The gastrointestinal tract terminates in a short segment, the anal canal. Its external margin is poorly demarcated, but the skin of the anal canal can usually be distinguished from the surrounding perianal skin by its moist, hairless appearance. The anal canal is normally held in a closed position by the muscle action of the voluntary external anal sphincter and involuntary internal anal sphincter, the latter an extension of the muscular coat of the rectal wall.

The direction of the anal canal on a line roughly between anus and umbilicus should be noted carefully. Unlike the rectum above it, the canal is liberally supplied by somatic sensory nerves, and a poorly directed finger or instrument will produce pain.
The anal canal is demarcated from the rectum superiorly by a serrated line marking the change from skin to mucous membrane. This anorectal junction, often called the *pectinate* or *dentate line*, also denotes the boundary between somatic and visceral nerve supplies. It is readily visible on proctoscopic examination, but is not palpable.

Above the anorectal junction, the rectum balloons out and turns posteriorly into the hollow of the coccyx and the sacrum. In the male, the three lobes of the *prostate gland* surround the urethra. The two lateral lobes lie against the anterior rectal wall, where they are readily palpable as a rounded, heart-shaped structure about 2.5 cm in length. They are separated by a shallow median sulcus or groove, also palpable. The third, or median, lobe is anterior to the urethra and cannot be examined. The *seminal vesicles*, shaped like rabbit ears above the prostate, are also not normally palpable.

In the female, the uterine *cervix* can usually be felt through the anterior wall of the rectum.

The rectal wall contains three inward foldings, called *valves of Houston*. The lowest of these can sometimes be felt, usually on the patient’s left. Most of the rectum that is accessible to digital examination does not have a peritoneal surface. The anterior rectum usually does, however, and you may reach it with the tip of your examining finger. You may thus be able to identify the tenderness of peritoneal inflammation or the nodularity of peritoneal metastases.

### Changes With Aging

The prostate gland is small during boyhood, but between puberty and the age of about 20 years it increases roughly five-fold in size. Starting in about the 5th decade, further enlargement is increasingly common as the gland becomes hyperplastic (see p. __).
Many questions concerning symptoms related to the anorectal area and the prostate have been addressed in other chapters. For example, you will need to ask if there has been any change in the pattern of bowel function or the size or caliber of the stools. What about diarrhea or constipation? You will need to ask about the color of the stools. Turn to pp. ___–___ and review the health history regarding these symptoms, as well as queries about blood in the stool, ranging from black stools, suggesting melena, to the red blood of hematochezia to bright red blood per rectum. Has there been any mucus present in the stool?

Is there any pain on defecation? Any itching? Any extreme tenderness in the anus or rectum? Is there any mucopurulent discharge or bleeding? Any ulcerations? Does the patient have anal intercourse?

In men, review the pattern of urination (see pp. ___–___). Does the patient have any difficulty starting the urine stream or holding back urine? Is the flow weak? What about frequent urination, especially at night? Or pain or burning as urine is passed? Any blood in the urine or semen or pain with ejaculation? Is there frequent pain or stiffness in the lower back, hips, or upper thighs?

See Table 9-??? , Black and Bloody Stools, and Table 9-???, Constipation.

Change in bowel pattern, especially stools of thin pencil-like caliber, may warn of cancer. Blood in the stool from polyps or cancer, also from gastrointestinal bleeding, local hemorrhoids, mucus in villous adenoma.

Proctitis with anorectal pain, pruritus, tenesmus, discharge or bleeding in anorectal infection from gonorrhea, Chlamydia, lymphogranuloma venereum; ulcerations in herpes simplex, chancre in primary syphilis; May arise from receptive anal intercourse. Itching in younger patients from pinworms.


These symptoms suggest urethral obstruction as in benign prostatic hyperplasia or prostate cancer, especially in men older than age 70.
Also in men, is there any feeling of discomfort or heaviness in the prostate area at the base of the penis? Any associated malaise, fever, or chills?

Clinicians should discuss screening issues related to prostate cancer to promote health for men, and provide screening recommendations to both men and women for detection of colorectal cancer and adenomatous colonic polyps.

Prostate cancer is the leading cancer diagnosed in men in the United States, and the second leading cause of death in North American men. Ethnicity and age strongly influence risk. African American men have the highest incidence rate of prostate cancer in the world, and Asian and native American men have the lowest rates. Sixty percent of all new cases and approximately 80% of deaths occur in men age 70 or older. Also at risk are men with a family history of prostate cancer.

To educate patients about prostate cancer, clinicians must be knowledgeable about several issues related to general screening of patients without symptoms. Prognosis is most favorable when the cancer is confined to the prostate, and worsens with extracapsular or metastatic spread. Autopsy studies show that many men over 50, and even some who are younger, have nests of cancerous prostate cells that never cause disease. Since many of these tumors are quiescent, early detection may increase unnecessary testing and treatment without affecting survival. A further complication in decisions about screening is that currently available screening tests are not highly accurate, which heightens patient concern and leads to additional noninvasive and invasive testing.

The two principal screening tests for prostate cancer are the digital rectal examination (DRE) and the prostate-specific antigen test (PSA). Each of these tests has distinct limitations that warrant careful review with the patient.* The DRE reaches only the posterior and lateral surfaces of the prostate, missing 25% to 35% of tumors in other areas. Sensitivity of the DRE for prostate

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cancer is low, ranging from 20% to 68%. In addition, because the DRE has a high rate of false positives, further testing by transrectal ultrasound or even biopsy is common. Many professional societies recommend annual DRE between the ages of 40 or 50 and 70. In contrast, the U.S. Preventive Health Services Task Force currently recommends against routine screening by DRE until there is more definitive evidence of increased survival from early detection and of decreased adverse effects from testing and even surgery (prostatectomy carries up to a 20% risk of impotence and a 5% risk of urinary incontinence). Instead, the Task Force advises clinicians to counsel all men requesting screening about the utility of testing and “the benefits and harms of early detection and treatment.”

The benefits of PSA testing are equally unclear. The PSA can be elevated in benign conditions like hyperplasia and prostatitis, and its detection rate for prostate cancer is low, about 28% to 35% in asymptomatic men. Several groups recommend annual combined screening with PSA and DRE for men over 50 and for African Americans and men over age 40 with a positive family history. Other groups, including the U.S. Preventive Health Services Task Force, do not recommend routine PSA screening until its benefits are more firmly established.

For men with symptoms of prostate disorders, the clinician’s role is more straightforward. As men approach 50, risk of prostate cancer begins to increase. Review the symptoms of prostate disorders—incomplete emptying of the bladder, urinary frequency or urgency, weak or intermittent stream or straining to initiate flow, hematuria, nocturia, or even bony pains in the pelvis. Men may be reluctant to report such symptoms, but should be encouraged to seek evaluation and treatment early.

To increase detection of colorectal cancer, clinicians can make use of three screening tests that are currently available: the DRE, the fecal occult blood test (FOBT), and sigmoidoscopy. Both the DRE and the FOBT have significant limitations. The DRE permits the clinician to examine only 7 to 8 cm of the rectum (usually about 11 cm long)—only about 10% of colorectal cancers arise in this zone. The FOBT (see discussion on p. __) detects only 2% to 11% of colorectal cancers and 20% to 30% of adenomas in individuals over age 50, and results in a high rate of false positives. Among advocates, the DRE and FOBT are usually performed annually after age 40 to 50. Flexible sigmoidoscopy (also discussed on p. __) permits good surveillance of the distal third of the colon. It is generally recommended every 3 to 5 years for patients over 50. Patients over 40 with familial polyposis, inflammatory bowel disease, or history of colon cancer in a first-degree relative should be advised to obtain a colonoscopy or air contrast barium enema every 3 to 5 years.
Preview: Recording the Physical Examination—
The Anus, Rectum, and Prostate

Note that initially you may use sentences to describe your findings; later you will use phrases. The style below contains phrases appropriate for most write-ups. Unfamiliar terms are explained in the next section, Techniques of Examination.

“No perirectal lesions or fissures. External sphincter tone intact. Rectal vault without masses. Prostate smooth and nontender with palpable median sulcus. (Or in a female, uterine cervix nontender). Stool brown and hemoccult negative.”

OR

“Perirectal area inflamed; no ulcerations, warts, or discharge. Unable to examine external sphincter, rectal vault, or prostate because of spasm of external sphincter and marked inflammation and tenderness of anal canal.”

OR

“No perirectal lesions or fissures. External sphincter tone intact. Rectal vault without masses. Left lateral prostate lobe with 1 × 1 cm firm hard nodule; right lateral lobe smooth; median sulcus is obscured. Stool brown and hemoccult negative.”

Raises concern of proctitis from infectious cause

Raises concern of prostate cancer
For many patients, the rectal examination is probably the least popular segment of the physical examination. It may cause discomfort for the patient, perhaps embarrassment, but, if skillfully done, should not be truly painful in most circumstances. Although you may choose to omit a rectal examination in adolescents who have no relevant complaints, you should do one in adult patients. In middle-aged and older persons, omission risks missing an asymptomatic carcinoma. A successful examination requires gentleness, slow movement of your finger, a calm demeanor, and an explanation to the patient of what he or she may feel.

**Male**

The anus and rectum may be examined with the patient in one of several positions. For most purposes, the side-lying position is satisfactory and allows good views of the perianal and sacrococcygeal areas. This is the position described below. The lithotomy position may help you to reach a cancer high in the rectum. It also permits a bimanual examination, enabling you to delineate a pelvic mass. Some clinicians prefer to examine a patient while he stands with his hips flexed and his upper body resting across the examining table.

Ask the patient to lie on his left side with his buttocks close to the edge of the examining table near you. Flexing the patient’s hips and knees, especially in the top leg, stabilizes his position and improves visibility. Drape the patient appropriately and adjust the light for the best view. Glove your hands and spread the buttocks apart.

No matter how you position the patient, your examining finger cannot reach the full length of the rectum. If a rectosigmoid cancer is suspected or screening is warranted, inspection by sigmoidoscopy is necessary.
Inspection should be systematic and focused. The examination should begin with the external genitalia, progressing to the scrotum in men and the vulva in women. The examiner should note the symmetry and position of the external genitalia, as well as any abnormalities such as lesions, discharges, or swelling.

Next, the examiner should palpate the inguinal lymph nodes to look for enlargement or tenderness. This can be done by gently pressing the lymph nodes with the fingers while the patient breathes in and out deeply.

Finally, the examiner should assess the size and shape of the testicles or ovaries, noting any asymmetry or enlargement.

Throughout the examination, the patient should be communicated with and reassured to ensure their comfort and cooperation. The examiner should also ensure that the examination is performed in a private and comfortable setting.

By systematically examining the external genitalia, inguinal lymph nodes, and testicles or ovaries, the examiner can effectively assess any potential abnormalities or conditions that may require further investigation or treatment.
TECHNIQUES OF EXAMINATION

- Induration

- Irregularities or nodules

Insert your finger into the rectum as far as possible. Rotate your hand clockwise to palpate as much of the rectal surface as possible on the patient’s right side, then counterclockwise to palpate the surface posteriorly and on the patient’s left side.

Note any nodules, irregularities, or induration. To bring a possible lesion into reach, take your finger off the rectal surface, ask the patient to strain down, and palpate again.

Then rotate your hand further counterclockwise so that your finger can examine the posterior surface of the prostate gland. By turning your body somewhat away from the patient, you can feel this area more easily. Tell the patient that you are going to feel his prostate gland, and that it may make him want to urinate but he will not do so.

Sweep your finger carefully over the prostate gland, identifying its lateral lobes and the median sulcus between them. Note the size, shape, and consistency of the prostate, and identify any nodules or tenderness. The normal prostate is rubbery and nontender.

See Table 13-2, Abnormalities of the Prostate (p. ___).

EXAMPLES OF ABNORMALITIES

Induration may be due to inflammation, scarring, or malignancy.

The irregular border of a rectal cancer is shown below.
If possible, extend your finger above the prostate to the region of the seminal vesicles and the peritoneal cavity. Note nodules or tenderness.

Gently withdraw your finger, and wipe the patient’s anus or give him tissues to do it himself. Note the color of any fecal matter on your glove, and test it for occult blood.

**Female**

The rectum is usually examined after the female genitalia, while the patient is in the lithotomy position. If a rectal examination alone is indicated, the lateral position offers a satisfactory alternative. It affords a much better view of the perianal and sacrococcygeal areas.

The technique is basically similar to that described for males. The cervix is usually felt readily through the anterior rectal wall. Sometimes, a retroverted uterus is also palpable. Neither of these, nor a vaginal tampon, should be mistaken for a tumor.
### TABLE 13-1 Abnormalities of the Anus, Surrounding Skin, and Rectum

<table>
<thead>
<tr>
<th>Pilonidal Cyst and Sinus</th>
<th>Anorectal Fistula</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.jpg" alt="Image of Pilonidal Cyst and Sinus" /></td>
<td><img src="image2.jpg" alt="Image of Anorectal Fistula" /></td>
</tr>
</tbody>
</table>

A pilonidal cyst is a fairly common, probably congenital abnormality located in the midline superficial to the coccyx or the lower sacrum. It is clinically identified by the opening of a sinus tract. This opening may exhibit a small tuft of hair and be surrounded by a halo of erythema. Although pilonidal cysts are generally asymptomatic except perhaps for slight drainage, abscess formation and secondary sinus tracts may complicate the picture.

<table>
<thead>
<tr>
<th>Location</th>
</tr>
</thead>
</table>

An anorectal fistula is an inflammatory tract or tube that opens at one end into the anus or rectum and at the other end onto the skin surface (as shown here) or into another viscus. An abscess usually antedates such a fistula. Look for the fistulous opening or openings anywhere in the skin around the anus.

<table>
<thead>
<tr>
<th>Fistula</th>
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</thead>
</table>

An anal fissure is a very painful oval ulceration of the anal canal, found most commonly in the midline posteriorly, less commonly in the midline anteriorly. Its long axis lies longitudinally. Inspection may show a swollen “sentinel” skin tag just below it, and gentle separation of the anal margins may reveal the lower edge of the fissure. The sphincter is spastic; the examination painful. Local anesthesia may be required.

<table>
<thead>
<tr>
<th>Fissure</th>
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*(table continues next page)*
<table>
<thead>
<tr>
<th>TABLE 13-1</th>
<th>Abnormalities of the Anus, Surrounding Skin, and Rectum (Continued)</th>
</tr>
</thead>
</table>

**External Hemorrhoids (Thrombosed)**

External hemorrhoids are dilated hemorrhoidal veins that originate below the pectinate line and are covered with skin. They seldom produce symptoms unless thrombosis occurs. This causes acute local pain that is increased by defecation and by sitting. A tender, swollen, bluish, ovoid mass is visible at the anal margin.

**Internal Hemorrhoids (Prolapsed)**

Internal hemorrhoids are an enlargement of the normal vascular cushions that are located above the pectinate line. Here they are not usually palpable. Sometimes, especially during defecation, internal hemorrhoids may cause bright red bleeding. They may also prolapse through the anal canal and appear as reddish, moist, protruding masses, typically located in one or more of the positions illustrated.

**Prolapse of the Rectum**

On straining for a bowel movement the rectal mucosa, with or without its muscular wall, may prolapse through the anus, appearing as a doughnut or rosette of red tissue. A prolapse involving only mucosa is relatively small and shows radiating folds, as illustrated. When the entire bowel wall is involved, the prolapse is larger and covered by concentrically circular folds.

**Polyps of the Rectum**

Polyps of the rectum are fairly common. Variable in size and number, they can develop on a stalk (pedunculated) or lie on the mucosal surface (sessile). They are soft and may be difficult or impossible to feel even when in reach of the examining finger. Proctoscopy is usually required for diagnosis, as is biopsy for the differentiation of benign from malignant lesions.

**Cancer of the Rectum**

Asymptomatic carcinoma of the rectum makes routine rectal examination important for adults. Illustrated here is the firm, nodular, rolled edge of an ulcerated cancer. Polyps, as noted above, may also be malignant.

**Rectal Shelf**

Widespread peritoneal metastases from any source may develop in the area of the peritoneal reflection anterior to the rectum. A firm to hard nodular rectal “shelf” may be just palpable with the tip of the examining finger. In a woman, this shelf of metastatic tissue develops in the rectouterine pouch, behind the cervix and the uterus.
### TABLE 13-2 Abnormalities of the Prostate

<table>
<thead>
<tr>
<th>Normal Prostate Gland</th>
<th>Cancer of the Prostate</th>
</tr>
</thead>
<tbody>
<tr>
<td>As palpated through the anterior rectal wall, the normal prostate is a rounded, heart-shaped structure about 2.5 cm in length. The median sulcus can be felt between the two lateral lobes. Only the posterior surface of the prostate is palpable. Anterior lesions, including those that may obstruct the urethra, are not detectable by physical examination.</td>
<td>Cancer of the prostate is suggested by an area of hardness in the gland. A distinct hard nodule that alters the contour of the gland may or may not be palpable. As the cancer enlarges, it feels irregular and may extend beyond the confines of the gland. The median sulcus may be obscured. Hard areas in the prostate are not always malignant. They may also result from prostatic stones, chronic inflammation, and other conditions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Benign Prostatic Hyperplasia</th>
<th>Prostatitis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starting in the 5th decade of life, benign prostatic hyperplasia becomes increasingly prevalent. The affected gland usually feels symmetrically enlarged, smooth, and firm though slightly elastic. It seems to protrude more into the rectal lumen. The median sulcus may be obliterated. Finding a normal-sized gland by palpation, however, does not rule out this diagnosis. Prostatic hyperplasia may obstruct urinary flow, causing symptoms, yet not be palpable.</td>
<td>Acute prostatitis (illustrated here) is an acute, febrile condition caused by bacterial infection. The gland is very tender, swollen, firm, and warm. Examine it gently. Chronic prostatitis does not produce consistent physical findings and must be evaluated by other methods.</td>
</tr>
</tbody>
</table>