HEALTH EDUCATION

- A. Several client education issues have already been addressed during the description of the various tests; therefore, these sections are provided for a complete review of this topic.
- B. Because certain high-risk pregnancy conditions are preventable and relate to lifestyle choices that are hazardous to the fetus, counseling during some testing sessions can assist clients in making better choices.
 - 1. Obtain prenatal care within the first trimester.
 - a. Prenatal care increases the accuracy of gestational age assessment.
 - **b.** It allows more timely intervention in true cases of postterm pregnancies.
 - c. It improves determination of inadequate fetal growth for a given fetal age.
 - 2. Avoid alcohol, illegal drugs, caffeine, and over-the-counter drugs during pregnancy, especially during the first trimester, to prevent teratogenic effects. Some prescription medications may have negative effects on the growing fetus. The woman's provider will assess prescription medications to determine their appropriateness for pregnancy. If deemed inappropriate the prescription will be modified to accommodate the pregnancy.
 - 3. Normal fetal growth can result if smoking is stopped early in the pregnancy.
 - 4. Maintain a good diet with proper nutrition (ACOG, 2007b; U.S. Department of Health and Human Services, [USDHHS] 2006). See Chapter 5 for a complete discussion of nutrition in pregnancy.
 - a. A healthy diet is low in fat, sugar, and cholesterol and high in vegetables, fruits, and grains.
 - **b.** A healthy diet should also include proteins, carbohydrates, vitamins, minerals, and fat. Dependingonthewoman's diet, the provider may prescribe prenatal vitamins to ensure the correct amount of nutrients are ingested during pregnancy.
 - c. Iron, folic acid, protein, and calcium are essential for fetal growth. Iron and folic acid are needed to generate the additional red blood cells (RBCs) (thus, oxygen-carrying capability) during pregnancy. Protein is needed to assist with RBC production and building fetal tissues and muscles. Calcium is needed to build fetal bones and teeth.
 - 5. Abuse, whether physical, sexual, or emotional, needs to be assessed throughout the pregnancy, especially as the fetus begins to be visible on the pregnant woman's body. The pregnant woman should have access to information and education on abuse to include contact information for support agencies (ACOG, 2007b). See Chapter 18 for a complete discussion of intimate partner violence in pregnancy.

CASE STUDIES AND STUDY QUESTIONS

Ms. J. is a 37-year-old gravida 1, para 0 (G1, P0) woman whose last menstrual period was March 17. Her first prenatal visit was on July 3, at which time her fundal height was 22 cm. Fetal heart rate was audible by Doppler ultrasonography but not by DeLee stethoscope, and she has not yet felt fetal movement. Select from among the following items those that apply to Ms. J. or the issue addressed.

- 1. High-risk factor(s)
 - a. Fetal cardiac anomaly
 - b. Advanced maternal age
 - c. Size greater than dates
 - d. IUGR
 - e. Decreased fetal movement
- 2. Differential diagnoses for size greater than dates
 - a. Oligohydramnios
 - b. Polyhydramnios

- c. Twins
- d. Uterine fibroids
- e. Inaccurate date of LMP
- f. Pregnancy-induced hypertension
- 3. Diagnostic testing options
 - a. CST
 - b. Amniocentesis for genetics
 - c. NST
 - d. Ultrasonography for dating
- 4. Risk of miscarriage because of amniocentesis
 - a. Less than 1%
 - b. 10%
 - c. 5%
 - d. 8%

Ms. S. is a 30-year-old G3 P2002 woman at 43 weeks' gestation (by poor dates) with late prenatal care. Her obstetric ultrasonography at 42½ weeks showed a grade III placenta and biparietal

diameter of 9.2 cm. She has complained of decreased FM since the previous night. Her next scheduled office visit is in 3 days. Select from among the following items those that apply to Ms. S. or the issue addressed.

- 5. High-risk factor(s)
 - a. Preterm labor
 - b. Postdate pregnancy
 - c. Abruptio placentae
 - d. Decreased fetal movement
 - e. Grand multipara
- 6. Possible diagnoses
 - a. Postterm pregnancy
 - b. Term pregnancy
 - c. Placenta previa
 - d. Inaccurate maternal perception of fetal movement
 - e. Uterine dystocia
 - f. Fetal distress
 - g. Preterm pregnancy
- 7. Diagnostic testing options
 - a. Amniocentesis for L/S ratio
 - b. NST
 - c. CST
 - d. AFI
 - e. Biophysical profile
- 8. Is it true or false that Ms. S. is at no additional risk if she waits until her next scheduled office visit to be evaluated?
- 9. Is it true or false that all clients should be induced for postterm pregnancy at 42 weeks by dates, regardless of the accuracy of their EGA dating method, fetal surveillance results, or evidence of fetal maturity?

Ms. G. is a 25-year-old G2, P1001 woman at 32 weeks' gestation. Her prenatal blood pressures have ranged from 116 to 130/68 to 74. At her current prenatal visit her blood pressure was 160/104 and her urine dipstick was 2+ for protein. In addition, her fundal height is 30 cm. Select from among the following items those that apply to Ms. G. or the issue addressed.

- 10. High-risk factor(s)
 - a. Preeclampsia
 - b. Rh sensitization
 - c. Maternal anemia
 - d. IUGR

Ms. L. is a 25-year-old G4, P3 woman at 34 weeks' gestation (by good dates) who has a history of drug abuse and smoking. Fetal serial ultrasound

tests show poor interval growth, with a current biparietal diameter (BPD) of 7.8 cm and femur length of 6 cm, both consistent with 30 weeks' gestation. Select from among the following items those that apply to Ms. L. or the issue addressed.

- 11. High-risk factor(s)
 - a. Preeclampsia
 - b. Diabetes
 - c. IUGR
 - d. Multiple pregnancy
 - e. Substance abuse
- 12. Diagnostic testing for IUGR pregnancy and treatment planning
 - a. Cervical culture
 - b. Biophysical profile
 - c. Amniocentesis for lung profile
 - d. Maternal urine toxicology screen
 - e. Maternal glucose testing
 - f. NST and AFI (modified BPP)
- 13. Is it true or false that if Ms. L. were to stop smoking now, her fetus would have an improved blood supply and would gain weight more rapidly?

M., a 35-year-old G5, P3012 woman, is at 33 weeks' gestation and has experienced a 7-pound weight gain in the last 4 weeks, has an elevated diastolic BP of 104, and has 2+ protein in her urine. The physician has required her to quit work and maintain bedrest at home.

- 14. Because of the potential for uteroplacental insufficiency associated with preeclampsia, M. may have the following parameters evaluated in the home:
 - a. AFI
 - b. BPP
 - c. CST
 - d. NST
- e. Fetal movement 15. Two weeks later, she experiences spontane-
- ous rupture of the membranes. She continues to leak amniotic fluid daily, and the AFI has just decreased by 50% at 36 weeks' gestation. To determine fetal maturity, which of the following tests might be performed?
 - a. L/S ratio
 - b. delta OD 450
 - c. AFP
 - d. LBC
 - e. PG

ANSWERS TO STUDY QUESTIONS

1. b, c	6. a, b, d, f	11. c, e
2. b, c, d, e	7. a, b, c, d, e	12. b, c, d, f
3. b, d	8. False	13. True
4. a	9. False	14. d, e
5. b, d	10. a, d	15. a, d, e

BIBLIOGRAPHY

- Abuhamad, A. (2007). Uterine size less than dates: A clinical dilemma. In E. I. Bluth, C. B. Benson, P. W. Ralls, & M. J. Siegel (Eds.), *Ultrasound: A practical approach to clinical problems* (2nd ed., pp. 342–346). New York: Thieme Publishers.
- ACOG. (1999). Antepartum fetal surveillance. Practice Bulletin No. 9. Washington, DC: ACOG.
- ACOG. (2004). Guidelines for diagnostic imaging during pregnancy. (ACOG Committee Opinion, Number 299. Washington, DC: ACOG, September 2004.
- ACOG. (2006). *Ultrasounds. ACOG educational pamphlet*. Washington, DC: ACOG.
- ACOG. (2007a). Screening for fetal chromosomal abnormalities. Practice Bulletin No. 77. Washington, DC: ACOG.
- ACOG. (2007b). You and your baby: Prenatal care, labor and delivery, and postpartum care. Washington, DC: ACOG Educational Pamphlet Author.
- Alfirevic, Z., & Neilson, J. P. (1995). Doppler ultrasonography in high-risk pregnancies: Systematic review with meta-analysis. *American Journal of Obstetrics and Gynecology*, 172(5), 1379–1387.
- Allister, L., Lester, B. M., Carr, S., & Liu, J. (2000). The effects of maternal depression on fetal heart rate response to vibroacoustic stimulation. *Develop*mental Neuropsychology, 20, 639–651.
- American Academy of Pediatrics (AAP) & American College of Obstetricians and Gynecologists (ACOG). (2007). *Guidelines for perinatal care* (6th ed., pp. 83–137). Washington, DC: AAP/ACOG.
- Andonotopo, W., Stanojevic, M., Kurjak, A., Azumendi, G., & Carrera, J. M. (2004). Assessment of fetal behavior and general movements by four-dimensional sonography. *Ultrasound. Review of Obstetrics and Gynecology*, 4,103-114.
- Armour, K. (2004). Antepartum maternal-fetal assessment. *AWHONN Lifelines*, 8, 232–240.
- Association of Women's Health Obstetrics and Neonatal Nurses (AWHONN). (2008). Fetal assessment: Clinical position statement Washington, DC: AWHONN.

- Atterbury, J., Mikkelsen, G., & Santa-Donato, A. (2003).
 Antepartum fetal surveillance. In N. Feinstein,
 K. Torgersen, & J. Atterbury (Eds.), Fetal monitoring principles and practices (3rd ed., pp. 261–288).
 Dubuque, IA: Kendall-Hunt Publications.
- Baird, S. M., & Ruth, D. J. (2002). Electronic fetal monitoring of the preterm fetus. *Journal of Perinatal & Neonatal Nursing*, 16(1), 12–24.
- Barclay, L. (2008). New guidelines recommend universal prenatal screening for Down Syndrome. Medscape Medical News, online journal released January 2008. http://cme.medscape.com.
- Barkai, G., Reichman, B., Modan, M., Goldman, B., Serr, D., & Mashiach, S. (1988). The influence of abnormal pregnancies on fluorescence polarization of amniotic fluid lipids. *Obstetrics and Gynecology*, 67(4), 566–568.
- Barron, M. L. (2008). Antenatal care. In K. R. Simpson, & P. A. Creehan (Eds.), AWHONN perinatal nursing (3rd ed., pp. 88–124). Philadelphia: Lippincott Williams & Wilkins.
- Baschat, A. A., & Harman, C. R. (2001). Antenatal assessment of the growth restricted fetus. Current Opinions in Obstetrics and Gynecology, 13(2), 161–168.
- Beall, M. H., & Ross, M. G. (2009). Amniotic fluid dynamics. In R. Creasy, R. Resnick, J. Iams, C. J. Lockwood, & T. R. Moore (Eds.), Creasy & Resnik's maternal-fetal medicine: Principles and practice (6th ed., pp. 47–54). Philadelphia: Saunders.
- Behrman, R. E., & Butler, A. S. (2007). Preterm birth: Causes, consequences, and prevention. Committee on Understanding Premature Birth and Assuring Healthy Outcomes; Institute of Medicine (U.S.). Washington, DC: National Academies Press.
- Blackburn, S. T. (2007). Fetal assessment. In *Maternal, fetal, and neonatal physiology: A clinical perspective* (3rd ed., pp. 173–192). Philadelphia: Saunders.
- Boehm, F., Salyer, S., Shah, D., & Waughn, W. (1986). Improved outcome of twice weekly nonstress testing. Obstetrics and Gynecology, 67(4), 566–568.