physical activity and may need additional encouragement to do so.
- **Breastfeeding status.** Because energy needs are substantially increased during lactation, breastfeeding tends to have a small beneficial effect upon postpartum weight loss.¹⁸ It is important, though, for the lactating teen not to diet or restrict energy or nutrients when breastfeeding, making weight maintenance a more appropriate goal than weight loss.
- **Stress and other psychosocial issues.** Adolescent mothers experience considerable stress and may lose weight too rapidly or actually gain weight during the

postpartum period. Time or financial pressures or little support at home can lead to meal skipping or reliance on quick, less nutritious food choices. Depressive symptoms, common in postpartum adolescents,⁵ and concomitant changes in appetite can lead to excessive weight gain or loss. Symptoms of eating disorders also have been shown to increase during the postpartum period¹⁹ and can be associated with restrictive dieting, binge eating and purging behavior. All of these reactions may put the teen at nutritional risk for nutrient depletion, anemia, or eating disorders.

- **Cigarette smoking.** The adolescent who quits smoking during pregnancy and does not intend to start smoking again may retain more weight in the first year postpartum.¹⁸ The decision to continue as a nonsmoker should be supported, but expectations for weight change at this time need to be realistic.

Nutrition education and counseling included in weight management programs should include the following information:

- Ideas for choosing more nutrient-dense foods.
- Low fat food selection and preparation techniques.
- Portion control.
- Physical activity. This discussion should be centered on aerobic, strength and flexibility exercises. Suggestions should be given on appropriate activity, acceptability of activity, time involved, and how to fit it in their schedule of school and childcare. Reducing time spent watching TV or using the computer or playing video games is a priority.
- Ways to cope with specific places, people, emotions and occasions that may lead to overeating.
- Referral to intervention programs for obese adolescents that combine exercise and dietary recommendations within a behavioral context, addressing the complex factors affecting adolescent eating behavior.²⁰ A referral to such a program should only be made if the individual has support, time and the desire to make substantial changes in eating, activity, and personal behavior. The overweight, lactating mother should be encouraged to exercise, but not to reduce energy intake until the infant is weaned.
- Realistic rate and amount of weight loss. Although the long-term goal is maintenance of weight at or

below the 85th percentile of Body Mass Index for age, providers need to discourage fasting, dieting, and purging behaviors, and support realistic expectations for body shape and size. Caution must be exercised when recommending weight loss or setting weight goals for adolescents. Adolescents with warning signs for eating disorders should be identified²¹ and evaluated by an interdisciplinary team skilled in working with these patients.

GENERAL POSTPARTUM EDUCATION STRATEGIES

Table 5 lists some general guidelines for nutrition education in postpartum adolescents.

- Emphasis should be on personalizing recommendations and helping the adolescent integrate changes into her existing lifestyle. For example, the adolescent mother who feels there is no time to exercise may be able to take regular brisk walks pushing a stroller.
- It is important to identify positive behaviors and provide alternate strategies that facilitate coping with

motherhood, as well as normal adolescent development. This may require training adolescents in skills such as decision-making and peer pressure resistance, which enhance the adolescent's confidence or ability to make a change. Obese adolescents in Shapedown, a skills-based, behavioral weight management program, showed improvement in self-esteem, dietary and exercise habits, as well as weight loss.²⁰

- The individual's adoption of health-enhancing behaviors may be a long process. Regular contact with the adolescent mother, assessing progress, and encouraging gradual changes over an extended period of time, enhances results.
- When possible, the partner and/or baby's father, peers, parents, and other relatives should form a supportive network, reinforcing the adolescent mother's healthy behavior.
- When working with adolescent mothers, health promotion issues are often clouded by psychological, socioeconomic, nutritional, and medical factors. A comprehensive health team is essential and, if not available, appropriate referrals should be made.

TABLE 5

Guidelines for Nutrition Education and Counseling for Postpartum Adolescents

Screen for potential nutrition and health-related problems.

Identify strengths (eating regular meals, physical activity, good emotional support) and problem-solve around obstacles to compliance.

Review dietary recommendations with emphasis on protein, calcium, iron, folic acid, and fluids.

Review infant feeding practices and infant growth.

Review safe methods of weight management.

Promote regular eating pattern and avoid meal-skipping.

Help integrate regular physical activity into lifestyle.

Help adolescent set realistic goals.

Give practical information (written and verbally) and correct misconceptions.

Encourage emotional support from family and friends.

Follow-up with adolescent mother on regular, long-term basis.

Identify assistance programs if food resources are inadequate.

Identify those postpartum adolescents who may benefit from a mental health referral due to depression, family dysfunction, or an eating disorder.

OVERCOMING OBSTACLES TO COMPLIANCE

Numerous factors affect adolescent mothers' adherence to health-promoting recommendations. Barriers experienced by adolescent mothers can make it more difficult to initiate a behavior change and provide little reinforcement for practicing positive behaviors. Selected barriers are listed in Table 6.

Methods for overcoming barriers are listed below.

- The physical effects of childbirth and the demands of infant care leave little energy for major lifestyle changes, especially combined with employment or school attendance. Providing referrals and resources for low-cost or free childcare can help the adolescent find the time and energy to participate in health-enhancing behaviors, such as physical activity or social interaction.
- There is often realignment within the family or with partners, and limited support for making changes. Provide referrals to community education or Early Childhood and Family Education programs. These

programs offer new mothers the chance to interact with other new parents, increase their confidence by teaching positive parenting skills, and usually offer free or low-cost childcare.

- Involve the adolescent in identifying and developing strategies for overcoming perceived barriers. Participation in setting goals and planning strategies increases the likelihood that the adolescent will adopt health-enhancing behaviors.
- Develop contracts for behavior change with postpartum adolescents that include strategies that will be used to overcome obstacles to change.

TABLE 6
Obstacles to Change
in Postpartum Adolescents

Individual

- Fatigue or physical discomfort
- Postpartum depression
- Substance abuse
- Little free time available (e.g., to exercise or make healthier meals)
- Small perceived benefit from making recommended change

Financial

- Poor financial resources or access to transportation
- Limited access to health care, nutrition/health counseling

Family And Peers

- Misinformation
- Additional stressful events or losses (e.g., marriage, breakup of relationship, financial problems, dropping out of school, new job, divorce of parent)
- Little social support; chaotic or isolated home environment

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