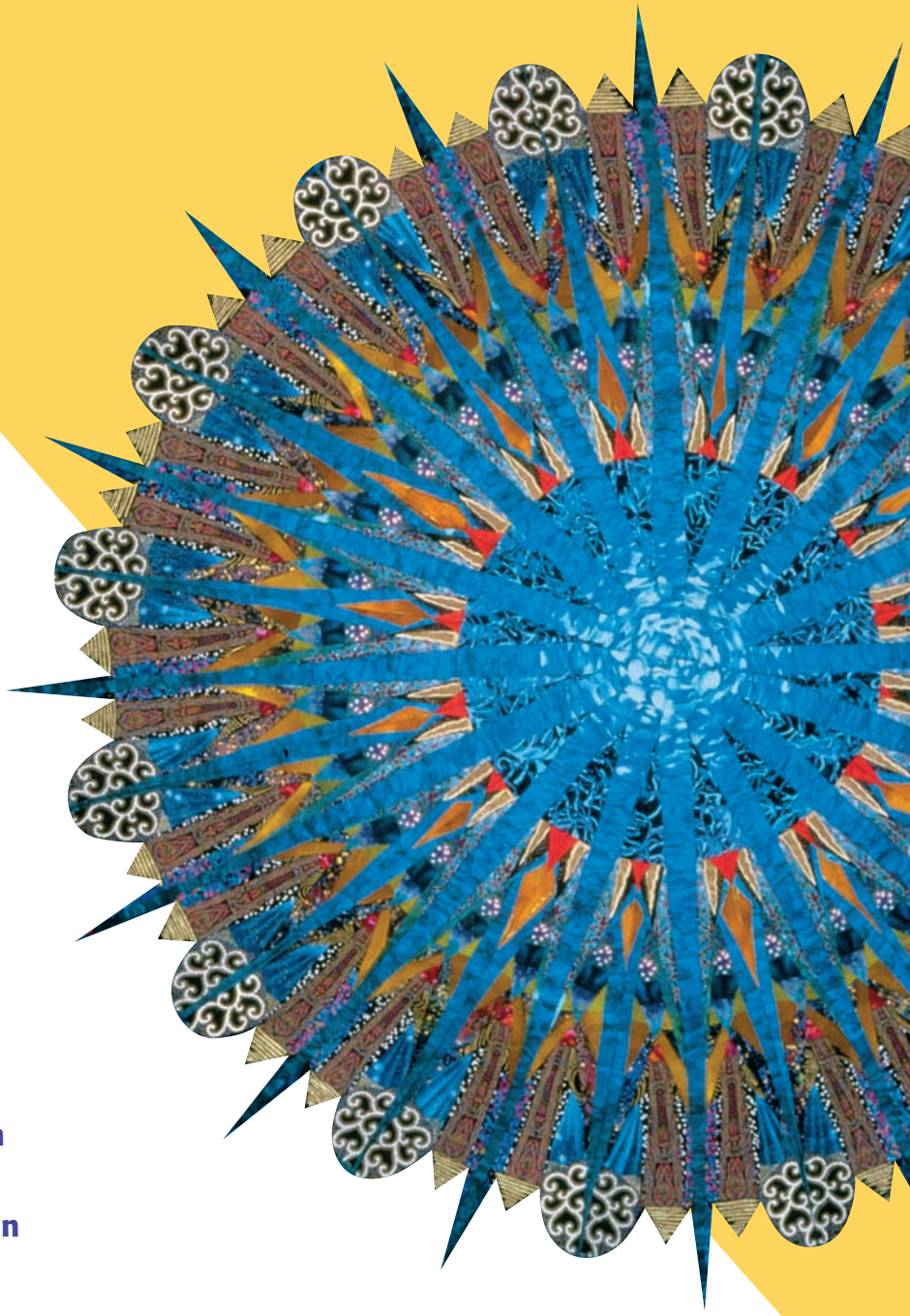
PART

III

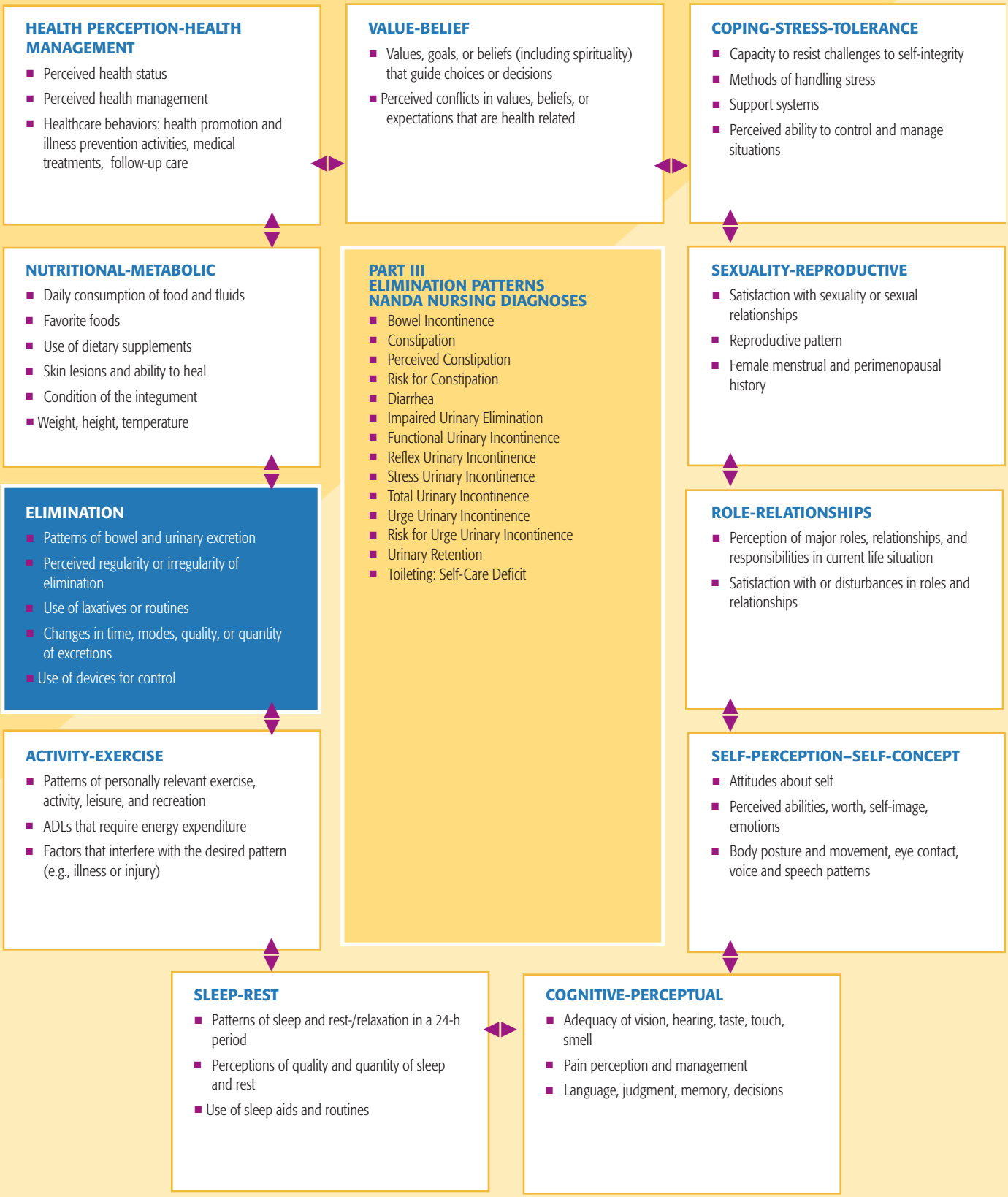
Elimination Patterns



UNIT 7
Responses to Altered Bowel Elimination

UNIT 8
Responses to Altered Urinary Elimination

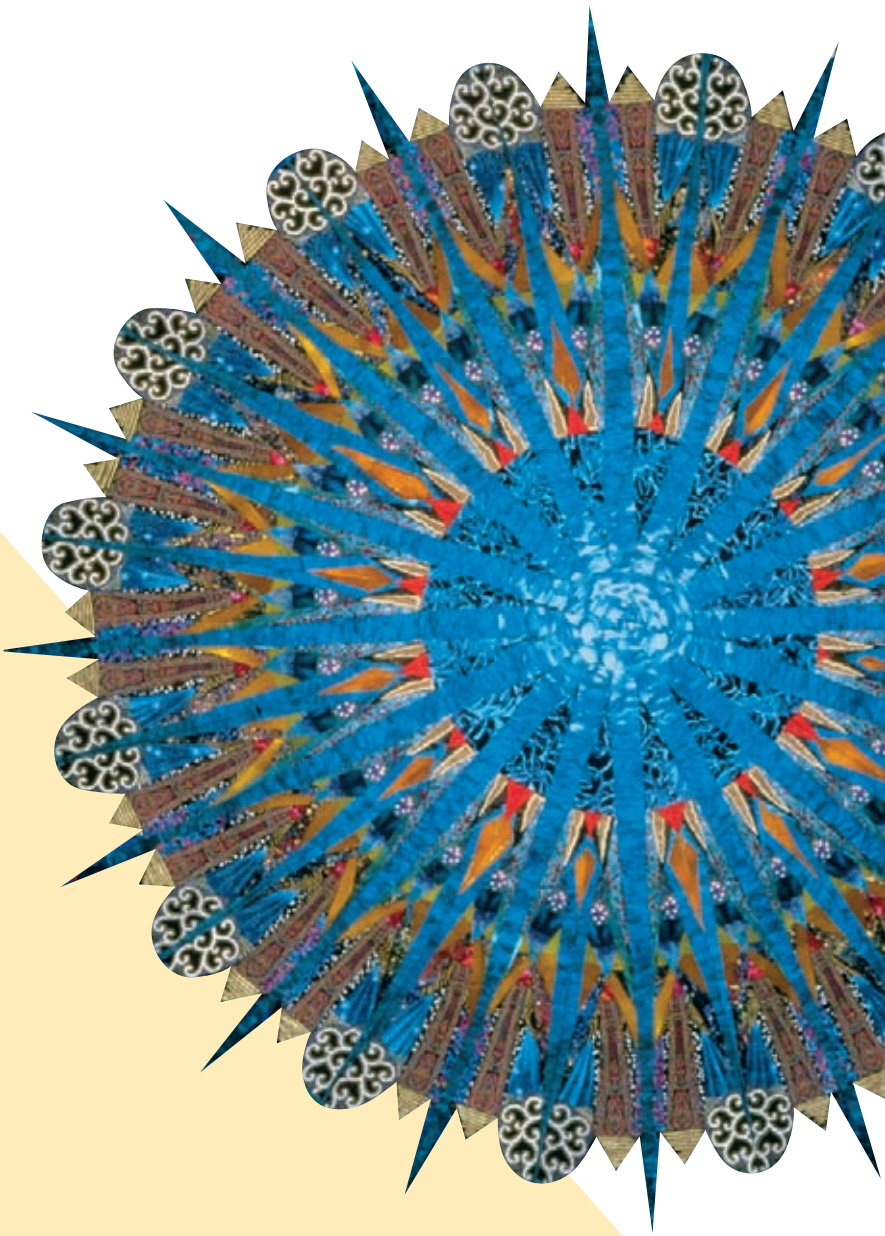
Functional Health Patterns with Related Nursing Diagnoses



UNIT 7 Responses to Altered Bowel Elimination

CHAPTER 25
Assessing Clients with Bowel Elimination Disorders

CHAPTER 26
Nursing Care of Clients with Bowel Disorders



CHAPTER 25 Assessing Clients with Bowel Elimination Disorders

LEARNING OUTCOMES

- Describe the anatomy, physiology, and functions of the intestines.
- Explain the physiologic processes involved in bowel elimination.
- Identify specific topics to consider during a health history assessment interview of the client with problems of bowel elimination.
- Describe techniques used to assess bowel integrity and function.
- Describe normal variations in assessment findings for the older adult.
- Identify manifestations of altered intestinal function.

CLINICAL COMPETENCIES

- Conduct and document a health history for clients who have or are at risk for alterations in bowel elimination.
- Conduct and document a physical assessment of the intestinal system.
- Monitor the results of diagnostic tests and report abnormal findings.

EQUIPMENT NEEDED

- Water-soluble lubricant
- Occult blood test kit, such as Occultest or Hemoccult II
- Disposable gloves
- Stethoscope

MEDIALINK

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

KEY TERMS

borborygmus, *748*
bruits, *749*
constipation, *743*
diarrhea, *746*
flatus, *746*
hernia, *749*
melena, *750*
occult blood, *744*
ostomy, *746*
peristalsis, *743*
steatorrhea, *750*
striae, *748*
Valsalva's maneuver, *743*

After foods are eaten and broken down into usable elements, nutrients are absorbed and indigestible materials are eliminated. Bowel elimination is the end process in digestion. This chapter describes the structure and function of the large intestine, including the rectosigmoid region and the anus, as well as the assessment of bowel function. The anatomy and physiology of the small intestine are discussed in relation to nutrition in Chapter 21 ∞; the information in this chapter is provided as a base for understanding health problems from altered bowel function. In addition, this chapter discusses the function of the small intestine in the absorption of digested end products. Malabsorption (impaired absorption of nutrients) is discussed fully in Chapter 26 ∞.

ANATOMY, PHYSIOLOGY, AND FUNCTIONS OF THE INTESTINES

The small and large intestines provide structures to absorb nutrients and vitamins and to eliminate wastes from food ingested and processed in the upper gastrointestinal (GI) tract.

The Small Intestine

The small intestine begins at the pyloric sphincter and ends at the ileocecal junction at the entrance of the large intestine. The small intestine is about 20 feet (6 m) long, but only about 1 inch (2.5 cm) in diameter. This long tube hangs in coils in the abdominal cavity, suspended by the mesentery and surrounded by the large intestine.

The small intestine has three regions: the duodenum, the jejunum, and the ileum. The duodenum begins at the pyloric sphincter and extends around the head of the pancreas for about 10 inches (25 cm). Both pancreatic enzymes and bile from the liver enter the small intestine at the duodenum. The jejunum is the middle region of the small intestine. It extends for about 8 feet (2.4 m). The ileum, the terminal end of the small intestine, is approximately 12 feet (3.6 m) long and meets the large intestine at the ileocecal valve.

Food is chemically digested and mostly absorbed as it moves through the small intestine. Circular folds (deep folds of the mucosa and submucosa layers), villi (finger-like projections of the mucosa cells), and microvilli (tiny projections of the mucosa cells) all increase the surface area of the small intestine to enhance absorption of food. Although up to 10 L of food, liquids, and secretions enter the gastrointestinal tract each day, most is digested and absorbed in the small intestine; less than 1 L reaches the large intestine.

Enzymes in the small intestine break down carbohydrates, proteins, lipids, and nucleic acids as follows:

- Pancreatic amylase acts on starches, converting them to maltose, dextrins, and oligosaccharides; the intestinal enzymes dextrinase, glucoamylase, maltase, sucrase, and lactase further break down these products into monosaccharides.
- Proteins are broken down into peptides by the pancreatic enzymes trypsin and chymotrypsin and by intestinal enzymes. Pancreatic enzymes (trypsin and chymotrypsin) and intestinal enzymes continue to break down proteins into peptides.
- Pancreatic lipases break down lipids.
- Triglycerides enter as fat globules, and are then coated by bile salts and emulsified.
- Nucleic acids are hydrolyzed by pancreatic enzymes, then broken apart by intestinal enzymes.

Both pancreatic enzymes and bile are excreted into the duodenum in response to the secretion of secretin and cholecystokinin, hormones produced by the intestinal mucosa cells when chyme enters the small intestine.

Nutrients are absorbed through the mucosa of the intestinal villi into the blood or lymph by active transport, facilitated transport, and passive diffusion. Almost all food products and water, as well as vitamins and most electrolytes, are absorbed in the small intestine, leaving only indigestible fibers, some water, and bacteria to enter the large intestine.

The Large Intestine

The large intestine, or colon, begins at the ileocecal valve and terminates at the anus (Figure 25–1 ■). It is about 5 feet (1.5 m) long. The large intestine frames the small intestine on three sides and includes the cecum, the appendix, the colon, the rectum, and the anal canal.

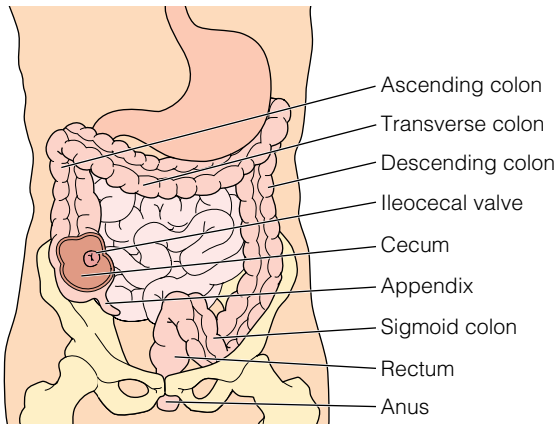


Figure 25–1 ■ Anatomy of the large intestine.

The first section of the large intestine is the cecum. The appendix is attached to its surface as an extension. The appendix, a twisted structure in which bacteria can accumulate, may become inflamed.

The colon is divided into ascending, transverse, and descending segments. The ascending colon extends along the right side of the abdomen to the hepatic flexure, where it makes a right-angle turn. The next segment, called the transverse colon, crosses the abdomen to the splenic flexure. At this juncture, the descending colon descends down the left side of the abdomen and ends at the S-shaped sigmoid colon. The sigmoid colon terminates at the rectum.

The rectum is a mucosa-lined tube approximately 12 cm in length (Figure 25–2 ■). The rectum has three transverse folds (valves of Houston) that retain feces yet allow flatus to be passed through the anus. The rectum ends at the anal canal, which terminates at the anus.

The anus, a hairless, dark-skinned area, is the end of the digestive tract. It has both an internal involuntary sphincter and an external voluntary sphincter. The sphincters are usually open only during defecation. The anorectal junction separates the rectum from the anal canal and may be the site of internal hemorrhoids (clusters of dilated veins in swollen anal tissue).

The major function of the large intestine is to eliminate indigestible food residue from the body. The large intestine absorbs water, salts, and vitamins formed by the food residue and bacteria. The semiliquid chyme that passes through the ileocecal valve is formed into feces as it moves through the large intestine. Feces are moved along the intestine by **peristalsis**, waves of alternating contraction and relaxation. Goblet cells lining the large intestine secrete mucous that facilitates the lubrication and passage of feces.

The defecation reflex is initiated when feces enter the rectum and stretch the rectal wall. This spinal cord reflex causes the walls of the sigmoid colon to contract and the anal sphincters to relax. This reflex can be suppressed by voluntary control of the external sphincter. Closing the glottis and contracting the diaphragm and abdominal muscles to increase intra-abdominal pressure **(Valsalva's maneuver)** facilitates expulsion of feces. Prolonged suppression of defecation can result in a weakened reflex that may in turn lead to **constipation** (infrequent and often uncomfortable passage of hard, dry stool). Frequent bouts of constipation may lead to external hemorrhoids at the area of the external hemorrhoidal plexus.

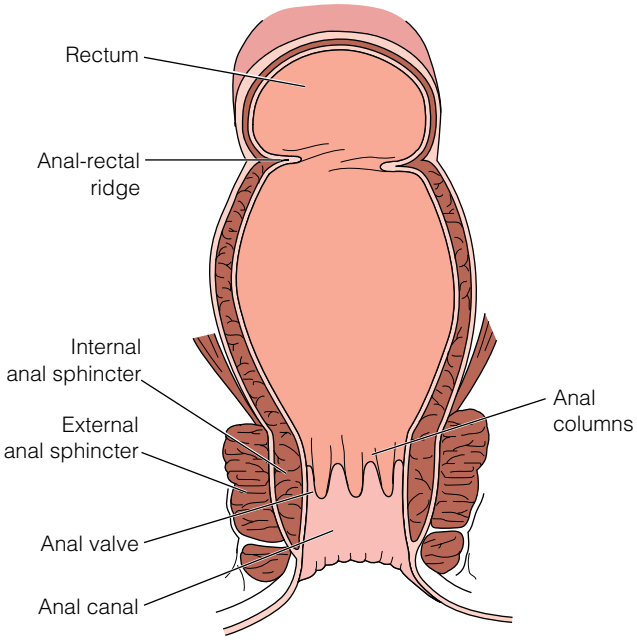


Figure 25–2 ■ Structure of the rectum and anus.

ASSESSING BOWEL FUNCTION

Bowel elimination and the function of the intestines are assessed by findings from diagnostic tests, a health assessment interview to collect subjective data, and a physical assessment to collect objective data. See sample documentation of an abdominal assessment below.

SAMPLE DOCUMENTATION
Abdominal Assessment

72-year-old female, currently a resident in an extended care facility, states she had not had a bowel movement for a week, and normally has one every other day. She also says she has lost her appetite and "just feels terrible." Abdominal assessment reveals a firm, slightly distended abdomen. Bowel sounds are active with gurgles in all 4 quadrants. Slight dullness to percussion in LLQ (sigmoid colon). States she has some generalized abdominal discomfort with moderate palpation. Hard stool present in rectum. Stool negative for occult blood.

Diagnostic Tests

The results of diagnostic tests of intestinal function are used to support the diagnosis of a specific disease, to provide information to identify or modify the appropriate medication or therapy used to treat the disease, and to help nurses monitor the client's responses to treatment and nursing care interventions. Diagnostic tests to assess the structures and function of the intestines are described on pages 744–745 and summarized in the bulleted list that follows. More information about diagnostic tests for specific disorders is included in Chapter 26 ∞.

- Stool specimens are examined grossly for volume, water, color, blood, pus, mucus, and fat; and microscopically for white blood cells (WBCs), unabsorbed fat, and parasites.
- Both the small bowel (small-bowel series) and the large bowel (barium enema) are examined by using a contrast medium and examining the intestinal tract under radiologic fluoroscopy. These tests are done to identify structural abnormalities.
- An abdominal ultrasound and/or an MRI may be used to identify sources of GI bleeding, abdominal masses, ascites, and disorders of the appendix. An MRI is often used to stage colon cancer.
- Direct visualization of the anus, rectum, sigmoid colon (sigmoidoscopy), and of the entire large intestine (colonoscopy) is accomplished by using a flexible tube. These tests are done to identify tumors, polyps, infections, inflammations, bleeding

DIAGNOSTIC TESTS of Intestinal Disorders

NAME OF TEST Stool Specimen, Stool Culture

PURPOSE AND DESCRIPTION A sample of stool is collected for gross and microscopic examination, as well as for form, consistency, and color. Gross examination includes volume and water content, and the presence of any blood, pus, mucus, or excess fat. Microscopic examination identifies the presence of WBCs, unabsorbed fat, and parasites. When an enteric pathogen is suspected, a stool culture is done.

RELATED NURSING CARE Ask client to provide a fresh stool sample. A sterile container should be used to collect a stool sample for a culture. Ask women of childbearing age if they are having their menstrual period; if so, note this on the laboratory request.

NAME OF TEST Test for **Occult Blood** (Hidden Blood)

PURPOSE AND DESCRIPTION A stool specimen may be sent to the laboratory, or the test may be done with a commercial kit such as Hemoccult II or Occultest.

RELATED NURSING CARE When testing for occult blood with a commercial kit following a rectal examination, place a smear of stool on the designated area and drop the reagent on the area. A blue color that develops in response to the reagent indicates the presence of blood.

NAME OF TEST Small-Bowel Series

PURPOSE AND DESCRIPTION This radiologic examination is done to diagnose abnormalities of the small intestine. The client drinks a contrast medium and films are taken every 20 minutes until the medium reaches the terminal ileum. It may also be done in conjunction with an upper GI series or barium swallow.

CLIENT PREPARATION

- Ensure the presence of a signed informed consent for the procedure.
- A low-residue diet may be ordered for 48 hours preceding the examination, and a tap-water enema or cathartic may be given the evening before.
- Instruct to withhold all food for 8 hours and water for 4 hours before the examination.
- Withhold medications affecting bowel motility for 24 hours prior to examination if possible (unless prescribed as part of the preparation procedure).

HEALTH EDUCATION FOR THE CLIENT AND FAMILY

- Although the test is not uncomfortable, it requires several hours to complete. Bring reading material, paperwork, or crafts along to occupy time.
- For a small-bowel exam, the barium may be administered orally, or instilled through a weighted tube inserted into the small bowel, or endoscopically.
- Increase intake of fluids for at least 24 hours after the procedure to facilitate evacuation of the barium. A laxative or cathartic may be prescribed.
- Stool will be chalky white for up to 72 hours after the exam. Normal stool color will return on complete evacuation of barium.

NAME OF TEST Barium Enema (Ba Enema)

PURPOSE AND DESCRIPTION To identify structural abnormalities of the rectum and colon.

This fluoroscopic radiologic examination of the colon is done by administering a contrast medium rectally. Double-contrast or air-contrast studies are the examination of choice, with air being infused after the barium is evacuated.

CLIENT PREPARATION

- Ensure presence of a signed informed consent for the procedure.
- Provide or instruct to follow a clear liquid diet for 24 hours prior to the test. All food and fluids may be withheld for 8 hours prior to the test.
- Administer or instruct to use laxatives, enemas, or suppositories as ordered the evening prior to the procedure. Additional bowel preparation may be ordered for the morning just prior to the procedure.

HEALTH EDUCATION FOR THE CLIENT AND FAMILY

Before Procedure

- The procedure takes approximately 1 hour.
- The barium will be instilled through a lubricated tube inserted into your rectum. You will experience a sensation of fullness, and may feel the need to defecate.
- You will be positioned on the left side, on your back, and prone during this procedure.
- A fluoroscope will be used to follow the progress of the barium, and x-rays will be taken.
- You will expel the barium in the bathroom.

After Procedure

- Following the procedure, a laxative will be given.
- Stools may be white for the next 1 to 2 days.

NAME OF TEST Abdominal Ultrasound

PURPOSE AND DESCRIPTION Used to identify abdominal masses, ascites, and disorders of the appendix. A lubricant gel is applied to the skin and a transducer is placed over the area of interest. High-frequency sound waves pass through the body structures and are recorded as they are reflected.

RELATED NURSING CARE Tell client not to eat or drink for 8 to 12 hours prior to the examination.

NAME OF TEST Magnetic Resonance Imaging (MRI)

PURPOSE AND DESCRIPTION May be done to identify sources of GI bleeding and to stage colon cancer.

RELATED NURSING CARE Ask if client is pregnant or has a metal implant (examination will be canceled).

DIAGNOSTIC TESTS of Intestinal Disorders (continued)

NAME OF TEST Sigmoidoscopy

PURPOSE AND DESCRIPTION A visual examination of the anus, rectum, and sigmoid colon to identify tumors, polyps, infections, inflammations, hemorrhoids, and fissures. Test is done by using a flexible sigmoidoscope. Specimens are obtained and polyps removed during the procedure.

CLIENT PREPARATION

- Ensure the presence of a signed informed consent form.
- Generally, clear liquid or a light diet is ordered for the evening before the procedure.
- Instruct to take a laxative.
- Administer an enema or rectal suppository before the procedure as ordered.

HEALTH EDUCATION FOR THE CLIENT AND FAMILY

Before Procedure

- The procedure takes approximately 15 minutes.
- A mild sedative or tranquilizer may be given during the procedure.
- You may be positioned on your left side or in the knee–chest position.
- The scope will be inserted through the anus into the sigmoid colon.
- Feces may be suctioned.
- A biopsy may be taken. Polyps may be removed.
- Taking deep breaths when you feel discomfort may help you relax.

After Procedure

- Sit up slowly to avoid dizziness or lightheadedness.
- You may pass large amounts of flatus if air was instilled into the bowel.
- Report any abdominal pain, fever, chills, or rectal bleeding.
- If a polyp is removed, avoid heavy lifting for 7 days, and avoid high-fiber foods for 1 to 2 days.

NAME OF TEST Colonoscopy

PURPOSE AND DESCRIPTION A visual examination of the entire colon to the ileocecal valve to identify tumors, polyps, and inflammatory bowel disease and to dilate strictures. A flexible endoscope is inserted anally and advanced through the colon. Polyps are removed during the procedure to prevent them from becoming malignant.

CLIENT PREPARATION

- Ensure presence of a signed informed consent for the procedure.
- A liquid diet may be prescribed for 2 days prior to the procedure, and the client is usually NPO for 8 hours just before the procedure.
- Administer or instruct the client in bowel preparation procedures such as taking citrate of magnesia or polyethylene glycol the evening before.
- Sedation is usually given during the procedure.

HEALTH EDUCATION FOR THE CLIENT AND FAMILY

Before Procedure

- Explain dietary restrictions and their purpose.
- The procedure takes 30 minutes to 1 hour.
- The scope is inserted through the anus and advanced to the cecum.
- A biopsy may be taken, and polyps may be removed.
- Discomfort is minimal.
- Arrange for transportation as you may not be allowed to drive for 24 hours after the procedure.

After Procedure

- You may have increased flatus as air is instilled into the bowel during the procedure.
- Report any abdominal pain, chills, fever, rectal bleeding, or mucopurulent discharge.
- If a polyp has been removed, avoid heavy lifting for 7 days, and avoid high-fiber food for 1 to 2 days.

sites, hemorrhoids, and fissures. During the examination, specimens may be obtained, strictures dilated, and polyps removed. These tests are conducted for diagnosis, but are also part of the American Cancer Society recommendations for cancer screening for adults over age 50.

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 client 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 physical assessment, it is important for the nurse to consider genetic influences on health of the adult. During the health assessment interview, ask about family members with inflammatory bowel disorders, celiac disease, colon polyps, and/or colon cancer. During the physical assessment, assess for any manifestations that might indicate a genetic disorder (see page 746 for genetic considerations). 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 bowel structure and function may be conducted during a health screening, may focus on a chief complaint (such as abdominal pain or change in bowel patterns), or may be part of a total health assessment. The assessment of bowel sounds is a common part of routine assessments. Clients may feel embarrassed to talk about bowel elimination patterns. To promote effective rapport, ask about less personal information first.

GENETIC CONSIDERATIONS
Intestinal Tract

- Familial adenomatous polyposis (FAP) and hereditary nonpolyposis colorectal cancer (HNPCC) are inherited disorders in which there is progressive development of colorectal adenomas. Unless treated, colorectal cancer inevitably occurs by the fourth or fifth decade of life.
- In about 20% of cases, Crohn's disease (an inflammatory bowel disease) appears to be familial in origin.
- Colon cancer is one of the most common inherited cancer syndromes.
- Celiac disease (CD) is a genetic, inheritable disease responsible for the malabsorption of nutrients resulting in malnutrition. If people with CD eat certain types of proteins (glutens, found in wheat, barley, rye, and oats) an autoimmune response causes damage to the small intestine, so that nutrients are not absorbed.

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

- Can you describe the type of cramping and abdominal pain you are experiencing?
- Have you ever had bleeding from your rectum?
- Have you noticed increased constipation since your surgery?

Begin the interview by inquiring about any medical conditions that may influence the client's bowel elimination pattern, such as a stroke or spinal cord impairment, inflammatory gastrointestinal diseases, endocrine disorders, and allergies. Note any recent travel to other countries. Information about the client's psychosocial history is also important. Assess the client's lifestyle for any patterns of psychologic stress and/or depression, which may alter bowel elimination. Depression may be associated with constipation, whereas **diarrhea** (frequent passage of loose, watery stools) may occur in situations of high stress and anxiety. Explore the client's activities of daily living (ADLs), including exercise, sleep–rest patterns, and dietary and fluid intake. Changes in ADLs can influence bowel elimination patterns.

Determine whether the client has had any lower abdominal pain or rectal pain, which may be associated with a distended colon filled with gas or fluid. Crampy, colicky pains occur with diarrhea and/or constipation. Sudden onset of lower abdominal cramping occurs in obstruction of the colon. Left lower abdominal pain is associated with diverticulitis. Rectal pain may occur with stool retention and/or hemorrhoids. See Chapter 9 ∞ for further information about a pain assessment.

Ask the client to describe the frequency and character of the stools. Ask about any history of diarrhea, constipation, or bleeding from the rectum, and collect information about the use of laxatives, suppositories, or enemas. Anticholinergic drugs, antihistamines, tranquilizers, or narcotics may cause constipation.

If the client has an **ostomy** (surgical opening into the bowel), ask about skin care problems, consistency of stool, foods that cause problems with diarrhea or **flatus** (intestinal gas), the number of times that the client empties the appliance bag each day, and irrigation habits. It is also important to explore the client's feelings about the appliance.

To obtain information about the client's nutritional status, ask about changes in weight, appetite, food preferences, food intolerances, special diets, and any cultural or ethnic influences on dietary intake. Ask whether the client is experiencing nausea and vomiting; if so, determine any relation to food intake, and ask the client to describe the character of the emesis. In addition, ask about indigestion, the use of antacids or other over-the-counter medications, herbal preparations, and episodes of diarrhea and its character.

Explore any family history of colon cancer, colitis, gallbladder disease, or malabsorption syndromes, such as lactose intolerance and celiac sprue. Assess the client's risk factors for cancer, including age greater than 50; family member with colon cancer; history of endometrial, ovarian, or breast cancer; and previous diagnoses of colon inflammation, polyps, or cancer.

Interview questions categorized by functional health patterns are listed on the following page.

Physical Assessment

The function of the bowels is assessed by inspecting the abdomen, auscultating bowel sounds, and performing a rectal examination, an anal examination, an examination for inguinal hernia, and examination of the client's stool. Normal age-related findings for the older adult are summarized in Table 25–1.

Physical assessment of the abdomen may be performed as part of a total health assessment, in combination with assessment of the urinary and reproductive systems (problems which may cause clinical manifestations similar to those of the gastroin-

TABLE 25–1 Age-Related Intestinal Changes

AGE-RELATED CHANGE	SIGNIFICANCE
Small intestine: ↓ number of absorbing cells on intestinal wall, slowed fat absorption, faulty absorption of vitamin B_{12}, vitamin D, calcium, and iron.	■ Decreased ability to absorb vitamins A, D, E, and K ■ Increased risk of osteoporosis and fractures (↓ calcium and vitamin D) ■ Increased risk of iron-deficiency anemia (weakness, lassitude, pallor) (↓ iron) ■ Increased risk of pernicious anemia (weakness, dyspnea, glossitis, numbness, dementia, depression) (↓ vitamin B_{12})
Large intestine: ↓ mucous secretion and elasticity of the wall of the rectum, loss of tone in internal sphincter with decreased awareness of need to defecate.	■ Increased tendency for constipation

MEDIALINK Case Study: Abdominal Pain

FUNCTIONAL HEALTH PATTERN INTERVIEW Intestinal Tract

Functional Health Pattern	Interview Questions and Leading Statements
Health Perception-Health Management	■ Have you had any illnesses or surgery that would affect your bowel elimination patterns? If so, describe how it was treated. ■ *Depending on age:* Have you had your colon screened for cancer (such as a colonoscopy)? ■ Do you use any medications to prevent or treat constipation or diarrhea? What do you use and how often? ■ Do you use any treatment for hemorrhoids? Describe.
Nutritional-Metabolic	■ Do you have any food intolerances or food allergies? What type of reaction do you have (such as indigestion, nausea, vomiting, diarrhea, excess gas, abdominal pain)? ■ What do you normally eat and drink in a 24-hour period? ■ Does your bowel problem prevent you from eating specific foods? What are they? ■ *If client has an ostomy:* Do certain foods cause elimination problems such as gas or diarrhea? Describe. Do you have skin irritation around your stoma?
Elimination	■ How often do you have a bowel movement? ■ Describe the color and consistency of your bowel movements. ■ Have your bowel habits changed recently? If so, how? ■ Do you have to strain excessively to have a bowel movement? ■ Have you ever noticed bright red blood on your bowel movement or on the paper after you wiped? ■ *If the client has an ostomy:* How often do you irrigate your ostomy? How often do you have to empty your ostomy bag?
Activity-Exercise	■ Describe your activities in a usual day. ■ Does your bowel elimination pattern interfere with your usual activities? Explain.
Sleep-Rest	■ Does your bowel elimination pattern interfere with your ability to rest and sleep? Explain. ■ Does abdominal cramping or pain interfere with your ability to rest and sleep? Explain.
Cognitive-Perceptual	■ Describe the bowel elimination pattern that is normal for you. ■ Do you have abdominal or rectal pain? Where is it located? What brings it on or relieves it?
Self-Perception-Self-Concept	■ How does having this condition make you feel about yourself?
Role-Relationships	■ How does having this condition affect your relationships with others?
Sexuality-Reproductive	■ Has this condition interfered with your usual sexual activity?
Coping-Stress-Tolerance	■ Has having this condition created stress for you? ■ Have you experienced any kind of stress that makes this condition worse? Explain. ■ Describe what you do when you feel stressed.
Value-Belief	■ Describe how specific relationships or activities help you cope with this problem. ■ Describe specific cultural beliefs or practices that affect how you care for and feel about this problem. ■ Are there any specific treatments that you would not use to treat this condition?

testinal system), or alone for clients with known or suspected health problems. The techniques of inspection, auscultation, percussion, and palpation are used. Figure 25–3 ■ illustrates the four quadrants of the abdomen. A list of organs in each quadrant, as well as photographs of abdominal assessment techniques, are found in Chapter 21 ∞. Box 25–1 provides guidelines for abdominal assessment.

PRACTICE ALERT

Palpation is the last method used in assessing the abdomen, because pressure on the abdominal wall and contents may interfere with bowel sounds and cause pain, ending the examination. Follow standard precautions when palpating the inguinal, perianal, and rectal areas.

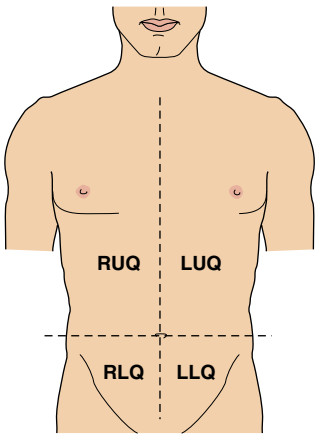


Figure 25–3 ■ The four quadrants of the abdomen.

BOX 25–1 Guidelines for Assessing the Abdomen

Ask the client to empty the bladder before beginning the examination. Assist the client to the dorsal recumbent (supine) position, with a small pillow under the head, a pillow under the knees (if desired), and the arms at the sides of the body. Warm the stethoscope before applying it to the client's skin. Ask the client to point to areas that are painful, and explain that those areas will be examined last. Expose the abdomen from below the breasts to the pubic symphysis, and drape the client's thoracic and genital areas. When you document your findings, specify the location by abdominal quadrant.

General guidelines for abdominal assessment are as follows:

1. Inspect the abdomen under a good light source that is shining across the abdomen. Sit at the right side of the client, and note symmetry, distention, masses, visible peristalsis, and respiratory movements. If masses are detected, ask the client to take a deep breath, which decreases the size of the abdominal cavity and makes any abnormality more visible.
2. Auscultate each quadrant of the abdomen, using the diaphragm of the stethoscope. Listen for bowel sounds, arterial bruits, venous hums, and friction rubs.
3. Percuss several areas within each quadrant of the abdomen, using a systematic path. (For example, always begin in the lower left quadrant, then proceed to the lower right quadrant, upper right quadrant, and upper left quadrant, respectively). The predominant percussion tones for the entire abdomen are tympany and dullness. Tympany is present over gas-filled intestines. Dullness is present over the liver, the spleen, an enlarged kidney, or a full stomach. Percuss for fluid, gaseous distention, and masses.
4. Palpate each quadrant of the abdomen for shape, position, mobility, size, consistency, and tenderness of the major abdominal organs. Begin this part of the assessment with light palpation, and increase the depth of palpation to elicit tenderness or better identify organ size and shape. Deep palpation should be conducted only by nurses with considerable experience. Remember to palpate areas of indicated tenderness last and to use gentle pressure. Palpation may be difficult or impossible if the client exhibits muscle guarding from pain or is ticklish. The gallbladder and the spleen are normally not palpable.

Ask the client to empty the bladder before the examination and lie in the supine position for the abdominal and rectal assessments. Have the client turn to the left lateral (Sims') position for the rectal examination. The older client or the client with limited mobility may need assistance in assuming this position. The client should be standing to assess for an inguinal hernia.

Explain what will happen during the examination, and encourage the client to take deep, regular breaths to increase relaxation. Explain that during the examination, it may feel as though the client is about to have a bowel movement and that sometimes flatus ("gas") is passed. Assure the client that this is normal. Ensure that the examination area is private and the client is draped properly to prevent unnecessary exposure.

BOWEL ASSESSMENT

Technique/Normal Findings	Abnormal Findings
Abdominal Assessment	
Inspect abdominal contour, skin integrity, venous pattern, and aortic pulsation. *Abdomen should be slightly concave with intact skin. There should not be distended veins or obvious aortic pulsations.*	■ Generalized abdominal distention may be seen in gas retention or obesity. ■ Lower abdominal distention is seen in bladder distention, pregnancy, or ovarian mass. ■ General distention and an everted umbilicus are seen with ascites and/or tumors. ■ A scaphoid (sunken) abdomen is seen in malnutrition or when fat is replaced with muscle. ■ **Striae** (whitish-silver stretch marks) are seen in obesity and during or after pregnancy. ■ Spider angiomas may be seen in liver disease. ■ Dilated veins are prominent in cirrhosis of the liver, ascites, portal hypertension, or venocaval obstruction. ■ Pulsation is increased in aortic aneurysm.
Auscultate all four quadrants of the abdomen with the diaphragm of the stethoscope. Begin in the lower right quadrant, where bowel sounds are almost always present. *Normal bowel sounds (gurgling or clicking) occur every 5 to 15 seconds. Listen for at least 5 minutes in each of the four quadrants to confirm the absence of bowel sounds.*	■ **Borborygmus** (hyperactive high-pitched, tinkling, rushing, or growling bowel sounds) is heard in diarrhea or at the onset of bowel obstruction. ■ Bowel sounds may be absent later in bowel obstruction, with an inflamed peritoneum, and/or following surgery of the abdomen.

Technique/Normal Findings	Abnormal Findings
Auscultate the abdomen for vascular sounds with the bell of the stethoscope. *No sounds (bruits, venous hum, or friction rub) other than bowel sounds should be auscultated.*	■ **Bruits** (blowing sound due to restriction of blood flow through vessels) may be heard over constricted arteries. A bruit over the liver may be heard in hepatic carcinoma. ■ A venous hum (continuous medium-pitched sound) may be heard over a cirrhotic liver. ■ Friction rubs (rough grating sounds) may be heard over an inflamed liver or spleen.
Percuss the abdomen in all four quadrants (see Figure 25–3). *Normally, tympany is heard over the stomach and gas-filled bowels.*	■ Dullness is heard when the bowel is displaced with fluid or tumors or filled with a fecal mass.
Palpate the abdomen in all four quadrants. Use a circular motion to move the abdominal wall over underlying structures. Feel for masses and note any tenderness or pain the client may have during this part of the exam. Palpate lightly at first (0.5 to 0.75 inch), then more deeply (1.5 to 2 inches) with caution. If a mass is palpated, ask the client to raise head and shoulders. *There should be no abdominal masses or pain on palpation.*	■ A mass in the abdomen may become more prominent when the head and shoulders are raised, as will a ventral abdominal wall hernia. If the mass is no longer palpable, it is deeper in the abdomen. **PRACTICE ALERT** Never use deep palpation in a client who has had a pulsatile abdominal mass, renal transplant, polycystic kidneys, or is at risk for hemorrhage. ■ In cases of peritoneal inflammation, palpation causes abdominal pain and involuntary muscle spasms. ■ Abnormal masses include aortic aneurysms, neoplastic tumors of the colon or uterus, and a distended bladder or distended bowel due to obstruction. ■ A rigid, boardlike abdomen may be palpated when the client has a perforated duodenal ulcer.
Palpate for rebound tenderness. Press the fingers into the abdomen slowly and release the pressure quickly. *Releasing pressure should not cause or increase pain.*	■ In peritoneal inflammation, pain occurs when the fingers are withdrawn. ■ Right upper quadrant pain occurs with acute cholecystitis. ■ Upper middle abdominal pain occurs with acute pancreatitis. ■ Right lower quadrant pain at McBurney's point occurs with acute appendicitis. ■ Left lower quadrant pain is seen in acute diverticulitis.

Inguinal Area Assessment

Inspect the inguinal area for bulges after asking the client to bear down. *The inguinal area is normally free of bulges.*	■ Bulges that appear in the inguinal area when the client bears down may indicate a **hernia** (a defect in the abdominal wall that allows abdominal contents to protrude outward).
Palpate the inguinal area with the gloved hand. Ask the client to shift weight to the left to palpate the right inguinal area and vice versa. Place your right index finger upward into the inguinal area and ask the client to bear down or cough. *Bulging or masses are normally not palpable.*	■ A bulge or mass may indicate a hernia.

Technique/Normal Findings	Abnormal Findings

Perianal Assessment

Inspect the perianal area. Wearing gloves, spread the client's buttocks apart. Observe the area, and ask client to bear down as if trying to have a bowel movement. *The perianal area should be intact, without obvious lesions.*

- Swollen, painful, longitudinal breaks in the anal area may appear in clients with anal fissures. (These are caused by the passing of large, hard stools or by diarrhea.)
- Dilated anal veins appear with hemorrhoids.
- A red mass may appear with prolapsed internal hemorrhoids.
- Doughnut-shaped red tissue at the anal area may appear with a prolapsed rectum.

Palpate the anus and rectum. Lubricate the gloved index finger and ask the client to bear down. Touch the tip of your finger to the client's anal opening. Flex the index finger, and slowly insert it into the anus, pointing the finger toward the umbilicus (Figure 25–4 ■). Rotate the finger in both directions to palpate any lesions or masses. *There should be no masses in the anus or rectum.*

- Movable, soft masses may be polyps.
- Hard, firm, irregular embedded masses may indicate carcinoma.

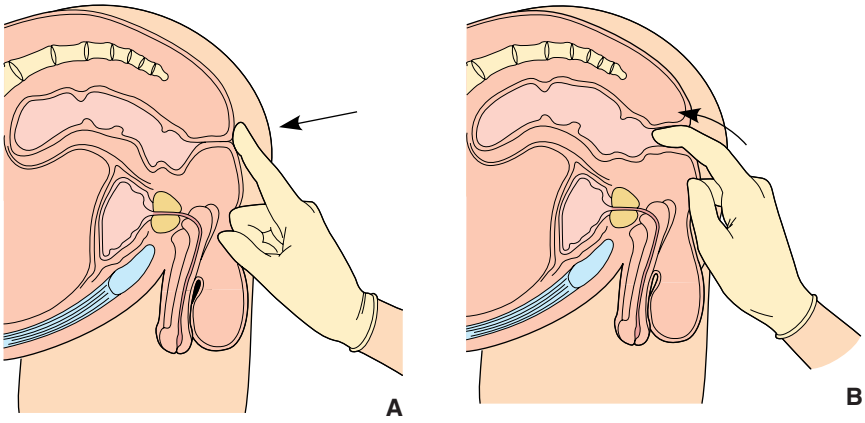


Figure 25–4 ■ Digital examination of the *A*, anus; and *B*, rectum.

Fecal Assessment

Inspect the client's feces. After palpating the rectum, withdraw your finger gently. Inspect any feces on the glove. Note color and/or presence of blood. Also use gloved fingers to note consistency. *Stool should be soft with no blood present, either on the stool or as occult blood.*

- See Box 25–2 for information about stool characteristics.

BOX 25–2 Assessing Stool Characteristics

Inspect feces for color, odor, and consistency after the rectal exam or after defecation. Both hands are gloved.

Color

- Blood *on* the stool results from bleeding from the sigmoid colon, anus, or rectum. Blood *within* the stool indicates bleeding from the colon due to ulcerative colitis, diverticulosis, or tumors. Black, tarry stools, called **melena,** occur with upper gastrointestinal bleeding. Oral iron may turn stools black and mask melena.
- Grayish or whitish stools can result from biliary tract obstruction due to lack of bile in stool.
- Greasy, frothy, yellow stools, called **steatorrhea**, may appear with fat malabsorption.

Odor

- Distinct, foul odors may be noted with stools containing blood or extra fat or in cases of colon cancer.

Consistency

- Hard stools or long, flat stools may result from a spastic colon or bowel obstruction due to a tumor or hemorrhoids. Hard stools may also result from ingestion of oral iron.
- Mucousy, slimy feces may indicate inflammation and occur in irritable bowel syndrome.
- Watery, diarrhea stools appear with malabsorption problems, irritable bowel syndrome, emotional or psychologic stress, ingestion of spoiled foods, or lactose intolerance.

Technique/Normal Findings	Abnormal Findings
Test the feces for occult blood. Use a testing kit such as Occultest or Hemoccult II. *There should be no blood in the feces.*	■ A positive occult blood test requires further testing for colon cancer or gastrointestinal bleeding due to peptic ulcers, ulcerative colitis, or diverticulosis.
Note the odor of the feces. *No distinctly foul odors should be present.*	■ Distinctly foul odors may be noted with stools containing blood or extra fat or in cases of colon cancer.

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TEST YOURSELF NCLEX-RN® REVIEW

1 In which part of the intestinal tract are most nutrients and vitamins absorbed?
1. pancreas
2. small intestine
3. large intestine
4. rectum

2 What is the major function of the large intestine?
1. to produce hormones necessary to digest food
2. to break down lipids, proteins, and carbohydrates
3. to secrete bile into the small intestine
4. to eliminate undigested food residue

3 The appendix is attached to the surface of what segment of the large intestine?
1. cecum
2. ascending colon
3. transverse colon
4. rectum

4 A client asks you to tell her what internal hemorrhoids are. What would you say?
1. "They are part of the arteries of the body."
2. "They are just bits of tissue that occur for no reason."
3. "They are swollen veins in the anal canal."
4. "They are part of the lymphatic system."

5 Which of the following questions or statements would be appropriate for the client with an ostomy?
1. "Have you had any bleeding from your hemorrhoids?"
2. "Has your appetite changed lately?"
3. "Tell me about your family."
4. "Describe the consistency of your stools."

6 Which diagnostic tests would be most appropriate to detect intestinal parasites?
1. colonoscopy
2. CT of the abdomen
3. barium enema
4. stool specimen

7 Why is removal of polyps from the colon important?
1. to identify genetic disorders
2. to prevent the development of cancer
3. to facilitate further examination of the bowel
4. to decrease future problems with constipation

8 What assessment technique is used to assess bowel sounds?
1. inspection
2. palpation
3. percussion
4. auscultation

9 What term is used to describe black, tarry stools?
1. occult blood
2. hematemesis
3. melena
4. steatorrhea

10 You are caring for a client the first day following bowel surgery. You do not hear bowel sounds during your initial assessment. What would you do?
1. Immediately call the physician and report this abnormal finding.
2. Repeat the assessment in 30 minutes to ensure accuracy of findings.
3. Document the assessment as normal following abdominal surgery.
4. Ask another nurse to check your assessment before reporting it.

See Test Yourself answers in Appendix C.

BIBLIOGRAPHY

Amella, E. (2004). Presentation of illness in older adults: If you think you know what you're looking for, think again. *American Journal of Nursing, 104*(10), 40–52.

Bickley, L., & Szilagyi, P. (2007). *Bates' guide to physical examination and history taking* (9th ed.). Philadelphia: Lippincott, Williams & Wilkins.

Bland-Reid, C. (2004). Abdominal trauma: Dealing with the damage. *Nursing, 34*(9), 36–42.

Celiac Sprue Association. (2004). *What is celiac disease?* Retrieved form http://www.csaceliacs.org/celiac_defined.php

Eliopoulos, C. (2005). *Gerontological nursing* (6th ed.). Philadelphia: Lippincott Williams & Wilkins.

Irwin, K. (2003). Back to basics 1: Assessment of bowel dysfunction. *Journal of Community Nursing, 17*(11), 26, 28, 30–32.

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.

McCormick, S., & Clarke, C. (2004). Prevention and management of overweight/obesity in the community. *Nutrition Bulletin, 29*(3), 274–279.

Mehta, M. (2003). Assessing the abdomen: Use sight, sound and touch to screen for abnormalities. *Nursing, 33*(5), 54–55.

Nathan, A. (2004). Acute & chronic diarrhoea. *Practice Nurse, 28*(5), 44–45, 47.

National Institutes of Health. (2003). *Genes and disease: The digestive system.* Retrieved from http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=gnd.section.115

Norton, C., & Chelvanayagam, S. (2000). A nursing assessment tool for adults with fecal incontinence. *Journal of WOCN, 27*(5), 279–291.

Perform abdominal assessment, or risk missing life-threatening trauma injury: Don't allow "invisible" injuries to escape detection in your ED. (2004). *ED Nursing, 7*(7), 73–75.

Porth, C. (2005). *Pathophysiology: Concepts of altered health states* (7th ed.). Philadelphia: Lippincott.

Walker, B. (2004). Assessing gastrointestinal infections. *Nursing, 34*(5), 48–52.

Watson, R. (2001). Assessing the gastrointestinal tract in older people. 2: The lower GI tract. *Nursing Older People, 13*(1), 27–28.

Weber, J., & Kelley, J. (2006). *Health assessment in nursing* (3rd ed.). Philadelphia: Lippincott.