

Fertility and Conception

Study Group Module



Learning Goals

Review the following Learning Goals as an organized beginning to your study of this module. As you read the Learning Goals, note key words that will aid you in finding the information in the texts. When you complete the module, revisit this list and check for areas that require further investigation.

- Review the gestational reproductive system.
 - Identify the normal reproductive/menstrual and hormone cycle.
 - Review the biological male reproductive system.
 - Identify the stages of normal sperm production.
 - Understand connections between hormones and emotions.
 - Identify life-style changes and nutritional support to increase fertility.
 - Define the processes of ovulation and conception.
 - Identify the hormonal responses required to maintain a pregnancy.
 - Define the process of blastocyst implantation.
 - Review Embryology and Fetal Development module.
 - Identify assisted reproduction technologies, laws, practicalities, and support.
 - Identify indications for tailored support for clients who struggled to conceive.
 - Identify the three modern factors that influence fertility on the global scale.
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- Review Miscarriage and Stillbirth module.
 - Review Grieving module.
 - Review Lifelong Reproductive Health Care module, the birth control section.
 - Review Postpartum Care module, lactation and fertility section.



Study Sources

The following texts are recommended for completion of this module. Use them to cross reference and build a more comprehensive understanding.

Using key words from the Learning Objectives, search the index. Read those pages listed, and read the chapter in which they are found. Establish a context for the information so that you understand how other topics are related. In addition, read the chapter headings in the Table of Contents, and flip through each text to familiarize yourself with the content of chapters. As you work through Study Group modules, you will eventually read each text in its entirety.

- Holistic Midwifery, Vol. I, Frye
 - Human Anatomy and Physiology, Marieb
 - Herbal for the Childbearing Year, Weed
 - A Cooperative Method of Natural Birth Control, Nofziger
 - Botanical Medicine for Women's Health, Romm
 - A New View of a Woman's Body, Gage
 - Contraceptive Technology, Hatcher, Trussell, Nelson, Cates, Kowal and Policar
 - Understanding Diagnostic Tests in the Childbearing Year, Frye
 - Taking Charge of Your Fertility, Weschler
 - The Garden of Fertility, Singer
 - The New Essential Guide to Lesbian Conception, Pregnancy, and Birth, Brill
- See NMI website Fertility and Conception module web resources section for current online study sources for this module.



Related Topics

- Sexuality and Gender
- Pregnancy
- Embryology and Fetal Development
- Miscarriage and Stillbirth
- Grief
- Lifelong Reproductive Health Care
- Postpartum Care



Short Answer Questions

1. What other terms are used to identify fertile mucous?
2. In the U.S., a few Eurocentric vocabulary words have been adopted for common use when discussing fertility, conception, and contraception.
 - a. What is mittelschmerz?
 - b. What is spinnbarkeit, sometimes referred to as “spin”?
3. Do people generally alternate ovulation between the left and right ovary?
4. Describe the structure of the body of the uterus.
5. In the structure of the uterus, what causes the shedding of the endometrium during menses?
6. How is the vagina lubricated?
7. How many sperm are produced daily?
8. What is the usual volume of semen ejaculated and how many sperm are usually contained in it?
9. Why is it important that the scrotum and testes reside outside of the body cavity?
10. What is the life expectancy of sperm, once ejaculated?
11. How long can sperm survive and remain viable in fertile mucous?
12. Where in the reproductive tract does conception generally occur?
13. How many gametes are required for conception?
14. Your client reports a menstrual cycle that ranges from 35 to 37 days in length. On what day of their last cycle did ovulation most likely occur?
15. How does a longer menstrual cycle affect the length of a pregnancy?
16. Define andropause.
17. What effect does aging have on the physiology of sperm production, motility, and viability?



Questions Requiring Longer, Thoughtful Answers & Explanations

18. Describe the shifts in estrogen, progesterone, LH and FSH throughout the menstrual and ovulatory cycle. Provide an illustration with legible labels.
19. What have been your own observations of behavioral and emotional changes that occur during an ovulating and menstruating cycle?
20.
 - a. Describe the Fertility Awareness Method.
 - b. Describe Natural Family Planning.
 - c. What is the difference between FAM and NFP?
21. Describe how FAM and NFP might be used for increasing bodily awareness
 - a. For contraception?
 - b. For conception?
 - c. simply for increased bodily awareness?
22. How can breastfeeding impact fertility?
23. What conditions may effect the ovulatory and menstrual cycle?
24. Why do multiple gestations become more likely with increased maternal age?
25. Describe the process of follicular development and ovulation.
26. Describe changes in the endometrial lining throughout the menstrual cycle.
27. Describe typical shifts in basal body temperature throughout the menstrual cycle.
28. Describe the shifts in cervical position throughout the menstrual cycle.
29. Describe cervical mucous changes throughout the menstrual cycle.
30. Describe the microscopic structure of fertile mucous.
31. What kinds of lubricant are “conception friendly”?
32. Describe meiosis.
33. What is a haploid cell?
34. Describe the movement of the ovum from the follicle to the uterus.
35. Describe the role of the zona pellucida.

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36. Describe the mechanism that allows sperm to penetrate the ovum and participate in fertilization.
- 37.a. What keeps more than one sperm from penetrating an oocyte?
b. What happens when two sperm penetrate an oocyte?
38. What is a diploid cell?
39. Describe cellular cleavage. When does it happen to the zygote?
40. What is a zygote?
41. What determines the sex of the new zygote?
42. What sex would an XX combination of gametes create?
43. Generally speaking, what sex would an XY combination of gametes create?
44. What does the SRY gene (sex-determining region Y gene) contribute to sex determination?
- 45.a. What significant changes occur during the blastocyst stage?
b. What stage follows the blastomeres?
- 46.a. When does implantation usually occur?
b. Describe implantation.
- 47.a. How is human chorionic gonadotropin commonly abbreviated?
b. Describe the role of human chorionic gonadotropin in pregnancy.
c. How can human chorionic gonadotropin be utilized in a pregnancy test?
48. Describe the hormonal responses required to maintain a pregnancy.
49. What are some nutritional and herbal sources for fertility support?
50. How do the number of children born to a person relate to their life expectancy?
51. How does pregnancy later in life effect longevity?
52. What factors may make it difficult for a person to conceive?
53. What range of emotions might a person experience while trying to conceive?
54. What fertility resources or counseling can you provide for clients who wish to conceive?

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- 55.a. What assisted reproduction technologies (A.R.T.) are currently available?
b. Which A.R.T. are available in your community?
- 56.a. What particular resources or additional resources and technologies might be needed for conception in non-heterosexual couples or families?
b. In single parents by choice?
c. In transgender clients who may or may not be on hormone therapy?
57. Where can an individual, couple, or family source sperm?
58. What are the differences with conception with fresh or frozen sperm?
59. What are the options for introducing sperm to the body for conception?
- 60.a. What legal issues may come into play with known or unknown sperm donors?
b. What are your local laws regarding known and unknown sperm donors?
61. What services are local providers willing to offer for unmarried biological parents trying to conceive? (This includes fresh sperm from a known donor for assisted insemination and IUI.)
- 62.a. Where can an individual, couple, or family source eggs?
b. How are eggs extracted/donated?
63. a. Listen to the Radio Lab episode "Birthstory" (See NMI website Fertility and Conception module web resources section for link)
b. Comment on your response to this recording.
64. Describe the process of in vitro fertilization.
65. What are the chances of successful implantation and development for each IVF cycle?
66. During any single ovulation cycle, what are the chances of conception resulting from a potentially fertilizing event?
67. What are the chances of conception:
a. with fresh sperm?
b. frozen sperm?
c. with vaginal introduction?
d. with IUI?
e. with IVF?
68. What procedure is necessary for intrauterine insemination?
69. Why are chances of multiple pregnancy higher with assisted reproductive technologies?
70. Discuss the medical and personal considerations that contribute to decisions regarding fetal reduction.

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- 71.a. What is surrogacy?
b. What is the difference between gestational and traditional surrogacy?
- 72.a. Are surrogate mothers/gestational parents usually compensated?
b. Does your state have surrogate regulations?
c. Who, When, and How are legal parental rights established in a surrogate relationship?
d. Will a surrogate mother/gestational parent usually plan a homebirth?
e. Will a surrogate mother/gestational parent usually breastfeed?
73. Describe the particular emotional considerations in caring for a client who struggled with fertility to conceive.



Projects

(send completed projects with the rest of your course work for this module)

74. Create a referral list for clients addressing fertility/infertility issues. Consider local clinical and alternative practitioners for enhancing fertility, assisting reproduction at home and in clinics, and community support. Consider how each referral might be friendly or unfriendly toward non-heterosexual partners, single parents by choice, or transgender clients.
75. Watch the video “The Miracle of Life.” (See NMI website Fertility and Conception module web resources section for link)
- 76.a. Consider your current impressions about fertility and population growth.
b. Do you think you have biases that are based on what you believe to be true?
c. Spend time on the website ourworldindata.org. Familiarize yourself with the tools that show time progression. Be sure to study the following pages (visit NMI website Fertility and Conception module web resources section for links):
- About
- Fertility
- World Population Growth
- Infant Mortality
d. What did you learn at ourworldindata.org?
e. What are the three contributing factors of modern times that contribute to fertility rates?



Skills Review

Following are excerpts from the NMI forms for assessment of midwifery skills, which include all skills identified and required by NARM. Review the following skills and consider how they each relate to the content of this module. If you are currently working with a preceptor, take this opportunity to focus on these areas. During Supervised Primary Care you will formally evaluate these skills together using the NMI form Preceptor Evaluation/Student Self-Assessment of Midwifery Skills.

1. Midwifery Counseling, Education and Communication:
 - A. Provides interactive support and counseling and/or referral services to the mother regarding her relationships with her significant others and other health care providers
 - C. Provides education and counseling based on maternal health/reproductive/family history and on-going risk assessment
 - F. Educates the mother concerning the natural physical and emotional processes of pregnancy, labor, birth and post partum
 - H. Provides individualized care
2. General Health care Skills:
 - D. Demonstrates the use of instruments and equipment including:
 10. Gestation calculation wheel/calendar
3. Maternal Health Assessment:
 - C. Estimates due date based upon:
 5. Date of positive pregnancy test
 6. Date of implantation bleeding/cramping/pelvic congestion
 7. Changes in the cervix
 8. Changes in the uterus
 9. Auscultation of the fetal heart
 10. Date mother reported quickening
 11. Measurement of fundal height
 12. Palpation of body parts
 13. Calendar date of conception or unprotected intercourse
5. Postpartum
 - C. Provides contraceptive education and counseling
 - G. Performs maternal four- to six-week post-partum check-up assessing for:
 1. Post partum subjective history
 2. Lochia
 3. Return of menses
6. Well-Women Care
 - E. Provides education and communicates about:
 1. Nutrition
 2. Female reproductive anatomy and physiology:
 - a) monthly breast self examination techniques (BSE),
 - b) implications for the nursing mother,
 - c) prevention of HIV/AIDS and other STIs,
 - d) the practice of Kegel exercises

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- F. Assesses client's family planning history and needs: counsels/prescribes
- K. Recognizes and responds to potential prenatal complications by:
 - 5. Identifying breech presentations
 - 6. Turning breech presentations with:
 - a) Alternative positions (tilt boards, exercises),
 - b) Non-allopathic methods
 - 7. Identifying multiple gestations
 - 9. Assessing and evaluating a post-date pregnancy by monitoring /assessing:
 - a) The need for consultation,
 - b) Fetal movement, growth, and heart tone variability,
 - c) Estimated due date calculation,
 - d) Previous birth patterns,
 - e) Amniotic fluid volume,
 - f) Maternal tracking of fetal movements,
 - g) Referral for ultrasound,
 - h) Referral for non-stress test
- 5. Postpartum
 - G. Performs maternal four- to six-week postpartum check-up assessing for:
 - 4. Physical condition by performing an examination including assessment of:
 - a) vital signs,
 - b) systems function,
 - c) breastfeeding, condition of breast and nipples,
 - d) muscle prolapse of vagina and rectum (cystocele, rectocele, etc.),
 - e) strength of pelvic floor,
 - f) condition of uterus, ovaries and cervix,
 - g) condition of the vulva, vagina, perineum and anus



Study Group Module Evaluation Sheet

We'd like to know what you think of the course work we ask you to complete. Please comment on as many modules as you can, and return this form to NMI. Thank you!

Name of Module: Fertility and Conception

Your Name: _____

1. What did you like about this module?
2. Were there any surprises for you in this module?
3. Was there anything in this module that was particularly challenging for you?
4. What will completing this module bring to your midwifery practice?
5. Do you feel you met this module's stated learning objectives?
6. Did the learning activities enable you to meet the learning objectives?
7. Were the suggested learning resources (books and materials) adequate to meet the learning objectives?
8. Did you utilize additional resources?
9. Any comments/Suggestions for improving this module?

Thank you!