An operation called radical prostatectomy completely removes the prostate and nearby tissues. A radical prostatectomy is further described in terms of the incisions used by the surgeon to reach the gland. In a retropubic prostatectomy, the prostate is reached through an incision in the lower abdomen; in a perineal prostatectomy, the approach is through the perineum, the space between the scrotum and the anus. In radical prostatectomy, the surgeon excises the entire prostate gland, along with both seminal vesicles, both ampullae (the enlarged lower sections of the vas deferens), and other surrounding tissues. The section of urethra that runs through the prostate is cut away (and with it some of the sphincter muscle that controls the flow of urine).

Pelvic lymph node dissection is done routinely as part of a retropubic prostatectomy; with a perineal prostatectomy, lymph node dissection will require a separate incision.

Radical prostatectomy is a complicated and demanding procedure that typically requires general anesthesia and takes 2 to 4 hours. Patients stay in the hospital for about 3 days, and need to wear a tube to drain urine (catheter) for 10 days to 3 weeks. About 5 to 10 percent of patients experience surgery-related complications such as bleeding, infection, or cardiopulmonary problems. There is a small risk of death from surgery; it is less for men who are young and healthy than for men who are older and frail.

Prostatectomy also carries the risk of serious long-term problems, notably urinary incontinence, stool incontinence, and sexual impotence. (The procedure also makes it very unlikely for a man to father children, due to little ejaculate being produced without the prostate.)

Most men experience urinary incontinence following surgery. Many continue to have intermittent problems with dribbling caused by coughing or exertion. A few men permanently lose all urinary control. Some men can be helped with an artificial urinary sphincter, surgically implanted, or with injections of collagen to narrow the bladder opening.

Infrequently men may develop stool or fecal incontinence after radical prostatectomy. Fecal incontinence is the loss of normal muscle control of the bowels. Muscle damage can occur during rectal surgery. Stool incontinence may also be caused by a reduction in the elasticity of the rectum, which shortens the time between the sensation of the stool and the urgent need to have a bowel movement. Surgery or radiation injury can scar and stiffen the rectum.

At one time, prostatectomy almost invariably resulted in sexual impotence. Today, the risk of

impotence may be reduced by nerve-sparing surgery. This technique carefully avoids cutting or stretching two bundles of nerves and blood vessels that run closely along the surface of the prostate gland and are needed for an erection.

However, nerve-sparing surgery is not possible for everyone. Sometimes the cancer is too large or is located too close to the nerves. Even with nerve-sparing surgery, many men -especially older men- become impotent. Most men will lose a degree of sexual function. (If a man has trouble with erections prior to treatment, nerve-sparing surgery is probably not indicated.) Depending on age, extent of disease, and type of surgery, the chances of impotence vary widely to somewhere between 20 and 90 percent.