LEARNING OBJECTIVES

- Describe the process of confirming pregnancy and estimating the date of birth.
- Summarize the physical, psychosocial, and behavioral changes that usually occur as the mother and other family members adapt to pregnancy.
- Discuss the benefits of prenatal care and problems of accessibility for some women.
- Outline the patterns of health care used to assess maternal and fetal health status at the initial and follow-up visits during pregnancy.
- Identify the typical nursing assessments, diagnoses, interventions, and methods of evaluation in providing care for the pregnant woman.
- Discuss education needed by pregnant women to understand physical discomforts related to pregnancy and to recognize signs and symptoms of potential complications.
- Examine the impact of culture, age, parity, and number of fetuses on the response of the family to the pregnancy and on the prenatal care provided.

KEY TERMS AND DEFINITIONS

birth plan A tool by which parents can explore their childbirth options and choose those that are most important to them.

Couvade syndrome The phenomenon of expectant fathers' experiencing pregnancy-like symptoms.

cultural prescriptions Practices that are expected or acceptable during pregnancy.

cultural proscriptions Forbidden; taboo practices during pregnancy.

doula Trained assistant hired to give the woman support during pregnancy, labor and birth, and/or postpartum.

home birth Planned birth of the child at home, usually done under the supervision of a midwife.

morning sickness Nausea and vomiting that affect some women during the first few months of their pregnancy; may occur at any time of day.

multifetal pregnancy Pregnancy in which there is more than one fetus in the uterus at the same time; multiple pregnancy.

Nägele's rule One method for calculating the estimated date of birth, or "due date.

pelvic tilt (rock) Exercise used to help relieve low back discomfort during menstruation and pregnancy.

pinch test Determines whether nipples are everted or inverted by placing thumb and forefinger on areola and pressing inward; the nipple will stand erect or will invert.

supine hypotension Shock; fall in blood pressure caused by impaired venous return when gravid uterus presses on ascending vena cava, when woman is lying flat on her back; vena cava syndrome.

trimesters One of three periods of approximately 3 months each into which pregnancy is divided.
he prenatal period is a time of physical and psychologic preparation for birth and parenthood. Becoming a parent is considered one of the maturational milestones of adult life, and as such, it is a time of intense learning for both parents and those close to them. The prenatal period provides a unique opportunity for nurses and other members of the health care team to influence family health. During this period, essentially healthy women seek regular care and guidance. The nurse’s health promotion interventions can affect the well-being of the woman, her unborn child, and the rest of her family for many years.

Regular prenatal visits, ideally beginning soon after the first missed menstrual period, offer opportunities to ensure the health of the expectant mother and her fetus. Prenatal health care permits diagnosis and treatment of maternal disorders that may have preexisted or may develop during the pregnancy. Care is designed to monitor the growth and development of the fetus and to identify abnormalities that may interfere with the course of normal labor. Education and support for self-care and parenting can be provided.

Pregnancy spans 9 months, but health care providers, in contrast to using the familiar monthly calendar to ascertain fetal age or discuss the pregnancy, use the concept of lunar months which last 28 days, or 4 weeks. Normal pregnancy, therefore, is considered to be at term if it advances to 38 to 40 weeks. A pregnancy is known as the third trimester from weeks 27 through 40. A pregnancy is traditionally termed the estimated date of confinement (EDC), although estimated date of delivery (EDD) also has been used. To promote a more positive perception of both pregnancy and birth, however, the term estimated date of birth (EDB) is suggested. Because the precise date of conception generally is unknown, several formulas have been suggested for calculating the EDB. None of these guides is infallible, but Nägele’s rule is reasonably accurate and is usually used.

### DIAGNOSIS OF PREGNANCY

Women may suspect pregnancy when they miss a menstrual period. Many women come to the first prenatal visit after a positive home pregnancy test; however, the clinical diagnosis of pregnancy before the second missed period may be difficult in some women. Physical variations, obesity, or tumors, for example, may confound even the experienced examiner. Accuracy is important, however, because emotional, social, medical, or legal consequences of an inaccurate diagnosis, either positive or negative, can be extremely serious. A correct date for the last (normal) menstrual period (LMP) or LNMP and for the date of intercourse and a basal body temperature (BBT) record may be of great value in the accurate diagnosis of pregnancy (see Chapter 6).

### Signs and Symptoms

Great variability is possible in the subjective and objective signs and symptoms of pregnancy; therefore, the diagnosis of pregnancy may be uncertain for a time. Many of the indicators of pregnancy are clinically useful in the diagnosis of pregnancy, and they are classified as presumptive, probable, or positive (see Table 8-2).

The presumptive indicators of pregnancy can be caused by conditions other than gestation. For example, amenorrhea may be caused by illness or excessive exercise; fatigue may signify anemia or infection; a tumor may cause enlargement of the abdomen; and nausea or vomiting may be caused by a gastrointestinal (GI) upset or food allergy. Therefore, these signs alone are not reliable for diagnosis.

### Estimating Date of Birth

After the diagnosis of pregnancy, the woman’s first question usually concerns when she will give birth. This date has traditionally been termed the estimated date of confinement (EDC), although estimated date of delivery (EDD) also has been used. To promote a more positive perception of both pregnancy and birth, however, the term estimated date of birth (EDB) is suggested. Because the precise date of conception generally is unknown, several formulas have been suggested for calculating the EDB. None of these guides is infallible, but Nägele’s rule is reasonably accurate and is usually used.

Nägele’s rule is as follows: After determining the first day of the LMP, subtract 3 calendar months, add 7 days and
Pregnancy affects all family members, and each family member must adapt to the pregnancy and interpret its meaning in light of his or her own needs. This process of family adaptation takes place within a cultural environment influenced by societal trends. Dramatic changes have occurred in Western society in recent years, and the nurse must be prepared to support single-parent families, reconstituted families, dual-career families, and alternative families, as well as traditional families, in the childbirth experience.

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Much of the investigation of family dynamics in pregnancy by scholars in the United States and Canada has been done with Caucasian, middle-class nuclear families, and findings may not apply to families who do not fit the traditional North American model. Adaptation of terms is appropriate to avoid embarrassment to the nurse and offense to the family. Additional research is needed on a variety of families to determine if study findings generated in traditional families are applicable to others.

Maternal Adaptation

Women of all ages use the months of pregnancy to adapt to the maternal role, a complex process of social and cognitive learning. Early in pregnancy, nothing seems to be happening, and a woman may spend much time sleeping. With the perception of fetal movement in the second trimester, the woman turns her attention inward to her pregnancy and to relationships with her mother and other women who have been or who are pregnant.

Pregnancy is a maturational milestone that can be stressful but also rewarding as the woman prepares for a new level of caring and responsibility. Her self-concept changes in readiness for parenthood as she prepares for her new role. She moves gradually from being self-contained and independent to being committed to a lifelong concern for another human being. This growth requires mastery of certain developmental tasks: accepting the pregnancy, identifying with the role of mother, reordering the relationships between herself and her mother and between herself and her partner, establishing a relationship with the unborn child, and preparing for the birth experience (Lederman, 1996). The partner’s emotional support is an important factor in the successful accomplishment of these developmental tasks. Single women with limited support may have difficulty making this adaptation.

Accepting the pregnancy

The first step in adapting to the maternal role is accepting the idea of pregnancy and assimilating the pregnant state into the woman’s way of life. Mercer (1995) described this process as cognitive restructuring and credited Reva Rubin (1984) as the nurse theorist who pioneered our understanding of maternal role attainment. The degree of acceptance is reflected in the woman’s emotional responses. Many women are dismayed initially at finding themselves pregnant, especially if the pregnancy is unintended. Eventual acceptance of pregnancy parallels the growing acceptance of the reality of a child. Nonacceptance of the pregnancy, however, should not be equated with rejection of the child, for a woman may dislike being pregnant but feel love for the child to be born.

Women who are happy and pleased about their pregnancy often view it as biologic fulfillment and part of their life plan. They have high self-esteem and tend to be confident about outcomes for themselves, their babies, and other family members. Despite a general feeling of well-being, many women are surprised to experience emotional lability, that is, rapid and unpredictable changes in mood. These swings in emotions and increased sensitivity to others are disconcerting to the expectant mother and those around her. Increased irritability, explosions of tears and anger, and feelings of great joy and cheerfulness alternate, apparently with little or no provocation.

Profound hormonal changes that are part of the maternal response to pregnancy may be responsible for mood changes. Other reasons such as concerns about finances and changed lifestyle contribute to this seemingly erratic behavior.

Most women have ambivalent feelings during pregnancy whether the pregnancy was intended or not. Ambivalence—having conflicting feelings simultaneously—is considered a normal response for people preparing for a new role. During pregnancy, women may, for example, feel great pleasure that they are fulfilling a lifelong dream, but they also may feel great regret that life as they now know it is ending. Even women who are pleased to be pregnant may experience feelings of hostility toward the pregnancy or unborn child from time to time. Such incidents as a partner’s chance

Use of Nägele’s Rule

July 10, 2006, is the first day of the last menstrual period.

<table>
<thead>
<tr>
<th>Day</th>
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<tr>
<td>7</td>
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<td>7</td>
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<td>2007</td>
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The estimated date of birth (EDB) is April 17, 2007.
remark about the attractiveness of a slim, nonpregnant woman or news of a colleague’s promotion can give rise to ambivalent feelings. Body sensations, feelings of dependence, or the realization of the responsibilities of child care also can generate such feelings.

Intense feelings of ambivalence that persist through the third trimester may indicate an unresolved conflict with the motherhood role (Mercer, 1995). After the birth of a healthy child, memories of these ambivalent feelings usually are dismissed. If the child is born with a defect, however, a woman may look back at the times when she did not want the pregnancy and feel intensely guilty. She may believe that her ambivalence caused the birth defect. She then will need assurance that her feelings were not responsible for the problem.

Identifying with the mother role

The process of identifying with the mother role begins early in each woman’s life when she is being mothered as a child. Her social group’s perception of what constitutes the feminine role can subsequently influence her toward choosing between motherhood or a career, being married or single, being independent rather than interdependent, or being able to manage multiple roles. Practice roles, such as playing with dolls, baby-sitting, and taking care of siblings, may increase her understanding of what being a mother entails.

Many women have always wanted a baby, liked children, and looked forward to motherhood. Their high motivation to become a parent promotes acceptance of pregnancy and eventual prenatal and parental adaptation. Other women apparently have not considered in any detail what motherhood means to them. During pregnancy, conflicts such as not wanting the pregnancy and child-related or career-related decisions must be resolved.

Reordering personal relationships

Close relationships of the pregnant woman undergo change during pregnancy as she prepares emotionally for the new role of mother. As family members learn their new roles, periods of tension and conflict may occur. An understanding of the typical patterns of adjustment can help the nurse to reassure the pregnant woman and explore issues related to social support. Promoting effective communication patterns between the expectant mother and her own mother and between the expectant mother and her partner are common nursing interventions provided during the prenatal visits.

The woman’s own relationship with her mother is significant in adaptation to pregnancy and motherhood. Important components in the pregnant woman’s relationship with her mother are the mother’s availability (past and present), her reactions to the daughter’s pregnancy, respect for her daughter’s autonomy, and the willingness to reminisce (Mercer, 1995).

The mother’s reaction to the daughter’s pregnancy signifies her acceptance of the grandchild and of her daughter. If the mother is supportive, the daughter has an opportunity to discuss pregnancy and labor and her feelings of joy or ambivalence with a knowledgeable and accepting woman (Fig. 9-1). Reminiscing about the pregnant woman’s early childhood and sharing the prospective grandmother’s account of her childbirth experience help the daughter to anticipate and prepare for labor and birth.

Although the woman’s relationship with her mother is significant in considering her adaptation in pregnancy, the most important person to the pregnant woman is usually the father of her child. The support and concern of a partner during pregnancy have positive consequences for a woman’s desire to carry out the pregnancy (Kroelinger & Oths, 2000), and she has fewer emotional and physical symptoms, fewer labor and childbirth complications, and an easier postpartum adjustment. Women express two major needs within this relationship during pregnancy: feeling loved and valued and having the child accepted by the partner.

The marital or committed relationship is not static but evolves over time. The addition of a child changes forever the nature of the bond between partners. This may be a time when couples grow closer, and the pregnancy has a maturing effect on the partners’ relationship as they assume new roles and discover new aspects of one another. Partners who trust and support each other are able to share mutual-dependency needs (Mercer, 1995).

Sexual expression during pregnancy is highly individual. The sexual relationship is affected by physical, emotional,
and interactional factors, including myths about sex during pregnancy, sexual dysfunction, and physical changes in the woman. Myths about body functions and fantasies about the influence of the fetus as a third party in lovemaking are commonly expressed. An individual may also inaccurately attribute anomalies, mental retardation, and other injuries to the fetus and mother to sexual relations during pregnancy. Some couples fear that the woman's genitals will be drastically changed by the birth process. Couples may not express their concerns to the health care provider because of embarrassment or because they do not want to appear foolish.

As pregnancy progresses, changes in body shape, body image, and levels of discomfort influence both partners' desire for sexual expression. During the first trimester, the woman's sexual desire may decrease, especially if she has breast tenderness, nausea, fatigue, or sleepiness. As she progresses into the second trimester, however, her sense of well-being combined with the increased pelvic congestion that occurs at this time may increase her desire for sexual release. In the third trimester, somatic complaints and physical bulkiness may increase her physical discomfort and again diminish her interest in sex. As a woman's pregnancy progresses, her enlarging gravid abdomen may limit the use of the man-on-top position for intercourse. Therefore other positions (e.g., side to side or the woman on top) may allow intercourse and minimize pressure on the woman's abdomen (Westheimer & Lopater, 2005).

Partners need to feel free to discuss their sexual responses during pregnancy with each other and with their health care provider. Their sensitivity to each other and willingness to share concerns can strengthen their sexual relationship. Partners who do not understand the rapid physiologic and emotional changes of pregnancy can become confused by the other's behavior. By talking to each other about the changes they are experiencing, couples can define problems and then offer the needed support. Nurses can facilitate communication between partners by talking to expectant couples about possible changes in feelings and behaviors they may experience as pregnancy progresses (see later discussion).

**Establishing a relationship with the fetus**

Emotional attachment—feelings of being tied by affection or love—begins during the prenatal period as women use fantasizing and daydreaming to prepare themselves for motherhood (Rubin, 1975). They think of themselves as mothers and imagine maternal qualities they would like to possess. Expectant parents desire to be warm, loving, and close to their child. They try to anticipate changes that the child will bring in their lives and wonder how they will react to noise, disorder, reduced freedom, and caregiving activities. The mother-child relationship progresses through pregnancy as a developmental process that unfolds in three phases.

In phase 1 the woman accepts the biologic fact of pregnancy. She needs to be able to state, "I am pregnant" and incorporate the idea of a child into her body and self-image. The woman's thoughts center around herself and the reality of her pregnancy. The child is viewed as part of herself, not a separate and unique person.

In phase 2 the woman accepts the growing fetus as distinct from herself, usually accomplished by the fifth month. She can now say, "I am going to have a baby." This differentiation of the child from the woman's self permits the beginning of the mother-child relationship that involves not only caring but also responsibility. Attachment of a mother to her child is enhanced by experiencing a planned pregnancy, and it increases when ultrasound examination and quickening confirm the reality of the fetus.

With acceptance of the reality of the child (hearing the heart beat and feeling the child move) and an overall feeling of well-being, the woman enters a quiet period and becomes more introspective. A fantasy child becomes precious to the woman. As the woman seems to withdraw and to concentrate her interest on the unborn child, her partner sometimes feels left out. If there are other children in the family, they may become more demanding in their efforts to redirect the mother's attention to themselves.

During phase 3 of the attachment process, the woman prepares realistically for the birth and parenting of the child. She expresses the thought, "I am going to be a mother" and defines the nature and characteristics of the child. She may, for example, speculate about the child's sex and personality traits based on patterns of fetal activity.

Although the mother alone experiences the child within, both parents and siblings believe the unborn child responds in a very individualized, personal manner. Family members may interact a great deal with the unborn child by talking to the fetus and stroking the mother's abdomen, especially when the fetus shifts positions (fig. 9-2). The fetus may even have a nickname used by family members.

**Preparing for childbirth**

Many women actively prepare for birth by reading books, viewing films, attending parenting classes, and talking to other women. They seek the best caregiver possible for advice, monitoring, and caring. The multigender has her own history of labor and birth, which influences her approach to preparation for this childbirth experience.

Anxiety can arise from concern about a safe passage for herself and her child during the birth process (Mercer, 1995; Rubin, 1975). This concern may not be expressed overtly, but cues are given as the nurse listens to plans women make for care of the new baby and other children in case "anything should happen." These feelings persist despite statistical evidence about the safe outcome of pregnancy for mothers and their infants. Many women fear the pain of childbirth or mutilation because they do not understand anatomy and the birth process. Education by the nurse can allay many of these fears. Women also express concern over what behaviors are appropriate during the birth process and whether caregivers will accept them and their actions.
Toward the end of the third trimester, breathing is difficult, and fetal movements become vigorous enough to disturb the woman’s sleep. Backaches, frequency and urgency of urination, constipation, and varicose veins can become troublesome. The bulkiness and awkwardness of her body interfere with the woman’s ability to care for other children, perform routine work-related duties, and assume a comfortable position for sleep and rest. By this time, most women become impatient for labor to begin, whether the birth is anticipated with joy, dread, or a mixture of both. A strong desire to see the end of pregnancy, to be over and done with it, makes women at this stage ready to move on to childbirth.

**Paternal Adaptation**

The father’s beliefs and feelings about the ideal mother and father and his cultural expectation of appropriate behavior during pregnancy affect his response to his partner’s need for him. One man may engage in nurturing behavior. Another may feel lonely and alienated as the woman becomes physically and emotionally engrossed in the unborn child. He may seek comfort and understanding outside the home or become interested in a new hobby or involved with his work. Some men view pregnancy as proof of their masculinity and their dominant role. To others, pregnancy has no meaning in terms of responsibility to either mother or child. However, for most men, pregnancy can be a time of preparation for the parental role with intense learning.

**Accepting the pregnancy**

The ways fathers adjust to the parental role has been the subject of considerable research. In older societies the man enacted the ritual couvade; that is, he behaved in specific ways and respected taboos associated with pregnancy and giving birth so the man’s new status was recognized and endorsed. Now, some men experience pregnancy-like symptoms, such as nausea, weight gain, and other physical symptoms. This phenomenon is known as the *couvade syndrome*. Changing cultural and professional attitudes have encouraged fathers’ participation in the birth experience in the past 30 years (Fig. 9-3).

The man’s emotional responses to becoming a father, his concerns, and his informational needs change during the course of pregnancy. Phases of the developmental pattern become apparent. May (1982) described three phases characterizing the developmental tasks experienced by the expectant father:

- The announcement phase may last from a few hours to a few weeks. The developmental task is to accept the biologic fact of pregnancy. Men react to the confirmation of pregnancy with joy or dismay, depending on whether the pregnancy is desired or unplanned or unwanted. Ambivalence in the early stages of pregnancy is common.

If pregnancy is unplanned or unwanted, some men find the alterations in life plans and lifestyles difficult to accept. Some men engage in extramarital affairs for the first time during their partner’s pregnancy. Others batter their wives for the first time or escalate the frequency of battering episodes (Martin et al., 2001). Chapter 4 provides information about violence against women and offers guidance on assessment and intervention.
The second phase, the moratorium phase, is the period when he adjusts to the reality of pregnancy. The developmental task is to accept the pregnancy. Men appear to put conscious thought of the pregnancy aside for a time. They become more introspective and engage in many discussions about their philosophy of life, religion, childbearing, and childrearing practices and their relationships with family members, particularly with their father. Depending on the man’s readiness for the pregnancy, this phase may be relatively short or persist until the last trimester.

The third phase, the focusing phase, begins in the last trimester and is characterized by the father’s active involvement in both the pregnancy and his relationship with his child. The developmental task is to negotiate with his partner the role he is to play in labor and to prepare for parenthood. In this phase the man concentrates on his experience of the pregnancy and begins to think of himself as a father.

Identifying with the father role
Each man brings to pregnancy attitudes that affect the way in which he adjusts to the pregnancy and parental role. His memories of the fathering he received from his own father, the experiences he has had with child care, and the perceptions of the male and father roles within his social group will guide his selection of the tasks and responsibilities he will assume. Some men are highly motivated to nurture and love a child. They may be excited and pleased about the anticipated role of father. Others may be more detached or even hostile to the idea of fatherhood.

Reordering personal relationships
The partner’s main role in pregnancy is to nurture and respond to the pregnant woman’s feelings of vulnerability. The partner also must deal with the reality of the pregnancy. The partner’s support indicates involvement in the pregnancy and preparation for attachment to the child.

Some aspects of a partner’s behavior may indicate rivalry, and it may be especially evident during sexual activity. For example, men may protest that fetal movements prevent sexual gratification or that they are being watched by the fetus during sexual activity. However, feelings of rivalry may be unconscious and not verbalized, but expressed in subtle behaviors.

The woman’s increased introspection may cause her partner to feel uneasy as she becomes preoccupied with thoughts of the child and of her motherhood, with her growing dependence on her physician or midwife, and with her reevaluation of the couple’s relationship.

Establishing a relationship with the fetus
The father-child attachment can be as strong as the mother-child relationship, and fathers can be as competent as mothers in nurturing their infants. The father-child attachment also begins during pregnancy. A father may rub or kiss the maternal abdomen, try to listen, talk, or sing to the fetus, or play with the fetus as he notes movement. Calling the unborn child by name or nickname helps to confirm the reality of pregnancy and promote attachment.

Men prepare for fatherhood in many of the same ways as women do for motherhood—by reading and by fantasizing about the baby. Daydreaming about their role as father is common in the last weeks before the birth; men rarely describe their thoughts unless they are reassured that such daydreams are normal.

Preparing for childbirth
The days and weeks immediately before the expected day of birth are characterized by anticipation and anxiety. Boredom and restlessness are common as the couple focuses on the birth process; however, during the last 2 months of pregnancy, many expectant fathers experience a surge of creative energy at home and on the job. They may become dissatisfied with their present living space. If possible, they tend to act on the need to alter the environment (remodeling, painting, etc.). This activity may be overt evidence of their sharing in the childbirth experience. They are able to channel the anxiety and other feelings experienced during the final weeks before birth into productive activities. This behavior earns recognition and compliments from friends, relatives, and their partners.

Major concerns for the man are getting the woman to a medical facility in time for the birth and not appearing ignorant. Many men want to be able to recognize labor and determine when it is appropriate to leave for the hospital or call the physician or nurse-midwife. They may fantasize different situations and plan what they will do in response to them, or they may rehearse taking various routes to the hospital, timing each route at different times of the day.

Some prospective fathers have questions about the labor suite’s furniture, nursing staff, and location, as well as the availability of the physician and anesthesiologist. Others want to know what is expected of them when their partners are in labor. The man also may have fears concerning safe passage of his child and partner and the possible death or complications of his partner and child. It is important he verbalize these fears, otherwise he cannot help his mate deal with her own unspoken or overt apprehension.

With the exception of childbirth preparation classes, a man has few opportunities to learn ways to be an involved and active partner in this rite of passage into parenthood. The tensions and apprehensions of the unprepared, unsupportive father are readily transmitted to the mother and may increase her fears.

The same fears, questions, and concerns may affect birth partners who are not the biologic fathers. Birth partners need to be kept informed, supported, and included in all activities in which the mother desires their participation. The nurse can do much to promote pregnancy and birth as a family experience.
Sibling Adaptation
Sharing the spotlight with a new brother or sister may be the first major crisis for a child. The older child often experiences a sense of loss or feels jealous at being "replaced" by the new sibling. Some of the factors that influence the child’s response are age, the parents’ attitudes, the role of the father, the length of separation from the mother, the hospital’s visitation policy, and the way the child has been prepared for the change.

A mother with other children must devote time and effort to reorganizing her relationships with them. She needs to prepare siblings for the birth of the child (Fig. 9-4 and Box 9-2) and begin the process of role transition in the family by including the children in the pregnancy and being sympathetic to older children’s concerns about losing their places in the family hierarchy. No child willingly gives up a familiar position.

Siblings’ responses to pregnancy vary with their age and dependency needs. The 1-year-old infant seems largely unaware of the process, but the 2-year-old child notices the change in his or her mother’s appearance and may comment that “Mommy’s fat.” The toddlers’ need for sameness in the environment makes the children aware of any change. They may exhibit more clinging behavior and revert to dependent behaviors in toilet training or eating.

By age 3 or 4 years, children like to be told the story of their own beginning and accept its being compared with the present pregnancy. They like to listen to the fetal heart beat and feel the baby moving in utero (see Fig. 9-2). Sometimes they worry about how the baby is being fed and what it wears.

School-age children take a more clinical interest in their mother’s pregnancy. They may want to know in more detail, “How did the baby get in there?” and “How will it get out?” Children in this age group notice pregnant women in stores, churches, and schools and sometimes seem shy if they need to approach a pregnant woman directly. On the whole, they look forward to the new baby, see themselves as “mothers” or “fathers,” and enjoy buying baby supplies and readying a place for the baby. Because they still think in concrete terms and base judgments on the here and now, they respond positively to their mother’s current good health.

Early and middle adolescents preoccupied with the establishment of their own sexual identity may have difficulty accepting the overwhelming evidence of the sexual activity of their parents. They reason that if they are too young for...
such activity, certainly their parents are too old. They seem to take on a critical parental role and may ask, “What will people think?” or “How can you let yourself get so fat?” or “How can you let yourself get pregnant?” Many pregnant women with teenage children will confess that the attitudes of their teenagers are the most difficult aspect of their current pregnancy.

Late adolescents do not appear to be unduly disturbed. They are busy making plans for their own lives and realize that they soon will be gone from home. Parents usually report they are comforting and act more as other adults than as children.

**Grandparent Adaptation**

Every pregnancy affects all family relationships. For expectant grandparents, a first pregnancy in a child is undeniable evidence that they are growing older. Many think of a grandparent as old, white-haired, and becoming feeble of mind and body; however, some people face grandparenthood while still in their 30s or 40s. Parents-to-be announcing their pregnancy to their parents may be greeted by a negative response, indicating that they are not ready to be grandparents. Both the parents-to-be and their parents may be hurt by this initial response. Daughter and mother both may be startled and hurt by the response.

In some family units some expectant grandparents are nonsupportive and may also inadvertently decrease the self-esteem of the parents-to-be. Mothers may talk about their terrible pregnancies; fathers may discuss the endless cost of rearing children; and mothers-in-law may complain that their sons are neglecting them because their concern is now directed toward the pregnant daughters-in-law.

However, most grandparents are delighted at the prospect of a new baby in the family. It reawakens the feelings of their own youth, the excitement of giving birth, and their delight in the behavior of the parents-to-be when they were infants. They set up a memory store of the child’s first smiles, first words, and first steps, which they can use later for “claiming” the newborn as a member of the family. These behaviors provide a link between the past and present for the parents’ and grandparents-to-be.

In addition, the grandparent is the historian who transmits the family history, a resource person who shares knowledge based on experience; a role model; and a support person. The grandparent’s presence and support can strengthen family systems by widening the circle of support and nurturance (Fig. 9-5).

**CARE MANAGEMENT**

The purpose of prenatal care is to identify existing risk factors and other deviations from normal so that pregnancy outcomes may be enhanced (Johnson & Niebyl, 2002). Major emphasis is placed on preventive aspects of care, primarily to motivate the pregnant woman to practice optimal self-care and to report unusual changes early so that problems can be minimized or prevented. If health behaviors must be modified in early pregnancy, nurses need to understand psychosocial factors that may have influence on the woman (Walker, Cooney, & Riggs, 1999). In holistic care, nurses provide information and guidance about not only the physical changes but also the psychosocial impact of pregnancy on the woman and members of her family. The goals of prenatal nursing care, therefore, are to foster a safe birth for the infant and to promote satisfaction of the mother and family with the pregnancy and birth experience.

Advances have been made in the number of women in the United States who receive adequate prenatal care. In 2003, 84.1% of all women received care in the first trimester and 3.5% had late or no prenatal care. There is disparity in use of prenatal care in the first trimester by race and ethnicity: non-Hispanic Caucasians (89%), non-Hispanic blacks (76%), and Hispanic (77.4%) (Martin, Kochanek, Strobino, Guyer, & MacDorman, 2005). Although prenatal care is sought routinely by women of middle or high socioeconomic status, women living in poverty or who lack health insurance may not be able to use public medical services or gain access to private care. Lack of culturally sensitive care providers and barriers in communication resulting from differences in language also interfere with access to care (Shaffer, 2002). Likewise, immigrant women who come from cultures in which prenatal care is not emphasized may not know to seek routine prenatal care. Birth outcomes in these populations are therefore less positive, with higher rates of maternal and fetal or newborn complications. Problems with low birth weight (LBW; less than 2500 g) and infant mortality have in particular been associated with lack of adequate prenatal care.
Barriers to obtaining health care during pregnancy include lack of transportation, unpleasant clinic facilities or procedures, inconvenient clinic hours, and personal attitudes (Boyle, Banks, Pettazzi, & Larimore, 2003; Chandler, 2002; Handler, Rosenberg, Raube, & Lyons, 2003; Sword, 2003).

The availability and accessibility of prenatal care may be improved by the increasing use of advanced practice nurses in collaborative practice with physicians (Boyle et al., 2003). The effectiveness of a regular schedule of home visiting by nurses during pregnancy also has been validated (Petrick, Christiansen, & Mitchell, 2003).

The current model for provision of prenatal care has been used for more than a century. The initial visit usually occurs in the first trimester, with monthly visits through week 28 of pregnancy. Thereafter, visits are scheduled every 2 weeks until week 36, and then every week until birth (see Box 9-3). This model is currently being questioned, and in some practices there is a growing tendency to have fewer visits with women who are at low risk for complications (Villar, Carroli, Khan-Mirzaei, & Gulmezoglu, 2001).

Prenatal care is ideally a multidisciplinary activity in which nurses work with physicians or midwives, nutritionists, social workers, and others. Collaboration among these individuals is necessary to provide holistic care. The case management model, which makes use of care maps and critical pathways, is one system that promotes comprehensive care with limited overlap in services. To emphasize the nursing role, case management here is organized around the central elements of the nursing process: assessment, nursing diagnoses, expected outcomes, plan of care and interventions, and evaluation.

**Assessment and Nursing Diagnoses**

Once the presence of pregnancy has been confirmed and the woman’s desire to continue the pregnancy has been validated, prenatal care is begun. The assessment process begins at the initial prenatal visit and is continued throughout the pregnancy. Assessment techniques include the interview, physical examination, and laboratory tests. Because the initial visit and follow-up visits are distinctly different in content and process, they are described separately.

**Initial visit**

The pregnant woman and family members who may be present should be told that the first prenatal visit is more lengthy and detailed than are future visits. The initial evaluation includes a comprehensive health history emphasizing the current pregnancy, previous pregnancies, the family, a psychosocial profile, a physical assessment, diagnostic testing, and an overall risk assessment. A prenatal history form includes a comprehensive health history emphasizing the current pregnancy, previous pregnancies, the family, a psychosocial profile, a physical assessment, diagnostic testing, and an overall risk assessment. A prenatal history form (Fig. 9-6) is the best way to document information obtained.

**Interview.** The therapeutic relationship between the nurse and the woman is established during the initial assessment interview. It is a time for planned, purposeful communication that focuses on specific content. The data collected are of two types: the woman’s subjective appraisal of her health status and the nurse’s objective observations. During the interview the nurse observes the woman’s affect, posture, body language, skin color, and other physical and emotional signs.

Often the pregnant woman is accompanied by one or more family members. The nurse needs to build a relationship with these people as part of the social context of the patient. With her permission, those accompanying the woman can be included in the initial prenatal interview, and the observations and information about the woman’s family form part of the database. For example, if the woman is accompanied by small children, the nurse can ask about her plans for child care during the time of labor and birth. Special needs are noted at this time (e.g., wheelchair access, assistance in getting on and off the examining table, and cognitive deficits).

**Reason for seeking care.** Although pregnant women are scheduled for “routine” prenatal visits, they often come to the health care provider seeking information or reassurance about a particular concern. When the patient is asked a broad, open-ended question such as, “How have you been feeling?,” she may reveal problems that could otherwise be overlooked. The woman’s chief concerns should be recorded in her own words to alert other personnel to the priority of needs as identified by her. At the initial visit the desire for information about what is normal in the course of pregnancy is typical.

**Current pregnancy.** The presumptive signs of pregnancy may be of great concern to the woman. A review of symptoms she is experiencing and how she is coping with them helps to establish a database to develop a plan of care. Some early teaching may be provided at this time.

**Obstetric and gynecologic history.** Data are gathered on the woman’s age at menarche, menstrual history, and contraceptive history; the nature of any infertility or gynecologic conditions; her history of any sexually transmitted infections (STIs); her sexual history; and a detailed history of all her pregnancies, including the present pregnancy, and their outcomes. The date of the last Pap test (Pap) test and the result are noted. The date of her last menstrual period (LMP) is obtained to establish the EDB (see Guidelines/Box 9-3).

**Medical history.** The medical history includes those medical or surgical conditions that may affect the pregnancy or that may be affected by the pregnancy. For example, a pregnant woman who has diabetes, hypertension, or epilepsy requires special care. Because most women are anxious...
Nutritional history. The woman’s nutritional history is an important component of the prenatal history because her nutritional status has a direct effect on the growth and development of the fetus. A dietary assessment can reveal special diet practices, food allergies, eating behaviors, the practice of pica (Corbett, Ryan, & Weinrich, 2003), and other factors related to her nutritional status. Pregnant women are usually motivated to learn about good nutrition and respond well to nutritional advice generated by this assessment.

History of drug and herbal preparations use. A woman’s past and present use of legal (over-the-counter [OTC] and prescription medications; herbal preparations; caffeine; alcohol; nicotine) and illegal (marijuana, cocaine, heroin) drugs must be assessed because many substances cross the placenta and may therefore harm the developing fetus. Periodic urine toxicology screening tests are often recommended during the pregnancies of women who have a history of illegal drug use. Results of such tests have been used for criminal prosecution, which results in a breach in patient-provider relationship and in ethical responsibilities to the patient (Foley, 2002; Harris & Faltrow, 2003). Nurses may have ethical concerns if pregnant women are not informed of the possibility of random urine testing for presence of drugs. The other side of this concern is the unborn child and whether the mother has a duty not to harm him or her.

LEGAL TIP Informed Consent for Drug Therapy

Hospitals must obtain informed consent from a pregnant woman before she can be tested for drug use (Kehringer, 2003).

Family history. The family history provides information about the woman’s immediate family, including parents, siblings, and children. These data help identify familial or genetic disorders or conditions that could affect the present health status of the woman or her fetus.

Social, experiential, and occupational history. Situational factors such as the family’s ethnic and cultural background and socioeconomic status are assessed while the history is obtained. The following information may be obtained in several encounters. The woman’s perception of this pregnancy is explored by asking her such questions as the following: Is this pregnancy planned or not, wanted or not? Is the woman pleased, displeased, accepting, or nonaccepting? What problems related to finances, career, or living accommodations may arise as a result of the pregnancy? The family support system is determined by asking her such questions as the following: What primary support is available to her? Are changes needed to promote adequate support? What are the existing relationships among the mother, father or partner, siblings, and in-laws? What preparations are being made for her care and that of dependent family members during labor and for the care of the infant after birth? Is financial, educational, or other support needed from the community? What are the woman’s ideas about...
### MENSTRUAL HISTORY

<table>
<thead>
<tr>
<th>PAST PREGNANCIES (LAST SIX)</th>
<th>COMMENTS/COMPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
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<td></td>
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</tr>
</tbody>
</table>

### MEDICAL HISTORY

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DATES</th>
<th>TOTAL DOSE</th>
<th>REASON</th>
<th>DOSE</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
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<tr>
<td>3.</td>
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<tr>
<td>4.</td>
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<td></td>
<td></td>
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<tr>
<td>5.</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

### COMMENTS

242

Fig. 9-6  A sample prenatal history form. (Copyright © 2003 The American College of Obstetricians and Gynecologists, 409 12th Street, SW, PO Box 96920, Washington, DC 20090-6920.)
11. **INFECTION HISTORY**

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. HAVE YOU HAD ANY URINARY TRACT INFECTION SINCE LAST MENSTRUAL PERIOD?</td>
<td></td>
</tr>
<tr>
<td>2. HAVE YOU HAD ANY URINARY TRACT INFECTION SINCE LAST MENSTRUAL PERIOD?</td>
<td></td>
</tr>
<tr>
<td>3. HAVE YOU HAD ANY URINARY TRACT INFECTION SINCE LAST MENSTRUAL PERIOD?</td>
<td></td>
</tr>
<tr>
<td>4. HAVE YOU HAD ANY URINARY TRACT INFECTION SINCE LAST MENSTRUAL PERIOD?</td>
<td></td>
</tr>
<tr>
<td>5. HAVE YOU HAD ANY URINARY TRACT INFECTION SINCE LAST MENSTRUAL PERIOD?</td>
<td></td>
</tr>
<tr>
<td>6. HAVE YOU HAD ANY URINARY TRACT INFECTION SINCE LAST MENSTRUAL PERIOD?</td>
<td></td>
</tr>
<tr>
<td>7. HAVE YOU HAD ANY URINARY TRACT INFECTION SINCE LAST MENSTRUAL PERIOD?</td>
<td></td>
</tr>
</tbody>
</table>

**COMMENTS**

**INITIAL PHYSICAL EXAMINATION**

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<tr>
<th>DATE</th>
<th>HEIGHT (CM)</th>
<th>SP (mmHg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. HEAD</td>
<td>NARROW</td>
<td>NO</td>
</tr>
<tr>
<td>2. THROAT</td>
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<td>NO</td>
</tr>
<tr>
<td>3. HEART</td>
<td>NORMAL</td>
<td>NO</td>
</tr>
<tr>
<td>4. BREASTS</td>
<td>NARROW</td>
<td>NO</td>
</tr>
<tr>
<td>5. SUGAR</td>
<td>NARROW</td>
<td>NO</td>
</tr>
<tr>
<td>6. LIVER</td>
<td>NARROW</td>
<td>NO</td>
</tr>
<tr>
<td>7. KIDNEYS</td>
<td>NARROW</td>
<td>NO</td>
</tr>
<tr>
<td>8. SLEEVES</td>
<td>NARROW</td>
<td>NO</td>
</tr>
<tr>
<td>9. ARM</td>
<td>NARROW</td>
<td>NO</td>
</tr>
<tr>
<td>10. SKIN</td>
<td>NARROW</td>
<td>NO</td>
</tr>
</tbody>
</table>

**COMMENTS**

- **Normal and stated abnormalities**

**INTERVIEWER’S SIGNATURE**

**EXAM BY**
**Fig. 9-6, cont’d** A sample prenatal history form. (Copyright © 2003 The American College of Obstetricians and Gynecologists, 409 12th Street, SW, P.O. Box 96920, Washington, DC, 20090-6920.)


<table>
<thead>
<tr>
<th>LABORATORY AND EDUCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INITIAL LABS</strong></td>
</tr>
<tr>
<td><strong>DATE</strong></td>
</tr>
<tr>
<td>Blood Type</td>
</tr>
<tr>
<td>D (Rh) Type</td>
</tr>
<tr>
<td>Antibody Screen</td>
</tr>
<tr>
<td>Hgb/Hgb</td>
</tr>
<tr>
<td>FTA Test</td>
</tr>
<tr>
<td>NIL</td>
</tr>
<tr>
<td>UA/Culture/Screen</td>
</tr>
<tr>
<td>HBsAg</td>
</tr>
<tr>
<td><strong>OPTIONAL LABS</strong></td>
</tr>
<tr>
<td><strong>DATE</strong></td>
</tr>
<tr>
<td>Blood Electrophoresis</td>
</tr>
<tr>
<td>PPD</td>
</tr>
<tr>
<td>Gondorhia</td>
</tr>
<tr>
<td>Genetic Screening Tests (see Form B)</td>
</tr>
<tr>
<td><strong>OTHER</strong></td>
</tr>
<tr>
<td><strong>8-18 WEEK LABS</strong></td>
</tr>
<tr>
<td><strong>DATE</strong></td>
</tr>
<tr>
<td>Ultrasound</td>
</tr>
<tr>
<td>ASAP (Multiple Markers)</td>
</tr>
<tr>
<td>Amnio CVS</td>
</tr>
<tr>
<td>amnioType</td>
</tr>
<tr>
<td>Amniotic fluid (AF)</td>
</tr>
<tr>
<td><strong>24-28 WEEK LABS</strong></td>
</tr>
<tr>
<td><strong>DATE</strong></td>
</tr>
<tr>
<td>Hgb/Hgb</td>
</tr>
<tr>
<td>Gestational Screen</td>
</tr>
<tr>
<td>GGT (IF SCREEN ABNORMAL)</td>
</tr>
<tr>
<td>D (Rh) Antibody Screen</td>
</tr>
<tr>
<td>HIV (HIV screen ORS)</td>
</tr>
<tr>
<td><strong>32-36 WEEK LABS</strong></td>
</tr>
<tr>
<td><strong>DATE</strong></td>
</tr>
<tr>
<td>Hgb/Hgb</td>
</tr>
<tr>
<td>Ultrasound (When Indicated)</td>
</tr>
<tr>
<td>TOR (When Indicated)</td>
</tr>
<tr>
<td>Gondorhia (When Indicated)</td>
</tr>
<tr>
<td>Chlamydia (When indicated)</td>
</tr>
<tr>
<td>Group B Strep</td>
</tr>
</tbody>
</table>

*Check state requirements before recording results.

**PROVIDER SIGNATURE (AS REQUIRED)**

Fig. 9-6, cont’d
childbearing, her expectations of the infant’s behavior, and her outlook on life and the female role?

Other such questions that should be asked include the following: What does the woman think it will be like to have a baby in the home? How is her life going to change by having a baby? What plans does having a baby interrupt? During interviews throughout the pregnancy the nurse should remain alert to the appearance of potential parenting problems, such as depression, lack of family support, and inadequate living conditions. The nurse needs to assess the woman’s attitude toward health care, particularly during childbearing, her expectations of health care providers, and her view of the relationship between herself and the nurse.

Coping mechanisms and patterns of interacting also are identified. Early in the pregnancy the nurse should determine the woman’s knowledge of pregnancy; maternal changes; fetal growth; self-care; and care of the newborn, including feeding. Asking about attitudes toward unmedicated or medicated childbirth and about her knowledge of the availability of parenting skills classes is important. Before planning for nursing care, the nurse needs information about the woman’s decision-making abilities and living habits (e.g., exercise, sleep, diet, diversional interests, personal hygiene, clothing). Common stressors during childbearing include the baby’s welfare, labor and birth process, behaviors of the newborn, woman’s relationship with the baby’s father and her family, changes in body image, and physical symptoms.

Attitudes concerning the range of acceptable sexual behavior during pregnancy also should be explored by asking questions such as the following: What has your family (partner, friends) told you about sex during pregnancy? The woman’s sexual self-concept is given more emphasis by asking questions such as the following: How do you feel about the changes in your appearance? How does your partner feel about your body now? How do you feel about wearing maternity clothes?

History of physical abuse. All women should be assessed for a history or risk of physical abuse, particularly because the likelihood of abuse increases during pregnancy (see Guidelines/Guías box). Although visual cues from the woman’s appearance or behavior may suggest the possibility, if questioning is limited to those women who fit the supposed profile of the battered woman, many women will be missed. Identification of abuse and immediate clinical intervention that includes information about safety can result in behaviors that may prevent future abuse and increase the safety and well-being of the woman and her infant (McFarlane, Parker, & Cross, 2001).

### GUIDELINES/GUÍAS

**Recognizing Violence in a Relationship**

**ARE YOU IN A RELATIONSHIP IN WHICH YOU ARE . . .**

- afraid of your partner’s temper?
- tiene miedo de que él pierda los estribos?
- afraid to break up because your partner has threatened to hurt someone?
- tiene miedo de dejarlo porque él ha amenazado con lastimar a alguien?
- constantly apologizing for or defending your partner’s behavior?
- constantemente tiene que disculparse por o defender el comportamiento de su pareja?
- afraid to disagree with your partner?
- tiene miedo de discutir con su pareja?
- isolated from your family or friends?
- está aislada de su familia o sus amigos?
- embarrassed in front of others because of your partner’s words or actions?
- las palabras o acciones de su pareja delante de otros te dan vergüenza?
- intimidated by your partner and forced into having sex?
- su pareja le intimida a usted y le obliga a tener relaciones sexuales con él?
- depressed and jumpy?
- está depresiva y/o nerviosa?

**A PERSON WHO IS VIOLENT IN A RELATIONSHIP OFTEN . . .**

- has an explosive temper.
- pierde los estribos.
- is possessive or jealous of his partner’s time, friends, or family.
- es posesivo o tiene celos de lo que su pareja pase tiempo con la familia o los amigos.
- constantly criticizes his partner’s thoughts, feelings, or appearance.
- critica constantemente los sentimientos, ideas, o apariencia física de su pareja.
- pinches, slaps, grabs, shoves, or throws things at his partner.
- pellizca, pega, agarra, empuja, o lanza objetos que pueden lastimar a su pareja.
- forces his partner into having sex.
- obliga a su pareja a tener relaciones sexuales.
- causes his partner to be afraid.
- causa que su pareja tenga miedo.
During pregnancy, the target body parts change during abusive episodes. Women report physical blows directed to the head, breasts, abdomen, and genitalia. Sexual assault is common.

Battering and pregnancy in teenagers constitute a particularly difficult situation. Adolescents may be trapped in the abusive relationship because of their inexperience. Many professionals and the adolescents themselves ignore the violence because it may not be believable, because relationships are transient, and because the jealous and controlling behavior is interpreted as love and devotion. Routine screening for abuse and sexual assault is recommended for pregnant adolescents. Because pregnancy in young adolescent girls is commonly the result of sexual abuse, the nurse should assess the desire to maintain the pregnancy (see Chapter 4 for further discussion).

Review of systems. During this portion of the interview, the woman is asked to identify and describe pre-existing or concurrent problems in any of the body systems, and her mental status is assessed. The woman is questioned about physical symptoms she has experienced, such as shortness of breath or pain. Pregnancy affects and is affected by all body systems; therefore information on the present status of the body systems is important in planning care. For each sign or symptom described, the following additional data should be obtained: body location, quality, quantity, chronology, aggravating or alleviating factors, and associated manifestations (onset, character, course) (Seidel, Ball, Dains, & Benedict, 2003).

Physical examination. The initial physical examination provides the baseline for assessing subsequent changes. The examiner should determine the woman’s needs for basic information regarding reproductive anatomy and provide this information, along with a demonstration of the equipment that may be used and an explanation of the procedure itself. The interaction requires an unhurried, sensitive, and gentle approach with a matter-of-fact attitude.

The physical examination begins with assessment of vital signs including height and weight (for calculation of body mass index [BMI]) and blood pressure (BP) (see Guidelines/Guías box). The bladder should be empty before pelvic examination. A urine specimen may be obtained to test for protein, glucose, or leukocytes or for other urine tests.

Each examiner develops a routine for proceeding with the physical examination; most choose the head-to-toe procedure. Heart and lung sounds are evaluated, and extremities are examined. Distribution, amount, and quality of body hair are of particular importance because the findings reflect nutritional status, endocrine function, and attention to hygiene. The thyroid gland is assessed carefully. The height of the fundus is noted if the first examination is done after the first trimester of pregnancy. During the examination the examiner needs to remain alert to the woman’s cues that give direction to the remainder of the assessment and that indicate imminent untoward response such as supine hypotension—low BP that occurs while the woman is lying on her back, causing feelings of faintness. See Chapter 4 for a detailed description of the physical examination.

Whenever a pelvic examination is performed, the tone of the pelvic musculature and the woman’s knowledge of Kegel exercises are assessed. Particular attention is paid to the size of the uterus because this is an indication of the duration of gestation. The nurse present during the examination can coach the woman in breathing and relaxation techniques at this time, as needed. One vaginal examination during early pregnancy is recommended, but another is usually not done unless medically indicated.

Laboratory tests. The laboratory data yielded by the analysis of the specimens obtained during the examination provide important information concerning the symptoms of pregnancy and the woman’s health status.

Specimens are collected at the initial visit so that the cause of any abnormal findings can be treated. Blood is drawn for a variety of tests (Table 9-1). A sickle cell screen is recommended for women of African, Asian, or Middle Eastern descent, and testing for antibody to the human immunodeficiency virus (HIV) is strongly recommended for all pregnant women (Box 9-4). In addition, pregnant women and fathers with a family history of cystic fibrosis...
and of Caucasian ethnicity may elect to have blood drawn for testing to ascertain if they are a cystic fibrosis carrier (Fries, Bashford, & Nunes, 2005). Urine specimens are usually tested by dipstick; culture and sensitivity tests are ordered as necessary. During the pelvic examination, cervical and vaginal smears may be obtained for cytologic studies and for diagnosis of infection (e.g., Chlamydia, gonorrhea, group B streptococcus [GBS]).

The finding of risk factors during pregnancy may indicate the need to repeat some tests at other times. For example, exposure to tuberculosis or an STI would necessitate repeat testing. STIs are common in pregnancy and may have negative effects on mother and fetus. Careful assessment and screening are essential.

Follow-up visits

Monthly visits are scheduled routinely during the first and second trimesters, although additional appointments may be made as the need arises. During the third trimester, however, the possibility for complications increases, and closer monitoring is warranted. Starting with week 28, maternity visits are scheduled every 2 weeks until week 36, and then every week until birth, unless the health care provider individualizes the schedule. Individual needs, complications, and risks of the pregnant woman may warrant visits more or less often. The pattern of interviewing the woman first and then assessing physical changes and performing laboratory tests is maintained.

Interview. Follow-up visits are less intensive than the initial prenatal visit. At each of these follow-up visits, the woman is asked to summarize relevant events that have occurred since the previous visit (Fig. 9-7). She is asked about her general emotional and physiologic well-being, complaints or problems, and questions she may have. Personal and family needs also are identified and explored.

Emotional changes are common during pregnancy, and therefore it is reasonable for the nurse to ask whether the woman has experienced any mood swings, reactions to changes in her body image, bad dreams, or worries. Positive feelings (her own and those of her family) are also noted. The reactions of family members to the pregnancy and the woman’s emotional changes are recorded.

<table>
<thead>
<tr>
<th>TABLE 9-1 Laboratory Tests in Prenatal Period</th>
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</thead>
<tbody>
<tr>
<td>laboratory test</td>
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</tr>
<tr>
<td>Hemoglobin, hematocrit, WBC, differential</td>
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<tr>
<td>Hemoglobin electrophoresis</td>
</tr>
<tr>
<td>Blood type, Rh, and irregular antibody</td>
</tr>
<tr>
<td>Rubella titer</td>
</tr>
<tr>
<td>Tuberculosis skin testing; chest film after 20 weeks of gestation in women with reactive tuberculin tests</td>
</tr>
<tr>
<td>Urinalysis, including microscopic examination of urinary sediment; pH, specific gravity, color, glucose, albumin, protein, RBCs, WBCs, casts, acetonuria</td>
</tr>
<tr>
<td>Urine culture</td>
</tr>
<tr>
<td>Renal function tests: BUN, creatinine, electrolytes, creatinine clearance, total protein excretion</td>
</tr>
<tr>
<td>Pap test</td>
</tr>
<tr>
<td>Vaginal or rectal smear for Neisseria gonorrhoeae, Chlamydia, HPV, GBS</td>
</tr>
<tr>
<td>RPR, VDRL, or FTA-ABS</td>
</tr>
<tr>
<td>HIV* antibody, hepatitis B surface antigen, toxoplasmosis 1-hr glucose tolerance</td>
</tr>
<tr>
<td>3-hr glucose tolerance</td>
</tr>
<tr>
<td>Cardiac evaluation: ECG, chest x-ray film, and echocardiogram</td>
</tr>
</tbody>
</table>

*BUN, Blood urea nitrogen; ECG, electrocardiogram; FTA-ABS, fluorescent treponemal antibody absorption test; GBS, group B streptococcus; HCG, human chorionic gonadotropin; HIV, human immunodeficiency virus; HPV, human papillomavirus; RBC, red blood cell; RPR, rapid plasma reagin; VDRL, Venereal Disease Research Laboratory; WBC, white blood cell.
During the third trimester, current family situations and their effect on the woman are assessed, for example, siblings’ and grandparents’ responses to the pregnancy and the coming child. In addition, the following assessments of the woman and her family are made: warning signs of emergencies; signs of preterm and term labor; the labor process and concerns about labor; and fetal development and methods to assess fetal well-being. The nurse should ask if the woman is planning to attend childbirth preparation classes and what she knows about pain management during labor.

A review of the woman’s physical systems is appropriate at each prenatal visit, and any suspicious signs or symptoms are assessed in depth. Discomforts reflecting adaptations to pregnancy are identified.

Physical examination. Reevaluation is a constant aspect of a pregnant woman’s care. Each woman reacts differently to pregnancy. As a result, careful monitoring of the pregnancy and her reactions to care is vital. The database is updated at each time of contact with the pregnant woman. Physiologic changes are documented as the pregnancy progresses and reviewed for possible deviations from normal progress.

At each visit, physical parameters are measured. Ideally, BP is taken by using the same arm at every visit, with the woman sitting, using a cuff of appropriate size (which is noted on her chart). Her weight is assessed, and the appropriateness of the gestational weight gain is evaluated in relationship to her BMI. Urine may be checked by dipstick, and the presence and degree of edema are noted. For examination of the abdomen, the woman lies on her back with her arms by her side and head supported by a pillow. The bladder should be empty. Abdominal inspection is followed by measurement of the height of the fundus. While the woman lies on her back, the nurse should be alert for the occurrence of supine hypotension (see Emergency box). When a woman is lying in this position, the weight of abdominal contents may compress the vena cava and aorta, causing a decrease in BP and a feeling of faintness.

The findings revealed during the interview and physical examination reflect the status of maternal adaptations. When any of the findings is suspicious, an in-depth examination is performed. For example, careful interpretation of BP is important in the risk factor analysis of all pregnant women. BP is evaluated on the basis of absolute values and the length of gestation and is interpreted in light of modifying factors.

HIV Screening

Pregnant women are ethically obligated to seek reasonable care during pregnancy and to avoid causing harm to the fetus. Maternity nurses should be advocates for the fetus while accepting of the pregnant woman’s decision regarding testing and/or treatment for HIV.

The incidence of perinatal transmission from an HIV-positive mother to her fetus ranges from 25% to 35%. Zidovudine decreases perinatal transmission and the risk of infant death (Brookehurst & Volmink, 2002). Elective cesarean birth significantly reduces the risk of transmission from the mother to the child (Brookehurst, 2002). Testing has the potential to identify HIV-positive women who can then be treated. Health care providers have an obligation to ensure that pregnant women are well informed about HIV symptoms, testing, and methods of decreasing maternal-fetal transmission. However, mandatory HIV screening involves ethical issues related to privacy invasion, discrimination, social stigma, and reproductive risks to the pregnant woman. Although some professional groups advocate mandatory testing, the Association of Women’s Health, Obstetric and Neonatal Nurses (AWHONN) does not support either mandatory or universal HIV testing of pregnant women because these models do not have the same standards of confidentiality and counseling that are present with voluntary, confidential testing with counseling (AWHONN, 1999).

During the third trimester, current family situations and their effect on the woman are assessed, for example, siblings’ and grandparents’ responses to the pregnancy and the coming child. In addition, the following assessments of the woman and her family are made: warning signs of emergencies; signs of preterm and term labor; the labor process and concerns about labor; and fetal development and methods to assess fetal well-being. The nurse should ask if the woman is planning to attend childbirth preparation classes and what she knows about pain management during labor.

A review of the woman’s physical systems is appropriate at each prenatal visit, and any suspicious signs or symptoms are assessed in depth. Discomforts reflecting adaptations to pregnancy are identified.

Physical examination. Reevaluation is a constant aspect of a pregnant woman’s care. Each woman reacts differently to pregnancy. As a result, careful monitoring of the pregnancy and her reactions to care is vital. The database is updated at each time of contact with the pregnant woman. Physiologic changes are documented as the pregnancy progresses and reviewed for possible deviations from normal progress.

At each visit, physical parameters are measured. Ideally, BP is taken by using the same arm at every visit, with the woman sitting, using a cuff of appropriate size (which is noted on her chart). Her weight is assessed, and the appropriateness of the gestational weight gain is evaluated in relationship to her BMI. Urine may be checked by dipstick, and the presence and degree of edema are noted. For examination of the abdomen, the woman lies on her back with her arms by her side and head supported by a pillow. The bladder should be empty. Abdominal inspection is followed by measurement of the height of the fundus. While the woman lies on her back, the nurse should be alert for the occurrence of supine hypotension (see Emergency box). When a woman is lying in this position, the weight of abdominal contents may compress the vena cava and aorta, causing a decrease in BP and a feeling of faintness.

The findings revealed during the interview and physical examination reflect the status of maternal adaptations. When any of the findings is suspicious, an in-depth examination is performed. For example, careful interpretation of BP is important in the risk factor analysis of all pregnant women. BP is evaluated on the basis of absolute values and the length of gestation and is interpreted in light of modifying factors.

HIV Screening

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Individuals whose systolic BP (SBP) is 120 to 139 mm Hg or whose diastolic BP (DBP) is 80 to 89 mm Hg should be viewed as prehypertensive. To prevent cardiovascular disease, they require health-promoting lifestyle modifications (National High Blood Pressure Education Program, 2003).

An absolute SBP of 140 mm Hg or more and a DBP of 90 mm Hg or more suggests the presence of hypertension. An SBP ≥125 mm Hg or a DBP ≥75 mm Hg in midpregnancy or an SBP ≥130 mm Hg or DBP ≥85 in later pregnancy are indicative of problems and should be reported to the primary health care provider immediately (Peters & Flack, 2004).

A rise in SBP of 30 mm Hg or more than the baseline pressure, or rise in the DBP of 15 mm Hg more than the baseline pressure, is also a significant finding regardless of the absolute values. An increase of 20 mm Hg or more in the mean arterial pressure (MAP) is also an indicator of hypertension (Gilbert & Harmon, 2003). See Chapter 23 for an in-depth discussion of problems associated with hypertension.

The pregnant woman is monitored continuously for a range of signs and symptoms that indicate potential complications in addition to hypertension. For example, persistent and excessive vomiting and ketonuria may indicate the development of hyperemesis gravidarum. Uterine cramping and vaginal bleeding are signs of threatened miscarriage. Chills and fever are symptoms of infection. Discharge from the vagina may be amniotic fluid or may be associated with infection (see Signs of Potential Complications box).

**Fetal assessment.** Toward the end of the first trimester, before the uterus is an abdominal organ, the fetal heart tones (FHTs) can be heard with an ultrasound fetoscope or an ultrasound stethoscope. To hear the FHTs, place the instrument in the midline, just above the symphysis pubis, and apply firm pressure. The woman and her family should be offered the opportunity to listen to the FHTs (see Fig. 9-9, A). The health status of the fetus is assessed at each visit for the remainder of the pregnancy.

**Fundal height.** During the second trimester, the uterus becomes an abdominal organ. The fundal height, measurement of the height of the uterus above the symphysis pubis, is used as one indicator of fetal growth. The measurement also provides a gross estimate of the duration of pregnancy. From approximately gestational weeks (GW) 18 to 32, the height of the fundus in centimeters is approximately the same as the number of weeks of gestation, (± 2 GW) with an empty bladder at the time of measurement (Cunningham et al., 2005). For example, a woman of 28 gestational weeks, with an empty bladder would measure from 26 to 30 cm. In addition, it may aid in the identification of high risk factors. A stable or decreased fundal height may indicate the presence of intrauterine growth restriction (IUGR); an excessive increase could indicate the presence of multifetal gestation (more than one fetus) or hydramnios.
A paper tape typically is used to measure fundal height. To increase the reliability of the measurement, the same person examines the pregnant woman at each of her prenatal visits, but often this is not possible. All clinicians who examine a particular pregnant woman should be consistent in their measurement technique. Ideally, a protocol should be established for the health care setting in which the measurement technique is explicitly set forth, and the woman’s position on the examining table, the measuring device, and method of measurement used are specified. Conditions under which the measurements are taken also can be described in the woman’s records, including whether the bladder was empty and whether the uterus was relaxed or contracted at the time of measurement.

Various positions for measuring fundal height have been described. The woman can be supine, have her head elevated, have her knees flexed, or have both her head elevated and knees flexed. Measurements obtained with the woman in the various positions differ, making it even more important to standardize the fundal height measurement technique. The bladder must be empty before the measurement is taken. As much as 3-cm variation is possible if the bladder is full (Cunningham et al., 2005).

Placement of the tape measure also can vary. The tape can be placed in the middle of the woman’s abdomen, and the measurement made from the upper border of the symphysis pubis to the upper border of the fundus with the tape measure held in contact with the skin for the entire length of the uterus (Fig. 9-8, A). In another measurement technique, the upper curve of the fundus is not included in the measurement. Instead, one end of the tape measure is held at the upper border of the symphysis pubis with one hand, and the other hand is placed at the upper border of the fundus. The tape is placed between the middle and index fingers of the other hand, and the point where these fingers intercept the tape measure is taken as the measurement (Fig. 9-8, B).

**Gestational age.** In an uncomplicated pregnancy, fetal gestational age is estimated after the duration of pregnancy and the EDB are determined. Fetal gestational age is determined from the menstrual history, contraceptive history, pregnancy test result, and the following findings obtained during the clinical evaluation:

- First uterine evaluation: date, size
- Fetal heart (FH) first heard: date, method (Doppler stethoscope, fetoscope)
- Date of quickening
- Current fundal height, estimated fetal weight (EFW)
- Current week of gestation by history of LMP and/or ultrasound examination
- Ultrasound examination: date, week of gestation, biparietal diameter (BPD)
- Reliability of dates

Quickening (“feeling of life”) refers to the mother’s first perception of fetal movement. It usually occurs between weeks 16 and 20 of gestation and is initially experienced as a fluttering sensation. The mother’s report should be recorded. Multiparas often perceive fetal movement earlier than primigravidas.

Routine use of ultrasound examination (also called a sono gram) in early pregnancy has been recommended, and many health care providers have this equipment available in the office. This procedure may be used to establish the duration of pregnancy if the woman cannot give a precise date for her LMP or if the size of the uterus does not conform to the EDB as calculated by Nägele’s rule. Ultrasound also provides information about the well-being of the fetus. However, the routine use of ultrasound has not been found to substantially improve fetal outcome (Bricker & Neilson, 2000).

**Health status.** The assessment of fetal health status includes consideration of fetal movement. The mother is instructed to note the extent and timing of fetal movements and to report immediately if the pattern changes or if movement ceases. Regular movement has been found to
be a reliable indicator of fetal health (Cunningham et al., 2005). One method is for the woman to count fetal movements after a meal. Four or more kick counts in an hour is reassuring.

The fetal heart rate (FHR) is checked on routine visits once it has been heard (Fig. 9-9). Early in the second trimester, the heart beat may be heard with the Doppler stethoscope (Fig. 9-9, B). To detect the heart beat before the fetus can be palpated by Leopold maneuvers (see procedure, p. 412), the scope is moved around the abdomen until the heart beat is heard. Each nurse develops a set pattern for searching the abdomen for the heart beat—for example, starting first in the midline about 2 to 3 cm above the symphysis, then moving to the left lower quadrant, and so on. The heart beat is counted for 1 minute, and the quality and rhythm noted. Later in the second trimester, the FHR can be determined with the fetoscope or Pinard fetoscope (Fig. 9-9, A and C). A normal rate and rhythm are other good indicators of fetal health. Once the heart beat is noted, its absence is cause for immediate investigation.

Fetal health status is investigated intensively if any maternal or fetal complications arise (e.g., gestational hypertension, IUGR, premature rupture of membranes [PROM], irregular or absent FHR, or absence of fetal movements after quickening). Careful, precise, and concise recording of patient responses and laboratory results contributes to the continuous supervision vital to ensuring the well-being of the mother and fetus.

**Laboratory tests.** The number of routine laboratory tests done during follow-up visits in pregnancy is limited. A clean-catch urine specimen is obtained to test for glucose, protein, nitrites, and leukocytes at each visit. Urine specimens for culture and sensitivity, as well as blood samples, are obtained only if signs and symptoms warrant.

It is recommended that the maternal serum alpha-fetoprotein (MSAFP) screening be done between 15 and 22 GW, ideally between 16 and 18 GW (Jenkins & Wapner, 2004). Elevated levels are associated with open neural tube defects and multiple gestations, whereas low levels are associated with Down syndrome. Abnormal levels are followed by second trimester ultrasonography for more in-depth investigation (Benn, Egan, Fang, & Smith-Bindman, 2004). The multiple-marker, or triple-screen, blood test is also recommended (Graves, Miller, & Sellers, 2002). Done between 16 and 18 weeks of gestation, it measures the MSAFP, human chorionic gonadotropin (hCG), and unconjugated estriol, the levels of which are combined to yield one value. Low levels may be associated with Down syndrome and other chromosomal abnormalities (Cunningham et al., 2005). Other blood tests are repeated as necessary, as are cervical and vaginal smears.

A glucose challenge is usually done between 24 and 28 weeks of gestation. GBS testing is done between 35 and 37 weeks of gestation; cultures collected earlier will not accurately predict GBS status at time of birth (Himmelberger, 2002). GBS testing may be done also at the initial physical examination to identify and treat women who are GBS positive who may give birth before 35 GW.

**Other tests.** Other diagnostic tests are available to assess the health status of both the pregnant woman and the fetus. Ultrasonography, for example, may be performed to...
determine the status of the pregnancy and to confirm gestational age of the fetus. Amniocentesis, a procedure used to obtain amniotic fluid for analysis, may be needed to evaluate the fetus for genetic disorders or gestational maturity. These and other tests that are used to determine health risks for the mother and infant are described in Chapter 21.

After obtaining information through the assessment process, the data are analyzed to identify deviations from the norm and unique needs of the pregnant woman and her family. Although comprehensive health care requires collaboration among professionals from several disciplines, nurses are in an excellent position to formulate diagnoses that can be used to guide independent interventions. The following are examples of the nursing diagnoses that may be appropriate in the prenatal period.

- **Anxiety related to**
  - physical discomforts of pregnancy
  - ambivalent and labile emotions
  - changes in family dynamics
  - fetal well-being
  - ability to manage anticipated labor
- **Constipation related to**
  - progesterone relaxation of gastrointestinal smooth muscle
  - dietary behaviors
- **Imbalanced nutrition: less than body requirements related to**
  - morning sickness (nausea and vomiting)
  - fatigue
- **Disturbed body image related to**
  - anatomic and physiologic changes of pregnancy
  - changes in the couple relationship
- **Disturbed sleep pattern related to**
  - discomforts of late pregnancy
  - anxiety about approaching labor

**Expected Outcomes of Care**

The plan of nursing care for women and their families during pregnancy is guided by the diagnoses that have been formulated during prenatal visits. Individualized plans that are developed mutually with the pregnant woman or couple are more likely to result in desirable outcomes than are those developed by the nurse for the woman. Measured outcomes of prenatal care include not only physical outcomes but also developmental and psychosocial outcomes.

The following are examples of outcomes that may be expected.

- Verbalize decreased anxiety about the health of her fetus and herself
- Verbalize improved family dynamics
- Show appropriate weight gain patterns per trimester
- Report increasing acceptance of changes in body image
- Demonstrate knowledge for self-care
- Seek clarification of information about pregnancy and birth
- Report signs and symptoms of complications
- Describe appropriate measures taken to relieve physical discomforts
- Develop a realistic birth plan

**Plan of Care and Interventions**

The nurse-patient relationship is critical in setting the tone for further interaction. The techniques of listening with an attentive expression, touching, and using eye contact have their place, as does recognizing the woman’s feelings and her right to express these feelings. The interaction may occur in various formal or informal settings. The clinic, home visits, or telephone conversations all provide opportunities for contact and can be used effectively.

**Care Paths**

Because a large number of health care professionals can be involved in care of the expectant mother, unintentional gaps or overlaps in care may occur. Care paths can be used to improve the consistency of care and to reduce costs. Although the Care Path on p. 254 focuses only on prenatal education, it is one example of the type of form that might be developed to guide health care providers in carrying out the appropriate assessments and interventions in a timely way. Use of care paths also may contribute to improved satisfaction of families with the prenatal care provided, and members of the health care team may function more efficiently and effectively.

**Education about maternal and fetal changes**

Expectant parents are typically curious about the growth and development of the fetus and the subsequent changes that occur in the mother’s body. Mothers in particular are sometimes more tolerant of the discomforts related to the continuing pregnancy if they understand the underlying causes. Educational literature that describes the fetal and maternal changes is available and can be used in explaining changes as they occur. The nurse’s familiarity with any material shared with pregnant families is essential to effective patient education. Educational material may include electronic and written materials appropriate to the pregnant woman’s or couple’s literacy level and experience and the agency’s resources. It is important that available educational materials reflect the pregnant woman’s or couple’s ethnicity, culture, and literacy level to be most effective.

**Education for self-care**

The expectant mother needs information about many subjects. The nurse who is observant, listens, and knows typical concerns of expectant parents can anticipate questions that will be asked and prompt mothers and partners to discuss what is on their minds. Many times, printed literature can be given to supplement the individualized teaching the nurse provides, and women often avidly read books and pamphlets related to their own experience. When nurses read
## Prenatal Care Pathway

### Prenatal Education Clinical Pathway

**Initial Visit and Orientation:**

**Prenatal Care Pathway**

| Event | Maternal Changes | Possible Complications | Testing | Maternal 
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<td>Maternal changes</td>
<td>Possible complications:</td>
<td>Labs</td>
<td>Ultrasound</td>
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<td>Threatened miscarriage</td>
<td>Ultrasound</td>
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<td>Pregnancy week 21-27</td>
<td>Introduction to breastfeeding</td>
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<td>Acceptance of pregnancy</td>
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<td>and childbirth preparation</td>
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<td>Pregnancy week 28-40</td>
<td>Dietary follow-up</td>
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<td>Fetal evaluation</td>
<td>Breastfeeding or bottle feeding</td>
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<td>Childbirth preparation</td>
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<td>Cesarean/VBAC</td>
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<td>Parenting preparation:</td>
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<td>PP care and checkup</td>
<td>Emotional changes</td>
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<td>BC options</td>
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**Signature:**

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*BC, Birth control; BPP, biophysical profile; FOB, father of baby; NST, nonstress test; OTC, over-the-counter preparations; PP, postpartum; S/S, signs and symptoms; STI, sexually transmitted infection; VBAC, vaginal birth after cesarean.*
the literature before they distribute it, they have an opportunity to point out areas that may not correspond to local health care practices. As family members are common sources for health information it is also important to include them in the health education endeavors (Lewallen, 2004). In addition, as more individuals use the computer for information, the pregnant woman or couple may have questions from their Internet reviews. Nurses may also share recommended electronic sites from reliable sources.

Patients who receive conflicting advice or instruction are likely to grow increasingly frustrated with members of the health care team and the care provided. Several topics that may cause concerns in pregnant women are discussed in the following sections.

Nutrition. Good nutrition is important for the maintenance of maternal health during pregnancy and the provision of adequate nutrients for embryonic and fetal development (American Dietetic Association [ADA], 2002). Assessing a woman’s nutritional status and providing information on nutrition are part of the nurse’s responsibilities in providing prenatal care. This includes assessment of weight gain during pregnancy as well as prenatal nutrition. Teaching may include discussion about foods high in iron, encouragement to take prenatal vitamins, and recommendations to moderate or limit caffeine intake. In some settings a registered dietitian conducts classes for pregnant women on the topics of nutritional status and nutrition during pregnancy or interviews them to assess their knowledge of these topics. Nurses can refer women to a registered dietitian if a need is revealed during the nursing assessment. (For detailed information concerning maternal and fetal nutritional needs and related nursing care, see Chapter 10).

Personal hygiene. During pregnancy, the sebaceous (sweat) glands are highly active because of hormonal influences, and women often perspire freely. They may be reassure assured that the increase is normal and that their previous patterns of perspiration will return after the postpartum period. Baths and warm showers can be therapeutic because they relax tense, tired muscles; help counter insomnia; and make the pregnant woman feel fresh. Tub bathing is permitted unless under pressure. However, late in pregnancy, when the woman’s center of gravity lowers, she is at risk for falling. Tub bathing is permitted even in late pregnancy because little water enters the vagina unless under pressure. However, late in pregnancy, when the woman’s center of gravity lowers, she is at risk for falling. Tub bathing is contraindicated after rupture of the membranes.

Prevention of urinary tract infections. Because of physiologic changes that occur in the renal system during pregnancy (see Chapter 8), urinary tract infections are common, but they may be asymptomatic. Women should be instructed to inform their health care provider if blood or pain occurs with urination. These infections pose a risk to the mother and fetus; therefore the prevention or early treatment of these infections is essential. The nurse can assess the woman’s understanding and use of good handwashing techniques before and after urinating and of the importance of wiping the perineum from front to back. Soft, absorbent toilet tissue, preferably white and unscented, should be used; harsh, scented, or printed toilet paper may cause irritation. Bubble bath or other bath oils should be avoided because these may irritate the urethra. Women should wear cotton crotch underpants and panty hose and avoid wearing tight-fitting slacks or jeans for long periods; anything that allows a buildup of heat and moisture in the genital area may foster the growth of bacteria.

Some women do not consume enough fluid and food. After discovering her food preferences, the nurse should advise the woman to drink at least 2 L (eight glasses) of liquid, preferably water, a day to maintain an adequate fluid intake that ensures frequent urination. Pregnant women should not limit fluids in an effort to reduce the frequency of urination. Women need to know that if urine looks dark (concentrated), they must increase their fluid intake. The consumption of yogurt and acidophilus milk also may help prevent urinary tract and vaginal infections. The nurse should review healthy urination practices with the woman. Women are told not to ignore the urge to urinate because holding urine lengthens the time bacteria are in the bladder and allows them to multiply. Women should plan ahead when they are faced with situations that may normally require them to delay urination (e.g., a long car ride). They always should urinate before going to bed at night. Bacteria can be introduced during intercourse; therefore, women are advised to urinate before and after intercourse, and then drink a large glass of water to promote additional urination. Although frequently recommended, there is conflicting evidence regarding the effectiveness of cranberry juice and in particular the effective dosage in the prevention of urinary tract infections (Jepson, Mihaljevic, & Craig, 2005; Kiel, Nashelsky, Robbins, & Bondi, 2003; Raz, Chazan, & Dan, 2004).

Kegel exercises. Kegel exercises, deliberate contraction and relaxation of the pubococcygeus muscle, strengthen the muscles around the reproductive organs and improve muscle tone. Many women are not aware of the muscles of the pelvic floor until it is pointed out that these are the muscles used during urination and sexual intercourse that can be consciously controlled. The muscles of the pelvic floor encircle the vaginal outlet, and they need to be exercised because an exercised muscle can then stretch and contract readily at the time of birth. Practice of pelvic muscle exercises during pregnancy also results in fewer complaints of urinary incontinence in late pregnancy and postpartum (Sampselle, 2003).

Several ways of performing Kegel exercises have been described. The method described in the Teaching Guidelines in Chapter 4 (see p. 93) demonstrates evidence-based nursing care. This method was developed by nurses involved in a research utilization project for continence in women. Teaching has been effective if the woman reports an increased ability to control urine flow and greater muscular control during sexual intercourse.

Preparation for breastfeeding. Pregnant women are usually eager to discuss their plans for feeding the newborn. Breast milk is the food of choice, in part
because breastfeeding is associated with a decreased incidence of perinatal morbidity and mortality. The American Academy of Pediatrics recommends breastfeeding for at least a year. However, a deep-seated aversion to breastfeeding on the part of the woman or partner, the woman’s need for certain medications or use of street drugs, and certain life-threatening illnesses and medical complications, such as HIV infection, are contraindications to breastfeeding (Lawrence & Lawrence, 2005). Although hepatitis B antigen has not been shown to be transmitted through breast milk, as an added precaution, it is recommended that infants born to hepatitis B surface antigen (HBsAg)-positive women receive the hepatitis B vaccine and hepatitis B immune globulin (HBIg) immediately after birth. Women who are HIV positive are discouraged from nursing because the risk of HIV transmission outweighs the risk of the infant dying from another cause (Lawrence & Lawrence, 2005).

A woman’s decision about the method of infant feeding often is made before pregnancy; therefore the education of women of childbearing age about the benefits of breastfeeding is essential. If undecided, the pregnant woman and her partner are encouraged to choose which method of feeding is suitable for them (Pavill, 2002). Once the couple has been given information about the advantages and disadvantages of bottle feeding and breastfeeding, they can make an informed choice. Health care providers support their decisions and provide any needed assistance.

Women with inverted nipples need special consideration if they are planning to breastfeed. The pinch test is done to determine whether the nipple is everted or inverted (Fig. 9-10). The nurse shows the woman the way to perform the pinch test. It involves having the woman place her thumb and forefinger on her areola and gently press inward. This action will cause her nipple either to stand erect or to invert. Most nipples will stand erect.

Exercises to break the adhesions that cause the nipple to invert do not work and may precipitate uterine contractions (Lawrence & Lawrence, 2005). The use of breast shells, small plastic devices that fit over the nipples, is suggested for women who have flat or inverted nipples (Fig. 9-11). Breast shells work by exerting a continuous, gentle pressure around the areola that pushes the nipple through a central opening in the inner shield. Breast shells should be worn for 1 to 2 hours daily during the last trimester of pregnancy. They should be worn for gradually increasing lengths of time (Lawrence & Lawrence, 2005). Breast stimulation is contraindicated in women at risk for preterm labor; therefore the decision to suggest the use of breast shells to women with flat or inverted nipples must be made judiciously. Continuous support and guidance must be given to the woman as part of the nursing plan of care.
The woman is taught to cleanse the nipples with warm water to keep the ducts from being blocked with dried colostrum. Soap, ointments, alcohol, and tinctures should not be applied because they remove protective oils that keep the nipples supple. The use of these substances may cause the nipples to crack during early lactation (Lawrence & Lawrence, 2005).

The woman who plans to breastfeed should purchase a nursing bra that will accommodate her increased breast size during the last few months of pregnancy and during lactation. If her breasts are very heavy, or if the woman feels uncomfortable with the weight unsupported, the bra can be worn day and night.

Dental care. Dental care during pregnancy is especially important because nausea during pregnancy may lead to poor oral hygiene, allowing dental cavities to develop. A fluoride toothpaste should be used daily. Inflammation and infection of the gingival and periodontal tissues may occur, especially in the last trimester because the uterus is now outside the pelvis but not so large as to cause discomfort while she sits in a dental chair (Carl, Roux, & Matacale, 2000). Research links periodontal disease with preterm births and LBW (Jared et al., 1999) and dental delivery complications (Carl, Roux, & Matacale, 2000). Research links periodontal disease with preterm births and LBW (Jared et al., 1999) and dental delivery complications (Carl, Roux, & Matacale, 2000).

Because calcium and phosphorus in the teeth are fixed during the late pregnancy trimester because of the increased weight of the fetus are necessary, the woman will be most comfortable during the second trimester because the uterus is now outside the pelvis but not so large as to cause discomfort while she sits in a dental chair (Carl, Roux, & Matacale, 2000).

Physical activity. Physical activity promotes a feeling of well-being in the pregnant woman. It improves circulation, promotes relaxation and rest, and counteracts boredom, as it does in the nonpregnant woman (American College of Obstetricians and Gynecologists, [ACOG], 2002). Detailed exercise tips for pregnancy are presented in the Patient Instructions for Self-Care box. Exercises that help relieve low back pain that often arises during the second trimester because of the increased weight of the fetus are demonstrated in Fig. 9-12.

Posture and body mechanics. Skeletal and musculoskeletal changes and hormonal changes (relaxin) in pregnancy may predispose the woman to backache and possible injury. As pregnancy progresses, the pregnant woman’s center of gravity (jogging, running) and concentrating on non–weight-bearing activities such as swimming, cycling, or stretching. If you are a runner, starting in your seventh month, you may wish to walk instead. Avoid becoming overheated, especially in hot, humid weather. As your body temperature rises, the heat is transmitted to your fetus. Prolonged or repeated elevation of fetal temperature may result in birth defects, especially during the first 3 months. Your temperature should not exceed 38°C.

Avoid risky activities such as surfing, mountain climbing, skydiving, and racquetball because such activities that require precise balance and coordination may be dangerous. Avoid activities that require holding your breath and bearing down (Valsalva maneuver). Jerky, bouncy motions also should be avoided.

Exercise regularly every day if possible, as long as you are healthy, to improve muscle tone and increase or maintain your stamina. Exercising sporadically may put undue strain on your muscles. Thirty minutes of moderate physical exercise is recommended. This activity can be broken up into shorter segments with rest in between. For example, exercise for 10 to 15 minutes, rest for 2 to 3 minutes, then exercise for another 10 to 15 minutes.
PATIENT INSTRUCTIONS FOR SELF-CARE—cont’d

**Exercise Tips for Pregnant Women**

Rest for 10 minutes after exercising, lying on your side. As the uterus grows, it puts pressure on a major vein in your abdomen, which carries blood to your heart. Lying on your side removes the pressure and promotes return circulation from your extremities and muscles to your heart, thereby increasing blood flow to your placenta and fetus. You should rise gradually from the floor to prevent dizziness or fainting (orthostatic hypotension).

Drink two or three 8-oz glasses of water after you exercise to replace the body fluids lost through perspiration. While exercising, drink water whenever you feel the need.

Increase your caloric intake to replace the calories burned during exercise and provide the extra energy needs of pregnancy. (Pregnancy alone requires an additional 300 kcal/day.) Choose such high-protein foods as fish, milk, cheese, eggs, and meat.

Take your time. This is not the time to be competitive or train for activities requiring speed or long endurance.

Wear a supportive bra. Your increased breast weight may cause changes in posture and put pressure on the ulnar nerve.

Wear supportive shoes. As your uterus grows, your center of gravity shifts and you compensate for this by arching your back. These natural changes may make you feel off balance and more likely to fall.

Stop exercising immediately if you experience shortness of breath, dizziness, numbness, tingling, pain of any kind, more than four uterine contractions per hour, decreased fetal activity, or vaginal bleeding, and consult your health care provider.


Riding a recumbent bicycle provides exercise while supplying back support. (Courtesy Shannon Perry, Phoenix, AZ.)

**Fig. 9-12** Exercises. **A-C,** Pelvic rocking relieves low backache (excellent for relief of menstrual cramps as well). **D,** Abdominal breathing aids relaxation and lifts abdominal wall off uterus.
gravity changes, pelvic joints soften and relax, and stress is placed on abdominal musculature. Poor posture and body mechanics contribute to the discomfort and potential for injury. To minimize these problems, women can learn good body posture and body mechanics (Fig. 9-13). Strategies to prevent or relieve backache are presented in the Patient Instructions for Self-Care box on p. 260.

Rest and relaxation. The pregnant woman is encouraged to plan regular rest periods, particularly as pregnancy advances. The side-lying position is recommended because it promotes uterine perfusion and fetoplacental oxygenation by eliminating pressure on the ascending vena cava and descending aorta, which can lead to supine hypotension (Fig. 9-14). The mother also should be shown the way to rise slowly from a side-lying position to prevent placing strain on the back and to minimize the orthostatic hypotension caused by changes in position common in the latter part of pregnancy. To stretch and rest back muscles at home or work, the nurse can show the woman the way to do the following exercises:

• Stand behind a chair. Support and balance self by using the back of the chair (Fig. 9-15). Squat for 30 seconds; stand for 15 seconds. Repeat six times, several times per day, as needed.
• While sitting in a chair, lower head to knees for 30 seconds. Raise head. Repeat six times, several times per day, as needed.

Conscious relaxation is the process of releasing tension from the mind and body through deliberate effort and practice. The ability to relax consciously and intentionally can be beneficial for the following reasons:

• To relieve the normal discomforts related to pregnancy
• To reduce stress and therefore diminish pain perception during the childbearing cycle
• To heighten self-awareness and trust in one’s own ability to control responses and functions
• To help cope with stress in everyday life situations, whether the woman is pregnant or not

The techniques for conscious relaxation are numerous and varied. Guidelines are given in Box 9-5.

Employment. Employment of pregnant women usually has no adverse effects on pregnancy outcomes. Job discrimination that is based strictly on pregnancy is illegal. However, some job environments pose potential risk to the fetus (e.g., dry-cleaning plants, chemistry laboratories, parking garages). Excessive fatigue is usually the deciding factor in the termination of employment. Strategies to improve safety during pregnancy are described in the Patient Instructions for Self-Care Box on p. 261.

Women with sedentary jobs need to walk around at intervals to counter the usual sluggish circulation in the legs. They also should neither sit nor stand in one position for long periods, and they should avoid crossing their legs at
the knees, because all these activities can foster the development of varices and thrombophlebitis. Standing for long periods also increases the risk of preterm labor. The pregnant woman’s chair should provide adequate back support. Use of a footstool can prevent pressure on veins, relieve strain on varicosities, minimize edema of feet, and prevent backache.

Clothing. Some women continue to wear their usual clothes during pregnancy as long as they fit and feel comfortable. If maternity clothing is needed, outfits may be purchased new or found at thrift shops or garage sales in good condition. Comfortable, loose clothing is recommended. Tight bras and belts, stretch pants, garters, tight-top knee socks, panty girdles, and other constrictive clothing should be avoided because tight clothing over the perineum encourages vaginitis and pruritus (itching), and impaired circulation in the legs can cause varicosities. Maternity bras are constructed to accommodate the increased breast weight, chest circumference, and the size of breast tissue (under the arm). These bras also have drop-flaps over the nipples to facilitate breastfeeding. A good bra can help prevent neckache and backache.

PATIENT INSTRUCTIONS FOR SELF-CARE

Posture and Body Mechanics

TO PREVENT OR RELIEVE BACKACHE

Do pelvic tilt:
- Pelvic tilt (rock) on hands and knees (see Fig. 9-12, A) and while sitting in straight-back chair.
- Pelvic tilt (rock) in standing position against a wall, or lying on floor (see Fig. 9-12, B and C).
- Perform abdominal muscle contractions during pelvic tilt while standing, lying, or sitting to help strengthen rectus abdominis muscle (see Fig. 9-12, D).
- Use good body mechanics.
- Use leg muscles to reach objects on or near floor: Bend at the knees, not from the back. Knees are bent to lower body to squatting position. Feet are kept 12 to 18 inches apart to provide a solid base to maintain balance (see Fig. 9-13, A).
- Lift with the legs. To lift heavy object (e.g., young child), one foot is placed slightly in front of the other and kept flat as woman lowers herself onto one knee. She lifts the weight holding it close to her body and never higher than the chest. To stand up or sit down, she places one leg slightly behind the other as she raises or lowers herself (see Fig. 9-13, B).

TO RESTRICT THE LUMBAR CURVE

- For prolonged standing (e.g., ironing, employment), place one foot on low footstool or box; change positions often.
- Move car seat forward so that knees are bent and higher than hips. If needed, use a small pillow to support low back area.
- Sit in chairs low enough to allow both feet to be placed on floor, preferably with knees higher than hips.

TO PREVENT ROUND LIGAMENT PAIN AND STRAIN ON ABDOMINAL MUSCLES

Implement suggestions given in Table 9-2.

TO PREVENT OR RELIEVE BACKACHE

Do pelvic tilt:
- Pelvic tilt (rock) on hands and knees (see Fig. 9-12, A) and while sitting in straight-back chair.
- Pelvic tilt (rock) in standing position against a wall, or lying on floor (see Fig. 9-12, B and C).
- Perform abdominal muscle contractions during pelvic tilt while standing, lying, or sitting to help strengthen rectus abdominis muscle (see Fig. 9-12, D).
- Use good body mechanics.
- Use leg muscles to reach objects on or near floor: Bend at the knees, not from the back. Knees are bent to lower body to squatting position. Feet are kept 12 to 18 inches apart to provide a solid base to maintain balance (see Fig. 9-13, A).
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TO RESTRICT THE LUMBAR CURVE

- For prolonged standing (e.g., ironing, employment), place one foot on low footstool or box; change positions often.
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- Sit in chairs low enough to allow both feet to be placed on floor, preferably with knees higher than hips.

TO PREVENT ROUND LIGAMENT PAIN AND STRAIN ON ABDOMINAL MUSCLES

Implement suggestions given in Table 9-2.
Maternal support hose give considerable comfort and promote greater venous emptying in women with large varicose veins. Ideally, support stockings should be put on before the woman gets out of bed in the morning. Fig. 9-16 demonstrates a position for resting the legs and reducing swelling and varicosities.

Comfortable shoes that provide firm support and promote good posture and balance also are advisable. Very high heels and platform shoes are not recommended because of the changes in the pregnant woman’s center of gravity, and the hormone relaxin, which softens pelvic joints in later pregnancy, all of which can cause her to lose her balance. In addition, in the third trimester, the woman’s pelvis tilts forward, and her lumbar curve increases. The resulting leg aches and cramps are aggravated by nonsupportive shoes (Fig. 9-17).

Travel.
Travel is not contraindicated in low risk pregnant women. However, women with high risk pregnancies are advised to avoid long-distance travel after fetal viability has been reached to avert possible economic and psychologic consequences of giving birth to a preterm infant far from home. Travel to areas in which medical care is poor, water is untreated, or malaria is prevalent should be avoided if possible. Women who contemplate foreign travel should be aware that many health insurance carriers do not cover a birth in a foreign setting or even hospitalization for preterm labor. In addition, vaccinations for foreign travel may be contraindicated during pregnancy.

Pregnant women who travel for long distances should schedule periods of activity and rest. While sitting, the woman can practice deep breathing, foot circling, and alternating contracting and relaxing different muscle groups.

**Conscious Relaxation Tips**

**Preparation:** Loosen clothing, assume a comfortable sitting or side-lying position with all parts of body well supported with pillows.

**Beginning:** Allow yourself to feel warm and comfortable. Inhale and exhale slowly, and imagine peaceful relaxation coming over each part of the body, starting with the neck and working down to the toes. Often people who learn conscious relaxation speak of feeling relaxed even if some discomfort is present.

**Maintenance:** Use imagery (fantasy or daydream) to maintain the state of relaxation. Using active imagery, imagine yourself moving or doing some activity and experiencing its sensations. Using passive imagery, imagine yourself watching a scene, such as a lovely sunset.

**Awakening:** Return to the wakeful state gradually. Slowly begin to take in stimuli from the surrounding environment.

**Further retention and development of the skill:** Practice regularly for some periods each day, for example, at the same hour for 10 to 15 minutes each day, to feel refreshed, revitalized, and invigorated.

**Embryonic and fetal development is vulnerable to environmental teratogens.** Many potentially dangerous chemicals are present in the home, yard, and workplace: cleaning agents, paints, sprays, herbicides, and pesticides. The soil and water supply may be unsafe. Therefore the woman should follow these guidelines:

- Use good body mechanics.
- Use safety features on tools and vehicles (safety seat belts, shoulder harnesses, headrests, goggles, helmets) as specified.
- Avoid activities requiring coordination, balance, and concentration.
- Take rest periods; reschedule daily activities to meet rest and relaxation needs.

- Read all labels for ingredients and proper use of product.
- Ensure adequate ventilation with clean air.
- Dispose of wastes appropriately.
- Wear gloves when handling chemicals.
- Change job assignments or workplace as necessary.
- Avoid high altitudes (not in pressurized aircraft), which could jeopardize oxygen intake.
She should avoid becoming fatigued. Although travel in itself is not a cause of adverse outcomes such as miscarriage or preterm labor, certain precautions are recommended while traveling in a car. For example, women riding in a car should wear automobile restraints and stop and walk every hour.

Maternal death as a result of injury is the most common cause of fetal death. The next most common cause is placental separation that occurs because body contours change in reaction to the force of a collision. The uterus as a muscular organ can adapt its shape to that of the body, but the placenta is not resilient. At the impact of collision, placental separation can occur. A combination lap belt and shoulder harness is the most effective automobile restraint, and both should be used (Fig. 9-18). The lap belt should be worn low across the pelvic bones and as snug as is comfortable. The shoulder harness should be worn above the gravid uterus and below the neck to prevent chafing. The pregnant woman should sit upright. The headrest should be used to prevent a whiplash injury.

Pregnant women traveling in high-altitude regions have lowered oxygen levels that may cause fetal hypoxia, especially if the pregnant woman is anemic. However, the current information on this condition is limited, and recommendations are not standardized.

Airline travel in large commercial jets usually poses little risk to the pregnant woman, but policies vary from airline to airline. The pregnant woman is advised to inquire about restrictions or recommendations from her carrier. Most health care providers allow air travel up to 36 weeks gestation in women without medical or pregnancy complications. The 8% humidity at which the cabins of commercial airlines are maintained may result in some water loss; hydration (with water) should therefore be maintained under these conditions. Sitting in the cramped seat of an airliner for prolonged
periods may increase the risk of superficial and deep thrombophlebitis; therefore a pregnant woman is encouraged to take a 15-minute walk around the aircraft during each hour of travel to minimize this risk. Metal detectors used at airport security checkpoints are not harmful to the fetus. However, women who are pilots, flight attendants, or frequent flyers expose themselves to in-flight radiation that exceeds recommended levels (Barth, 2004). Resources from the U.S. Federal Aviation Administration will assist the health care provider in determining safe levels for those women at high risk for radiation exposure.

### Medications and herbal preparations

Although much has been learned in recent years about fetal drug toxicity, the possible teratogenicity of many medications, both prescription and OTC, is still unknown. This fact is especially true for new medications and combinations of drugs. Moreover, certain subclinical errors or deficiencies in intermediate metabolism in the fetus may cause an otherwise harmless drug to be converted into a hazardous one. The greatest danger of drug-caused developmental defects in the fetus extends from the time of fertilization through the first trimester, a time when the woman may not realize she is pregnant. Self-treatment must be discouraged. The use of all drugs, including OTC medications, herbs, and vitamins, should be limited and a careful record kept of all therapeutic and nontherapeutic agents used.

### Immunizations

Some concern has been raised over the safety of various immunization practices during pregnancy. Immunization with live or attenuated live viruses is contraindicated during pregnancy because of its potential teratogenicity but should be part of postpartum care (ACOG, 2003). Live-virus vaccines include those for measles (rubeola and rubella), chickenpox, and mumps, as well as the Sabin oral vaccine (poliomyelitis vaccine no longer used in the United States) (ACOG). Live-virus vaccines consist of killed viruses that may be used. Those that may be administered during pregnancy include tetanus, diphtheria, recombinant hepatitis B, and rabies vaccines.

### Alcohol, cigarette smoke, caffeine, and drugs

A safe level of alcohol consumption during pregnancy has not yet been established. Although the consumption of occasional alcoholic beverages may not be harmful to the mother or her developing embryo or fetus, complete abstinence is strongly advised. Maternal alcoholism is associated with high rates of miscarriage and fetal alcohol syndrome; the risk for miscarriage in the first trimester is dose related (three or more drinks per day). Growing evidence indicates that the pattern of drinking (frequency, timing, and duration), especially in the first trimester, is more predictive of fetal damage than the amount (Wagner, Katikaneni, Cox, & Ryan, 1998). Considerably less alcohol use is reported among pregnant women than in nonpregnant women, but a high prevalence of some alcohol use among pregnant women still exists. Such a finding underscores the need for more systematic public health efforts to educate women about the hazards of alcohol consumption during pregnancy.

Cigarette smoking or continued exposure to secondhand smoke (even if the mother does not smoke) is associated with intrauterine fetal growth restriction (IUGR) and an increase in perinatal and infant morbidity and mortality. Smoking is associated with an increased frequency of preterm labor, PROM, abruptio placenta, placenta previa, and fetal death, possibly resulting from decreased placental perfusion. Smoking cessation activities should be incorporated into routine prenatal care (Todd, LaSala, & Neil-Urban, 2001; Yu, Park, & Schwabberg, 2002). All women who smoke should be strongly encouraged to quit or at least reduce the number of cigarettes they smoke. Pregnant women need to be told about the negative effects of even secondhand smoke on the fetus and encouraged to avoid such environments (Andres, 2004). Efforts focused on preventing gifts and women from beginning to smoke should be intensified.

Most studies of human pregnancy have revealed no association between caffeine consumption and birth defects or LBW (Andres, 2004). In contrast, some studies have documented an increased risk for miscarriage with caffeine intake greater than 300 mg/day (Giannelli, Doyle, Romas, Peletin, & Hermon, 2003) or intrauterine fetal growth restriction with caffeine intake greater than 223 mg/day (Torststein, Bakkeiteig, Trygg, Lund-Lanen, & Jacoben, 2003). Because other effects are unknown, however, pregnant women are advised to limit their caffeine intake, particularly coffee intake, as it has a high caffeine content per unit of measure. Therefore health care providers often encourage pregnant women to limit caffeine intake to no more than 3 cups of coffee or cola per day (ADA, 2002).

Any drug or environmental agent that enters the pregnant woman’s bloodstream has the potential to cross the placenta and harm the fetus. Most public health officials have incorporated the common examples of such substances. Although the problem of substance abuse in pregnancy is considered a major public health concern, comprehensive care of drug-addicted women improves maternal and neonatal outcomes (see Chapter 27).

### Normal discomforts

Pregnant women have physical symptoms that would be considered abnormal in the nonpregnant state. Women pregnant for the first time have an increased need for explanations of the causes of the discomforts and for advice on ways to relieve the discomforts. The discomforts of the first trimester are fairly specific. Information about the physiology and prevention of and self-care for discomforts experienced during the three trimesters is given in Table 9-2. Box 9-6 lists alternative and complementary therapies and why they might be used in pregnancy (Fig. 9-19). Nurses can do much to allay a first-time mother’s anxiety about such symptoms by telling her about them in advance and using terminology that the woman (or couple) can understand. Understanding the rationale for treatment promotes their participation in their care. Interventions should be individualized, with attention given to the woman’s lifestyle and culture.
BACKGROUND

Smoking during pregnancy is linked with low birth weight (<2500 g), very preterm birth (<32 weeks), perinatal death, low rates of breastfeeding, and shorter duration of breast-feeding. Characteristics of women likely to smoke during pregnancy include being of significantly higher parity and lower socioeconomic status, experiencing depression and job strain, and being more likely to be without a partner or practical support system. Even when they have these characteristics, however, certain groups still have lower smoking prevalence rates in pregnancy than the general population, as a result of cultural influences. For example, Mexican-American and African-American women have lower smoking rates in pregnancy, although the rate is ris- ing. Widespread campaigns to discourage smoking dur- ing pregnancy may have decreased the incidence, but the women who continue to smoke experience guilt, anxiety, and stress on their relationships with families and health care providers. Smokers are notoriously unreliable in self-reporting how much they smoke, and this is exacerbated in pregnancy, leading to measurement errors in research. Some women erroneously believe that low birth weight is desirable for an easy delivery.

OBJECTIVES

The reviewers searched for studies comparing the effi- cacy of smoking cessation interventions in pregnancy. In- terventions included information on the risks of smoking, advice to quit, individual counseling, group counseling, feedback of the pathophysiologic effects of smoking on mother or fetus, pictures of the fetus, nicotine replace- ment therapy, self-help manuals on strategies for quitting, and rewards and incentives. Outcomes included birth weight, gestation at birth, perinatal mortality, method of delivery, breastfeeding initiation and duration, maternal anxiety, depression, family functioning, duration of smok- ing cessation, and knowledge, attitudes and behavior of health professionals regarding smoking in pregnancy.

METHODS

Search Strategy

The authors searched the Cochrane database and the Cochrane Tobacco Addiction Group trials register. Search keywords were not reported. Thirty-seven trials, repre- senting 16,916 women, were selected, dated 1976 to 1999. Most of the trials (27) took place in the United States, but other countries represented included the United Kingdom, Argentina, Brazil, Cuba, Mexico, New Zealand, Sweden, Australia, Canada, and Norway.

Statistical Analyses

The trials were grouped by type and intensity of the in- tervention. Similar data were pooled. Secondary analy- sis looked at some outcomes separately.

FINDINGS

There was a significant decrease in smoking during late pregnancy in the intervention groups. The absolute difference between groups was 6.4% of 100 women smokers, ten will stop smoking as a result of “usual care,” and a further 6 to 7 will stop as a result of intervention.

Smoking cessation interventions were associated with significantly fewer low-birth-weight babies and preterm birth and increased mean birth weight. There was no dif- ference detected in very low birth weight (<1500 g) or perinatal mortality.

Five trials had a smoking relapse prevention inter- vention, with even fewer women in late pregnancy smok- ing. About 25% of women who quit smoking during preg- nancy relapse while still pregnant. Some data suggested that the stages of change (precontemplation, contem- plation, preparation, and action) may be different in preg- nancy, and that changes made in early pregnancy may not be sustained.

LIMITATIONS

- A number of trials did not offer informed consent. Many trials did not discuss the method of randomization, and many were quasi-randomized. Because the interventions were not concealed, outside influence may have skewed the results. Intervention protocols varied quite a bit, as did duration of intervention and follow-up. Interventions may not have been culturally appropriate for every setting. The amount of smoking cessation intervention that occurs in the “usual care” control group more recently may exceed the intervention groups of decades ago. Health providers may find it difficult to treat women differently according to their randomized group allocation. Many withdrawals and dropouts in the trials leave gaps in the data. Women who had a fetal death or a preterm infant may not have been counted as late-pregnancy smokers, as they never reached 36 weeks. Self-report inaccuracies may be re- placed with biochemical results.

CONCLUSIONS

- Intervention is effective in assisting women to decrease smoking during late pregnancy. The women who quit smoking had fewer low-birth-weight babies and preterm births, but the interventions made no difference in inci- dence of very low birth weight (<1500 g) babies or peri- natal mortality.

IMPLICATIONS FOR PRACTICE

- All maternity settings need smoking cessation programs. This review makes it clear that smoking cessation groups perform poorly. Further education can be fostered with programs that take into account the concerns of women who smoke, the staff who counsel them, and cognitive-behavioral strategies and relapse prevention. Health care providers need to team with other commu- nity educators to prevent smoking onset in young peo- ple and address socioeconomic inequities and stresses.

IMPLICATIONS FOR FURTHER RESEARCH

- Standardization of intervention and outcome measures would strengthen the ability to determine which smoking cessation interventions are successful in pregnancy. Bio- chemical markers are better indicators of smoking behavior than self-report. Targeting teens would benefit a subset of the population already at risk for low-birth-weight babies. These trials did not measure methods of delivery, breast-feeding, or maternal or family psychologic well-being.
## TABLE 9-2

<table>
<thead>
<tr>
<th>DISCOMFORT</th>
<th>PHYSIOLOGY</th>
<th>EDUCATION FOR SELF-CARE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FIRST TRIMESTER</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast changes, new sensation: pain, tingling, tenderness</td>
<td>Hypertrophy of mammary glandular tissue and increased vascularization, pigmentation, and size and prominence of nipples and areolae caused by hormonal stimulation</td>
<td>Wear supportive maternity bras with pads to absorb discharge, may be worn at night; wash with warm water and keep dry; breast tenderness may interfere with sexual expression or foreplay but is temporary</td>
</tr>
<tr>
<td>Urgency and frequency of urination</td>
<td>Vascular engorgement and altered bladder function caused by hormones; bladder capacity reduced by enlarging uterus and fetal presenting part</td>
<td>Empty bladder regularly; perform Kegel exercises; limit fluid intake before bedtime; wear perineal pad; report pain or burning sensation to primary health care provider</td>
</tr>
<tr>
<td>Languor and malaise; fatigue (early pregnancy, most commonly)</td>
<td>Unexplained; may be caused by increasing levels of estrogen, progesterone, and HCG or by elevated BBT; psychologic response to pregnancy and its required physical and psychologic adaptations</td>
<td>Rest as needed; eat well-balanced diet to prevent anemia</td>
</tr>
<tr>
<td>Nausea and vomiting, morning sickness—occurs in 50%-75% of pregnant women; starts between first and second missed periods and lasts until about fourth missed period; may occur any time during day; fathers also may have symptoms</td>
<td>Cause unknown; may result from hormonal changes, possibly HCG; may be partly emotional, reflecting pride in, ambivalence about, or rejection of pregnant state</td>
<td>Avoid empty or overloaded stomach; maintain good posture—give stomach ample room; stop smoking; eat dry carbohydrate on awakening; remain in bed until feeling subsides; eat five to six small meals per day; avoid fried, odorous, spicy, greasy, or gas-forming foods; consult primary health care provider if intractable vomiting occurs</td>
</tr>
<tr>
<td>Physialism (excessive salivation) may occur starting 2 to 3 weeks after first missed period</td>
<td>Possibly caused by elevated estrogen levels; may be related to reluctance to swallow because of nausea</td>
<td>Use astringent mouth wash, chew gum, eat hard candy as comfort measures</td>
</tr>
<tr>
<td>Gingivitis and epulis (hyperemia, hypertrophy, bleeding, tenderness of the gums); condition will disappear spontaneously 1 to 2 months after birth</td>
<td>Increased vascularity and proliferation of connective tissue from estrogen stimulation</td>
<td>Eat well-balanced diet with adequate protein and fresh fruits and vegetables; brush teeth gently and observe good dental hygiene; avoid infection; see dentist</td>
</tr>
<tr>
<td>Nasal stuffiness; epistaxis (nosebleed)</td>
<td>Hyperemia of mucous membranes related to high estrogen levels</td>
<td>Use humidifier; avoid trauma; normal saline nose drops or spray may be used</td>
</tr>
<tr>
<td>Leukorrhea: often noted throughout pregnancy</td>
<td>Hormonally stimulated cervix becomes hypertrophic and hyperactive, producing abundant amount of mucus</td>
<td>Not preventable; do not douche; wear perineal pads; perform hygienic practices such as wiping front to back; report to primary health care provider if accompanied by pruritus, foul odor, or change in character or color</td>
</tr>
<tr>
<td>Psychosocial dynamics, mood swings, mixed feelings</td>
<td>Hormonal and metabolic adaptations; feelings about female role, sexuality, timing of pregnancy, and resultant changes in life and lifestyle</td>
<td>Participate in pregnancy support group; communicate concerns to partner, family, and health care provider; request referral for supportive services if needed (financial assistance)</td>
</tr>
</tbody>
</table>

continued
### TABLE 9-2 Discomforts Related to Pregnancy—cont’d

<table>
<thead>
<tr>
<th>DISCOMFORT</th>
<th>PHYSIOLOGY</th>
<th>EDUCATION FOR SELF-CARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pigmentation deepens; acne, oily skin</td>
<td>Melanocyte-stimulating hormone (from anterior pituitary) Focal networks of dilated arterioles (end arteries) from increased concentration of estrogens</td>
<td>Not preventable; usually resolves during puerperium</td>
</tr>
<tr>
<td>Spider nevi (angiomatous) appear over neck, thorax, face, and arms during second or third trimester</td>
<td>Diffuse reddish mottling over palms and suffused skin over thenar eminences and fingertips; may be caused by genetic predisposition or hyperestrogenism</td>
<td>Not preventable; they fade slowly during late puerperium; rarely disappear completely</td>
</tr>
<tr>
<td>Palmar erythema occurs in 50% of pregnant women; may accompany spider nevi</td>
<td>Unknown cause; various types as follows: nonpapular; closely aggregated pruritic papules Increased excretory function of skin and stretching of skin possible factors</td>
<td>Not preventable; condition will fade within 1 wk after giving birth</td>
</tr>
<tr>
<td>Pruritus (noninflammatory)</td>
<td>Keep fingernails short and clean; contact primary health care provider for diagnosis of cause</td>
<td>Not preventable; use comfort measures for symptoms such as Keri baths; distraction; tepid baths with sodium bicarbonate or oatmeal added to water; lotions and oils; change of soaps or reduction in use of soap; loose clothing; see health care provider if mild sedation is needed</td>
</tr>
<tr>
<td>Palpitations</td>
<td>Unknown; should not be accompanied by persistent cardiac irregularity</td>
<td>Not preventable; contact primary health care provider if accompanied by symptoms of cardiac decompensation</td>
</tr>
<tr>
<td>Supine hypotension (vena cava syndrome) and bradycardia</td>
<td>Induced by pressure of gravid uterus on ascending vena cava when woman is supine; reduces utero-placental and renal perfusion</td>
<td>Side-lying position or semisitting posture, with knees slightly flexed (see supine hypotension, p. 249)</td>
</tr>
<tr>
<td>Faintness and, rarely, syncope (orthostatic hypotension) may persist throughout pregnancy</td>
<td>Vasomotor lability or postural hypotension from hormones; in late pregnancy may be caused by venous stasis in lower extremities</td>
<td>Moderate exercise, deep breathing, vigorous leg movement; avoid sudden changes in position and warm crowded areas; move slowly and deliberately; keep environment cool; avoid hypoglycemia by eating five or six small meals per day; wear elastic hose; sit as necessary; if symptoms are serious, contact primary health care provider</td>
</tr>
<tr>
<td>Food cravings</td>
<td>Cause unknown; craving influenced by culture or geographic area</td>
<td>Not preventable; satisfy craving unless it interferes with well-balanced diet; report unusual cravings to primary health care provider</td>
</tr>
<tr>
<td>Heartburn (pyrosis or acid indigestion): burning sensation, occasionally with burping and regurgitation of a little sour-tasting fluid</td>
<td>Progesterone slows GI tract motility and digestion, reverses peristalsis, relaxes cardiac sphincter, and delays emptying time of stomach; stomach displaced upward and compressed by enlarging uterus</td>
<td>Limit or avoid gas-producing or fatty foods and large meals; maintain good posture; sip milk for temporary relief; hot herbal tea; primary health care provider may prescribe antacid between meals; contact primary health care provider for persistent symptoms</td>
</tr>
</tbody>
</table>

_BBT, Basal body temperature; GI, gastrointestinal; hCG, human chorionic gonadotropin._
### TABLE 9-2
Discomforts Related to Pregnancy—cont’d

<table>
<thead>
<tr>
<th>DISCOMFORT</th>
<th>PHYSIOLOGY</th>
<th>EDUCATION FOR SELF-CARE</th>
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</thead>
<tbody>
<tr>
<td><strong>SECOND TRIMESTER—cont’d</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constipation</td>
<td>GI tract motility slowed because of progesterone, resulting in increased resorption of water and drying of stool; intestines compressed by enlarging uterus; predisposition to constipation because of oral iron supplementation</td>
<td>Drink six to eight glasses of water per day; include roughage in diet; moderate exercise; maintain regular schedule for bowel movements; use relaxation techniques and deep breathing; do not take stool softener; laxatives, mineral oil, other drugs, or enemas without first consulting primary health care provider</td>
</tr>
<tr>
<td>Flatulence with bloating and belching</td>
<td>Reduced GI motility because of hormones, allowing time for bacterial action that produces gas; swallowing air</td>
<td>Chew foods slowly and thoroughly; avoid gas-producing foods, fatty foods, large meals; exercise; maintain regular bowel habits</td>
</tr>
<tr>
<td>Varicose veins (varicosities): may be associated with edema of legs and vulva; hemorrhoids are varicosities in perianal area</td>
<td>Varicose veins result from hereditary predisposition; relaxation of smooth muscle walls of veins because of hormones causing tortuous dilated veins in legs and pelvic vasocongestion; condition aggravated by enlarging uterus, gravity, and bearing down for bowel movements; thrombi from leg varicosities rare but may occur in hemorrhoids</td>
<td>Avoid obesity, lengthy standing or sitting, constrictive clothing, and constipation and bearing down with bowel movements; moderate exercise; rest with legs and hips elevated (see Fig. 9-18); wear support stockings; thrombosed hemorrhoids may be evacuated; relieve swelling and pain with warm sitz baths, local application of astringent compresses</td>
</tr>
<tr>
<td>Leukorrhea: often noted throughout pregnancy</td>
<td>Hormonally stimulated cervix becomes hypertrophic and hyperactive, producing abundant amount of mucus</td>
<td>Not preventable; do not douche; maintain good hygiene; wear perineal pads; report to primary health care provider if accompanied by pruritus, foul odor, or change in character or color</td>
</tr>
<tr>
<td>Headaches (through week 26)</td>
<td>Emotional tension (more common than vascular migraine headache); eye strain (refractory errors); vascular engorgement and congestion of sinuses resulting from hormone stimulation</td>
<td>Conscious relaxation; contact primary health care provider for constant “splitting” headache, to assess for preeclampsia</td>
</tr>
<tr>
<td>Carpal tunnel syndrome (involves thumb, second, and third fingers, lateral side of little finger)</td>
<td>Compression of median nerve resulting from changes in surrounding tissues; pain, numbness, tingling, burning; loss of skinned movements (typing); dropping of objects</td>
<td>Not preventable; elevate affected arms; splinting of affected hand may help; regressive after pregnancy; surgery is curative</td>
</tr>
<tr>
<td>Periodic numbness, tingling of fingers (acroodysesthesia) occurs in 5% of pregnant women</td>
<td>Brachial plexus traction syndrome resulting from dropping of shoulders during pregnancy (occurs especially at night and early morning)</td>
<td>Maintain good posture; wear supportive maternity bra; condition will disappear if lifting and carrying baby does not aggravate it</td>
</tr>
<tr>
<td>Round ligament pain (tenderness)</td>
<td>Stretching of ligament caused by enlarging uterus</td>
<td>Not preventable; rest, maintain good body mechanics to avoid overstretching ligament; relieve cramping by squatting or bringing knees to chest; sometimes heat helps</td>
</tr>
</tbody>
</table>

Continued
### TABLE 9-2

**Discomforts Related to Pregnancy—cont’d**

<table>
<thead>
<tr>
<th>DISCOMFORT</th>
<th>PHYSIOLOGY</th>
<th>EDUCATION FOR SELF-CARE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SECOND TRIMESTER—cont’d</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joint pain, backache, and pelvic pressure; hypermobility of joints</td>
<td>Relaxation of symphyseal and sacroiliac joints because of hormones, resulting in unstable pelvis; exaggerated lumbar and cervicothoracic curves caused by change in center of gravity resulting from enlarging abdomen</td>
<td>Maintain good posture and body mechanics; avoid fatigue; wear low-heeled shoes; abdominal supports may be useful; conscious relaxation; sleep on firm mattress; apply local heat or ice; get back rubs; do pelvic tilt exercises; rest; condition will disappear 6 to 8 wk after birth</td>
</tr>
<tr>
<td><strong>THIRD TRIMESTER</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shortness of breath and dyspnea occur in 60% of pregnant women</td>
<td>Expansion of diaphragm limited by enlarging uterus; diaphragm is elevated about 4 cm; some relief after lightening</td>
<td>Good posture; sleep with extra pillows; avoid overloading stomach; stop smoking; contact health care provider if symptoms worsen to rule out anemia, emphysema, and asthma</td>
</tr>
<tr>
<td>Insomnia (later weeks of pregnancy)</td>
<td>Fetal movements, muscle cramping, urinary frequency, shortness of breath, or other discomforts</td>
<td>Reassurance; conscious relaxation; back massage or effleurage; support of body parts with pillows; warm milk or warm shower before retiring</td>
</tr>
<tr>
<td>Psychosocial responses: mood swings, mixed feelings, increased anxiety</td>
<td>Hormonal and metabolic adaptations; feelings about impending labor, birth, and parenthood</td>
<td>Reassurance and support from significant other and health care providers; improved communication with partner, family, and others</td>
</tr>
<tr>
<td>Urinary frequency and urgency return</td>
<td>Vascular engorgement and altered bladder function caused by hormones; bladder capacity reduced by enlarging uterus and fetal presenting part</td>
<td>Empty bladder regularly, Kegel exercises; limit fluid intake before bedtime; reassurance; wear perineal pad; contact health care provider for pain or burning sensation</td>
</tr>
<tr>
<td>Perineal discomfort and pressure</td>
<td>Pressure from enlarging uterus, especially when standing or walking; multifetal gestation</td>
<td>Rest, conscious relaxation, and good posture; contact health care provider for assessment and treatment if pain is present</td>
</tr>
<tr>
<td>Braxton Hicks contractions</td>
<td>Intensification of uterine contractions in preparation for work of labor</td>
<td>Reassurance; rest; change of position; practice breathing techniques when contractions are bothersome; effleurage; differentiate from preterm labor</td>
</tr>
<tr>
<td>Leg cramps (gastrocnemius spasms), especially when reclining</td>
<td>Compression of nerves supplying lower extremities because of enlarging uterus; reduced level of diffusable serum calcium or elevation of serum phosphorus; aggravating factors: fatigue, poor peripheral circulation, pointing toes when stretching legs or when walking, drinking more than 1 L (1 qt) of milk per day</td>
<td>Check for Homan’s sign; if negative, use massage and heat over affected muscle; dorsiflex foot until spasm relaxes (see Fig. 9-17, A); stand on cold surface; oral supplementation with calcium carbonate or calcium lactate tablets; aluminum hydroxide gel, 30 ml, with each meal removes phosphorus by absorbing it (consult primary health care provider before taking these remedies)</td>
</tr>
<tr>
<td>Ankle edema (nonpitting) to lower extremities</td>
<td>Edema aggravated by prolonged standing, sitting, poor posture, lack of exercise, constrictive clothing, or hot weather</td>
<td>Ample fluid intake for natural diuretic effect; put on support stockings before arising; rest periodically with legs and hips elevated (see Fig. 9-16); exercise moderately; contact health care provider if generalized edema develops; diuretics are contraindicated</td>
</tr>
</tbody>
</table>
Although complementary and alternative medications (CAM) may benefit the woman during pregnancy, some practices should be avoided because they may cause miscarriage or preterm labor. It is important to ask the woman what therapies she may be using.

Recognizing potential complications. One of the most important responsibilities of care providers is to alert the pregnant woman to signs and symptoms that indicate a potential complication of pregnancy. The woman needs to know how and to whom to report such warning signs. Therefore the pregnant woman and her family can be reassured if they receive and use a printed list of potential complications and the telephone numbers to call with questions or in an emergency.

The nurse must answer questions honestly as they arise during pregnancy. Pregnant women often have difficulty deciding when to report signs and symptoms. The mother is encouraged to refer to the printed list of potential complications and to listen to her body. If the senses that something is wrong, she should call her care provider. Several signs and symptoms must be discussed more extensively. These include vaginal bleeding, alteration in fetal movements, symptoms of gestational hypertension, rupture of membranes, and preterm labor (see Signs of Potential Complications box on p. 250).

Recognizing preterm labor. Teaching each expectant mother to recognize preterm labor is necessary for early diagnosis and treatment. Preterm labor occurs after the twentieth week but before the thirty-seventh week of pregnancy and consists of uterine contractions that, if untreated, cause the cervix to open earlier than normal and result in preterm birth. Although the exact etiology of preterm labor is unknown, it is assumed to have multiple causes. An increased incidence of preterm birth is associated with sociodemographic factors such as poverty, low educational level, lack of social support, smoking, domestic violence, and stress (Freda, 2003; Freda & Patterson, 2003; Moos, 2004). Other risk factors include a previous preterm labor (McPheeters et al., 2005), current multifetal gestation, and some uterine and cervical variations (March of Dimes Birth Defects Foundation, 2005). The rate...
is almost twice as high in the African-American population as in Caucasians. The pathology associated with preterm labor also is unclear, and more research is necessary to identify the pathophysiology of preterm labor and effective treatment strategies.

If a woman knows the warning signs and symptoms of preterm labor and seeks care early enough, prevention of preterm birth may be possible. Warning signs and symptoms of preterm labor are given in the Patient Instructions for Self-Care box. Fig. 9-20 shows the possible locations of symptoms in the body.

**Sexual counseling**

Sexual counseling of expectant couples includes countering misinformation, providing reassurance of normality, and suggesting alternative behaviors. The uniqueness of each couple is considered within a biopsychosocial framework (see the Patient Instructions for Self-Care box on p. 271). Nurses can initiate discussion about sexual adaptations that must be made during pregnancy, but they themselves need a sound knowledge base about the physical, social, and emotional responses to sex during pregnancy. Not all maternity nurses are comfortable dealing with the sexual concerns of their patients; therefore those nurses who are aware of their personal strengths and limitations in dealing with sexual content are better prepared to make referrals if necessary (Westheimer & Lopater, 2005).

Many women merely need permission to be sexually active during pregnancy. Many other women, however, need to be given information about the physiologic changes that occur during pregnancy, have the myths that are associated with sex during pregnancy dispelled, and participate in open discussions of intercourse positions that decrease pressure on the gravid abdomen (Westheimer & Lopater, 2005). Such tasks are within the purview of the nurse and should be an integral component of the health care rendered.

Some couples need to be referred for sex therapy or family therapy. Couples with long-standing problems with sexual dysfunction that are intensified by pregnancy are candidates for sex therapy. Whenever a sexual problem is a symptom of a more serious relationship problem, the couple would benefit from family therapy.

**Countering misinformation.** Many myths and much of the misinformation related to sex and pregnancy are masked by seemingly unrelated issues. For example, a discussion about the baby's ability to hear and see in utero may be prompted by questions about the baby being an "unseen observer" of the couple's lovemaking. The counselor must be extremely sensitive to the questions behind such questions when counseling in this highly charged emotional area.
Suggesting alternative behaviors. Research has not demonstrated conclusively that coitus and orgasm are contraindicated at any time during pregnancy for the obstetrically and medically healthy woman (Cunningham et al., 2005). However, a history of more than one miscarriage; a threatened miscarriage in the first trimester; impending miscarriage in the second trimester; and PROM, bleeding, or abdominal pain during the third trimester warrant caution when it comes to coitus and orgasm.

Solitary and mutual masturbation and oral-genital intercourse may be used by couples as alternatives to penile-vaginal intercourse. Partners who enjoy cunnilingus (oral stimulation of the clitoris or vagina) may feel “turned off” by the normal increase in the amount and odor of vaginal discharge during pregnancy. Couples who practice cunnilingus should be cautioned against the blowing of air into the vagina, particularly during the last few weeks of pregnancy when the cervix may be slightly open. An air embolism can occur if air is forced between the uterine wall and the fetal membranes and enters the maternal vascular system through the placenta.

Showing the woman or couple pictures of possible variations of coital position often is helpful (Fig. 9-21). The

PATIENT INSTRUCTIONS FOR SELF-CARE

Sexuality in Pregnancy

- Be aware that maternal physiologic changes, such as breast enlargement, nausea, fatigue, abdominal changes, perineal enlargement, leukorrhea, pelvic vasocongestion, and orgasmic responses, may affect sexuality and sexual expression.
- Discuss responses to pregnancy with your partner.
- Keep in mind that cultural prescriptions (“dos”) and prescriptions (“don’ts”) may affect your responses.
- Although your libido may be depressed during the first trimester, it often increases during the second and third trimesters.
- Discuss and explore with your partner:
  - Alternative positions (e.g., female superior, side-lying) for sexual intercourse
  - Intercourse is safe as long as it is not uncomfortable. There is no correlation between intercourse and miscarriage, but observe the following precautions:
  - Abstain from intercourse if you experience uterine cramping or vaginal bleeding; report event to your caregiver as soon as possible.
  - Abstain from intercourse (or any activity that results in orgasm) if you have a history of cervical incompetence, until the problem is corrected.
  - Continue to use “safer sex” behaviors. Women at risk for acquiring or conveying STIs are encouraged to use condoms during sexual intercourse throughout pregnancy.

STI, Sexually transmitted infection.
A back rub can often relieve some of the discomfort and backache after orgasm during the first and third trimesters. This is normal and temporary.

The woman also should be reassured that this condition is normal and temporary. Direct pressure on the woman’s breasts and decreased breast tenderness in the first trimester. A coital position that avoids penetration, as well as to protect her breasts and abdomen. The male-superior position. The woman astride (superior position) is possible alternative positions to the traditional female-superior, side-by-side, rear-entry, and side-lying positions. They can establish an open environment in which couples can feel free to introduce their own sexuality and the sexual counseling needs of expectant couples can offer information and advice in this valuable but often neglected area. They can establish an open environment in which couples can feel free to introduce their concerns about sexual adjustment and seek support and guidance.

Some women complain of lower abdominal cramping and backache after orgasm during the first and third trimesters. A back rub can often relieve some of the discomfort and provide a pleasant experience. A tonic uterine contraction, often lasting up to a minute, replaces the rhythmic contractions of orgasm during the third trimester. Changes in the FHR without fetal distress also have been reported. The objective of “safer sex” is to provide prophylaxis against the acquisition and transmission of STIs (e.g., herpes simplex virus [HSV], HIV). Because these diseases may be transmitted to the woman and her fetus, the use of condoms is recommended throughout pregnancy if the woman is at risk for acquiring an STI.

Anxiety related to defecation is possible alternative positions to the traditional female-superior, side-by-side, rear-entry, and side-lying positions. They can establish an open environment in which couples can feel free to introduce their own sexuality and the sexual counseling needs of expectant couples can offer information and advice in this valuable but often neglected area. They can establish an open environment in which couples can feel free to introduce their concerns about sexual adjustment and seek support and guidance. Direct pressure on the woman’s breasts and decreased breast tenderness in the first trimester. A coital position that avoids penetration, as well as to protect her breasts and abdomen. The male-superior position. The woman astride (superior position) is possible alternative positions to the traditional female-superior, side-by-side, rear-entry, and side-lying positions. They can establish an open environment in which couples can feel free to introduce their own sexuality and the sexual counseling needs of expectant couples can offer information and advice in this valuable but often neglected area. They can establish an open environment in which couples can feel free to introduce their concerns about sexual adjustment and seek support and guidance. Direct pressure on the woman’s breasts and decreased breast tenderness in the first trimester. A coital position that avoids penetration, as well as to protect her breasts and abdomen. The male-superior position. The woman astride (superior position) is possible alternative positions to the traditional female-superior, side-by-side, rear-entry, and side-lying positions. They can establish an open environment in which couples can feel free to introduce their own sexuality and the sexual counseling needs of expectant couples can offer information and advice in this valuable but often neglected area. They can establish an open environment in which couples can feel free to introduce their concerns about sexual adjustment and seek support and guidance.
More effort is needed in evaluating outcomes of nursing care interventions during pregnancy. Anticipatory guidance and health promotion strategies can help partners cope with their concerns. Health care providers can stimulate and encourage open dialogue between the expectant father and mother.

Evaluation
Evaluation of the effectiveness of care of the woman during pregnancy is based on the previously stated outcomes. More effort is needed in evaluating outcomes of nursing care interventions during pregnancy. Evaluation of the effectiveness of care of the woman during pregnancy is based on the previously stated outcomes.
VARIA TIONS IN PRENATAL CARE

The course of prenatal care described thus far may seem to suggest that the experiences of childbearing women are similar and that nursing interventions are uniformly consistent across all populations. Although typical patterns of response to pregnancy are easily recognized and many aspects of prenatal care indeed are consistent, pregnant women enter the health care system with individual concerns and needs. The nurse's ability to assess unique needs and to tailor interventions to the individual is the hallmark of expertise in providing care. Variations that influence prenatal care include culture, age, and number of fetuses.

Cultural Influences

Prenatal care as we know it is a phenomenon of Western medicine. In the U.S. biomedical model of care, women are encouraged to seek prenatal care as early as possible in their pregnancy by visiting a physician, and/or a nurse-midwife. Such visits are usually routine and follow a systematic sequence, with the initial visit followed by monthly, then semi-monthly, and then weekly visits. Monitoring weight and BP, testing blood and urine; teaching specific information about diet, rest, and activity; and preparing for childbirth are common components of prenatal care. This model not only is unfamiliar but also seems strange to women of other cultures. Different models for providing prenatal care for women throughout the world are being explored (Chalmers, Mangiaterra, & Porter, 2001).

Many cultural variations are found in prenatal care. Even if the prenatal care described is familiar to a woman, some practices may conflict with the beliefs and practices of a subculture group to which she belongs. Because of these and other factors, such as lack of money, lack of transportation, and language barriers, women from diverse cultures do not participate in the prenatal care system, for instance by keeping prenatal appointments (Shaffer, 2002). Such behavior may be misinterpreted by nurses as uncaring, lazy, or ignorant. A concern for modesty also is a deterrent to many women seeking prenatal care. For some women, exposing body parts, especially to a man, is considered a major violation of their modesty. For many women, invasive procedures, such as a vaginal examination, may be so threatening that they cannot be discussed even with their own husbands; therefore many women prefer a female health care provider. Too often, health care providers assume women lose this modesty during pregnancy and labor, but actually most women value and appreciate efforts to maintain their modesty. For many cultural groups, a physician is deemed appropriate only in times of illness, and because pregnancy is considered a normal process and the woman is in a state of health, the services of a physician are considered inappropriate. Even if what are considered problems with pregnancy by standards of Western medicine do develop, they may not be perceived as problems by members of other cultural groups.

Although pregnancy is considered normal by many, certain practices are expected of women of all cultures to ensure a good outcome. Cultural prescriptions tell women what to do, and cultural proscriptions establish taboos. The purposes of these practices are to prevent maternal illness resulting from a pregnancy-induced imbalanced state and to protect the vulnerable fetus. Prescriptions and proscriptions regulate the woman's emotional response, clothing, activity and rest, sexual activity, and dietary practices. Exploration of the woman's beliefs, perceptions of the meaning of childbearing, and health care practices may help health care providers foster her self-actualization, promote attainment of the maternal role, and positively influence her relationship with her spouse.

To provide culturally sensitive care, the nurse must be knowledgeable about practices and customs, although it is not possible to know all there is to know about every culture and subculture or the many lifestyles that exist. It is important to learn about the varied cultures in which specific nurses practice. When exploring cultural beliefs and practices related to childbearing, the nurse can support and nurture those beliefs that promote physical or emotional adaptation. However, if potentially harmful beliefs or activities are identified, the nurse should carefully provide education and propose modifications.

Emotional response

Virtually all cultures emphasize the importance of maintaining a socially harmonious and agreeable environment for a pregnant woman. An absence of stress is important in ensuring a successful outcome for the mother and baby. Harmony with other people must be fostered, and visits from extended family members may be required to demonstrate pleasant and noncontroversial relationships. If discord exists in a relationship, it is usually dealt with in culturally prescribed ways.

Besides proscriptions regarding food, other proscriptions involve forms of magic. For example, some Mexicans believe that pregnant women should not witness an eclipse of the moon because it may cause a cleft palate in the infant. They also believe that exposure to an earthquake may precipitate preterm birth, miscarriage, or even a breech presentation. In some cultures a pregnant woman must not ridicule someone with an affliction for fear her child might be born with the same handicap. A mother should not hate a person lest her child resemble that person, and dental work should not be done because it may cause a baby to have a "harelip." A widely held folk belief in some cultures is that the pregnant woman should refrain from raising her arms above her head, because such movement ties knots in the umbilical cord and may cause it to wrap around the baby's neck. Another belief is that placing a knife under the bed of a laboring woman will "cut" her pain.
Although most cultural groups do not prescribe specific clothing to be worn during pregnancy, modesty is an expectation of many. Some Mexican women of the Southwest wear a cord beneath the breasts and knotted over the umbilicus. This cord, called a muocco, is thought to prevent morning sickness and ensure a safe birth. Amulets, medals, and beads also may be worn to ward off evil spirits.

**Physical activity and rest**

Norms that regulate the physical activity of mothers during pregnancy vary tremendously. Many groups, including Native Americans and some Asian groups, encourage women to be active, to walk, and to engage in normal, although not strenuous, activities to ensure that the baby is healthy and not too large. Conversely, other groups such as Filipinos believe that any activity is dangerous, and others willingly take over the work of the pregnant woman. Some Filipinos believe that this inactivity protects the mother and child. The mother is encouraged simply to produce the succeeding generation. If health care providers do not know of this belief, they could misinterpret this behavior as laziness or noncompliance with the desired prenatal health care regimen. It is important for the nurse to find out the way each pregnant woman views activity and rest.

**Sexual activity**

In most cultures, sexual activity is not prohibited until the end of pregnancy. Some Latinos view sexual activity as necessary to keep the birth canal lubricated. Conversely, some Vietnamese may have definite proscriptions against sexual intercourse, requiring abstinence throughout the pregnancy because it is thought that sexual intercourse may harm the mother and fetus.

**Diet**

Nutritional information given by Western health care providers also may be a source of conflict for many cultural groups, but such a conflict commonly is not known by health care providers unless they understand the dietary beliefs and practices of the people for whom they are caring. For example, Muslims have strict regulations regarding preparation of food, and if meat cannot be prepared as prescribed, they may omit meats from their diets. Many cultures permit pregnant women to eat only warm foods.

**Age Differences**

The age of the childbearing couple may have a significant influence on their physical and psychosocial adaptation to pregnancy. Normal developmental processes that occur in both very young and older mothers are interrupted by pregnancy. Normal developmental processes that occur in both very young and older mothers are interrupted by pregnancy. Although the individuality of each pregnant woman is recognized, special needs of expectant mothers 15 years of age or younger or those 35 years of age or older are summarized.

Teenscage pregnancy is a worldwide problem (Cherry, Dillon, & Rugh, 2001). About 1 million adolescent females in the United States, or four out of every 10 girls, become pregnant each year. Most of the pregnancies are unintended, 56% end in live birth; 29% ended in induced abortion; and 15% in miscarriage (Arias, MacDorman, Strobino, & Guyer, 2003). Adolescents are responsible for almost 500,000 births in the United States annually. Hispanic adolescents currently have the highest birth rate, although the rate for African-American adolescents also is high. Of girls who become pregnant, 21% are repeat pregnancies (Arias et al., 2003). Most of these young women are unmarried, and many are not ready for the emotional, psychosocial, and financial responsibilities of parenthood.

Despite these alarming statistics and the fact that the United States has the highest adolescent birth rate in the industrialized world, the birth rate for adolescents has steadily declined since 1991 (Arias et al., 2003). Concentrated national efforts have generated a host of adolescent pregnancy-prevention programs that have had varying degrees of success (Ford et al., 2002). Characteristics of programs that make a difference are those that have sustained commitment to adolescents over a long time, involve the parents and other adults in the community, promote abstinence and personal responsibility, and assist adolescents to develop a clear strategy for reaching future goals such as a college education or a career.

When adolescents become pregnant and decide to give birth, they are much less likely than older women to receive adequate prenatal care, with many receiving no care at all (Ford et al., 2002). These young women also are more likely to smoke and less likely to gain adequate weight during pregnancy. As a result of these and other factors, babies born to adolescents are at greatly increased risk of LBW, of serious and long-term disability, and of dying during the first year of life.

Delayed entry into prenatal care may be the result of late recognition of pregnancy, denial of pregnancy, or confusion about the available services. Such a delay in care may leave an inadequate time before birth to attend to correctable problems. The very young pregnant adolescent is at higher risk for each of the confounding variables associated with poor pregnancy outcomes (e.g., socioeconomic factors) and for those conditions associated with a first pregnancy regardless of age (e.g., gestational hypertension). However, when prenatal care is initiated early and consistently, and confounding variables are controlled, very young pregnant adolescents are at no greater risk (nor are their infants) for an adverse outcome than are older pregnant women. The role of the nurse in reducing the risks and consequences of adolescent pregnancy is therefore twofold: first, to encourage early and continued prenatal care, and second, to refer the adolescent, if necessary, for appropriate social support services, which can help reverse the effects of a negative socioeconomic environment (Fig. 9-22) (see Plan of Care).
NURSING DIAGNOSIS Imbalanced nutrition: less than body requirements related to intake insuffi- cient to meet metabolic needs of fetus and ado- lescent patient

Expected Outcomes Patient will gain weight as prescribed by age, take prenatal vitamins and iron as prescribed, and maintain normal hematoctrit and hemoglobin.

Nursing Interventions/Rationales
• Assess current diet history and intake to determine pre- scriptions for additions or changes in present dietary pattern.
• Compare prepregnancy weight with current weight to de- termine if pattern is consistent with appropriate fetal growth and development.
• Provide information concerning food prescriptions for ap- propriate weight gain, considering preferences for “fast food” and peer influences to correct any misconceptions and in- crease chances for compliance with diet.
• Include patient’s immediate family or support system during instruction to ensure that person preparing family meals re- ceives information.

NURSING DIAGNOSIS Risk for injury, maternal or fetal, related to inadequate prenatal care and screening

Expected Outcomes Patient will experience uncom- plicated pregnancy and deliver a healthy fetus at term.

Nursing Interventions/Rationales
• Provide information using therapeutic communication and confidentiality to establish relationship and build trust.
• Discuss importance of ongoing prenatal care and possible risk to adolescent patient and fetus to reinforce that ongoing assessment is crucial to health and well-being of patient and fetus, even if patient feels well. The adolescent patient is at greater risk for certain complications that may be avoided or managed early if prenatal visits are maintained.
• Discuss risks of alcohol, tobacco, and recreational drug use during pregnancy to minimize risks to patient and fetus, be- cause adolescent patient has a higher abuse rate than the rest of the pregnant population.
• Assess for evidence of sexually transmitted infection (STI) and provide information regarding safer sexual practice to minimize risk to patient and fetus, because adolescent is at greater risk for STIs.
• Screen for preclampsia on an ongoing basis to minimize risk, because adolescent population is at greater risk for preclampsia.

NURSING DIAGNOSIS Social isolation related to body image changes of pregnant adolescent as evidenced by patient statements and concerns

Expected Outcomes Patient will identify support systems and report decreased feelings of social isolation.

Nursing Interventions/Rationales
• Establish a therapeutic relationship to listen objectively and establish trust.
• Discuss with patient changes in relationships that have oc- curred as a result of the pregnancy to determine extent of iso- lation from family, peers, and father of the baby.
• Provide referrals and resources appropriate for develop- mental stage of patient to give information for patient sup- port.
• Provide information regarding parenting classes, breast- feeding classes, and childbirth-preparation classes to give further information and group support, which lessens social isolation.

NURSING DIAGNOSIS Interrupted family processes related to adolescent pregnancy

Expected Outcome Patient will reestablish relation- ship with her mother and father of baby.

Nursing Interventions/Rationales
• Encourage communication with mother to clarify roles and relationships related to birth of infant.
• Encourage communication with father of baby if she desires continued contact to ascertain level of support to be ex- pected of father of baby.
• Refer to support group to learn more effective ways of prob- lem solving and reducing conflict within the family.

NURSING DIAGNOSIS Disturbed body image re- lated to situational crisis of pregnancy

Expected Outcome: Pregnant adolescent will verbal- ize positive comments regarding her body im- age during the pregnancy.

Nursing Interventions/Rationales
• Assess pregnant adolescent’s perception of self related to pregnancy to provide basis for further interventions.
• Give information regarding expected body changes occur- ring during pregnancy to provide a realistic view of these temporary changes.
• Provide opportunity to discuss personal feelings and con- cerns to promote trust and support.

NURSING DIAGNOSIS Risk for impaired parenting related to immaturity and lack of experience in new role of adolescent mother

Expected Outcome: Parents will demonstrate par- enting roles with confidence.

Nursing Interventions/Rationales
• Provide information on growth and development to enhance knowledge so that adolescent mother can have basis for car- ing for her infant.
• Refer to parenting classes to enhance knowledge and obtain support for providing appropriate care to newborn and infant.
• Initiate discussion of child care to assist adolescent in prob- lem solving for future needs.
• Assess parenting abilities of adolescent mother and father to provide basis for interventions.
• Provide information on parenting classes that are appropri- ate for parents’ developmental stage to give opportunity to share common feelings and concerns.
• Assist parents to identify pertinent support systems to give assistance with parenting as needed.
Women older than 35 years

Two groups of older parents have emerged in the population of women having a child late in their childbearing years. One group consists of women who have many children or who have an additional child during the menopausal period. The other group consists of women who have deliberately delayed childbearing until their late thirties or early forties.

Multiparous women. Multiparous women may have never used contraceptives because of personal choice or lack of knowledge concerning contraceptives. They also may be women who have used contraceptives successfully during the childbearing years, but as menopause approaches, they may cease menstruating regularly or stop using contraceptives and consequently become pregnant. The older multiparous woman may feel that pregnancy separates her from her peer group and that her age is a hindrance to close relationships.

Primiparous women. The number of first-time pregnancies in women between the ages of 35 and 40 years has increased significantly over the past three decades (Tough et al., 2002). Seeing women in their late thirties or forties during their first pregnancy is no longer unusual for health care providers. Reasons for delaying pregnancy include a desire to obtain advanced education, career priorities, and use of better contraceptive measures. Women who are infertile do not delay pregnancy deliberately but may become pregnant at a later age as a result of fertility studies and therapies.

These women choose parenthood. They often are successful in a career and a lifestyle with a partner that includes time for self-attention, the establishment of a home with accumulated possessions, and freedom to travel. When asked the reason they chose pregnancy later in life, many reply, “Because time is running out.” The dilemma of choice includes the recognition that being a parent will have positive and negative consequences. Couples should discuss the consequences of childbearing and childrearing before committing themselves to this lifelong venture. Partners in this group seem to share the preparation for parenthood, planning for a family-centered birth, and desire to be loving and competent parents; however, the reality of child care may prove difficult for such parents.

First-time mothers older than 35 years select the “right time” for pregnancy; this time is influenced by their awareness of the increasing possibility of infertility or of genetic defects in the infants of older women. Such women seek information about pregnancy from books, friends, and electronic resources. They actively try to prevent fetal disorders and are careful in searching for the best possible maternity care. They identify sources of stress in their lives. They have concerns about having enough energy and stamina to meet the demands of parenting and their new roles and relationships.

If older women become pregnant after treatment for infertility, they may suddenly have negative or ambivalent feelings about the pregnancy. They may experience a multifetal pregnancy that may create emotional and physical problems. Adjusting to parenting two or more infants requires adaptability and additional resources.

During pregnancy, parents explore the possibilities and responsibilities of changing identities and new roles. They must prepare a safe and nurturing environment during pregnancy and after birth. They must integrate the child into an established family system and negotiate new roles (parent roles, sibling roles, grandparent roles) for family members.

Adverse perinatal outcomes are more common in older primiparas than in younger women, even when they receive good prenatal care. Tough and colleagues (2002) reported that women aged 35 years and older are more likely than are younger primiparas to have LBW infants, premature birth, and multiple births. The occurrence of these complications is quite stressful for the new parents, and nursing interventions that provide information and psychosocial support are needed, as well as care for physical needs. In addition, in women aged 35 years or older there is an increased risk of maternal mortality. Pregnancy-related deaths result from hemorrhage, infection, embolism, hypertensive disorders of pregnancy, cardiomyopathy, and strokes (Callaghan & Berg, 2003).

Multifetal pregnancy

When the pregnancy involves more than one fetus, multifetal pregnancy, both the mother and fetuses are at increased risk for adverse outcomes. The maternal blood volume is increased, resulting in an increased strain on the maternal cardiovascular system. Anemia often develops because of a greater demand for iron by the fetuses. Marked uterine distention and increased pressure on the adjacent visceral and pelvic vasculature and diastasis of the two rectus abdominis muscles (see Fig. 8-12) may occur. Placenta previa develops more commonly in multifetal pregnancies because of the large size or placement of the placentas (Clark, 2004).
Premature separation of the placenta may occur before the second and any subsequent fetuses are born. Twin pregnancies often end in prematurity. Spontaneous rupture of membranes before term is common. Congenital malformations are twice as common in monozygotic twins as in singletons, although there is no increase in the incidence of congenital anomalies in dizygotic twins. In addition, two- vessel cords—that is, cords with a vein and a single umbilical artery instead of two—occur more often in twins than in singletons, but this abnormality is most common in monozygotic twins. The clinical diagnosis of multifetal pregnancy is accurate in about 90% of cases. The likelihood of a multifetal pregnancy is increased if any one or a combination of the following factors is noted during a careful assessment:
- History of dizygous twins in the female lineage
- Use of fertility drugs
- More rapid uterine growth for the number of weeks of gestation
- Hydramnios
- Palpation of more than the expected number of small or large parts
- Asynchronous fetal heart beats or more than one fetal electrocardiographic tracing
- Ultrasonographic evidence of more than one fetus

The diagnosis of multifetal pregnancy can come as a shock to many expectant parents, and they may need additional support and education to help them cope with the changes they face. The mother needs nutrition counseling so that she gains more weight than that needed for a singleton birth, counseling that maternal adaptations will probably be more uncomfortable, and information about the possibility of a preterm birth.

If the presence of more than three fetuses is diagnosed, the parents may receive counseling regarding selective reduction of the pregnancies to reduce the incidence of premature birth and improve the opportunities for the remaining fetuses to grow to term gestation (Malone & D’Alton, 2004). This situation poses an ethical dilemma for many couples, especially those who have worked hard to overcome problems with infertility and harbor strong values regarding right to life (Strong, 2003). Nurse-initiated discussion to identify what resources could help the couple (e.g., a minister, priest, or mental health counselor) can make the decision-making process somewhat less traumatic.

The prenatal care given women with multifetal pregnancies includes changes in the pattern of care and modifications in other aspects such as the amount of weight gained and the nutritional intake necessary. The prenatal visits of these women are scheduled at least every 2 weeks in the second trimester and weekly thereafter. In twin gestations the recommended weight gain is 16 to 20 kg. Iron and vitamin supplementation is desirable. As preeclampsia and eclampsia are increased in multifetal pregnancies, nurses aggressively work to prevent, identify, and treat these complications of pregnancy.

The considerable uterine distention involved can cause the backache commonly experienced by pregnant women to be even worse. Maternal support hose may be worn to control leg varicosities. If risk factors such as premature dilation of the cervix or bleeding are present, abstinence from orgasm and nipple stimulation during the last trimester is recommended to help avert preterm labor. Frequent ultrasound examinations, nonstress tests, and FHR monitoring will be performed. Some practitioners recommend bed rest beginning at 20 weeks in women carrying multiple fetuses to prevent preterm labor. Other practitioners question the value of prolonged bed rest. If bed rest is recommended, the mother assumes a lateral position to promote increased placental perfusion. If birth is delayed until after the thirty-sixth week, the risk of morbidity and mortality decreases for the neonates.

Multiple newborns will likely place a strain on finances, space, workload, and the woman’s and family’s coping capacity. Lifestyle changes may be necessary. Parents will need assistance in making realistic plans for the care of the babies (e.g., whether to breastfeed and whether to raise them as “alike” or as separate persons). Parents should be referred to national organizations such as Parents of Twins and Triplets, Mothers of Twins, and the La Leche League for further support (see Resources at end of chapter).

### CHILDBIRTH AND PERINATAL EDUCATION

The goal of childbirth and perinatal education is to assist individuals and their family members to make informed, safe decisions about pregnancy, birth, and early parenthood. It also is to assist them to comprehend the long-lasting potential that empowering birth experiences have in the lives of women and that early experiences have on the development of children and the family. The perinatal education program is an expansion of the earlier childbirth education movement that originally offered a set of classes in the third trimester of pregnancy to prepare parents for birth. Today perinatal education programs consist of a menu of class series and activities from preconception through the early months of parenting.

All health-promoting education should be provided in a context that emphasizes how well designed a healthy body is to adapt to the changes that accompany pregnancy. Without this context of health, routine care and testing for risks may contribute to a mindset of families that pregnancy is a pathologic as opposed to a healthy mind-body-spirit event.

Some of the decisions the childbearing family must consider are the decision to have a baby, followed by choices of a care provider and type of care (a midwifery model [natural oriented] versus a medical [intervention oriented] model); the place for birth (hospital, birthing center, home); and the type of infant feeding (breast or bottle) and care. If a woman has had a previous cesarean birth, she may...
consider having a vaginal birth. This section discusses these choices and the nurse’s role in educating childbearing families to make informed decisions about them.

Previous pregnancy and childbirth experiences are important elements that influence current learning needs. The patient’s (and support person’s) age, cultural background, personal philosophy with regard to childbirth, socioeconomic status, spiritual beliefs, and learning styles all need to be assessed to develop the best plan to help the woman meet her needs.

Most childbirth education classes are attended by the pregnant woman and her partner, although a friend, teenage daughter, or parent may be the designated support person (Fig. 9-23). Classes may also be held for grandparents and siblings to prepare them for their attendance at birth and/or the arrival of the baby (see Fig. 9-4). Siblings often see a film about birth and learn ways they can help welcome the baby. They also learn to cope with changes that include a reduction in parental time and attention. Grandparents learn about current child care practices and how to help their adult children adapt to parenting in a supportive way.

### Perinatal Care Choices

The Coalition to Improve Maternity Services (CIMS), a group of more than 50 nursing and maternity care-oriented organizations, produced a document to assist women in selecting their perinatal care. After some explanation of choices, women are encouraged to ask potential care providers the following questions:

- Who can be with me during labor and birth?
- What happens during a normal labor and birth in your setting?
- How do you allow for differences in culture and beliefs?
- Can I walk and move around during labor? What position do you suggest for birth?
- How do you make sure everything goes smoothly when my nurse, doctor, nurse-midwife, or agency work with one another?
- What things do you normally do to a woman in labor?
- How do you help mothers stay as comfortable as they can be? Besides drugs, how do you help mothers relieve the pain of labor?
- What if my baby is born early or has special problems?
- Do you circumcise babies?
- How do you help mothers who want to breastfeed?

The entire document can be obtained at www.motherfriendly.org. By using a related CIMS questionnaire provided by Hotelling (2004), hospitals and birthing centers can apply to CIMS to be designated “Mother-Friendly,” and such ratings can be passed on to expectant parents.

### Childbirth Education Programs

Childbirth, when one is prepared and well supported, presents to women a unique and powerful opportunity to find their core strength in a manner that forever changes their self-perception. Expectant parents and their families have different interests and information needs as the pregnancy progresses.

Early pregnancy (“early bird”) classes provide fundamental information. Classes are developed around the following areas: (1) early fetal development, (2) physiologic and emotional changes of pregnancy, (3) human sexuality, and (4) the nutritional needs of the mother and fetus. Environmental and workplace hazards may be addressed. Exercises, nutrition, warning signs, drugs, and self-medication are topics of interest and concern.

Midpregnancy classes emphasize the woman’s participation in self-care. Classes provide information on preparation for breastfeeding and formula feeding, infant care, basic hygiene, common complaints and simple safe remedies, infant health, parenting, and updating and refining the birth plans. Late pregnancy classes emphasize labor and birth. Different methods of coping with labor and birth have been developed and are often the basis for various prenatal classes. These include Lamaze, Bradley, and Dick-Read. A hospital tour is usually included.

Throughout the series of classes there is discussion of support systems that people can use during pregnancy and after birth. Such support systems help parents function independently and effectively. During all the classes the open expression of feelings and concerns about any aspect of pregnancy, birth, and parenting is welcomed.

Fathers or partners often worry about their role during childbirth classes and labor and birth, as well as the safety of their partner and baby during the birth. Many fathers elect to participate actively during labor and the birth of their child. As noted earlier, however, some men, through personal or cultural conception of the father role, neither want nor intend to participate. It is important that the partners agree on each other’s roles.
Parent educators must understand the value systems in other cultures and their influence on issues such as nutrition, exercise, child rearing, and infant feeding practices. Parent educators must establish rapport, be understood, and build on cultural practices, reinforcing the positive and promoting change only if a practice, such as pica, is directly harmful.

**OPTIONS FOR CARE PROVIDERS**

Often the first decision a woman makes is who will be her primary health care provider for the pregnancy and birth. This decision is doubly important because it usually affects where the birth will take place. The nurse can provide information about the different types of health care providers and what kind of care to expect from each type.

**Physicians**

Physicians (obstetricians, family practice physicians) attend about 91% of births in the United States and Canada (Martin et al., 2003). They see low risk and high-risk patients. Care often includes pharmacologic and medical management of problems as well as use of technologic procedures. Family practice physicians may need backup by obstetricians if a specialist is needed for a problem (e.g., a cesarean birth). Most physicians manage births in a hospital setting.

**Nurse-Midwives**

Nurse-midwives are registered nurses with advanced training in care of obstetric patients. They provide care for about 8% of births in the United States and Canada (Martin et al., 2003). Nurse-midwives may practice with physicians or independently with a contracted health care provider agency for physician backup. They usually see low risk obstetric patients. Care is often noninterventionist, and the woman and her family are encouraged to be active participants in the care. Nurse-midwives must refer patients to physicians for complications. Most births are managed in hospital settings or alternative birth centers; a small number may be managed in a home setting.

**Direct entry midwives**

Direct entry midwives are trained in midwifery schools, or universities as a profession distinct from nursing. Increasing numbers of midwives in the United Kingdom and Ireland fall into this category.

**Independent midwives**

Independent midwives, who also may be called lay midwives, are nonprofessional caregivers. Their training varies greatly, from formal training to self-teaching. They manage about 1% of births in the United States and Canada. Patients who develop problems need to be seen by a physician. A majority (i.e., 61%) of births in the United States and Canada (

**Doulas**

A doula is professionally trained to provide labor support, including physical, emotional, and informational support to women and their partners during labor and birth. The
doula does not become involved with clinical tasks (Doulas of North America [DONA], 1999a, 1999b, 1999c). A doula typically meets with the mother and her partner before labor to ascertain their expectations and desires for the birth experience. Working collaboratively with other health care providers and the woman’s supportive individuals, the doula focuses efforts on assisting the woman to achieve her goals. Box 9-7 provides questions to ask when interviewing a prospective doula. See Resources at end of chapter for organizations that offer information or referral services.

Although the doula role originally developed as an assistant during labor, some women need assistance during the postpartum period. There are small but growing numbers of postnatal doulas, who provide assistance to the new mother as she develops competence with infant care, feeding, and other maternal tasks.

**Birth Setting Choices**

With careful thought, the concept of natural or family- or woman-centered maternity care can be implemented in any setting. The three primary options for birth settings today are the hospital, birth center, and home. Women consider several factors in choosing a setting for childbirth, including the preference of their health care provider, characteristics of the birthing unit, and preference of their third-party payer. Approximately 99% of all births in the United States take place in a hospital setting (Martin et al., 2003). However, the types of labor and birth services vary greatly, from the traditional labor and delivery rooms with separate postpartum and newborn units, to in-hospital birthing centers where all or almost all care takes place in a single unit.

**Labor, delivery, recovery, postpartum (birthing) rooms**

Labor, delivery, and recovery (LDR) and labor, delivery, recovery, and postpartum (LDRP) rooms offer families a comfortable, private space for childbirth (Fig. 9-24). Women are admitted to LDR units, labor and give birth,
and spend the first 1 to 2 hours postpartum there for immediate recovery and to have time with their families to bond with their newborns. After this period of recovery, the mothers and newborns are transferred to a postpartum unit and nursery or mother-baby unit for the duration of their stay.

In LDRP units, total care is provided from admission for labor through postpartum discharge in the same room and usually by the same nursing staff. The woman and her family may stay in this unit for 6 to 48 hours after giving birth. The units are furnished to provide a homelike atmosphere, as LDR units are, but have accommodations for family members to stay overnight.

Both units are equipped with fetal monitors, emergency resuscitation equipment for both mother and newborn, and heated cribs or warming units for the newborn. Often this equipment is out of sight in cabinets or closets when it is not being used.

**Birth centers**

Free-standing birth centers are usually built in locations separate from the hospital but may be located nearby in case transfer of the woman or newborn is needed. These birth centers are intended to offer families a safe and cost-effective alternative to hospital or home birth. The centers are usually staffed by nurse-midwives or physicians who also have privileges at the local hospital. Only women at low risk for complications are included for care. Attendance at childbirth and parenting classes is required of all patients. The family is admitted to the birth center for labor and birth and will remain there until discharge, which often takes place within 6 hours of the birth.

Birth centers typically have homelike accommodations, including a double bed for the couple and a crib for the newborn (Fig. 9-25, A). Emergency equipment and drugs are stored discreetly within cupboards, out of view but easily accessible. Private bathroom facilities are incorporated into each birth unit. There may be an early labor lounge or a living room and small kitchen (Fig. 9-25, B).

Services provided by the free-standing birth centers include those necessary for safe management during the childbearing cycle. Patients must understand that some situations require transfer to a hospital, and they must agree to abide by those guidelines. Expectant families develop birth plans—that is, the practices and procedures they would like to either include or exclude from their childbirth experience. Birth centers as well as a hospital with a comprehensive birthing program may have resources for parents such as a lending library that includes books and videotapes; reference files on related topics; recycled maternity clothes, baby clothes, and equipment; and supplies and reference materials for childbirth educators. The centers may also have referral files for community resources that offer services relating to childbirth and early parenting, including support groups (e.g., for single parents, for postbirth support, and for parents of twins), genetic counseling, women’s issues, and consumer action.

When birth occurs in a birth center or a home setting, it should be located close to a major hospital so that quick transfer to that institution is possible if necessary. Ambulance service and emergency procedures must be readily available. Fees vary with the services provided but typically are less than or equal to those charged by local hospitals. Some base fees on the ability of the family to pay (a reduced-fee sliding scale). Several third-party payers, as well as Medicaid and the Civilian Health and Medical Programs of the Uniformed Services (TRICARE/CHAMPUS), recognize and reimburse these centers.

**Home birth**

Home birth has always been popular in certain countries, such as Sweden and The Netherlands. In developing countries, hospitals or adequate lying-in facilities are often unavailable to most pregnant women, and home birth is a necessity. In North America, home births account for less than 1% of births (Martin et al., 2003).
National groups supporting home birth are the Home Oriented Maternity Experience (HOME) and the National Association of Parents for Safe Alternatives in Childbirth (NAPSAC). These groups work to foster more humane childbearing practices at all levels, integrating the alternatives for childbirth to meet the needs of the total population.

With a home birth the family is in control of the experience, and the birth may be more physiologically natural in familiar surroundings. The mother may be more relaxed than she would be in the hospital environment. The family can assist in and be a part of the birth, and the mother-father and partner-infant (and sibling-infant) contract is immediate and sustained. Home birth may be less expensive than a hospital confinement. Serious infection may be less likely (assuming strict aseptic principles are followed) because it is usual for people to be relatively immune to the bacteria in their own homes.

Although some physicians and nurses support home births that use good medical and emergency backup systems, many regard this practice as exposing the mother and the fetus to unnecessary danger. Therefore home births are not widely accepted by the North American medical community. This makes it difficult for a family to find a qualified health care provider willing to give prenatal care and to attend the birth. Backup emergency care by a physician in a hospital may be difficult to arrange in advance. If an emergency birth is necessary, no effective way exists to do this rapidly in the home setting.

Factors increasing the safety of birth at home. Most health care providers agree that if home birth is the woman’s choice, certain criteria promote a safe home birth experience. The woman must be comfortable with her decision to have her baby at home. She should be in good health. Home birth is not indicated for women with a high risk pregnancy. A drive to the hospital (if needed) should take no more than 10 to 15 minutes. The woman should be attended by a well-trained physician or midwife with adequate medical supplies and resuscitation equipment, including oxygen.

Key Points
- The prenatal period is a preparatory one both physically, in terms of fetal growth and parental adaptations, and psychologically, in terms of anticipation of parenthood.
- Parent-child, sibling-child, and grandparent-child relationships are affected by pregnancy.
- Discomforts and changes of pregnancy can cause anxiety to the woman and her family and require sensitive attention and a plan for teaching self-care measures.
- Education about healthy ways of using the body (e.g., exercise, body mechanics) is essential given maternal anatomic and physiologic responses to pregnancy.
- Important components of the initial prenatal visit include detailed and carefully recorded findings from the interview, a comprehensive physical examination, and selected laboratory tests.
- Even in normal pregnancy the nurse must remain alert to hazards such as supine hypotension.
UNIT THREE
PREGNANCY

Key Points—cont’d
• Warning signs and symptoms, and signs of family maladaptations.
  • BP is evaluated on the basis of absolute values and length of gestation and interpreted in light of modifying factors.
  • Each pregnant woman needs to know how to recognize and report preterm labor.
  • Childbirth education is a process designed to help parents make the transition from the role of expectant parents to the role and responsibilities of parents of a new baby.

• The likelihood of physical abuse increases during pregnancy.
• Nurses must be knowledgeable about practices and customs related to childbirth to provide culturally sensitive care.
• Cultural prescriptions and proscriptions influence responses to pregnancy and to the health care delivery system.

Answer Guidelines to Critical Thinking Exercise

Deciding about a Home Birth

1. Yes, there is sufficient evidence to draw conclusions about the safety of a home birth for Millie.

2. a. Millie needs to have a low risk pregnancy, have education about requirements for a home birth, have supports available, be able to secure the equipment necessary, and have made plans for hospital or emergency care as needed.
   b. Millie needs to have a partner or family or friends who will support her; there needs to be a backup plan for emergencies.
   c. Midwives are listed in telephone directories. Names of home birth midwives can be obtained from midwifery associations, boards of registered nursing, telephone directories, and by word of mouth.

3. Priorities for care include assuring that Millie has access to prenatal care, providing information about home birth and other options for care such as a birth center, and making appropriate referrals.

4. Yes, information about the importance of prenatal care and the safety of home birth is available and supports the conclusion.

5. The nurse might explore with Millie her reasons for seeking a home birth, her tolerance of pain and willingness to forego use of analgesic medications during labor, and her previous experiences with physicians, nurses, and midwives.

Resources
Association of Labor Assistants and Childbirth Educators (ALACE)
P.O. Box 382724
Cambridge, MA 02238
617-441-2500
Baby Center (source for expectant parents)
www.babycenter.com
Baby Online (source of articles on pregnancy and baby care)
www.babiesonline.com
Childbirth Graphics
P.O. Box 21207
Waco, TX 76702
800-229-3366
www.childbirthgraphics.com
Childbirth.org (source of links to other sites related to pregnancy and birth)
www.childbirth.org
Coalition to Improve Maternity Services (CIMS)
P.O. Box 246
Ponte Verde Beach, FL 32004
888-282-CIMS
www.motherfriendly.org
COPE (Coping with the Overall Pregnancy/Parenting Experience)
37 Clarendon St.
Boston, MA 02116
617-357-3348
Doulas of North America (DONA)
1100 23rd Ave., East
Seattle, WA 98112
206-324-5440
www.dona.org
Healthy Mothers, Healthy Babies Coalition
Washington, DC 20024
202-863-2458
International Childbirth Education Association (ICEA)
P.O. Box 20448
Minneapolis, MN 55420
800-624-4934
www.icea.org
La Leche League International
P.O. Box 4097
Schaumburg, IL 60168
800-525-3243
www.lalecheleague.org
Lamaze International
1200 19th St., NW, Suite 300
Washington, DC 20036
202-223-4379 (fax)
202-357-1100
800-368-4404
www.lamaze-childbirth.com
Lesbian Mother’s Support Society
www.lesbian.org/lesbian-moms
Kroelinger, C., & Oths, K. (2000). Partner support and pregnancy want-


Kehringer, K. (2003). Informed consent: Hospitals must obtain in-


Jenkins, T & Wapner, R. (2004). Prenatal diagnosis of congenital dis-


Foley, E. (2002). Drug screening and criminal prosecution of pregnant


Freda, M., & Patterson, E. (2003). Prenatal labor and birth:


