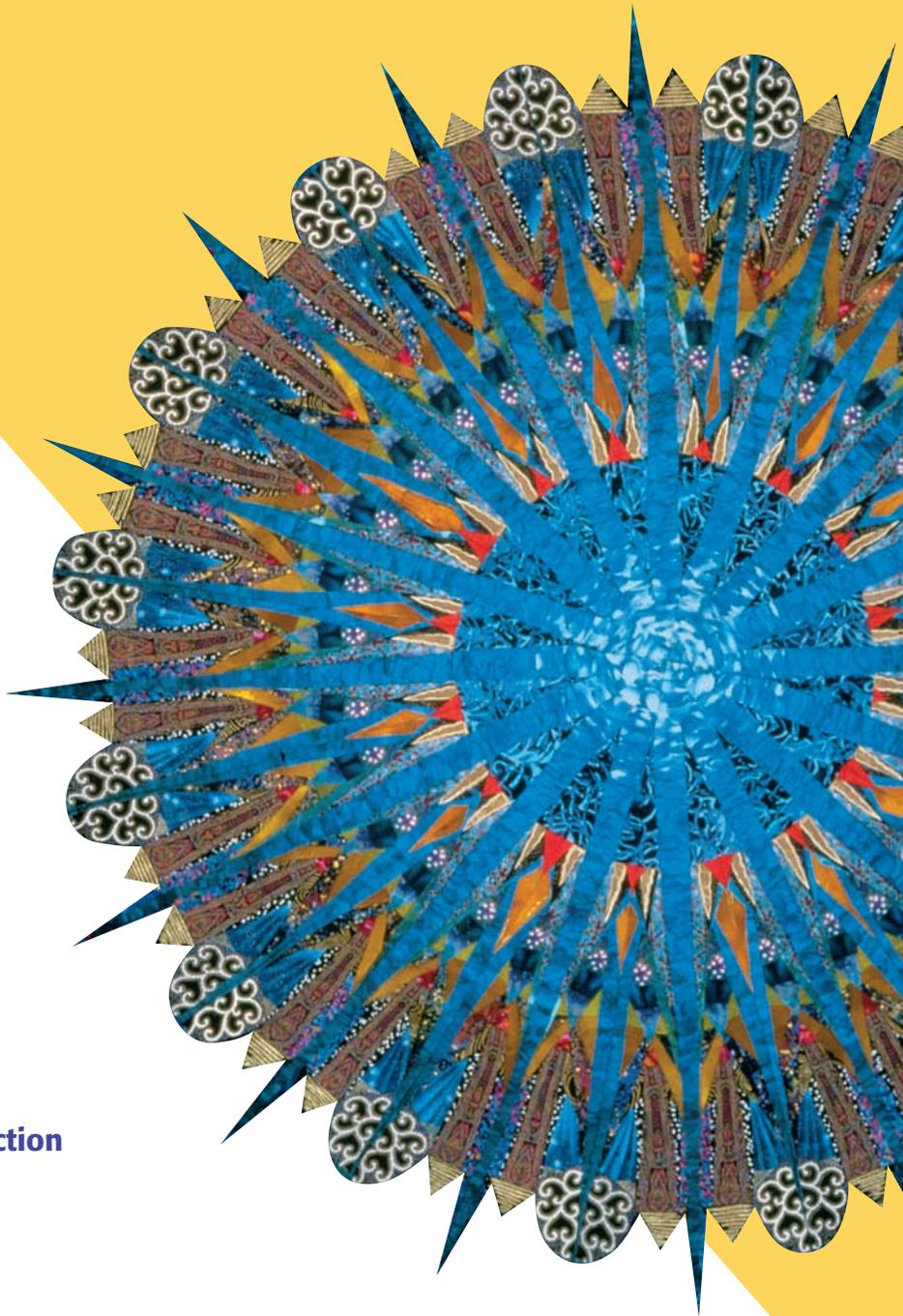


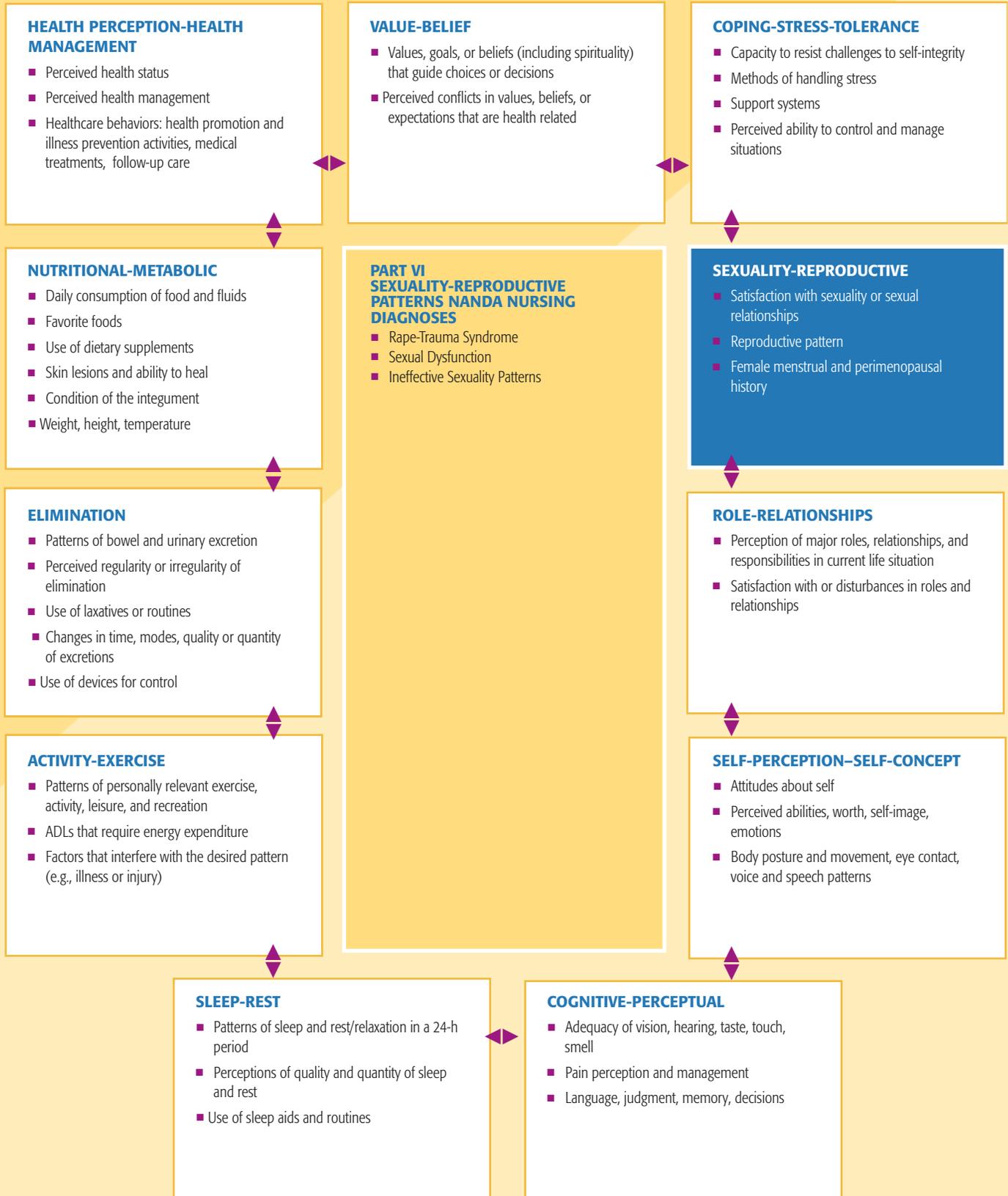
PART  
VI

Sexuality and  
Reproductive  
Patterns

UNIT 15  
**Responses to Altered Reproductive Function**



# Functional Health Patterns with Related Nursing Diagnoses



# UNIT 15

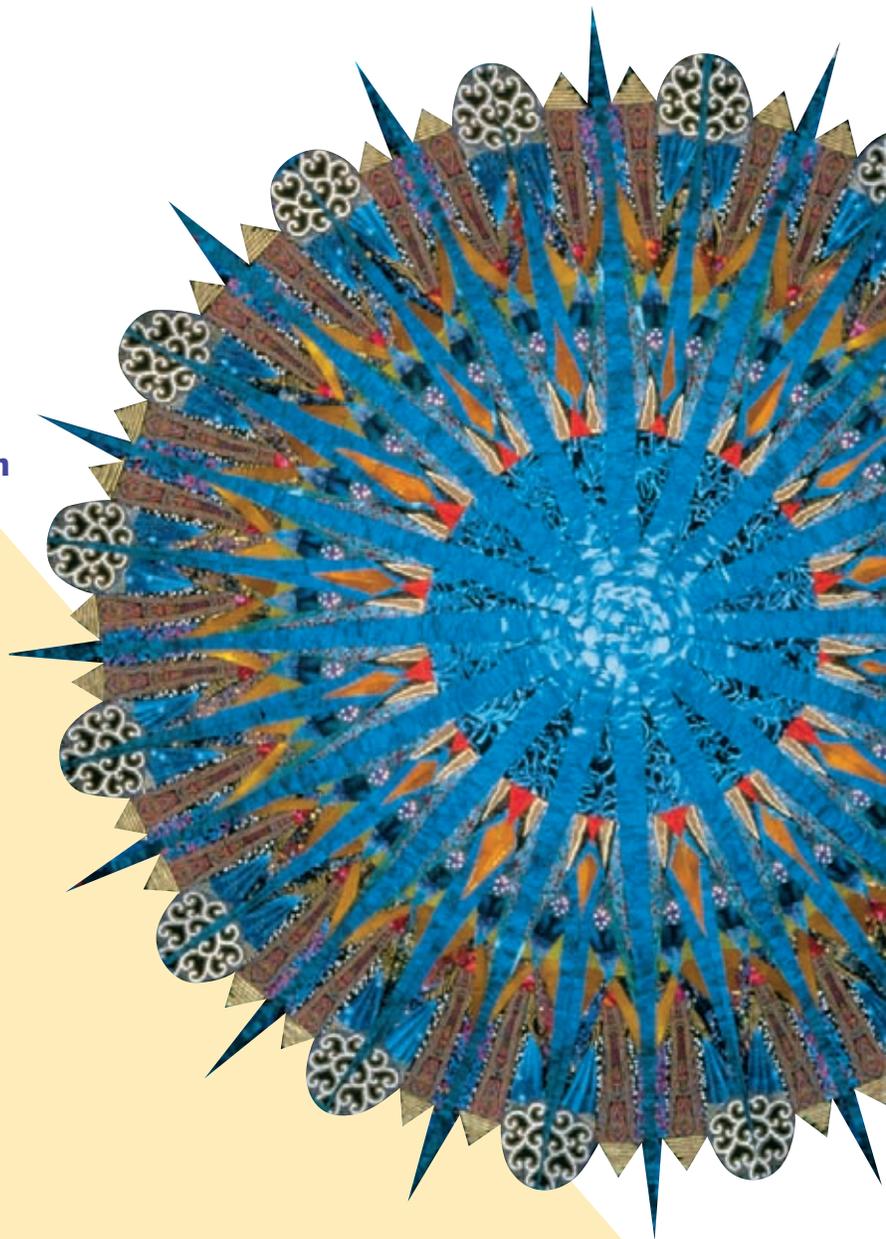
## Responses to Altered Reproductive Function

CHAPTER 49  
**Assessing Clients with Reproductive System  
and Breast Disorders**

CHAPTER 50  
**Nursing Care of Men with Reproductive  
System and Breast Disorders**

CHAPTER 51  
**Nursing Care of Women with Reproductive  
System and Breast Disorders**

CHAPTER 52  
**Nursing Care of Clients with Sexually  
Transmitted Infections**



# CHAPTER Assessing Clients with 49 Reproductive System and Breast Disorders

## LEARNING OUTCOMES

- Describe the anatomy, physiology, and functions of the male and female reproductive systems, including the breasts.
- Explain the functions of the male and female sex hormones.
- Identify specific topics for consideration during a health history interview of the client with health problems involving the reproductive system and breast structures and/or functions.
- Describe normal variations in assessment findings for the older adult.
- Identify manifestations of impairment in the male and female reproductive system and breast structure or function.

## CLINICAL COMPETENCIES

- Conduct and document a health history for men and women having or at risk for alterations of the reproductive system, including the breasts.
- Conduct and document a physical assessment of male and female reproductive system structures and functions, including the breasts.
- Monitor the results of diagnostic tests and report abnormal findings.

## EQUIPMENT NEEDED

- Disposable gloves
- Water-soluble lubricant
- A good light source
- Sterile cotton swabs (for culture)
- Culture media (for culture)
- A spatula, cotton swab or endocervical brush, slides, and cytologic fixative (for Pap smear)
- Vaginal speculum of appropriate size

### MEDIA LINK



Resources for this chapter can be found on the Prentice Hall Nursing MediaLink DVD-ROM accompanying this textbook, and on the Companion Website at <http://www.prenhall.com/lemone>

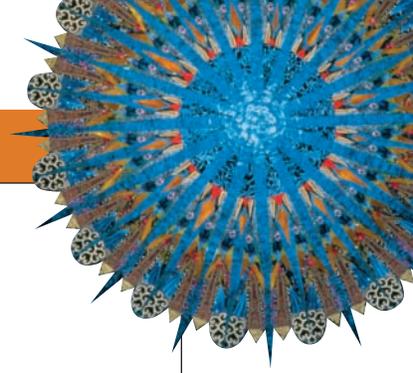


## KEY TERMS

**androgens**, 1745  
**anorgasmia**, 1758  
**dyspareunia**, 1758  
**estrogen**, 1752  
**gynecomastia**, 1749

**impotence**, 1747  
**menstrual cycle**, 1754  
**menstruation**, 1753  
**ovarian cycle**, 1754  
**phimosis**, 1749

**progesterone**, 1753  
**semen**, 1745  
**testosterone**, 1746



Although the reproductive organs in men and women are very different, they do share common functions: enabling sexual pleasure and reproduction. The reproductive organs, in conjunction with the neuroendocrine system, produce hormones important in biologic development and sexual behavior. Parts of the reproductive organs also enclose and are integral to the

function of the urinary system. The assessment of the reproductive and urinary systems is often difficult for both the nurse and the client and requires sensitivity on the part of the nurse when asking questions about topics that the client may be hesitant to talk about. Skill in conducting physical examinations of an area of the body usually considered private is also required.

## ANATOMY, PHYSIOLOGY, AND FUNCTIONS OF THE MALE REPRODUCTIVE SYSTEM

The male reproductive system consists of the paired testes, the scrotum, ducts, glands, and penis (Figure 49–1 ■). The breasts are part of the male reproductive system, and are also assessed. The location and functions of the male reproductive organs are summarized in Table 49–1.

### The Breasts

The male breast is comprised primarily of an areola (circular pigmented area) and a small nipple. These lie over a thin disk of undeveloped breast tissue that may not be overtly different from surrounding tissue. Approximately one in three men have a firm area of breast tissue 2 cm or larger; the limits of normal size of this area have not been established (Bickley & Szilagy, 2007).

### The Penis

The penis is the genital organ that encloses the urethra (see Figure 49–1). It is homologous to the clitoris of the female. The penis is composed of a shaft and a tip called the glans, which is

covered in the uncircumcised man by the foreskin (or prepuce). The shaft contains three columns of erectile tissue: The two lateral columns are called the corpora cavernosa, and the central mass is called the corpus spongiosum.

Erection occurs when the penile masses become filled with blood in response to a reflex that triggers the parasympathetic nervous system to stimulate arteriolar vasodilation. The erection reflex may be initiated by touch, pressure, sights, sounds, smells, or thoughts of a sexual encounter. After ejaculation, the arterioles vasoconstrict, and the penis becomes flaccid.

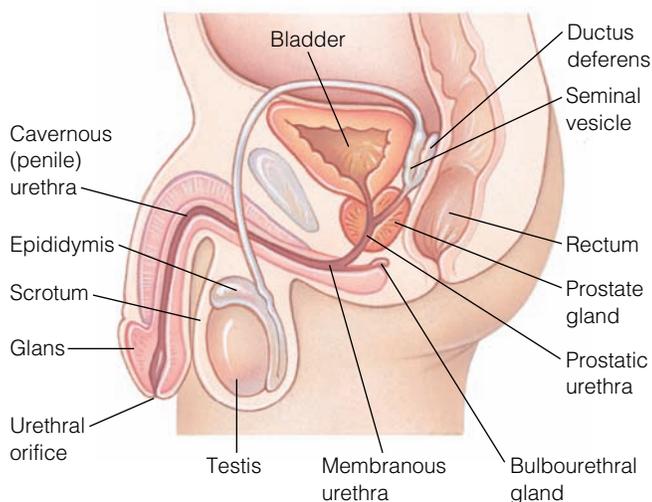
### The Scrotum

The scrotum is a sac or pouch made of two layers. The outer layer is continuous with the skin of the perineum and thighs. The inner layer is made of muscle and fascia. The scrotum hangs at the base of the penis, anterior to the anus, and regulates the temperature of the testes. The optimum temperature for sperm production is about 2 to 3 degrees below body temperature. When the testicular temperature is too low, the scrotum contracts to bring the testes up against the body. When the testicular temperature is too high, the scrotum relaxes to allow the testes to lie further away from the body.

### The Testes

The testes develop in the abdominal cavity of the fetus and then descend through the inguinal canal into the scrotum. They are homologous to the female's ovaries. These paired organs are each about 1.5 inches (4 cm) long and 1 inch (2.5 cm) in diameter. They are suspended in the scrotum by the spermatic cord. Each is surrounded by two coverings: an outer tunica vaginalis and an inner tunica albuginea. Each testis is divided into 250 to 300 lobules, with each lobule containing one to four seminiferous tubules. The testes produce sperm and testosterone.

The seminiferous tubules are responsible for sperm production. Leydig's cells (or interstitial cells) lie in the connective tissue surrounding the seminiferous tubules and produce testosterone.



**Figure 49–1** ■ The male reproductive system.

TABLE 49–1 Location and Function of the Male Reproductive Organs

MALE REPRODUCTIVE ORGAN	LOCATION	FUNCTION
Penis	Attached to front and sides of the pubic arch. Proximal, ventral surface is directly continuous with the scrotum.	Excretes semen and urine. Deposits sperm in female reproductive tract.
Scrotum	Hangs from body at root of penis.	Contains testes, epididymis, and portions of the vas (ductus) deferens.
Testes	In the scrotal sac.	Produce sperm and testosterone.
Epididymis	Posterolateral to upper aspect of each testis.	Stores sperm. Promotes sperm maturation. Transports sperm to vas deferens.
Vas deferens (ductus deferens)	Between the epididymis and the seminal vesicle forming the ejaculatory duct.	Stores sperm. Transports sperm.
Urethra	Begins at bladder and passes through prostate and penis.	Serves as passageway for urine or semen.
Prostate gland	Encircles the urethra at the neck of the bladder.	Contributes to ejaculatory volume. Enhances sperm motility and fertility.
Seminal vesicles	Lie on posterior bladder wall.	Contribute to ejaculatory volume. Contain nutrients to sustain sperm and prostaglandins to facilitate sperm motility.
Bulbourethral (Cowper's) glands	Inferior to the prostate.	Secrete mucus into urethra. Neutralize traces of acidic urine in the urethra.

## The Ducts and Semen

The seminiferous tubules lead into the efferent ducts and become the rete testis. From the rete testis, 10,000 to 20,000 efferent ducts join the epididymis, a long coiled tube that lies over the outer surface of each testis. The epididymis is the final area for the storage and maturation of sperm. When a man is sexually excited, the epididymis contracts to propel the sperm through the vas deferens to the ampulla, where the sperm are stored until ejaculation.

The seminal vesicles at the base of the bladder produce about 60% of the volume of seminal fluid. Seminal fluid is also made of secretions from the accessory sex organs, the epididymis, the prostate gland, and Cowper's glands. Seminal fluid nourishes the sperm, provides bulk, and increases its alkalinity. (An alkaline pH is essential to mobilize the sperm and ensure fertilization of the ova.) Sperm mixed with this fluid is called **semen**. Each seminal vesicle joins its corresponding vas deferens to form an ejaculatory duct, which enters the prostatic urethra. During ejaculation, seminal fluid mixes with sperm at the ejaculatory duct and enters the urethra for expulsion.

The total amount of semen ejaculated is 2 to 4 mL, although the amount varies. The total ejaculate of a healthy male contains from 100 to 400 million sperm.

## The Prostate Gland

The prostate gland is about the size of a walnut. It encircles the urethra just below the urinary bladder (see Figure 49–1). It is made of 20 to 30 tubuloalveolar glands surrounded by smooth muscle. Secretions of the prostate gland make up about one-third of the volume of the semen. These secretions enter the urethra through several ducts during ejaculation.

## Spermatogenesis

Spermatogenesis is the series of physiologic events that generate sperm in the seminiferous tubules. This process begins with puberty and continues throughout a man's life, with several hundred million sperm produced each day.

The inner layer of the seminiferous tubules consists of sustentacular cells (or Sertoli's cells), which contain the spermatocytes and sperm in different stages of development. Sertoli's cells secrete a nourishing fluid for the developing sperm, as well as enzymes that help convert spermatocytes to sperm. The events in spermatogenesis, which takes 64 to 72 days, are as follows:

1. The spermatogonia (sperm stem cells) undergo rapid mitotic division. As these cells multiply, the more mature spermatogonia divide into two daughter cells. These daughter cells grow and become the primary spermatocytes (and eventually become sperm).
2. Primary spermatocytes divide by meiosis to form two smaller secondary spermatocytes, which in turn divide to form two spermatids. This process occurs over several weeks.
3. The spermatids elongate into a mature sperm cell with a head and a tail. The head contains enzymes essential to the penetration and fertilization of the ova. The flagellar motion of the tail allows the sperm to move. The sperm cells then move to the epididymis to mature further and develop motility.

## Male Sex Hormones

The male sex hormones are called **androgens**. Most androgens are produced in the testes, although the adrenal cortex also

produces a small amount. **Testosterone**, the primary androgen produced by the testes, is essential for the development and maintenance of sexual organs and secondary sex characteristics, and for spermatogenesis. It also promotes metabolism, growth of muscles and bone, and libido (sexual desire).

## ASSESSING THE MALE REPRODUCTIVE SYSTEM

The structures and functions of the male reproductive system are assessed by findings from diagnostic tests, a health assessment interview to collect subjective data, and a physical assessment to collect objective data.

## Diagnostic Tests

The results of diagnostic tests of the structures and functions of the male reproductive system are used to support the diagnosis of a specific sexual problem, injury, or disease; to provide information to identify or modify the appropriate medications or treatments used to treat the disease; and to help nurses monitor the man's responses to treatment and nursing care interventions. Diagnostic tests used to assess the male reproductive system are described in the Diagnostic Tests table below and summarized in the bulleted list that follows. More information is included in the discussion of specific health problems or diseases in Chapter 50 ∞.

DIAGNOSTIC TESTS of the Male Reproductive System	
<p><b>NAME OF TEST</b> Prostate specific antigen (PSA)</p> <p><b>PURPOSE AND DESCRIPTION</b> A blood test used to diagnose prostate cancer and to monitor treatment of prostate cancer.</p>	<p><b>Normal value:</b> &lt;4 ng/mL</p> <p><b>RELATED NURSING CARE</b> No special preparation is needed.</p>
<p><b>NAME OF TEST</b> Prostate ultrasound</p> <p><b>PURPOSE AND DESCRIPTION</b> Conducted to identify testicular torsion or masses, and to evaluate prostate enlargement. Uses high-frequency sound waves, passed</p>	<p>through tissues of various densities, to produce a visual graphic of tissue being examined.</p> <p><b>RELATED NURSING CARE</b> A full bladder may be required for the study.</p>
<p><b>NAME OF TEST</b> Prostate biopsy</p> <ul style="list-style-type: none"> <li>■ Transrectal biopsy</li> <li>■ Transurethral biopsy</li> </ul> <p><b>PURPOSE AND DESCRIPTION</b> Conducted to diagnose prostate cancer. A transrectal ultrasound (TRUS) is often used to guide the placement of the needle during the procedure.</p> <ul style="list-style-type: none"> <li>■ A transrectal biopsy is performed with a spring-loaded needle, inserted through the rectal wall and into the prostate gland to remove one or more tissue samples.</li> <li>■ A transurethral biopsy is performed by inserting a cystoscope through the urethra and using a cutting loop to remove small samples of prostate tissue.</li> </ul>	<p><b>RELATED NURSING CARE</b> Advise the man to avoid strenuous activity for 4 hours postprocedure. Explain that there may be some discomfort in the biopsy area for 1 to 2 days, there may be some blood in the urine or from the rectum and semen may appear dark. Following a transurethral biopsy, a urinary catheter may remain in place for a few hours after the procedure and antibiotics will be prescribed. Excess bleeding, pain, or signs of infection should be reported to the physician.</p>
<p><b>NAME OF TEST</b> Gonorrhea culture</p> <p><b>PURPOSE AND DESCRIPTION</b> A culture is performed to evaluate for gonorrhea. A swab is used to collect a sample of discharge from the infected area (urethra, penis, anus, or throat), smeared on a slide, and a Gram stain is conducted to</p>	<p>identify the organism (<i>N. gonorrhoeae</i>). A urine sample is used in some tests.</p> <p><b>RELATED NURSING CARE</b> No special preparation is needed. If test is positive, request the names of all sexual partners and emphasize need for treatment to eradicate the infection.</p>
<p><b>NAME OF TEST</b></p> <ul style="list-style-type: none"> <li>■ Venereal Disease Research Laboratory (VDRL)</li> <li>■ Rapid plasma reagin (RPR)</li> <li>■ Fluorescent treponemal antibody absorption (FTA-ABS)</li> </ul> <p><b>PURPOSE AND DESCRIPTION</b> These blood tests are conducted to screen for syphilis. Positive findings can be made within 1 to 2 weeks after primary lesion appears or 1 to 4</p>	<p>months after the initial infection. The FTA-ABS test is considered the most accurate, and is often used if findings from the VDRL or RPR are questionable.</p> <p><b>RELATED NURSING CARE</b> No special preparation is needed. If test is positive, request the names of all sexual partners and emphasize need for treatment to eradicate the infection.</p>
<p><b>NAME OF TEST</b> Semen analysis</p> <p><b>PURPOSE AND DESCRIPTION</b> Done to assess volume, motility and sperm count, and percent of abnormal sperm.</p> <p><b>Normal values:</b> Volume: 2–5 mL</p>	<p>Sperm count: &gt;20 million/mL Motility: 60% motile % normal sperm: 60%</p> <p><b>RELATED NURSING CARE</b> Client is asked to bring in a fresh specimen within 2 hours of ejaculation.</p>

- Hormone changes and syphilis are diagnosed with blood tests, discussed in Chapters 50 ∞ and 52 ∞. Gonorrhea, as well as other sexually transmitted infections, is diagnosed by cultures and smears of discharge or mucous membranes.
- Prostate cancer is diagnosed and monitored by measuring prostate specific antigen (PSA).
- The prostate may be examined by ultrasound to identify testicular torsion or masses, and by a prostate biopsy to accurately diagnose cancer.
- Semen analysis is done to evaluate semen volume, sperm count and motility, and percentage of abnormal sperm.

Regardless of the type of diagnostic test, the nurse is responsible for explaining the procedure and any special preparation needed, for assessing for any medication use that might affect the outcome of the tests, for supporting the man during the examination as necessary, for documenting the procedures as appropriate, and for monitoring the results of the tests.

## Genetic Considerations

When conducting a health assessment interview and a physical assessment, it is important for the nurse to consider genetic influences on health of the adult. Several diseases of the male reproductive system have a genetic component. During the health assessment interview, it is especially important to ask about a family history of testicular or prostate cancer. During the physical assessment, assess for any manifestations that might indicate a genetic disorder (see the box below). If data are found to indicate genetic risk factors or alterations, ask about genetic testing and refer for appropriate genetic counseling and evaluation. Chapter 8 ∞ provides further information about genetics in medical-surgical nursing.

## Health Assessment Interview

A health assessment interview to determine problems with the male reproductive system may be conducted during a health screening, may focus on a chief complaint (such as a discharge from the penis), or may be part of a total health assessment. Men may be embarrassed to discuss health problems or concerns involving their reproductive organs; it is important for the nurse to ask questions in a nonthreatening, matter-of-fact manner. Consider the psychologic, social, and cultural factors that affect sexuality and sexual activity. Use words that the man can

understand, and do not be embarrassed or offended by the words he uses. The man may perceive the interview as less threatening if the discussion begins with more general questions and then progresses to specific questions, and if questions are asked in a way that gives him permission to describe behaviors and manifestations. For example, rather than asking a man if he has difficulty achieving or maintaining an erection, ask him to describe any changes he has noticed in his erections.

If the man has a health problem, analyze its onset, characteristics and course, severity, precipitating and relieving factors, and any associated symptoms, noting the timing and circumstances. For example, you may ask the man:

- When did you first notice that you were having difficulty urinating?
- Did you use a different brand of condoms before you noticed the rash on your penis?
- Describe the changes that occurred in your ability to have an erection after you started taking medicine for high blood pressure.

In questioning the man about past medical history, ask about chronic illnesses such as diabetes, chronic renal failure, cardiovascular disease, multiple sclerosis, spinal cord tumors or trauma, or thyroid disease. The effects of these illnesses as well as the treatment of the illnesses may cause **impotence** (inability to achieve or maintain an erection). The following drugs may cause sexual function problems: antihypertensives, antidepressants, antispasmodics, tranquilizers, sedatives, and histamine<sub>2</sub>-receptor antagonists. Psychosocial stressors also may contribute to impotence.

If the man was born to a woman treated during pregnancy with diethylstilbestrol (DES), a drug used in the 1940s and 1950s to prevent miscarriage, he may have congenital deformities of the urinary tract as well as decreased semen levels. If the man had mumps as a child, sterility is possible. The risk for testicular cancer is greatest in men who have a history of an undescended testicle, an inguinal hernia, testicular swelling with mumps, a history of maternal use of DES or oral contraceptives, and a family history of testicular cancer.

Explore the lifestyle and social history of the man; the use of alcohol, cigarettes, or street drugs may affect sexual function. Frequent sexual intercourse, especially if unprotected, increases the potential for sexually transmitted infections including HIV infection. Ask about sexual preference. Sexual intercourse with same-sex partners further increases the risk for HIV infection. Other questions about sexuality may include number of sexual partners; history of premature ejaculation, impotence, or other sexual problems; any history of sexual trauma; use of condoms or other contraceptives; and current level of sexual satisfaction.

Interview questions categorized by functional health patterns are listed in the Functional Health Pattern Interview table on the next page.

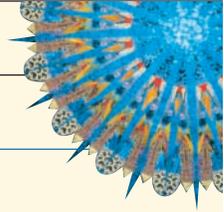
## Physical Assessment

Physical assessment of the male reproductive system may be performed as part of a total assessment or separately for men with known or suspected problems. If conducted as part of a total physical assessment, this is usually the final system to be assessed.



**GENETIC CONSIDERATIONS**  
**Male Reproductive System Disorders**

- Although the exact genetic predisposition for some men to have prostate cancer is unknown, the findings of many studies have identified a family history as a major risk factor.
- A family history of testicular cancer is a risk factor for cancer of the testes.
- Men who have XX chromosomes (instead of XY) often have altered testicular development because they are missing a gene called the sex-determining region Y gene (*SRY*), which is responsible for the development of secondary sex characteristics in men.


**FUNCTIONAL HEALTH PATTERN INTERVIEW The Male Reproductive System**
**Functional Health Pattern**
**Interview Questions and Leading Statements**

<b>Health Perception-Health Management</b>	<ul style="list-style-type: none"> <li>■ Have you ever had problems with your reproductive organs (penis, testicles, prostate gland)? Explain. If so, how was the problem treated?</li> <li>■ Have you ever had surgery on your reproductive organs? If so, what type, when, and what was the outcome?</li> <li>■ Have you ever noticed any pain or swelling in your breasts? Explain.</li> <li>■ Do you practice testicular self-examination? How often?</li> <li>■ Do you smoke? If so, how much and for how long?</li> </ul>
<b>Nutritional-Metabolic</b>	<ul style="list-style-type: none"> <li>■ Describe your usual intake of food and fluids in a 24-hour period.</li> </ul>
<b>Elimination</b>	<ul style="list-style-type: none"> <li>■ Do you now or have you ever had a discharge from your penis? If so, describe the color, odor, consistency, amount, and frequency.</li> <li>■ Have you ever had any bleeding from your penis? Explain.</li> <li>■ Have you noticed any change in your urination, such as burning, frequency, urgency, difficulty starting the stream, size of the stream, dribbling, or getting up frequently at night? Explain.</li> </ul>
<b>Activity-Exercise</b>	<ul style="list-style-type: none"> <li>■ Describe your usual activity in a 24-hour period.</li> <li>■ Do you participate in sports or heavy lifting? If so, do you wear a protective cup or athletic support?</li> </ul>
<b>Sleep-Rest</b>	<ul style="list-style-type: none"> <li>■ Describe the quality of your rest and sleep.</li> </ul>
<b>Cognitive-Perceptual</b>	<ul style="list-style-type: none"> <li>■ Describe any pain you have had in the groin area, testicles, penis, or scrotum. Where is it? Do you experience it in other parts of your body? How long does it last? What makes it worse or relieves it?</li> <li>■ Has there been a change in the condition or color of the skin on your scrotum or penis? Explain.</li> </ul>
<b>Self-Perception-Self-Concept</b>	<ul style="list-style-type: none"> <li>■ Has this problem affected how you feel about yourself as a man?</li> <li>■ Do you feel that your needs for intimacy and affection are being met?</li> </ul>
<b>Role-Relationships</b>	<ul style="list-style-type: none"> <li>■ Has having this condition affected your relationships with others?</li> <li>■ Has having this condition interfered with your ability to work? Explain.</li> <li>■ Has anyone in your family had problems with prostate cancer? Explain.</li> </ul>
<b>Sexuality-Reproductive</b>	<ul style="list-style-type: none"> <li>■ Are you currently in a sexual relationship? If so, has this condition interfered with your usual sexual activity? How long have you been with your current partner? Have you had any other partners during this time?</li> <li>■ What is your sexual preference?</li> <li>■ Has having this problem affected your relationship with your spouse or sexual partner?</li> <li>■ Are you satisfied with your current level of sexual functioning?</li> <li>■ Have you ever had any problem with achieving or maintaining an erection or ejaculation?</li> <li>■ Do you use any medications to facilitate your sexual ability? Describe.</li> <li>■ Do you use condoms every time you have sexual contact?</li> </ul>
<b>Coping-Stress-Tolerance</b>	<ul style="list-style-type: none"> <li>■ Has having this condition created stress for you? If so, does your health problem seem to be more difficult when you are stressed?</li> <li>■ Have you experienced any kind of stress that makes the condition worse? Explain.</li> <li>■ Describe what you do when you feel stressed.</li> </ul>
<b>Value-Belief</b>	<ul style="list-style-type: none"> <li>■ Describe how specific relationships or activities help you cope with this problem.</li> <li>■ Describe specific cultural beliefs or practices that affect how you care for and feel about this problem.</li> <li>■ Are there any specific treatments that you would not use to treat this problem?</li> </ul>

Problems of the male reproductive system may involve the urinary system, making an assessment of both systems important (see Chapter 27  for assessment of the urinary system). The nurse must feel comfortable with the examination of clients of the opposite gender; if either the nurse or the client is not comfortable, a nurse of the same gender should be asked to conduct this part of the assessment. Normal age-related findings for the older man are summarized in Table 49–2.

The male reproductive system is assessed by inspection and palpation. Explain the procedures for the examination thor-

oughly and in a matter-of-fact way to decrease anxiety and embarrassment. If the man is unfamiliar with his internal genitalia, charts may be used to demonstrate the parts that will be examined. Ask the man to empty his bladder (to be more comfortable during the examination), remove his clothing, and put on a gown or drape. The assessment may be done with the man sitting or standing. Expose only those body parts being examined to preserve modesty. Ensure that the examining room is warm and private. Put on gloves before beginning and wear them throughout the examination.

TABLE 49–2 Age-Related Changes in the Male Reproductive System

AGE-RELATED CHANGE	SIGNIFICANCE
<b>Prostate Gland</b> ■ A significant number of older men have some degree of benign prostatic hyperplasia.	Although aging does not cause prostate cancer, its incidence does increase with age.
<b>Penis, Testes, and Scrotum</b> ■ Epithelial tissue and mucosa of seminal vesicles are thinner and have reduced capacity to hold fluid. ■ Sclerosis of penile arteries and veins may occur.	Although men may father children throughout life, the sperm count is reduced in some men. Changes in the vascular system of the penis may mean the aging man takes longer to achieve an erection and ejaculation, or may be impotent.

## MALE REPRODUCTIVE SYSTEM ASSESSMENTS

### Technique/Normal Findings

### Abnormal Findings

#### Breast and Lymph Node Assessment

Inspect and palpate both breasts, including areola and nipple. *Breast tissue should not be swollen, tender, or enlarged (although soft, fatty, and enlarged breast tissue does occur with obesity in men).*

- A smooth, firm, mobile, tender disk of breast tissue behind the areola indicates **gynecomastia**, abnormal enlargement of the breast(s) in men. Gynecomastia requires additional investigation to determine cause.
- A hard, irregular nodule in the nipple area suggests carcinoma.

Palpate the axillary and supraclavicular lymph nodes. *Lymph nodes should not be palpable.*

- Enlarged axillary nodes are common with infections of the hand or arm but may be caused by cancer.
- Enlarged supraclavicular nodes may indicate metastasis.

#### External Genitalia Assessment

Inspect and palpate the inguinal and femoral area for bulges. Ask the man to bear down or cough as you palpate (Figure 49–2 ■). *There should be no bulging with coughing or bearing down.*

- A bulge that increases with coughing or straining suggests a hernia.



Figure 49–2 ■ Palpating the male inguinal area for bulges.

Inspect the penis. If the man is uncircumcised, retract the foreskin or ask him to do so. *When nonerect, the penis is normally soft, flaccid, and nontender. The foreskin should be without lesions, of color equal with the penis, and should retract easily. The glans is normally free of lesions.*

- **Phimosis** (tightness of prepuce that prevents retraction of foreskin) may be congenital or due to recurrent balanoposthitis (generalized infection of glans penis and prepuce).
- Narrow or inflamed foreskin can cause paraphimosis, retraction of the foreskin that causes painful swelling of the glans.
- Balanitis (inflammation of the glans) is associated with bacterial or fungal infections.
- Ulcers, vesicles, or warts suggest a sexually transmitted infection.
- Nodules or sores seen in uncircumcised men may be cancer.

**Technique/Normal Findings**

Inspect the external urinary meatus. Press the glans between the thumb and forefinger (Figure 49–3 ■). Replace the foreskin if appropriate. *The external urinary meatus is normally in the center of the glans, without redness or discharge.*

**Abnormal Findings**

- Erythema or discharge indicates inflammatory disease. Further assessment is required.



**Figure 49–3 ■** Inspecting the external urinary meatus of the male.

Inspect the skin on the shaft of the penis. *The skin on the shaft of the penis should be free of redness or lesions.*

- Excoriations or inflammation suggests lice or scabies.

Palpate the shaft of the penis. *The shaft of the penis should not be tender.*

- Induration with tenderness along the ventral surface suggests urethral stricture with inflammation.

Inspect the scrotum. Further assess any swelling in the scrotum using transillumination: Darken the room and place a lighted flashlight against the skin of the scrotum. *The normal scrotum and epididymis appear as dark masses with regular borders.*

- A unilateral or bilateral poorly developed scrotum suggests cryptorchidism (failure of one or both testes to descend into the scrotum).
- Swelling of the scrotum may indicate indirect inguinal hernia, hydrocele (accumulation of fluid in the scrotum), or scrotal edema. Swellings containing serous fluid will transilluminate. Swellings containing blood or tissue will not transilluminate.

Palpate each testis and epididymis. *The testes should not be tender or swollen.*

- Tender, painful scrotal swelling occurs in acute epididymitis, acute orchitis, torsion of the spermatic cord, and strangulated hernia.
- A painless nodule in the testis is associated with testicular cancer.

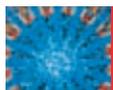
**Prostate Assessment**

The prostate gland is assessed by digital rectal examination (DRE). (See Chapter 25 ∞ for the technique used to palpate the prostate through the rectal wall.)

With a gloved index finger, palpate the posterior rectal wall for the rounded, two-lobed structure of the posterior prostate.

*The prostate is normally nontender, with two lateral lobes that are divided, smooth, and about 2.5 cm long.*

- Enlargement (1-cm protrusion into the rectum) with obliteration of the median sulcus suggests benign prostatic hypertrophy.
- Enlargement with asymmetry and tenderness suggests prostatitis.
- A hard irregular nodule is suspicious of carcinoma.



## ANATOMY, PHYSIOLOGY, AND FUNCTIONS OF THE FEMALE REPRODUCTIVE SYSTEM

The female reproductive system consists of the external genitalia (mons pubis, labia, clitoris, vaginal and urethral openings, and glands) and the internal organs (vagina, cervix, uterus, fallopian tubes, and ovaries). The breasts are a part of

women's reproductive organs. In women, the urethra and urinary meatus are separated from the reproductive organs; however, they are in so close to each other that a health problem with one often affects the other. The location and func-

tion of the female reproductive organs are summarized in Table 49–3.

## The Breasts

The breasts (or mammary glands) are located between the third and seventh ribs on the anterior chest wall. They are supported by the pectoral muscles and are richly supplied with nerves, blood, and lymph (Figure 49–4 ■). A pigmented area called the areola is located slightly below the center of each breast and contains sebaceous glands and a nipple. The nipple is usually protrusive and becomes erect in response to cold and stimulation.

The breasts are made of adipose tissue, fibrous connective tissue, and glandular tissue. Cooper’s ligaments support the

breast and extend from the outer breast tissue to the nipple, dividing the breast into 15 to 25 lobes. Each lobe is made of alveolar glands connected by ducts that open to the nipple.

## The External Genitalia

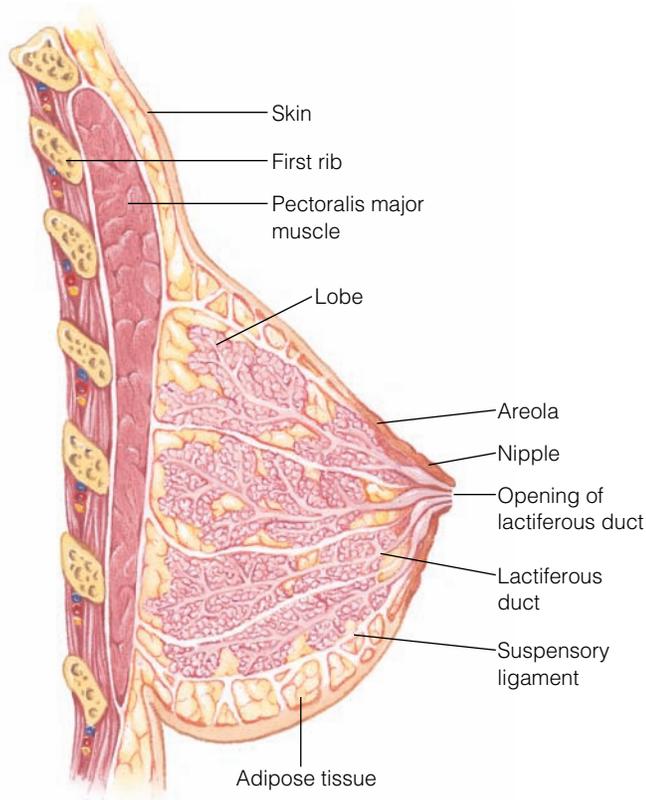
The external genitalia collectively are called the vulva. They include the mons pubis, the labia, the clitoris, the vaginal and urethral openings, and glands (Figure 49–5 ■).

The mons pubis is a pad of adipose (fat) tissue covered with skin. It lies anterior to the symphysis pubis. After puberty, the mons is covered with hair.

The labia are divided into two structures. The labia majora, folds of skin and adipose tissue covered with hair, are outermost; they begin at the base of the mons pubis and end at the

**TABLE 49–3 Location and Function of the Female Reproductive Organs**

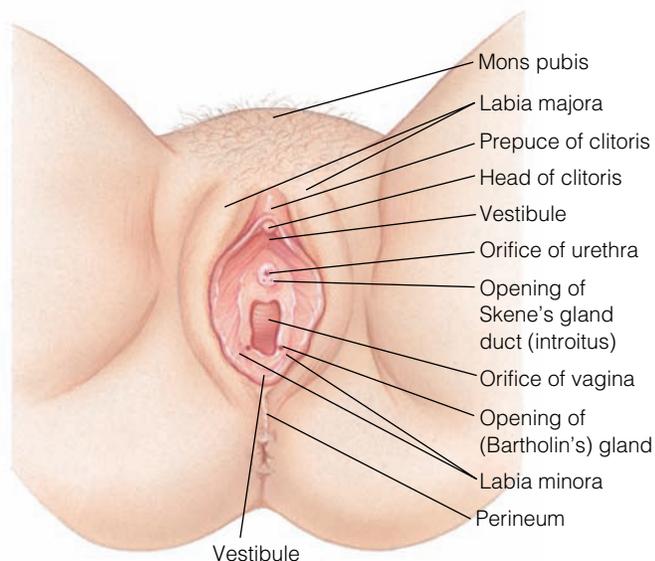
FEMALE REPRODUCTIVE ORGAN	LOCATION	FUNCTION
Mons pubis (mons veneris)	Anterior and superior to the pubis.	Enhances sexual sensations. Protects and cushions pubic symphysis during intercourse.
Labia majora	Extend from mons pubis to perineum.	Protect labia minora, urethral and vaginal openings. Enhance sexual arousal.
Labia minora	Enclosed by the labia majora.	Protect clitoris. Inferiorly, merge to form posterior ring of vaginal introitus (fourchette). Lubricate vulva. Enhance sexual arousal.
Vestibule	Area enclosed by labia minora.	Contains openings for urethra, vagina, Bartholin’s glands, and Skene’s glands.
Bartholin’s (greater vestibular) glands	Posterior on each side of the vaginal orifice. Open onto the sides of the vestibule in the groove between the labia minora and hymen.	Secrete clear, viscid mucus during intercourse.
Skene’s (lesser vestibular, paraurethral) glands	Open onto the vestibule on each side of the urethra.	Drain urethral glands. Produce lubricating mucus.
Clitoris	Small bud of erectile tissue just below the superior joining of the labia minora.	Stimulates and elevates levels of sexual arousal.
Perineum	Skin-covered muscular area between vaginal opening and anus.	Provides support for pelvic organs.
Mammary glands	Contained within breasts. Anterior to pectoral muscles of thorax.	Produce human milk. Play a role in sexual arousal.
Ovaries	Lie on each side of the uterus below and behind the uterine tubes.	Produce and secrete ova. Produce the hormones estrogen and progesterone.
Fallopian tubes (uterine tubes, oviducts)	One tube extends medially from the area of each ovary and empties into the upper portion (fundus) of the uterus.	Transport ova.
Uterus (adnexa of the uterus are composed of the uterine tubes and ovaries)	Anterior to the rectum and posterior/superior to the bladder.	Receives, retains, and nourishes the fertilized ovum. Contracts rhythmically to expel infant. Cyclically sheds lining when ovum is not fertilized.
Cervix	Lower portion of uterus extending into the vagina.	Connects uterine cavity with vagina. Opens to allow passage of menstrual flow and infant.
Vagina	Extends from the external orifice in the vestibule to the cervix.	Receives penis and semen during intercourse. Passageway for menstrual flow and expulsion of infant at birth.



**Figure 49–4** ■ Structure of the female breast.

anus. The labia minora, located between the clitoris and the base of the vagina, are enclosed by the labia majora. They are made of skin, adipose tissue, and some erectile tissues. They are usually light pink and hairless.

The area between the labia is called the vestibule, and contains the openings for the vagina and the urethra as well as the



**Figure 49–5** ■ The external organs of the female reproductive system.

Bartholin's glands. Skene's glands open onto the vestibule on each side of the urethra. Bartholin's and Skene's glands secrete lubricating fluid during the sexual response cycle prior to menopause.

The clitoris is an erectile organ analogous to the penis in the male. It is formed by the joining of the labia minora. Like the penis, it is highly sensitive and distends during sexual arousal.

The vaginal opening, called the introitus, is the opening between the internal and the external genitals. Prior to intercourse or trauma, the introitus is surrounded by a connective tissue membrane called the hymen.

## The Internal Organs

The vagina and cervix, uterus, fallopian tubes, and ovaries are the internal organs of the female reproductive system (Figure 49–6 ■). The ovaries are the primary reproductive organs in women and also produce female sex hormones. The vagina, uterus, and fallopian tubes serve as accessory ducts for the ovaries and a developing fetus.

### The Vagina and Cervix

The vagina is a fibromuscular tube about 3 to 4 inches (8 to 10 cm) in length located posterior to the bladder and urethra and anterior to the rectum. The upper end contains the uterine cervix in an area called the fornix. The walls of the vagina are membranes that form folds, called rugae. These membranes are composed of mucous-secreting stratified squamous epithelial cells. The vagina serves as a route for the excretion of secretions, including menstrual fluid, an organ of sexual response, and as a passageway for the birth of an infant.

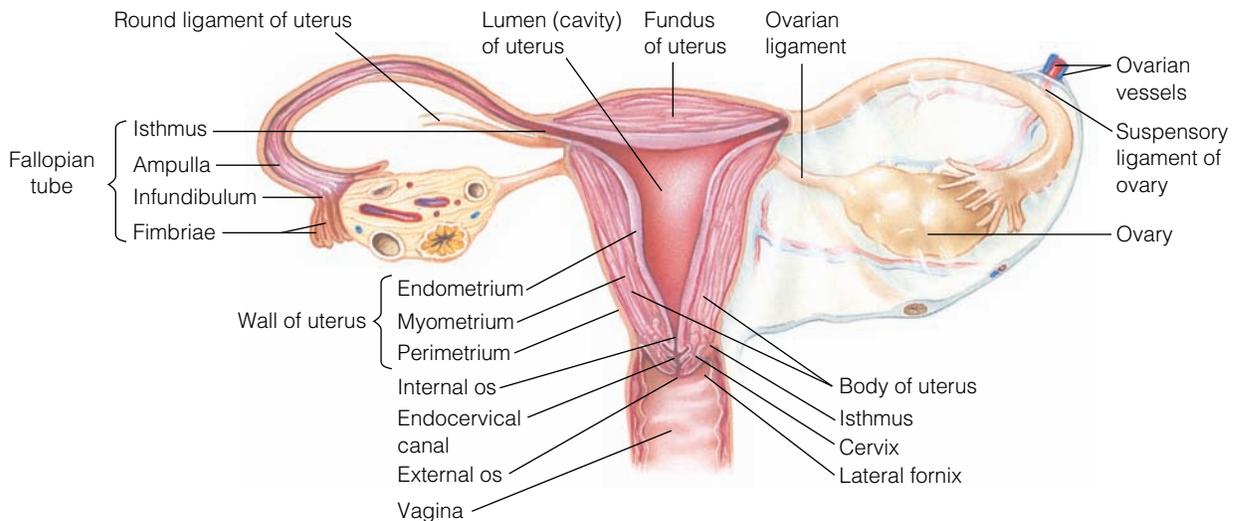
The walls of the vagina are usually moist and maintain a pH ranging from 3.8 to 4.2. This pH is bacteriostatic and is maintained by the action of estrogen and normal vaginal flora. **Estrogen** stimulates the growth of vaginal mucosal cells so that they thicken and have increased glycogen content. The glycogen is fermented to lactic acid by Döderlein's bacilli (lactobacilli that normally inhabit the vagina), slightly acidifying the vaginal fluid.

The cervix projects into the vagina and forms a pathway between the uterus and the vagina. The uterine opening of the cervix is called the internal os; the vaginal opening is called the external os. The space between these openings, the endocervical canal, serves as a route for the discharge of menstrual fluid, the entrance for sperm, and expulsion of the infant during birth. The cervix is a firm structure, protected by mucus that changes consistency and quantity during the menstrual cycle and during pregnancy.

### The Uterus

The uterus is a hollow pear-shaped muscular organ with thick walls located between the bladder and the rectum. It has three parts: the fundus, the body, and the cervix. It is supported in the abdominal cavity by the broad ligaments, the round ligaments, the uterosacral ligaments, and the transverse cervical ligaments. The uterus receives the fertilized ovum and provides a site for growth and development of the fetus.

The uterine wall has three layers. The perimetrium is the outer serous layer that merges with the peritoneum. The my-



**Figure 49–6** ■ The internal organs of the female reproductive system.

ometrium is the middle layer and makes up most of the uterine wall. This layer has muscle fibers that run in various directions, allowing contractions during **menstruation** (the periodic shedding of the uterine lining in a woman of childbearing age who is not pregnant) or childbirth, and expansion as the fetus grows. The endometrium lines the uterus; its outermost layer is shed during menstruation.

### The Fallopian Tubes

The fallopian tubes are thin cylindrical structures about 4 inches (10 cm) long and 2.5 inches (1 cm) in diameter. They are attached to the uterus on one end and are supported by the broad ligaments. The lateral ends of the fallopian tubes are open and made of projections called fimbriae that drape over the ovary. The fimbriae pick up the ovum after it is discharged from the ovary.

The fallopian tubes are made of smooth muscle and are lined with ciliated, mucous-producing epithelial cells. The movement of the cilia and contractions of the smooth muscle move the ovum through the tubes toward the uterus. Fertilization of the ovum by the sperm usually occurs in the outer portion of a fallopian tube.

### The Ovaries

The ovaries in the adult woman are flat, almond-shaped structures located on either side of the uterus below the ends of the fallopian tubes. They are homologous to the male's testes. They are attached to the uterus by a ligament and are also attached to the broad ligament. The ovaries store the female germ cells and produce the female hormones estrogen and progesterone. A woman's total number of ova is present at her birth.

Each ovary contains many small structures called ovarian follicles. Each follicle contains an immature ovum, called an oocyte. Each month, several follicles are stimulated by follicle-stimulating hormone (FSH) and luteinizing hormone (LH) to mature. The developing follicles are surrounded by layers of follicle cells, with the mature follicles called graafian follicles. The graafian follicles produce estrogen, which stimulates the devel-

opment of endometrium. Each month in the menstruating woman, one or two of the mature follicles eject an oocyte in a process called ovulation. The ruptured follicle then becomes a structure called the corpus luteum. The corpus luteum produces both estrogen and progesterone to support the endometrium until conception occurs or the cycle begins again. The corpus luteum slowly degenerates, leaving a scar on the surface of the ovary.

## Female Sex Hormones

The ovaries produce estrogens, progesterone, and androgens in a cyclic pattern. Estrogens are steroid hormones that occur naturally in three forms: estrone ( $E_1$ ), estradiol ( $E_2$ ), and estriol ( $E_3$ ). Estradiol is the most potent and is the form secreted in greatest amount by the ovaries. Although estrogens are secreted throughout the menstrual cycle, they are at a higher level during certain phases of the cycle, as discussed shortly.

Estrogens are essential for the development and maintenance of secondary sex characteristics; and in conjunction with other hormones, they stimulate the female reproductive organs to prepare for growth of a fetus. Estrogens are responsible for the normal structure of skin and blood vessels. They also decrease the rate of bone resorption, promote increased high-density lipoproteins, reduce cholesterol levels, and enhance the clotting of blood. Estrogens also promote the retention of sodium and water.

Menopause, a normal physiologic process, occurs as a result of the gradual decrease and final cessation of estrogen production by the ovaries. Menstruation ceases and the tissues that had been supported by estrogen change. Long-term effects of estrogen deprivation increase the risk of osteoporosis and cardiovascular disease. Menopause is discussed fully in Chapter 51 ∞.

**Progesterone** primarily affects the development of breast glandular tissue and the endometrium. During pregnancy, progesterone relaxes smooth muscle to decrease uterine contractions. It also increases body temperature. Androgens are responsible for normal hair growth patterns at puberty and may also have metabolic effects.

## Oogenesis and the Ovarian Cycle

At her birth, all of a woman's ova are present as primary oocytes in ovarian follicles. Each month from puberty until menopause, the remaining events of oogenesis (the production of ova) occur. Collectively, these events are known as the **ovarian cycle**.

The ovarian cycle has three consecutive phases that occur cyclically each 28 days (although the cycle normally may be longer or shorter), as follows:

- The follicular phase lasts from the 1st to the 10th day of the cycle.
- The ovulatory phase lasts from the 11th to the 14th day of the cycle and ends with ovulation.
- The luteal phase lasts from the 14th to the 28th day.

During the follicular phase, the follicle develops and the oocyte matures. These processes are controlled by the interaction of FSH and LH. On day 1 of the cycle, gonadotropin-releasing hormone (GnRH) from the hypothalamus increases and stimulates increased production of FSH and LH by the anterior pituitary. FSH and LH stimulate follicular growth, and the oocyte increases in size. The structure, now called the primary follicle, becomes a multicellular mass surrounded by a fibrous capsule, the theca folliculi. As the follicle continues to increase in size, estrogen is produced and a fluid-filled space (the antrum) forms within the follicle. The oocyte is enclosed by a membrane, the zona pellucida. By about day 10, the follicle is a mature graafian follicle and bulges out from the surface of the ovary. There are always follicles at different stages of development in each ovary, but usually only one follicle becomes dominant and matures to ovulation, while the others degenerate.

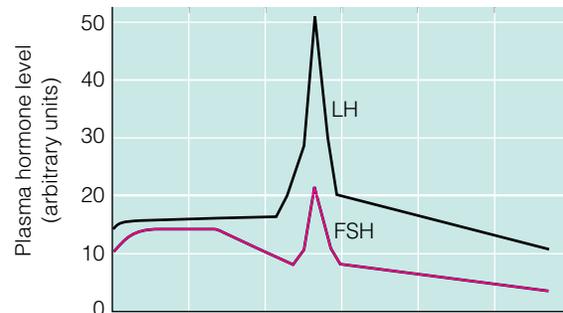
The ovulatory phase begins when estrogen levels reach a level high enough to stimulate the anterior pituitary, and a surge of LH is produced. The LH stimulates meiosis in the developing oocyte, and its first meiotic division occurs. The LH also stimulates enzymes that act on the bulging ovarian wall, causing it to rupture and discharge the antrum fluid and the oocyte. The oocyte is expelled from the mature ovarian follicle in the process called ovulation.

During the luteal phase, the surge in LH also stimulates the ruptured follicle to change into a corpus luteum and then stimulates the corpus luteum to begin immediately producing progesterone and estrogen. The increase of progesterone and estrogen in the blood has a negative feedback effect on the production of LH, inhibiting the further growth and development of other follicles.

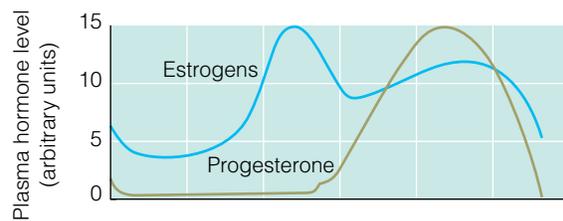
If pregnancy does not occur, the corpus luteum begins to degenerate, and its hormone production ceases. The declining production of progesterone and estrogen at the end of the cycle allows the secretion of LH and FSH to increase, and a new cycle begins. The ovarian cycle is compared to the menstrual cycle in Figure 49–7 ■.

## The Menstrual Cycle

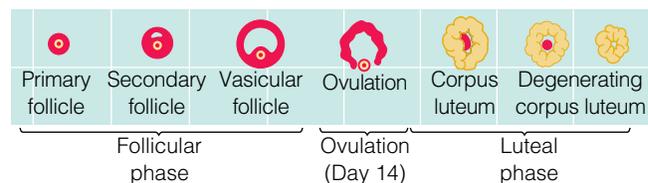
The endometrium of the uterus responds to changes in estrogen and progesterone during the ovarian cycle to prepare for implantation of the fertilized embryo. The endometrium is recep-



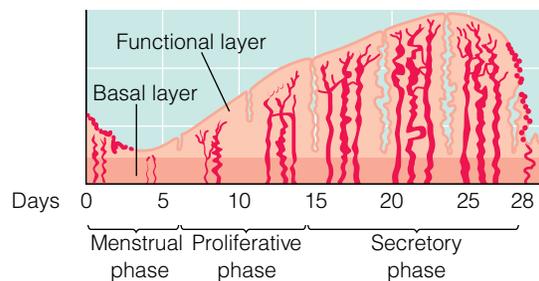
A Fluctuation of gonadotropin levels



B Fluctuation of ovarian hormone levels



C Ovarian cycle



D Menstrual cycle

**Figure 49–7 ■** Comparison of the ovarian and menstrual cycles. *A*, Fluctuating levels of follicle-stimulating hormone (FSH) and luteinizing hormone (LH), the pituitary gonadotropins regulating the ovarian cycle. *B*, Fluctuating levels of ovarian hormones that cause endometrial changes during the menstrual cycle. *C*, Changes in the ovarian follicles during the 28-day menstrual cycle. *D*, Corresponding changes in the endometrium during the menstrual cycle.

tive to implantation of the embryo for only a brief period each month, coinciding with the time when the embryo would normally reach the uterus from the uterine tube (usually 7 days).

The **menstrual cycle** begins with the menstrual phase, lasting from days 1 to 5. The inner endometrial (functionalis) layer detaches and is expelled as menstrual fluid (fluid and blood) for 3 to 5 days. As the maturing follicle begins to produce estrogen

(days 6 to 14), the proliferative phase begins. In response, the functionalis layer is repaired and thickens, while spiral arteries increase in number and tubular glands form. Cervical mucus changes to a thin, crystalline substance, forming channels to help the sperm move up into the uterus.

The final phase, lasting from days 14 to 28, is the secretory phase. As the corpus luteum produces progesterone, the rising levels act on the endometrium, causing increased vascularity, changing the inner layer to secretory mucosa, stimulating the secretion of glycogen into the uterine cavity, and causing the cervical mucus again to become thick and block the internal os. If fertilization does not occur, hormone levels fall. Spasm of the spiral arteries causes hypoxia of the endometrial cells, which begin to degenerate and slough off. As with the ovarian cycle, the process begins again with the sloughing of the functionalis layer.

## ASSESSING THE FEMALE REPRODUCTIVE SYSTEM

The structures and functions of the female reproductive system are assessed by findings from diagnostic tests, a health assessment interview to collect subjective data, and a physical assessment to collect objective data. Information from the health assessment interview is used to individualize the questions that are asked; for example, the postmenopausal woman would not be asked specific questions about her menstrual cycle, but it would be important to ask about vaginal dryness. Sample documentation of an assessment of the female reproductive system is included in the box below.

### Diagnostic Tests

The results of diagnostic tests of the structures and functions of the female reproductive system are used to monitor the health of female reproductive structures; to support the diagnosis of a specific sexual problem, injury, or disease; to provide information to identify or modify the appropriate medications or treatments used to treat the disease; and to help nurses monitor the woman's responses to treatment and nursing care interventions. Diagnostic tests to assess the female reproductive system are described in the Diagnostic Tests table on pages 1756–1758 and summarized in the following bulleted list. More information is included in the discussion of specific health problems or diseases in Chapter 51 ∞.

#### SAMPLE DOCUMENTATION

##### Assessment of the Female Reproductive System

*32-year-old female, first visit to health department for problems with "burning and pain in my crotch area" and "It really hurts to urinate." Also states she had unprotected sex on a date about 2 weeks ago. Oral temperature 101°F. Vaginal examination findings of vesicles and red ulcerations on labia majora and vaginal mucosa. Inguinal lymph nodes enlarged and tender to palpation. Culture of ulcerations taken and specimen sent to the laboratory for analysis.*

- Blood tests are used to diagnose a variety of hormone changes and sexually transmitted infections. These tests are discussed in Chapters 51 and 52 ∞.
- Sexually transmitted infections are often diagnosed with cultures and smears of a discharge or mucous membranes.
- A mammogram is used to detect breast tumors, often followed by a breast biopsy for a definitive diagnosis. The type of biopsy conducted depends on many factors, including the size, location, appearance, and characteristics of the breast abnormality.
- The Papanicolaou (Pap) smear and the HPV DNA test are conducted to diagnose premalignant and malignant conditions of the cervix, to monitor positive HPV tests, and may also be used to assess the effects of hormone replacement, identify other infective organisms, and evaluate response to therapy.
- Space-occupying lesions and abnormalities of the vagina, cervix, or uterus may be evaluated with ultrasound, a hysterosalpingogram, a colposcopy, a cervical biopsy, a laparoscopy, and/or an endometrial biopsy.

Regardless of the type of diagnostic test, the nurse is responsible for explaining the procedure and any special preparation needed, for assessing for any medication use that might affect the outcome of the tests, for supporting the woman during the examination as necessary, for documenting the procedures as appropriate, and for monitoring the results of the tests.

### Genetic Considerations

When conducting a health assessment interview and a physical assessment, it is important for the nurse to consider genetic influences on health of the adult. Several diseases of the female reproductive system have a genetic component. During the health assessment interview, it is especially important to ask about a family history of ovarian or breast cancer. During the physical assessment, assess for any manifestations that might indicate a genetic disorder (see the box below). If data are found to indicate genetic risk factors or alterations, ask about genetic testing and refer for appropriate genetic counseling and evaluation. Chapter 8 ∞ provides further information about genetics in medical-surgical nursing.



#### GENETIC CONSIDERATIONS Female Reproductive System Disorders

- There is a clear genetic link for some of the cases of both breast and ovarian cancer. Two breast cancer susceptibility genes have been identified: BRCA1 and BRCA2. If a woman has either of these genes, she is at increased risk for having breast or ovarian cancer at some point in her life.
- A family history of endometrial, colon, or breast cancer increases a woman's risk for endometrial cancer.
- Turner syndrome is a disorder in a female caused by complete or partial absence of one of the two X chromosomes. The disorder is characterized by short stature and the lack of sexual development at puberty. Other physical effects include a webbed neck, heart defects, and kidney abnormalities.


**DIAGNOSTIC TESTS of the Female Reproductive System**
**SCREENING TESTS, SMEARS, AND CULTURES**

**NAME OF TEST** Papanicolaou smear (Pap test)

**PURPOSE AND DESCRIPTION** Conducted to diagnose malignant and premalignant lesions of the cervix; assess the effects of hormone replacement; identify viral, bacterial, fungal, and parasitic conditions; and to evaluate response to chemotherapy or radiation therapy to the cervix. Cells are obtained during a pelvic examination, with a wooden spatula, a cotton swab, or an endocervical brush. The sample

collected may be smeared on a glass slide or put into a special liquid preservative and then the cells in suspension are processed onto a slide. The cells are then stained and examined.

**RELATED NURSING CARE** Explain that the test should be done during a time when the woman is not menstruating, and that she should not have intercourse, douche, or use vaginal medications for 36 hours prior to the examination. Ask the woman to void prior to the examination.

**NAME OF TEST** HPV test  
(HPV DNA test, genital human papilloma test)

**PURPOSE AND DESCRIPTION** Routinely used as a screening tool for human papillomavirus (HPV) in women after the age of 30. Conducted in conjunction with a pelvic examination and Pap smear. A finding of “low-grade changes” on the Pap smear with HPV indicates the likely presence of HPV and the need for further testing. A positive test for HPV indicates

the presence of a high risk for cancer type of HPV, but does not specify which type is present.

**RELATED NURSING CARE** Explain that the test should be done during a time when the woman is not menstruating, and that she should not have intercourse, douche, or use vaginal medications for 36 hours prior to the examination. Ask the woman to void prior to the examination.

**NAME OF TEST** Chlamydia

**PURPOSE AND DESCRIPTION** Performed to screen for or diagnose chlamydial infections. A swab of cells from the infected area is taken and either smeared on a slide and analyzed or cultured. Although usually taken from the urethra, vagina, or cervix, cultures may also be taken from the throat and rectum.

**RELATED NURSING CARE** Assess if the woman is pregnant or has enlargement of inguinal lymph nodes. Withhold antibiotics (if prescribed) until after obtaining the specimen. Instruct not to douche before the examination. If the test is positive, request the names of all sexual partners and emphasize need for treatment to eradicate the infection.

**NAME OF TEST** Gonorrhea culture

**PURPOSE AND DESCRIPTION** A culture is performed to evaluate for gonorrhea. A swab is used to collect a sample of discharge from the infected area (cervix, urethra, anus, or throat), smeared on a slide, and a Gram stain is conducted to identify the organism (*N. gonorrhoeae*). A urine sample is used in some tests.

**RELATED NURSING CARE** No special preparation is needed. Instruct not to douche before the examination. If the test is positive, request the names of all sexual partners and emphasize need for treatment to eradicate the infection.

**NAME OF TEST** Trichomonas, Bacteria, Candidae (yeast)

**PURPOSE AND DESCRIPTION** A culture is performed to identify vaginal organisms or blood cells. A specimen of vaginal discharge is obtained with a swab, placed in solution, and

examined under the microscope immediately after it is collected (referred to as a wet-mount).

**RELATED NURSING CARE** Request not to douche before the examination.

**NAME OF TEST**

- Venereal Disease Research Laboratory (VDRL)
- Rapid plasma reagin (RPR)
- Fluorescent treponemal antibody absorption (FTA-ABS)

**PURPOSE AND DESCRIPTION** These blood tests are conducted to screen for syphilis. Positive findings can be made within 1 to 2 weeks after primary lesion appears or 1 to 4

months after the initial infection. The FTA-ABS is considered the most accurate, and is often used if findings from the VDRL or RPR are questionable.

**RELATED NURSING CARE** No special preparation is needed. If test is positive, request the names of all sexual partners and emphasize need for treatment to eradicate the infection.

**NAME OF TEST** Syphilis (dark-field examination)

**PURPOSE AND DESCRIPTION** A specimen is obtained from a lesion believed to be caused by syphilis (*Treponema pallidum*) and examined under the microscope.

**RELATED NURSING CARE** No special preparation is needed. If test is positive, request the names of all sexual partners and emphasize need for treatment to eradicate the infection.

**BREAST EXAMINATIONS**

**NAME OF TEST** Mammogram

**PURPOSE AND DESCRIPTION** Used to detect tumors in the breast. Breasts are flattened in the mammography machine and low-dose x-rays are taken.

**RELATED NURSING CARE** Ask the woman not to apply body powder or underarm deodorant prior to the test.


**DIAGNOSTIC TESTS of the Female Reproductive System (continued)**

<p><b>NAME OF TEST</b> Breast ultrasound</p> <p><b>PURPOSE AND DESCRIPTION</b> This examination uses high-frequency sound waves passing through tissues to detect</p>	<p>masses in the breast. May be performed if lesions are identified in a mammogram.</p> <p><b>RELATED NURSING CARE</b> No special preparation is needed.</p>
<p><b>NAME OF TEST</b> Breast biopsy</p> <ul style="list-style-type: none"> <li>■ Fine-needle aspiration</li> <li>■ Core needle biopsy</li> <li>■ Vacuum-assisted mammatome</li> <li>■ Large core surgical biopsy</li> <li>■ Open surgical biopsy</li> </ul> <p><b>PURPOSE AND DESCRIPTION</b></p> <ul style="list-style-type: none"> <li>■ A fine-needle aspiration is conducted to withdraw fluid from cysts, and may be used to sample cells from masses in the breast. A 22- to 25-gauge needle is used to collect five to six samples of fluid or cells.</li> <li>■ A core needle biopsy is conducted to obtain a sample of tissue from a solid mass or calcium deposits in the breast. A 10-, 11-, or 12-gauge needle is used to collect five to six tissue samples.</li> <li>■ A vacuum-assisted mammatome is primarily used to evaluate calcifications. An 11- or 14-gauge needle is inserted through a small (1/4-inch) incision and 8 to 10 samples are removed.</li> <li>■ A large core surgical biopsy is performed to evaluate breast masses or calcification identified with a mammogram but</li> </ul>	<p>nonpalpable. An incision is made and a 5- to 20-mm cylinder of breast tissue (about the size of a wine cork) is removed.</p> <ul style="list-style-type: none"> <li>■ An open surgical biopsy is performed to evaluate breast masses, hard-to-reach lesions, multiple lesions, and masses with calcifications. A 1.5- to 2-inch incision is made and a golf ball size (or larger) area of tissue is removed.</li> </ul> <p><b>RELATED NURSING CARE</b> For all types, wearing a bra, applying ice packs, and mild analgesics decrease discomfort postprocedure.</p> <ul style="list-style-type: none"> <li>■ Explain that, depending on the physician, some procedures may be performed with or without a local anesthetic.</li> <li>■ Explain that a local anesthetic is used, but no stitches are required for a core needle biopsy or mammatome.</li> <li>■ Explain that a local anesthetic will be administered and stitches will be used to close the incision for a large-core biopsy.</li> <li>■ Explain that a general anesthetic is usually used and that the incision will require stitches and leave a scar for an open surgical biopsy.</li> </ul>
<b>TESTS OF THE INTERNAL REPRODUCTIVE SYSTEM</b>	
<p><b>NAME OF TEST</b> Ultrasound (abdominal, vaginal)</p> <p><b>PURPOSE AND DESCRIPTION</b> Used to detect the presence of space-occupying lesions, such as fibroid tumors, cysts, abscesses, and neoplasms. The abdomen is coated with transducing gel, and a graphic visualization is made. For a vaginal ultrasound, a transducer is covered with a condom or</p>	<p>vinyl glove coated with transducer gel and then introduced into the vagina.</p> <p><b>RELATED NURSING CARE</b> Explain need to increase intake of fluids and tell the woman not to void until the test is completed to ensure a full bladder (this lifts the pelvic organs higher in the abdomen and improves visualization).</p>
<p><b>NAME OF TEST</b> Hysterosalpingogram</p> <p><b>PURPOSE AND DESCRIPTION</b> Used to diagnose causes of infertility and abnormalities of the uterus or fallopian tubes. A contrast medium is instilled through the cervix, through the uterus, and out the fallopian tubes while x-rays are taken.</p>	<p><b>RELATED NURSING CARE</b> Assess for allergy to seafood (iodine) or previous contrast media. Explain that the procedure is briefly painful.</p>
<p><b>NAME OF TEST</b> Colposcopy</p> <p><b>PURPOSE AND DESCRIPTION</b> Conducted to further study abnormal Pap tests, and as screening for women exposed to</p>	<p>intrauterine DES. A binocular microscope is used to directly visualize the cervix.</p> <p><b>RELATED NURSING CARE</b> No special preparation is needed.</p>
<p><b>NAME OF TEST</b> Conization, loop electrosurgical excision of transformation zone (LEETZ), loop electrosurgical excision procedure (LEEP)</p> <p><b>PURPOSE AND DESCRIPTION</b> A conization, LEETZ, or LEEP is performed to remove cervical tissue for evaluation (most often for cervical cancer). A cone-shaped area of tissue surrounding the cervical os is removed.</p>	<p><b>RELATED NURSING CARE</b> Explain that the procedure requires general anesthesia. Postoperative self-care includes rest for 2 to 3 days. Explain that minor vaginal bleeding and discharge are expected for several days after the procedures; perineal pads (not tampons) should be used. Sexual intercourse should be avoided until discharge stops. Notify physician of increased bleeding or signs of infection (pain, foul-smelling discharge, fever) occur.</p>
<p><b>NAME OF TEST</b> Endometrial biopsy</p> <p><b>PURPOSE AND DESCRIPTION</b> Performed to identify endometrial hyperplasia or endometrial cancer. The cervix is cleaned and tissue is obtained transcervically from the endometrium either by curettage or vacuum aspiration.</p>	<p><b>RELATED NURSING CARE</b> Explain that the procedure is briefly painful, and causes vaginal bleeding. Advise to use perineal pads, and avoid tampons and sexual intercourse while bleeding.</p>

(continued)

## DIAGNOSTIC TESTS of the Female Reproductive System (continued)

### NAME OF TEST Cervical biopsy

**PURPOSE AND DESCRIPTION** Performed for women when Pap test results indicate possible cervical cancer or cervical intraepithelial neoplasia (CIN) and for screening for women at high risk for vaginal and cervical cancers from intrauterine exposure to DES. Cervix is cleaned and a sample of tissue is taken for analysis.

**RELATED NURSING CARE** Explain that minor vaginal bleeding and discharge are expected for several days after the procedures; perineal pads (not tampons) should be used. Sexual intercourse should be avoided until discharge stops. Notify physician of increased bleeding or signs of infection (pain, foul-smelling discharge, fever) occur.

### NAME OF TEST Laparoscopy

**PURPOSE AND DESCRIPTION** This examination is conducted to visualize the organs in the peritoneal cavity (uterus, fallopian tubes, ovaries); to withdraw fluid for analysis; and to perform a tubal ligation. A fiber-optic scope is inserted through small abdominal incisions and carbon dioxide is inserted into the peritoneal cavity for better visualization.

**RELATED NURSING CARE** Ask the woman to void prior to the examination and explain that a general anesthetic will be used. Explain that shoulder pain is common after the procedure (referred pain from the retained carbon dioxide gas); that some vaginal bleeding may occur and the woman should use a perineal pad; and to report excess bleeding, pain, or signs of infection to the physician.

## Health Assessment Interview

A health assessment interview to determine problems with the female reproductive system may be conducted during a health screening, may focus on a chief complaint (such as severe menstrual cramping), or may be part of a total health assessment. Women may be embarrassed to discuss health problems or concerns involving their reproductive organs; it is important for the nurse to ask questions in a nonthreatening, matter-of-fact manner. Consider the psychologic, social, and cultural factors that affect sexuality and sexual activity. Use words that the woman can understand, and do not be embarrassed or offended by the words she uses. The woman may perceive the interview as less threatening if the discussion begins with more general questions and then progresses to specific questions, and if questions are asked in a way that gives the woman permission to describe behaviors and manifestations. For example, first ask a female client about menstrual and childbirth histories before asking questions about sexually transmitted infections.

The focused interview for the female reproductive system is usually extensive. However, the questions may in many instances be tailored to the specific health problem of the woman. As with the assessment of other body systems, analyze and document the onset of the problem, its duration, frequency, precipitating and relieving factors, any associated symptoms, treatment, self-care, and outcome. For example, ask the woman:

- Have you noticed vaginal bleeding after intercourse?
- Does over-the-counter medication relieve the vaginal itching and discharge?
- Have you had any fever or abdominal pain with this vaginal infection?

Ask about menstrual history, obstetric history, use of contraceptives, sexual history, use of medications, and reproductive system examinations. Also assess the use of condoms during intercourse; unprotected sexual intercourse increases the risk of sexually transmitted infections, including HIV infection. Also ask about smoking; a history of smoking increases the risk of

circulatory problems in the woman taking oral contraceptives. Smoking also increases the risk for cancer of the cervix.

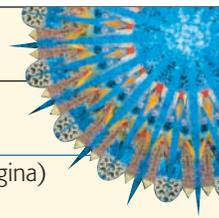
Chronic illnesses may affect the function of the female reproductive system. Diabetes mellitus increases the risk of vaginal infections and vaginal dryness, both of which interfere with sexual pleasure. Chronic heavy menstrual flow may result in anemia. Thyroid and adrenal disorders may affect secondary sex characteristics, the menstrual cycle, and the ability to become pregnant.

Obtaining any family history of cancer is important. The risk for endometrial cancer is higher in women with a family history of endometrial, breast, or colon cancer; the risk for ovarian cancer is higher in women with a family history of ovarian or breast cancer; and the risk for breast cancer is higher in women with a family history of breast cancer. Exposure to DES *in utero* increases the risk of cancer of the cervix and vagina. Exposure to asbestos poses a risk of cancer of the ovary. The risk for breast cancer is also greater if the woman has a history of fibrocystic disease.

Carefully explore any history of vaginal bleeding and vaginal discharge. Ask about the onset of vaginal bleeding, any related factors, the color (pink, red, dark red, brown), the character (thin, watery, presence of mucus, size and number of clots), the amount (spotting, how many pads or tampons in a specific amount of time), and relationship to menstrual cycle. Regarding vaginal discharge, ask about the onset, color (white, green, gray), character (thin, thick, curdlike), odor, itching, and rash.

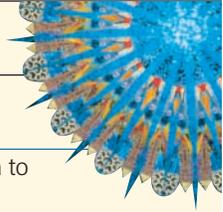
Questions about sexuality may include sexual preference, number of sexual partners; history of **anorgasmia** (absence of orgasm), **dyspareunia** (painful intercourse), or other problems with intercourse; history of sexual trauma; use of condoms or other contraceptives; and current level of sexual satisfaction.

Interview questions categorized by functional health patterns are listed in the Functional Health Pattern Interview table on the next page.

**FUNCTIONAL HEALTH PATTERN INTERVIEW The Female Reproductive System**

**Functional Health Pattern**
**Interview Questions and Leading Statements**

<b>Health Perception-Health Management</b>	<ul style="list-style-type: none"> <li>■ Have you ever had problems with your reproductive organs (ovaries, tubes, uterus, vagina) or with menstruation or menopause? Explain. If so, how was this problem treated?</li> <li>■ Do you routinely take any prescribed or herbal medications for symptoms of menopause? If so, what and when do you take it?</li> <li>■ Did you ever take hormone replacement therapy for menopausal symptoms?</li> <li>■ Do you practice breast self-examination? When and how often do you do this?</li> <li>■ Have you noticed any lumps in your breasts or discharge from your nipples? Describe, if so.</li> <li>■ Have you ever had a breast examination or mammogram? When was your last one? How often do you have these?</li> <li>■ When was your last gynecologic examination? Pap smear? How often do you have these done?</li> <li>■ Do you use birth control? If so, what do you use?</li> <li>■ What do you do to provide self-care if you have mood swings or menstrual cramps?</li> <li>■ Have you ever had a sexually transmitted infection or an infection of the reproductive organs? What was it? How was it treated?</li> <li>■ Do you use douches or vaginal sprays? If so, what type and how often?</li> <li>■ Do you smoke? If so, how much and for how long?</li> </ul>
<b>Nutritional-Metabolic</b>	<ul style="list-style-type: none"> <li>■ Do you notice a change in your appetite right before your menstrual period?</li> <li>■ Have you gained weight recently? If so, why do think this happened?</li> <li>■ Describe your usual food intake for a 24-hour period.</li> </ul>
<b>Elimination</b>	<ul style="list-style-type: none"> <li>■ When was your last menstrual period?</li> <li>■ At what age did you start/end having menstrual periods?</li> <li>■ Describe the length, amount of flow, and clotting with your menstrual periods. Do you ever have bleeding between your menstrual periods? If so, describe the type and amount.</li> <li>■ Describe any unusual vaginal discharge you have had (color, consistency, odor, itching, or rash).</li> <li>■ Have you noticed any changes in urination (frequency, urgency, burning)?</li> <li>■ Have you noticed changes in bowel elimination during your menstrual periods?</li> </ul>
<b>Activity-Exercise</b>	<ul style="list-style-type: none"> <li>■ Describe your usual activities of daily living.</li> <li>■ Have you noticed any change in activity or energy during your menstrual period?</li> <li>■ Have you noticed any change in activity or energy since menopause (if applicable)? If so, how?</li> </ul>
<b>Sleep-Rest</b>	<ul style="list-style-type: none"> <li>■ How long do you sleep at night?</li> <li>■ Do night sweats wake you?</li> <li>■ Do menstrual cramps ever wake you at night?</li> </ul>
<b>Cognitive-Perceptual</b>	<ul style="list-style-type: none"> <li>■ Do you have pain or other symptoms (such as headache, mood swings, irritability, bloating, constipation, diarrhea, and/or breast tenderness) before your menstrual period? Describe. What do you do about this?</li> <li>■ Do you have cramping before or during your menstrual period? Describe the type of cramping, how long it lasts, and what you do to be more comfortable.</li> <li>■ Do you ever have vaginal itching, pain, burning, or dryness? If so, is it affected by sexual intercourse? Does dryness interfere with intercourse?</li> </ul>
<b>Self-Perception-Self-Concept</b>	<ul style="list-style-type: none"> <li>■ Has this problem affected how you feel about yourself as a woman?</li> <li>■ Do you believe your needs for intimacy and affection are being met?</li> </ul>
<b>Role-Relationships</b>	<ul style="list-style-type: none"> <li>■ How has having this condition affected your relationships with others?</li> <li>■ Has having this condition interfered with your ability to work? Explain.</li> <li>■ Has anyone in your family had problems with breast or ovarian cancer? Explain.</li> </ul>
<b>Sexuality-Reproductive</b>	<ul style="list-style-type: none"> <li>■ Are you currently in a sexual relationship? If so, has this condition interfered with your usual sexual activity? How long have you been with your current partner? Have you had any other partners during this time?</li> <li>■ What is your sexual preference?</li> <li>■ Has having this problem affected your relationship with your spouse or sexual partner?</li> <li>■ Have you ever been pregnant? How many times? Have you ever had a miscarriage?</li> <li>■ Do you practice birth control? If so, what do you use?</li> <li>■ Do you ensure that your partner of the opposite gender uses a condom every time you have intercourse?</li> <li>■ Do you use a vaginal condom?</li> </ul>

(continued)

FUNCTIONAL HEALTH PATTERN INTERVIEW **The Female Reproductive System (continued)****Functional Health Pattern****Interview Questions and Leading Statements**

<b>Coping-Stress-Tolerance</b>	<ul style="list-style-type: none"> <li>■ Has having this condition created stress for you? If so, does your health problem seem to be more difficult when you are stressed?</li> <li>■ Have you experienced any kind of stress that makes the condition worse? Explain.</li> <li>■ Describe what you do when you feel stressed.</li> </ul>
<b>Value-Belief</b>	<ul style="list-style-type: none"> <li>■ Describe how specific relationships or activities help you cope with this problem.</li> <li>■ Describe specific cultural beliefs or practices that affect how you care for and feel about this problem.</li> <li>■ Are there any specific treatments that you would not use to treat this problem?</li> </ul>

## Physical Assessment

Physical assessment of the female reproductive system usually is conducted as part of a scheduled screening (e.g., for an annual Pap smear) or for a specific reproductive health problem. If conducted as part of a total physical assessment, this is usually the final system to be assessed. The nurse must feel comfortable with the examination of clients of the opposite gender; if either the nurse or the client is not comfortable, a nurse of the same gender should be asked to conduct this part of the assessment.

The female reproductive system is assessed by inspection and palpation. Ask the woman to void before having the examination. Prior to the examination, collect all necessary equipment and explain the techniques to the woman to decrease anxiety. Put on disposable gloves before beginning the examination and wear them throughout the examination. Ask the woman to remove her clothing and put on a gown. Ensure that the examining room is private and warm.

The female reproductive system is assessed by inspection and palpation. Explain the procedures for the examination thoroughly and in a matter-of-fact way to decrease anxiety and embarrass-

ment. If the woman is unfamiliar with her reproductive organs, charts may be used to demonstrate the parts that will be examined. Carefully explain the procedure for the examination, and show the speculum to the woman. The assessment may be done with the woman in the sitting or supine position to examine the breasts and in the lithotomy position to assess the external genitalia and internal organs. Expose only those body parts being examined to preserve modesty. Normal age-related findings for the older woman are summarized in Table 49–4.

The examination usually begins with examination of the breasts with the woman in the sitting and supine positions. The nurse then helps the woman move to the lithotomy position on the examining table, with the feet in the stirrups and the buttocks even with the foot of the table. Older or frail women may not be able to tolerate this position. In this case, the woman is examined in the supine position. Although the entire examination is described here, the internal examination is conducted only by a nurse with advanced practice in the procedure. However, nurses are often asked to assist with the examination and should be able to explain the examination to a woman.

**TABLE 49–4 Age-Related Changes in the Female Reproductive System**

**AGE-RELATED CHANGE****SIGNIFICANCE****Breasts**

- Atrophy, with sagging of breast tissue
- Linear strands may appear from shrinkage and fibrotic changes

Although aging does not cause breast cancer, the incidence rises in older women; age-related changes may make finding tumors more difficult.

**External Genitalia**

- Labia flatten, and vulvar adipose tissue and hair decrease.
- ↓ collagen and adipose tissues in the vaginal canal, resulting in loss of rugae, shortening and narrowing of vaginal canal.
- ↓ vaginal lubrication, epithelium becomes thinner and avascular.
- More alkaline pH of vagina.
- Cervix becomes smaller.

Vagina is more easily irritated, increasing the risk of vaginal infections. Lubricants are necessary for comfortable intercourse.

**Internal Organs**

- Uterus shrinks.
- Fallopian tubes shrink and shorten.
- Ovaries are smaller and thicker.
- With menopause, hormone production of estrogen decreases.
- Loss of estrogen may cause pelvic floor muscles to weaken.
- Loss of estrogen causes changes throughout the body, including loss of skin tone (wrinkling) and growth of facial hair.

With the completion of menopause, the menstrual cycles end and the woman is infertile. Weakening of the pelvic floor muscles may contribute to involuntary incontinence with increased intra-abdominal pressure (as with coughing and sneezing). Skin is dry and thin.

## FEMALE REPRODUCTIVE SYSTEM ASSESSMENTS

### Technique/Normal Findings

### Abnormal Findings

#### Breast Assessment

Inspect both breasts simultaneously with the woman seated in the following positions: arms at sides, arms overhead, hands pressed on hips, leaning forward. Inspect breast size, symmetry, contour, skin color, texture, venous patterns, and lesions. Lift the breasts, and inspect the lower and lateral aspects. *Breasts normally vary in size and shape, and one breast may normally be larger than the other. Color should be consistent with the skin tone and texture smooth. There should be no redness, swelling, prominent veins, or lesions.*

**Inspect the areolae and nipples.** *The color of the areolae should be consistent with the woman's skin color (ranging from dark pink to dark brown), and Montgomery tubercles may be present. The nipples should be equal bilaterally in size, centrally located in each breast, and free of lesions or discharge. Nipples are usually everted, but may normally be inverted or flat.*

**Palpate both breasts, axillae, and supraclavicular areas.**

Figure 49–8 ■ illustrates a possible pattern for breast palpation. Various palpation patterns may be used as long as every part of each breast is palpated, including the axillary tail (also called tail of Spence), which is the breast tissue that extends from the upper outer quadrant toward and into the axillae. Ask the woman to assume a supine position with a small pillow under the shoulder and the arm over the head, and repeat the systematic palpation sequence. Describe identified masses by location, size, shape, consistency, tenderness, mobility, and delineation of borders. *Breasts should feel smooth, firm, and elastic, without palpable masses. Prior to the menstrual cycle, there may be increased nodularity and tenderness.*

- Retractions, dimpling, and abnormal contours suggest benign lesions, but may also suggest malignancy.
- Thickened, dimpled skin with enlarged pores (called peau d'orange, orange peel, or pig skin) and unilateral venous patterns are also associated with malignancy.
- Redness may be seen with infection or carcinoma.

- Peau d'orange may be noted first in the areola.
- Recent unilateral inversion of the nipple or asymmetry in the directions in which the nipples point suggests cancer.

- Tenderness may be related to premenstrual fullness, fibrocystic disease, or inflammation. Tenderness may also indicate cancer.
- Nodules in the tail of the breast may be enlarged lymph nodes.
- Hard, irregular, fixed unilateral masses that are poorly delineated suggest carcinoma.
- Bilateral, single or multiple, round, mobile, well-delineated masses are consistent with fibrocystic breast disease or fibroadenoma.
- Swelling, tenderness, erythema, and heat may be seen with mastitis.



**Figure 49–8** ■ Possible pattern for palpation of the breast.

**Technique/Normal Findings**

Palpate the nipple then compress it between the thumb and index finger. Note the color of any discharge. *Nipples should be firm and elastic, normally without discharge (although some women normally have a clear discharge, and a milky substance may be expressed during pregnancy and lactation).*

**Abnormal Findings**

- Loss of nipple elasticity is seen in cancer.
- Bloody or serous discharge is associated with intraductal papilloma.
- Milky discharge not due to prior pregnancy and found on both sides suggests galactorrhea (lactation not associated with pregnancy or nursing), which is sometimes associated with a pituitary tumor.
- Unilateral discharge from one or two ducts can be seen in fibrocystic breast disease, intraductal papilloma, or carcinoma.

**Axillary Assessment**

Inspect the skin of the axillae. *There should be no redness, irritation, lesions, or enlarged lymph nodes on palpation.*

- Rash may be due to allergy or other causes.
- Signs of inflammation and infection may be due to infection of the sweat glands.
- Palpate all sections of both axillae for palpable nodes (Figure 49–9 ■).
- Enlarged axillary nodes are most often due to infection of the hand or arm but can be caused by malignancy.
- Enlarged supraclavicular nodes are associated with lymphatic metastases from abdominal or thoracic carcinoma.



**Figure 49–9 ■** Palpating the axillary lymph nodes.

**External Genitalia Assessment**

Help the woman to the lithotomy position with the knees flexed and separated.

Inspect and palpate the labia majora. *The labia majora should be equal in size and free of lesions or bulging.*

- Excoriation, rashes, or lesions suggest inflammatory or infective processes.
- Bulging of the labia that increases with straining suggests a hernia.
- Varicosities may be present on the labia.

Inspect the labia minora. Separate the labia majora for better visualization. *The labia minora should be symmetrical, dark pink and moist, without redness or lesions.*

- Inflammation, irritation, excoriation, or caking of discharge in tissue folds suggests vaginal infection or poor hygiene.
- Ulcers or vesicles may be symptoms of sexually transmitted infection.

Palpate the inside of the labia minora between thumb and forefinger. *There should be no nodules, ulcers, or lesions.*

- Small, firm, round cystic nodules in labia suggest sebaceous cysts.
- Wartlike lesions suggest condylomata acuminata (genital warts).
- Firm, painless ulcers suggest chancre of primary syphilis.
- Shallow, painful ulcers suggest herpes infection.
- Ulcerated or red raised lesions in older women suggest vulvar carcinoma.

**Technique/Normal Findings**

**Inspect the clitoris.** *The clitoris is normally not enlarged.*

**Inspect the vaginal opening.** *There should be no swelling, discoloration, lacerations, discharge, or lesions visible in the vaginal opening.*

**Palpate Skene's glands.** Using the index finger, "milk" Skene's glands on both sides and over the urethra and inspect for possible discharge (Figure 49–10 ■). *There should be no discharge or tenderness present.*

**Palpate Bartholin's glands at the posterior labia majora** (Figure 49–11 ■). *There should be no masses, redness, swelling, or tenderness on palpation.*

**Inspect the vaginal orifice for bulging and urinary incontinence.** Ask the woman to strain or "bear down." *No bulging should be visible with straining.*

**Inspect and palpate the perineum.** *The perineum should be free of redness or lesions. Episiotomy scars are a normal finding.*

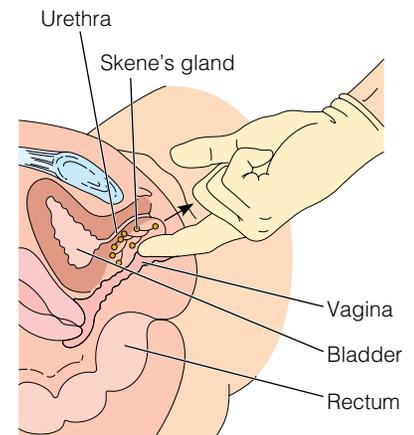
**Abnormal Findings**

- Enlargement may be a symptom of a masculinizing condition.
- Swelling, discoloration, or lacerations may be caused by trauma.
- Discharge or lesions may be symptoms of infection.
- Fissures or fistulas may be related to injury, infection, spreading of a malignancy, or trauma.
- Discharge from Skene's glands and/or tenderness suggests infection.

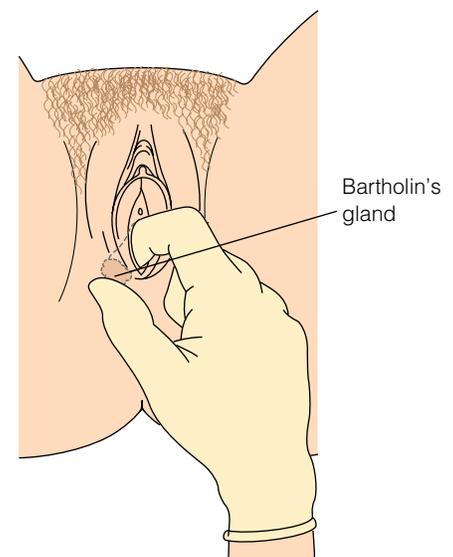
- A nontender mass in the posterolateral portion of the labia majora is indicative of a Bartholin's cyst.
- Swelling, redness, or tenderness, especially if unilateral, may indicate abscess of Bartholin's glands.

- Bulging of the anterior vaginal wall and urinary incontinence suggest a cystocele.
- Bulging of the posterior wall suggests a rectocele.
- Protrusion of the cervix or uterus into the vagina indicates uterine prolapse.

- Inflammation, lesions, and growths may be seen in infections or cancer.
- Fistulas may be the result of injury, trauma, infection, or spreading of a malignancy.



**Figure 49–10** ■ Palpating Skene's glands.



**Figure 49–11** ■ Palpating Bartholin's glands.

**Technique/Normal Findings****Abnormal Findings****Vaginal and Cervical Assessment**

Use a vaginal speculum to inspect the vaginal walls and cervix. See the guidelines in Box 49–1. *The vaginal opening varies, depending on age, sexual history, and vaginal births. Vaginal mucosa is normally pink and moist, without discharge or odor. There should be no bulging or loss of urine. The cervix is normally smooth and pink, without lesions and has a consistency similar to the tip of the nose.*

- Bluish color of the cervix and vaginal mucosa may be a sign of pregnancy.
- A pale cervix is associated with anemia.
- A cervix to the right or left of the midline may indicate a pelvic mass, uterine adhesions, or pregnancy.
- Projection of the cervix more than 3 cm into the vaginal canal may indicate a pelvic or uterine mass.
- Transverse or star-shaped cervical lacerations reflect trauma causing tearing of the cervix.
- An enlarged cervix is associated with infection.
- Nabothian cysts (small, white, or yellow raised, round areas on the cervix) are considered normal but may become infected.
- Cervical polyps may be cervical or endometrial in origin.

**BOX 49–1 Guidelines for Intravaginal Assessment and Use of the Vaginal Speculum**

The size of the speculum that is used for an internal examination of the female reproductive system depends on the age of the woman and size of the vagina. Two types of specula are available. The Graves speculum, used most often for examinations of adult women, is available in lengths of 3½ to 5 inches and widths of ¾ to 1½ inches. The Pederson speculum, which is narrower, may be used to examine adolescents or adult women who are virgins, who have never had a baby, or who are postmenopausal with vaginal atrophy. The speculum should be warm. If cultures or smears are to be obtained, neither water nor gel should be used to warm or to lubricate the speculum.

If cells are to be taken for cytologic studies, the client should not douche, use vaginal medications, or take a tub bath for 24 hours before the examination. Finally, the examination is usually deferred if the client is menstruating or has a vaginal infection.

The general procedure is as follows:

1. Place the index and middle finger of one hand into the vagina, just inside the introitus, and press the fingers toward the rectum. Hold the speculum in the other hand.
2. Ask the client to bear down, and insert the closed blades of the speculum into the vagina at an oblique angle until the ends of the blades reach the fingertips (see the accompanying figure). Withdraw the fingers and rotate the speculum to a transverse position.
3. Continue to insert the speculum until it reaches the end of the vagina. Depress the lever of the speculum to open the blades. If the cervix is not in full view, try closing the blades, withdrawing the speculum about halfway, and inserting it again at a more downward angle. When the cervix is in full view, fix the depressed lever to an open position.
4. Inspect the cervix. The normal cervix is pink and midline. Assess color, position, size, projection into the vagina, surface and shape, and any discharge.

If a Pap smear to collect cervical cells for cytologic studies is done, the following procedure may be used:

1. To collect cells from the vaginal pool, roll a sterile cotton-tipped applicator on the vaginal wall below the cervix. Paint the smear on the slide, and spray the slide with fixative.
2. To collect endocervical cells, place the groove of the spatula snugly against the cervical os, and rotate it 360 degrees. In a single stroke, spread the material from both sides of the spatula on a slide, and immediately spray with fixative.

If cultures are to be done, take a specimen from the vagina and/or cervix with a sterile, cotton-tipped applicator, and then either spread the specimen on a culture plate or place it in a culture container. Follow institutional protocols for preparing specimens for vaginal infections from suspected organisms.

At the end of the examination, loosen the lever control and slowly withdraw the speculum, closing the blades slowly and rotating the speculum while observing all areas of the vaginal wall. Assess the color of the mucosa and the color and appearance of any discharge.



Inserting the vaginal speculum.

**Palpate the cervix, uterus, and ovaries. See the guidelines in Box 49–2.** *The cervix can be moved slightly without discomfort. The uterus is*

- The uterus may be retroverted (tilted backward) or retroflexed (angled backward).
- Pain on movement of the cervix during manual examination suggests pelvic inflammatory disease (PID).
- Softening of the uterine isthmus (Hegar's sign), softening of the cervix (Goodell's sign), and uterine enlargement may be objective signs of pregnancy.

**Technique/Normal Findings**

normally at the level of the pubis, moves freely, and is nontender. The ovaries (about the size of a walnut) are firm, smooth, mobile, and slightly tender on palpation. The ovaries are not usually palpable 3 to 5 years after menopause. A small amount of clear drainage is normal.

**Abnormal Findings**

- Firm, irregular nodules that vary greatly with size and are continuous with the uterine surface are likely to be myomas (fibroids).
- Unilateral or bilateral smooth, compressible adnexal masses are found in ovarian tumors.
- Profuse menstrual bleeding is seen with endometrial polyps, dysfunctional uterine bleeding (DUB), and use of an intrauterine device.
- Irregular bleeding may be associated with endometrial polyps, DUB, uterine or cervical carcinoma, or oral contraceptives.
- Postmenopausal bleeding is seen with endometrial hyperplasia, estrogen therapy, and endometrial cancer.

**BOX 49–2 Guidelines for Bimanual Pelvic Examination**

The bimanual pelvic examination is done to palpate the cervix, uterus, and ovaries. The examiner's hand that will be used intravaginally is held with the index and middle fingers extended, the thumb abducted, and the fourth and fifth fingers folded on the palm of the hand. The extended fingers are lubricated.

The general procedure is as follows:

1. Spread the labia with the thumb and finger of the opposite hand and insert the lubricated fingers into the vagina with the palm upward.
2. Place the opposite hand on the abdomen; it is used to press on the abdomen and gently move the internal genitals toward the intravaginal fingers (see the accompanying figure).
3. Ask the client to take deep breaths to relax the abdominal wall.
4. Palpate the cervix, assessing size, contour, position, surface, consistency, tenderness, and mobility. The cervix should be freely movable and nontender.
5. Palpate the uterus by pressing downward on the abdomen while placing the intravaginal fingers in the anterior fornix and gently lifting against the abdominal hand. Assess the size, shape, surface, consistency, position, mobility, and tenderness of the uterus. The normal uterus is freely movable and nontender.
6. Palpate the adnexal areas, which surround the uterus and contain the fallopian tubes and ovaries. Because these structures are small, palpation may not be possible. If the ovaries are palpable, they should be smooth and firm. The normal ovary is sensitive to touch, firm, and highly movable.
7. Withdraw the fingers. Provide tissues for the client's use in wiping the genital area.



Bimanual pelvic examination.

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NCLEX-RN® Review

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Links to Resources



**TEST YOURSELF NCLEX-RN® REVIEW**

- 1 In the male, sperm and testosterone are produced by the:
  1. epididymis.
  2. seminal vesicles.
  3. testes.
  4. Cowper's glands.
- 2 What female structure is analogous to the penis in the male?
  1. ovaries
  2. labia majora
  3. labia minora
  4. clitoris
- 3 You are assessing a 65-year-old man. He says, "I don't understand how having prostate problems can cause me to urinate all the time." What would you say to begin your explanation?
  1. "The prostate gland presses on the bladder."
  2. "The prostate gland surrounds your urethra."
  3. "Your kidneys respond to prostate enlargement."
  4. "The prostate glands sit on top of the kidneys."
- 4 What blood test may be used to diagnose prostate cancer?
  1. PSA
  2. VDRL
  3. CBC
  4. WBC
- 5 Suspected abnormalities of the scrotum may be further assessed through:
  1. transillumination.
  2. auscultation.
  3. palpation.
  4. percussion.
- 6 The loss of estrogen production following menopause may result in elevation of what potentially harmful substance that increases the risk of cardiovascular disease?
  1. uric acid
  2. glucose
  3. cholesterol
  4. testosterone
- 7 Cessation of menstruation in young women is a normal response to what biologic event?
  1. implantation of an embryo
  2. onset of menopause
  3. onset of puberty
  4. beginning spermatogenesis
- 8 Which of the following diagnostic tests may be used to detect cervical cancer?
  1. colposcopy
  2. mammogram
  3. culture
  4. Pap smear
- 9 What assessment technique is **primarily** used to determine abnormalities of the breast?
  1. inspection
  2. auscultation
  3. palpation
  4. percussion
- 10 At what anatomic location would you palpate Bartholin's glands?
  1. above the clitoris
  2. posterior to the labia majora
  3. inferior to the urinary meatus
  4. internal vaginal wall

See Test Yourself answers in Appendix C.

**BIBLIOGRAPHY**

- Anderson, M., Klink, K., & Cohrssen, A. (2004). The rational clinical examination. Evaluation of vaginal complaints. *Journal of the American Medical Association*, 291(11), 1368–1379.
- Bickley, L., & Szilagyi, P. (2007). *Bates' guide to physical examination and history taking* (9th ed.). Philadelphia: Lippincott.
- Buxton-Blake, P. (2003). Recognizing menopausal symptomatology. *Home Health Care Management & Practice*, 15(2), 147–151.
- Davis, A., & Calvert, H. (2003). Sexually transmitted diseases in the emergency department. *Topics in Emergency Medicine*, 25(3), 247–255.
- Eliopoulos, E. (2005). *Gerontological nursing* (6th ed.). Philadelphia: Lippincott Williams & Wilkins.
- Heath, H., & White, I. (2001). Sexuality and older people: An introduction to nursing assessment. *Nursing Older People*, 13(4), 29–31.
- Jarvis, C. (2004). *Physical examination & health assessment*. St. Louis, MO: Mosby.
- Kee, J. (2005). *Prentice Hall handbook of laboratory & diagnostic tests with nursing implications*. Upper Saddle River, NJ: Prentice Hall.
- Kellogg-Spadt, S., & Albaugh, J. (2003). External genital and dermatologic examination part I: The female patient. *Urologic Nursing*, 23(4), 305–306.
- Knight, D. (2004). Health care screening for men who have sex with men. *American Family Physician*, 69(9), 2149–2156.
- Mick, J., Hughes, M., & Cohen M. (2004). Using the BETTER model to assess sexuality. *Clinical Journal of Oncology Nursing*, 8(1), 84–86.
- National Institutes of Health. (2003a). *Genes and disease. Female-specific diseases*. Retrieved from <http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=gnd.chapter.39>
- \_\_\_\_\_. (2003b). *Genes and disease. Male-specific diseases*. Retrieved from <http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=gnd.chapter.56>
- Porth, C. (2005). *Pathophysiology: Concepts of altered health states* (7th ed.). Philadelphia: Lippincott.
- Shokar, G., Carlson, C., Davis, B., & Shokar, N. (2003). Testicular cancer screening in a primary care setting. *International Journal of Men's Health*, 2(3), 221–228.
- Unber, J. (2004). How to assess and treat erectile dysfunction. *Emergency Medicine*, 36(1), 28–30, 33–37.
- Wallace, M. (2003). Try this: Best practices in nursing care to older adults from the Hartford Institute for Geriatric Nursing. *Sexuality, Dermatology Nursing*, 15(6), 570–571.
- Weber, J., & Kelley, J. (2006). *Health assessment in nursing* (3rd ed.). Philadelphia: Lippincott.