Comparing the Effects of Surgery, Radiation Therapy, and Active Surveillance on Men with Localized Prostate Cancer

What was the research about?
Prostate cancer occurs most often in men age 50 years and older. Usually, the cancer doesn't spread beyond the prostate gland. Doctors call this localized prostate cancer. Many men live for a long time after being diagnosed with localized prostate cancer.

The research team looked at three common treatments for localized prostate cancer:

- **Surgery**, called radical prostatectomy, which removes the prostate gland completely
- **External beam radiation therapy**, which focuses tissue-destroying beams of radiation onto the prostate gland
- **Active surveillance**, which includes regular checkups to see if the cancer progresses; checkups usually include blood tests or biopsies, where a small amount of prostate tissue is removed and sent to a lab

The research team wanted to know if there was a difference in the effects for the three treatment choices. Over three years, the team asked the men about their sexual function and urine or bowel problems.

What were the results?
**Sexual function.** After three years, men who had surgery reported lower sexual function than the men who had radiation or active surveillance. Men who had radiation and those who had active surveillance reported similar sexual function.

**Leaking of urine.** Men who had surgery reported more leaking of urine than the men who had radiation or active surveillance. Men who had radiation and those who had active surveillance reported similar leaking of urine.

**Other urine or bowel problems.** The research team asked about pain or reduced stream when passing urine, blood in the urine, and passing urine often. The team also asked about bowel function and hormone function. The only difference was that men who had surgery reported fewer of the urinary problems than men who had active surveillance.

Who was in the study?
The study included 2,550 men from across the United States with localized prostate cancer. All the men started the study within six months of being diagnosed. Of these, 74 percent were white, and 26 percent were other races. The average patient age was 64, and all were younger than 80. Of the surgeries, 76 percent used a laparoscope, a small robotic instrument with a video camera that works through small cuts to the body. Among the men who chose radiation, 45 percent also took medicines to reduce male hormones.

What did the research team do?
The research team used health records to find out which treatment each man received. The men...
completed a survey when the study began and three years later. The survey asked about sexual function and urine or bowel problems.

A group of 15 prostate cancer survivors helped the research team plan the study; 2 survivors helped conduct the study.

**What were the limits of the study?**
The study didn't measure other results that may be important to men with localized prostate cancer, such as overall quality of life, anxiety, satisfaction, and the effect of the cancer on their finances. Also, some results may occur beyond three years.

Future research could follow men for more than three years and might look at other results from treatment such as quality of life or anxiety about cancer.

**How can people use the results?**
The results could help men with localized prostate cancer and their doctors make treatment choices based on what is most important to the patient.

To learn more about this project, visit www.pcori.org/Penson007.