The development of ED is determined by the dose of radiation (how much) and field of radiation (how wide). Doses greater than 20 Gy (2000 rads) are frequently associated with large vessel injury. Typically, patients being treated with radiation for prostate cancer are receiving in excess of 70 Gy. The wider the field of radiation, the less likely the blood vessels will recover. Given that the cavernosal artery is the only artery giving rise to erection, radiation exposure to this system may severely limit blood flow into the penis.

Radiation specialists have made great efforts over the last two decades to minimize the negative effects associated with radiation, especially with the advent of 3D conformal x-ray therapy and brachytherapy (seeds). However, some men continue to suffer from this problem.

In 1997, Dr. Montorsi from Milan, Italy completed the first study looking at early postoperative preventive drug therapy for this problem. Immediate therapy after surgery, using penile injections, administered within the first two months of surgery resulted in a 67% incidence of return of a patient’s natural erections compared to 20% in men who had no treatment after surgery. It is concluded that these erections induced soon after surgery can protect the erection tissue itself and promote the return of a patient’s natural erections. There is a strong body of opinion that suggests that men with poor erections after radical prostatectomy should be treated with medications to induce erections early after surgery. The same concept would apply to post radiation therapy.

**Important concept**

In 1997, Dr. Montorsi from Milan, Italy completed the first study looking at early postoperative preventive drug therapy for this problem. Immediate therapy after surgery, using penile injections, administered within the first two months of surgery resulted in a 67% incidence of return of a patient’s natural erections compared to 20% in men who had no treatment after surgery. It is concluded that these erections induced soon after surgery can protect the erection tissue itself and promote the return of a patient’s natural erections. There is a strong body of opinion that suggests that men with poor erections after radical prostatectomy should be treated with medications to induce erections early after surgery. The same concept would apply to post radiation therapy.

**Recommendation**

- Prior to undergoing therapy, patients should be counseled regarding all possible sexual dysfunctions.
- Seek evaluation and treatment for erection problems within the first 2 months of the procedure.
- When ED exists, commence early drug therapy to obtain 2-3 erections per week. This therapy should be continued for 18 months postoperatively to increase the chance of the return of a patient’s natural erections.