First Steps Nutrition Modules

Module 5 – Nutrition and the Postpartum Period

Introduction

The postpartum period is a critical one. Worldwide, most maternal deaths occur during the postpartum period. From a nutrition perspective, this period is critical to the health (and nutritional status) of the mother and infant, and to setting the stage for a healthy feeding relationship.

The World Health Organization (WHO) has published guidelines for postpartum care. (WHO, 1998) Many of the guidelines have implications for the nutrition professional, including guidelines for maternal nutrition, including supplementation, general diet, and prevention of micronutrient deficiencies. Guidelines for breastfeeding and infant nutrition are also published, and are covered in Module 7, Breastfeeding Assessment and Support and in Module 6, Nutrition and the Young Infant.

Postpartum care should be a collaboration between parents, families, caregivers, and health professionals. Essential components of care include promotion of breastfeeding, contraceptive and nutrition advice. (WHO, 1998) In addition to the benefits for the mother, child and family, nutrition intervention between pregnancies may improve the outcome of a subsequent pregnancy. (IOM, 1992)

Estimated time to complete this module: 60 minutes.

Learning Objectives

Participants will be able to:

- Describe basic nutrient needs during the normal postpartum period
- Identify risk factors during the postpartum period and describe the potential complications and nutritional implications associated with each risk
- Complete a nutrition assessment for a woman during the postpartum period (including evaluation of anthropometrics, biochemical indicators, dietary intake, medical data, psycho-social issues)
- Develop an individualized intervention and education plan (including weight goals, treatment/prevention of iron deficiency, general diet quality)
- Identify referrals needed based on individual's nutrition and medical needs, including to members of the MSS/ICM team and/or community providers, as appropriate

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Changes in the Postpartum Period

The postpartum period begins with the delivery of the baby and the placenta. The end of the postpartum period is generally considered to be 6-8 weeks after delivery (though some systems do not return to pre-pregnancy states for 12 months).

Summary of immediate postpartum physiologic changes

It can be helpful for the dietitian to have an understanding of some of the changes that occur in the immediate postpartum period. If problems persist past discharge, they may have nutrition implications. At the very least, a basic understanding of the client's experience can make communication easier.

Skin-to-skin contact (mother and infant) is recommended, as soon after birth as possible. In addition to promoting breastfeeding initiation, this helps the infant maintain body temperature and glucose levels. After the baby is delivered, 25-50% of women experience chills and shivering, which may last up to an hour. Uterine involution begins, and the cervix, vagina, vulva, and abdominal wall begin to return to their pre-pregnancy states. Mean weight loss in this period is about 18-28 pounds (fetus, placenta, amniotic fluid, and other fluid). Rooming-in and on-demand infant feedings are current trends that promote breastfeeding initiation.

Complications that can occur in the immediate postpartum period include hemorrhage, preeclampsia/eclampsia, infection, urinary retention, adverse reactions to medications, thromboembolism, musculoskeletal pain, and neuropathy. (Berens, 2005)

Summary of late postpartum changes (after discharge from the hospital)

After the immediate postpartum period, the woman's body continues the gradual transition toward its prepregnancy state. Lochia (the normal shedding of blood and tissue) can last for 6-8 weeks. Gonadotropins and sex steroids are decreased for the first 2-3 weeks postpartum, and if the woman is breastfeeding, menstruation is delayed. About half of the gestational weight gain is lost in the first 6 weeks, and weight loss continues for about 6 months postpartum.

Issues to be addressed in the postpartum period include underlying medical conditions (and recommendations for follow-up and screening), weight loss, infant feeding method, contraception, and patient mood. Recommendations for postpartum activity are generally for the mother to resume activities when she is comfortable performing them; she should not drive until she has stopped using narcotic analgesics.

Maternal issues in this period can include problems with sexual function (related to decreased libido, increase in vaginal atrophy, and decrease in lubrication), baby blues and depression, and abnormal thyroid function (hyper- and/or hypothyroidism). (Berens, 2005)

WHO Recommendations During the Postpartum Period

The World Health Organization has identified special needs of women in the postpartum period. Many of these needs have relevance to the dietitian. Some are covered in this module; others are discussed in Module 7, Breastfeeding Assessment and Support and in Module 6, Nutrition and the Young Infant.

Information/counseling on the following:

Topic	**Possible Resources**
Care of the baby and breastfeeding	• Modules 6 • Module 7
What happens to their bodies, including signs of possible problems	• http://kidshealth.org/parent/pregnancy_newborn/home/recovering_delivery.html • http://www.nlm.nih.gov/medlineplus/childbirth.html • Community Health Nurse
Self-care, hygiene, and healing	• Community Health Nurse • Behavioral Health Specialist • Dietitian
Sexual life	• Community Health Nurse • Behavioral Health Specialist • Dietitian
Contraception	• Community Health Nurse • Behavioral Health Specialist • Dietitian • Community Health Worker • First Steps family planning training online
Support from: • Health care providers • Partner and family: emotional, psychological	• Community Health Nurse • Behavioral Health Specialist • Dietitian • Community Health Worker
Health care for suspected or manifest complications	• Community Health Nurse
Time to care for the baby	• Community Health Nurse • Behavioral Health Specialist • Dietitian
Help with domestic tasks	• Community Health Nurse • Behavioral Health Specialist • Dietitian • Community Health Worker
Maternity Leave	• Behavioral Health Specialist
Social reintegration into her family and community	• Community Health Nurse • Behavioral Health Specialist • Dietitian • Community Health Worker
Protection from	• Community Health Nurse

abuse/violence	• Behavioral Health Specialist • Dietitian

Table 5-1. Special needs of women in the postpartum period

In addition to this, fears that women may have in the postpartum period may include (WHO, 1998):

- Inadequacy
- Loss of marital intimacy
- Isolation
- Constant responsibility of caring for the baby and others

Interventions for many of the specific needs can be supported by health care providers, including nutrition professionals.

Nutrient Needs in the Postpartum Period

Recommendations for nutrient intake during the postpartum period are based on the following goals:

- Replenish nutrient stores, specifically, calcium, vitamin B6, and folate (IOM, 1992)
- Support requirements of lactation, when the woman is breastfeeding

Non-breastfeeding women

There are no nutrient intake guidelines for non-breastfeeding women that are specific to the postpartum period. In this case, it is reasonable to use the DRIs for nonpregnant women as the basis for nutritional therapy, with adjustments for situations that might affect needs.

Breastfeeding women

Recommendations for intake of selected nutrients during lactation are reviewed below. Higher intakes may be needed for women who are breastfeeding more than one infant. A summary table is available.

Requirements for some nutrients (e.g., fluoride and chromium) are thought to be unchanged by lactation. The increase in energy utilization increases needs for some nutrients (e.g., thiamin and niacin). Recommended intakes for other nutrients (e.g., copper, iodine, manganese, biotin, choline, riboflavin, and folate) are increased, based on the amount of the nutrient secreted in milk.

Recommendations for water intake (i.e., from food, beverages and drinking water) are increased during lactation from 3.0 liters (~100 ounces) per day during pregnancy to 3.8 liters (128 ounces) during lactation. (2.7 liters per day - 91 ounces - is the recommended amount for women who are not pregnant.)

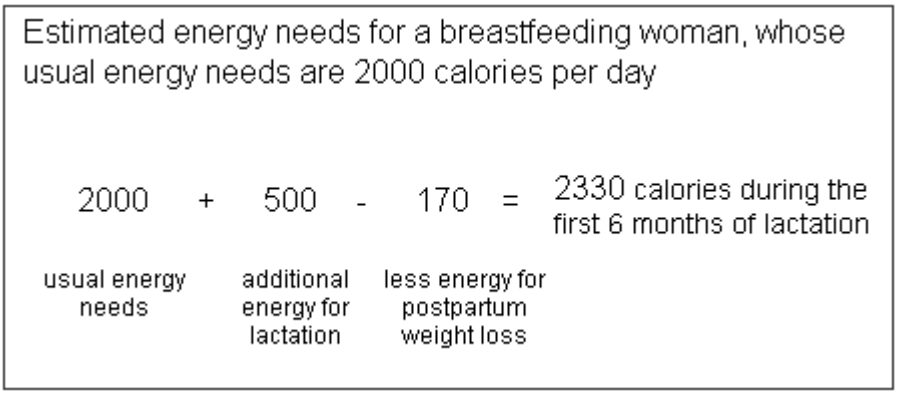
Guidelines for intake, based on Institute of Medicine recommendations and the Dietary Reference Intakes (DRI) are reviewed below and summarized in a table at the end of this section.

Practical guidelines for overall intake (including recommended portion sizes and number of servings) are included later in this module.

Energy

For lactating women, recommendations for daily energy intake include an increase for breastmilk production (500 calories in the first 6 months, 400 calories after that) and a decrease for weight loss (170 calories in the first six months).

For example:



Protein

Although studies have shown that the protein concentration of breastmilk is not affected by protein intake, adequate intake is necessary to promote conservation of maternal skeletal muscle. A factorial approach was used to determine the RDA for protein during lactation; it was assumed that protein and amino acid requirements increase in proportion to milk production. It is estimated that 1.3 g protein per kg is needed per day (IOM, 2002).

Fat

The essential fatty acids linoleic (18:2 n-6) and alpha-linolenic acid (18:3 n-3) are important components of cell membranes and essential to the formation of new tissue. Long-chain derivatives of linoleic and alpha-linolenic acids (arachidonic – AA and docosahexaenoic – DHA acids, respectively), are important for neural development.

Carbohydrate

Recommendations for carbohydrate intake increase during lactation, because of increased needs for production of breastmilk. (IOM, 2002)

Minerals

Calcium

The primary source of calcium in human milk seems to be from maternal bone resorption, and not maternal calcium intake. It is thought that this is a normal, physiologic adaptation, and that there are no long-term detrimental effects on maternal bone mass. Thus, the AIs for calcium during lactation are the same as AIs for women who are not lactating. (IOM, 1997)

Iron

Iron needs return to pre-pregnancy levels, unless blood loss exceeded the usual amount lost during a vaginal delivery (~500 mL). (IOM, 2001) In addition, the gradual disintegration of excess red blood cells releases iron that can be used for synthesis of new hemoglobin. (IOM, 1992)

Zinc

Requirements for zinc during lactation are increased above pregnancy and nonpregnancy levels. (IOM, 2001)

Vitamins

Vitamin D

Although there is concern about vitamin D-deficient rickets in infants, the literature does not support routine supplementation for all lactating women. However, when sunlight exposure is inadequate, an AI of 5.0 µg (200 IU)/day is needed. The amount provided by most general vitamin supplements – 10.0 µg – is not excessive. (IOM, 1997) Recent reports indicated many women have vitamin D insufficiency, and some groups are calling for an increase in recommended intake levels (Ginde et al, 2010).

Vitamin A

To assure adequate body stores of vitamin A, the RDA for vitamin A is increased above that for non-pregnant women. (IOM, 2001)

The upper limit for vitamin A intake for lactating women is the same as for nonpregnant and pregnant women (2800 µg preformed vitamin A per day for 14-18 year olds, and 3000 µg preformed vitamin A for 19-50 year olds).

Vitamin B6

There is evidence that low maternal intakes could lead to compromised B6 status in the infant, so an increased intake is suggested for lactating women.

Vitamin B12

As with pregnancy, it is thought that vitamin B12 concentrations in breastmilk are more reflective of the mother's current B12 intake than of B12 stores. The RDA for B12 during lactation is based on prepregnancy requirements and the amount of the vitamin secreted in breastmilk.

Vitamin B12 intake of women who are strict vegetarians may be marginal.

Considerations in the Nutritional Assessment

Anthropometrics

Good reference data for body composition during lactation and the postpartum period are not available. The average rate of weight loss by lactating women (after the initial rapid weight loss in the first few weeks postpartum) is 0.5 to 1.0 kg per month for the first 6 months. This is highly variable, however. (IOM, 1991) Patterns of weight loss among adolescents are even more variable; this is probably related to differences in pre-pregnancy growth status and gestational weight gain patterns. (Worthington-Roberts, 1997)

Postpartum weight retention is associated with several factors, including excessive weight gain during pregnancy, race- African American, obesity, quitting cigarette smoking. (Berens, 2005).

Clinical judgment should be used when evaluating the weight and body mass index (BMI) in the postpartum period. Questions to consider include:

- What was the client's prepregnancy weight? BMI?
- What was her rate of weight gain during pregnancy?
- What are her goals for weight?

Risk factors include:

- Underweight (e.g. low weight-for-height or BMI) (IOM, 1991)
- Excessive weight gain during pregnancy
- Unrealistic (or excessive) weight loss goals

Biochemical Indicators

The use of biochemical indicators in the postpartum period can be limited. Again, clinical judgment is critical in the assessment process – when the use of a biochemical marker is indicated, the dietitian should consider how postpartum and/or lactation might affect the level. In addition, any risk factors identified during pregnancy (e.g., diabetes, hypertension) should receive follow-up attention.

The Centers for Disease Control and Prevention (CDC) recommend that hemoglobin or hematocrit should be measured for women at risk for anemia at 4-6 weeks postpartum. Risk factors include:

- anemia continued through the third trimester
- excessive blood loss during delivery
- multiple birth

CDC guidelines call for measurement of hemoglobin or hematocrit and comparison to nonpregnant women for evaluation.

Age	**Hematocrit* (%)**	**Hemoglobin* (g/dL)**
<15 years	>35.7	>11.8
15-18 years	>35.9	>12.0
>18 years	>35.7	>12.0
Centers for Disease Control and Prevention. Recommendations to prevent and control iron deficiency in the United States. MMWR – April 03, 1998 / 47 (RR-3); 1-26.		
* Low levels may indicate iron deficiency. High values (Hct >45.0% or Hgb >15.0 g/dL) in the 2nd trimester or later may indicate poor blood expansion.		
Exceptions: Race-based differences in hemoglobin concentration and hematocrit levels have been documented; the Institute of Medicine suggests lowering cutoff values for black adults (by 2% for hematocrit and 0.8 g/dL for hemoglobin).		
Smoking may falsely elevate hemoglobin and hematocrit and mask anemia. The CDC recommendations suggest adjusting the cutoffs for hemoglobin and hematocrit, based on smoking level.		

Table 5-2. Guidelines for evaluating indicators of iron status in the postpartum period

	Hematocrit* (%)	**Hemoglobin* (g/dL)**
> 2.0 packs per day	2.0	0.7
All smokers	1.0	0.3
Centers for Disease Control and Prevention. Recommendations to prevent and control iron deficiency in the United States. MMWR – April 03, 1998 / 47 (RR-3); 1-26.		
(Smoking increases hemoglobin/hematocrit)		

Table 5-3. Adjustment of maximum hematocrit values and hemoglobin concentration for anemia, based on smoking

Risk factors include:

- Anemia, as indicated by hemoglobin or hematocrit

Dietary Intake

Evaluation of dietary intake involves the same general process during the postpartum period as was used during pregnancy. (See Module 3, Nutrition Assessment)

Guidelines

For the non-lactating woman, guidelines for intake should be consistent with general recommendations for women, and may include considerations for weight loss.

See the Table below for a sample meal pattern. Nutrients of concern for adult women in general include iron, calcium, folic acid, zinc, and magnesium. (Wright, et al, 2003)

Sample Meal Pattern
This food pattern provides approximately 2000 calories, 100 grams protein, 1000 mg calcium, and 20 mg iron.

Breakfast	1 large whole grain bagel 2 tablespoons cream cheese 1 banana 8 ounces milk
Snack	1 ½ ounces cheddar cheese 10 crackers
Lunch	¼ cup chicken salad 2 cups green salad 2 tablespoons Italian salad dressing 1 roll with 1 tablespoon butter
Dinner	½ cup rice 4 ounces lean beef 1 cup stir-fried vegetables ½ cup vanilla ice cream

Table 5-4. Sample meal pattern – postpartum period

Lactation increases the need for some nutrients. A general estimate is that intake should be increased to cover the cost of lactation – by about 10% if a woman is not active, or 20% or more if she is moderately or very active. WHO suggests an emphasis on high-protein, energy-dense foods and encouraging foods rich in iron.

In the US, lactating women whose intakes meet recommendations for energy intake, usually meet recommendations for all nutrients except calcium and zinc. Nutrients of concern if energy intakes are less than 2700 kcal/day, include calcium, magnesium, zinc, vitamin B6, and folate. (IOM, 1991) Iron is also a common nutrient of concern.

Factors that affect an individual's intake

Factors that affect an individual's intake (and readiness for intervention) were reviewed in Module 3, Nutrition Assessment. These are important factors in the postpartum period as well, and include the goals of the woman and her family, the home and work environment, food security, and family and cultural beliefs and attitudes about nutrition, eating, and parenting.

Risk factors include:

- Food insecurity and/or an inadequate food supply
- Restrictive food pattern for rapid weight loss (See discussion)
- Vegetarianism (See discussion)
- Lactose intolerance
- Limited support system
- Domestic abuse
- Psychological stresses; disinterest in healthy eating practices
- Negative feelings about parenting
- Beliefs/practices related to food and eating (cultural, regional, etc.)
- Low level of mastery or self esteem
- Fatigue
- Loss of appetite
- Excessive intake

Medical Data

Chronic medical conditions or conditions that were acquired during pregnancy may affect the nutritional status of a woman in the postpartum period. The health status of women who experienced complications during pregnancy should be reassessed in the postpartum period (IOM, 1992). For example:

- Gestational diabetes: evaluate blood glucose status
- Hypertension: evaluate blood pressure and renal status
- Hemorrhage associated with delivery: evaluate iron status (increased risk for anemia)

See Module 4, Medical Nutrition Therapy for Specific Conditions for more information.

Medical **risk factors** were summarized in Module 3. In general, nutrition risk factors can include:

- Chronic diseases and disorders
- History of mental illness or depression
- Oral health, dental issues
- Observable injuries, old or new
- Past or present use of tobacco, alcohol, drugs
- Medication-nutrient interactions
- Inappropriate use of vitamins, minerals, herbs

Psychosocial Issues

Considerations related to psychosocial issues are reviewed in Module 3 and apply to the postpartum period as well. The dietitian should also consider emotional status and mental health (especially symptoms of mild depression). In addition to the overall health and well-being of the mother and family, this can have specific nutrition-related implications. Consider the effects on appetite, access to food, and sleeping/eating habits. (IOM, 1992)

Developing Interventions

During the postpartum period, women are adjusting to a new role, especially if breastfeeding. They are tired and may not have support from their families or friends. In addition, they are adjusting to a new postpartum body and typically have decreased appetites. It is important to be aware of these issues and provide support in the assessment process and as interventions are developed. Help the client to develop realistic goals that she feels she can achieve. Recommendations may incorporate the following:

- Small, frequent meals
- Meals that are easy to prepare
- Use of a multivitamin
- A discussion about weight – how does she feel about her postpartum body? If weight loss is a concern, talk about safe weight loss and support (e.g., WIC, parent support groups)
- Sleeping/resting

Some plans that address common issues for women in the postpartum period are reviewed in this section:

Weight Goals

The rate of weight loss in the postpartum period is highly variable; it is estimated that the weight loss is about 0.5 to 1.0 kg (about 1 to 2.5 pounds) per month for the first 6 months. (IOM, 1991) The energy intake to achieve this can be estimated, with considerations for the woman's height and activity level, and whether or not she is breastfeeding. (See previous section.)

A Cochrane review concluded that both diet and exercise together and diet alone help women to lose weight in the postpartum period. The beneficial effects of exercise on cardiorespiratory fitness and preservation of fat-free mass were noted. (Adegboye et al, 2007)

The IOM suggests that overweight, breastfeeding women lose no more than 2 kg per month, and that the total energy intake should be at least 1800 calories per day, to allow adequate protein, vitamin, and mineral intakes. (IOM, 1992)

It is the role of the health care team to work with the woman to identify a reasonable body weight goal and develop a plan for achieving that goal. Some tools and resources for helping clients with this include the following:

- Be a Healthy Mom (available for download on Health Education Resource Exchange [HERE] web site or order through the DOP General Store)

- "A Lifetime of Good Health: Your guide to staying healthy" – Information for women about healthy behaviors to prevent and manage many health conditions. Available in English, Spanish and Chinese. http://www.4women.gov/pub/pg.cfm

Read more: about the long-term effects of pregnancy weight gain and postpartum weight loss

A recent study examined the effects of postpartum weight loss, breastfeeding, and exercise (among other things) on long-term (5-10 years) weight gain and BMI. Researchers looked at overall weight change of 540 women at (1) the first prenatal visit, (2) 6 months postpartum, and (3) at long-term follow-up (mean 8.5 years after pregnancy). (Rooney, 2002)

The most significant predictors of weight change at long-term follow-up were weight gain during pregnancy and weight retention at 6 months postpartum.

Breastfeeding was not related to BMI at 6 months postpartum, but was significant at long-term follow-up. Women who did not breastfeed, or who breastfed for fewer than 2 weeks, had largest weight gain from before pregnancy; women who breastfed >12 weeks had smallest weight gain.

Women who reported they were participating in aerobic exercise in the postpartum period had significantly less weight gain than those not reporting this.

The researchers concluded that:

- *Predictors of long-term weight changes (and higher BMI) were excess weight gain during pregnancy and failure to lose weight after pregnancy.*
- *Aerobic exercise is associated with significant, long-term benefits, even if there are no immediate weight loss benefits.*

Iron Deficiency

Treatment for iron-deficiency anemia includes an oral iron supplement (60-120 mg per day) and counseling about obtaining iron through diet. If no risk factors for anemia are present, supplemental iron should be stopped at delivery. (CDC, 1998)

Available for download from the HERE web site
- Be a Healthy Mom
- Iron for Strong Blood

General Diet Quality

Some guidelines for evaluating the general diet quality of women in the postpartum period are described previously. Tools and resources to help plan interventions to improve overall diet quality and/or address specific nutrient needs are listed below:

- Be a Healthy Mom (available for download)
- "Congratulations, Mom. You have a beautiful baby." This brochure explains why folic acid is important even after childbirth and reminds new mothers to take a multiple vitamin with folic acid every day. Tips on postpartum self-care, such as getting enough rest; finding time to relax; and eating a healthy, varied diet are presented. The brochure is available in English (http://www.nbdpn.org/archives/2006/2006pdf/NTDpostpartum_hr_eng.pdf) and Spanish (http://www.nbdpn.org/archives/2006/2006pdf/NTDpostpartum_hr_span.pdf)

In addition, the postpartum period may present a good opportunity to promote healthful eating for the entire family. The dietitian can provide general information about meal planning, food preparation, and food choices that can benefit the entire family. (IOM, 1992) Some general nutrition resources include the following:

- Healthy Choices for Kids
- Eat Better, Eat Together materials, including brochures: 10 Tips for Quality Family Meals, Family Meals with Growing Children, Healthful Meals. Available from Washington State University, Nutrition Education: http://nutrition.wsu.edu/ebet/brochures.html

Vegetarian

Women who follow vegetarian food patterns may have inadequate intakes of specific nutrients. Depending on the foods consumed, special attention (and/or supplements) may be required to ensure adequate intakes of protein, iron, vitamin B12, zinc, and calcium. (See the Table in Module 2, Nutrition and Normal Pregnancy for more detail about specific nutrients and vegetarian food patterns.)

- A vegetarian food guide was published in the Journal of the American Dietetic Association: http://www.ncbi.nlm.nih.gov/pubmed/12778051
- Vegetarian Nutrition Dietetic Practice Group of the American Dietetic Association http://www.vegetariannutrition.net
- Vegetarian Resource Group http://www.vrg.org.
- Messina V, Mangels R, Messina M. The Dietitian's Guide to Vegetarian Diets, 2nd ed. Boston, MA: Jones and Bartlett Publishers, 2004.

Restrictive Food Patterns

Food patterns may be restrictive for other reasons, including the client's desire to lose weight rapidly. Intakes of nutrient-rich foods (food rich in protein, vitamins, and minerals) should be encouraged, especially if energy intake is less than 1800 calories per day. (IOM, 1991)

Case Examples

Case Example: Kayla

Kayla is a 20-year-old single woman, who initially came to her local WIC office seeking food assistance. She found an apartment and moved in about a month before her infant (Skylar) was born. Skylar is healthy. Kayla will return to work the night shift at a convenience store in 2 weeks, and a friend has agreed to watch Skylar while Kayla works. She is not sure how this will work because she is already very tired. Money is very tight, and Kayla still has problems finding enough food at the end of the month. She is looking forward to losing the weight that she gained during pregnancy.

Kayla described a usual day's intake:
- Breakfast: coffee, cereal with milk (though she often skips breakfast)
- Snack: Poptart
- Lunch: peanut butter sandwich
- Dinner: fast food (usually a hamburger value meal with french fries and a soda)

What concerns do you have about Kayla's nutritional status?

Kayla's food pattern indicates risk of deficiency for several nutrients, (based on her description of a usual day's intake and her comment about being very tired).

Other "red flags" include:
- food insecurity (not having enough money for food at the end of the month)
- upcoming return to work may make healthy food selection even more difficult

What will you incorporate into the nutrition care plan?

Counseling should include information about general diet quality and address concerns about specific nutrients. A discussion about expectations for weight loss and infant feeding methods is also indicated.

The dietitian could discuss a healthy approach to eating. If a mother is already run down and tired she needs to be careful about an overly restrictive food pattern. Without adequate nutrition, she could become even more tired, and with the added stress of working could increase her risk of becoming sick. The discussion could include meal planning strategies that will help Kayla get easy nutritious meals and still allow for some weight loss.

The care plan might also include referrals, including:
- for medical insurance for Skylar
- resources for food

- other resources (e.g., community resources that provide diapers and other infant items)

Case Example: Yolanda

Yolanda is a 30-year old woman who had an uncomplicated pregnancy, labor, and delivery. She is currently breastfeeding and offering some supplemental formula. Yolanda says that she is overwhelmed. She is tired and doesn't have time to cook meals for herself, so she snacks a lot. Yolanda is very worried about her baby's well-being. She says, "I would never do anything to hurt my baby, but I have these panic attacks where I've left her somewhere."

What concerns do you have about Yolanda's nutritional status?

Yolanda's food pattern (snacking vs. scheduled meals and snacks) may be putting her at risk. Nutrition-related risk factors for Yolanda also include being tired and overwhelmed; this can interfere with her ability to make healthy food choices.

What concerns do you have about other (non-nutrition) issues?

Yolanda's concerns about her infant's well-being and "panic attacks" are red flags. Feeling overwhelmed and tired are also indicators that she might need additional help.

What will you incorporate into the nutrition care plan?

The nutrition care plan should include:
- counseling about general diet quality
- discussion of expectations for weight loss
- referral to behavioral health specialist because of concerns about postpartum depression
- discussion about the need to monitor the infant's nutritional status

References and Resources

References

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Resources

Changes in the Postpartum Period

Recovering from Delivery - KidsHealth for Parents website, Nemours Foundation
http://kidshealth.org/parent/pregnancy_newborn/home/recovering_delivery.html

Medline Plus- Childbirth
http://www.nlm.nih.gov/medlineplus/childbirth.html

New Mothers Speak Out
Results of a national survey highlight women's postpartum experiences. The report, produced by Childbirth Connections, discusses women's experiences from before conception through the early postpartum months. The content is presented in four parts: maternal well-being; child well-being; family and relationships; and employment, maternity leave, and child care. The report and a fact sheet are available online.
http://www.childbirthconnection.org/article.asp?ck=10413

General Diet Quality

Congratulations, Mom. You have a beautiful baby - This brochure explains why folic acid is important even after childbirth and reminds new mothers to take a multiple vitamin with folic acid every day. Tips on postpartum self-care, such as getting enough rest; finding time to relax; and eating a healthy, varied diet are presented. The brochure is available in English (http://www.nbdpn.org/archives/2006/2006pdf/NTDpostpartum_hr_eng.pdf) and Spanish (http://www.nbdpn.org/archives/2006/2006pdf/NTDpostpartum_hr_span.pdf)

Eat Better, Eat Together materials, including brochures: 10 Tips for Quality Family Meals, Family Meals with Growing Children, Healthful Meals. Available from Washington State University, Nutrition Education: http://nutrition.wsu.edu/ebet/brochures.html

Vegetarian

Vegetarian Food Guide - This is a companion paper to the American Dietetic Association's and Dietitians of Canada's Position Paper: http://www.ncbi.nlm.nih.gov/pubmed/12778051.

Vegetarian Nutrition Dietetic Practice Group of the American Dietetic Association http://www.vegetariannutrition.net

Vegetarian Resource Group http://www.vrg.org.

Messina V, Mangels R, Messina M. **The Dietitian's Guide to Vegetarian Diets**, 2nd ed. Boston, MA: Jones and Bartlett Publishers, 2004.

Quiz

1. True or false: Rooming-in and on-demand infant feedings are current trends that promote breastfeeding initiation.

a. true
b. false

2. In general, recommendations for postpartum activity are for the mother to:

a. resume activities as soon as possible
b. resume activities after 6 weeks
c. resume activities when she is comfortable performing them
d. postpone resuming activities for as long as possible

3. In general, about ____ of gestational weight is lost in the first 6 weeks, and weight loss continues for about __ months postpartum.

a. half, 6
b. half, 3
c. one-quarter, 2
d. one-quarter, 4

4. A discussion about emotional and psychological support from the woman's partner and family is suggested by the WHO. Which of the following MSS providers might include this discussion as part of the visit?

a. Community Health Nurse
b. Behavioral Health Specialist
c. Dietitian
d. All of the above

5. According to the IOM, recommendations during the postpartum period include replenishing stores of which of the following nutrients:

a. energy, calcium, and iron
b. calcium, vitamin B6, and folate
c. magnesium, calcium, and iron
d. calcium, and vitamin B12

6. The AI for calcium during lactation is _____ AI for women who are not lactating.

a. higher than
b. lower than
c. the same as
d. dependent upon how long the woman is planning to breastfeed

7. For most women, iron needs during lactation are ____ pre-pregnancy levels.

a. higher than
b. lower than
c. the same as
d. dependent upon how long the woman is planning to breastfeed

8. The CDC recommends that screening for iron deficiency anemia at 4-6 weeks postpartum for which of the following groups:

a. all women
b. women who smoke
c. women with anemia during the third trimester
d. none of the above; the recommendation is for routine iron supplementation (18 mg per day)

9. Recommendations during the postpartum period may include all of the following, EXCEPT:

a. Small, frequent meals
b. Meals that are easy to prepare
c. Planning for weight loss
d. The need for a high protein (e.g., 2.5 g/kg) food pattern

10. The IOM suggests that overweight, breastfeeding women lose no more than ___ kilograms per month, and that the total energy intake should be at least ____ calories per day to allow adequate protein, vitamin and mineral intakes.

a. 1 kg, 1600 calories
b. 2 kg, 1800 calories
c. 5 kg, 2000 calories
d. 5 kg, 2200 calories