

Seed Implant Radiation Therapy (Brachytherapy)

by: Dr. John Blasko,
Seattle Prostate Institute

LDR (low dose rate) brachytherapy for prostate cancer is more commonly known as seed implants. Seed implants involve the insertion of small radioactive pellets or seeds into the prostate by transrectal ultrasound guidance, in order to deliver a focused dose of radiation to the prostate.

The seeds contain radioactive isotopes. The seeds emit low energy radiation for

a period of a few months and then become inert. As a result of the low but continuous energy, an intense total dose of radiation is delivered to the prostate, but very little radiation reaches the sensitive surrounding organs such as the bladder and rectum. In the world of radiation treatment, a well-done seed implant offers the best of both worlds: a high dose to the prostate, a low dose to normal tissues.

Prostate seed implants have proven to be safe and effective for over 25 years.

What is new about seed implants in 2015? I am excited by a recent study done by **Canadian** researchers. A major criticism of prostate cancer research is the lack of high quality, prospective, randomized trials that accurately compare the results of various treatments. Well, the Canadians have managed to pull it off. They have just completed analysis of the ASCENDE-RT trial. The results have been presented at several major medical meetings, but have not yet

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Thanks!

Next meeting: January 21, 2016
Dr. Anne Katz, Clinical Nurse Specialist
Topic: Sexuality after Prostate Cancer:
What works and why.
Location: Room 4,
Seven Oaks General Hospital
Wellness Center
Time: 7:00 – 9:00 pm



*The Manitoba Prostate Cancer Support Group
does not recommend treatment modalities,
medications, or physicians.*

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Thought of The Day

Be careful about reading the fine print.....there's no way you're going to like it!

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been published and are currently available only in preliminary abstract form.

The ASCENDE-RT trial is a multicenter, randomized trial of dose-escalated external beam radiation therapy versus low-dose-rate brachytherapy for men with unfavorable-risk prostate cancer. To put this study in perspective, seed implants historically have been used in one of two ways: 1) as a stand-alone treatment for low-risk prostate cancer or, 2) as part of combination approach in conjunction with modest doses of external beam radiation for intermediate and high-risk prostate cancer. Many retrospective studies have demonstrated that the combination of modest dose external beam and a seed implant boost with or without hormones is a very effective treatment. Alternatively, sometimes high-risk disease is treated with hormones plus high-dose external beam radiation (IMRT) without seeds.

For years, many radiation experts have contended that while seed boost treatment is effective, the combination of hormones with IMRT is just as effective and is simpler to administer. The ASCENDE-RT is the very first randomized trial ever to evaluate the question of whether adding seed implants improves results to a material degree.

RESULTS OF THE ASCENDE-RT TRIAL

This randomized study demonstrates a dramatic 20% improvement in PSA success in patients who received a seed implant boost compared to those who received IMRT alone. The rationale for this improvement is that brachytherapy delivers a higher and more effective dose of radiation to the prostate which is unachievable with external radiation alone.

As you may be aware, there is controversy regarding the importance of PSA-based outcomes. Some physicians feel that a more important endpoint to measure is how many patients are alive and how many died of prostate cancer. How did the ASCENDE-RT trial do with these endpoints? Well, no difference was seen between the seed boost and the EBRT alone groups with regards to overall survival or prostate cancer-specific survival. This finding is no surprise to me and does NOT mean to me that there is no difference in the treatments. This is because not enough follow-up time has elapsed for PSA failures to manifest mortalities. In this era of multiple effective systemic treatment agents, it is not difficult to keep most people from dying of this disease for up to a decade after they have failed primary treatment. It will probably take at least another 6 or 7 years of follow-up for the PSA failures to translate into survival statistics in this study. To get on my soapbox for a minute, PSA is an incredibly important early clinical indication of success or failure. In addition to shortened survival, PSA failure has a very negative impact on quality-of-life. Further diagnostic tests are required, often followed by a lifetime of further treatment with hormones, chemotherapy or radiation. A patient with a PSA failure has a much worse quality-of-life than one who does not.



What else is new in prostate brachytherapy? Doctors who perform brachytherapy continue to analyze and publish excellent 10+ year results for the full spectrum of low to high-risk disease. Numerous comparative quality-of-life studies have appeared demonstrating the favorable side effect profile of brachytherapy

compared to surgery or IMRT. But mostly, I am impressed with the continuing evolution of technology and how it has improved the accuracy and reliability of brachytherapy.

Transrectal ultrasound imaging has made tremendous strides. We now have the capability of merging and coordinating MR imaging with transrectal ultrasound before, during, and after the operating room for even finer control and knowledge of seed placement. With this faster and more sophisticated computer software, our ability to precisely place seeds and to control the radiation doses to the urethra, bladder, and rectum is greatly improved. I expect these technological improvements to further reduce the chance of complications and further enhance cure rates.

In this era of cost-consciousness, there is an ongoing effort to assess the value of medical interventions by means of comparative effectiveness analysis. Considering outcomes and cost of treatment, the summary of these studies published in 2013 is that brachytherapy for low-risk disease is the most effective and *least expensive* initial treatment compared to IMRT, proton, or surgery.

Multiple studies over the past 25 years have demonstrated that brachytherapy either alone or in combination with external beam radiation is as effective and—particularly in intermediate and high-risk disease—superior to prostatectomy or IMRT alone for cure potential and quality-of-life. The ACENDE-RT prospective, randomized trial proves the superior cure rates attainable with seed implantation. When these excellent clinical outcomes are coupled with proven cost-effectiveness, what is there not to like about seed implants?

Source: Prostate Insights – May 2015.

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Factors That Affect Prognosis

Some of the factors that affect prognosis include:

- ◆ The type of cancer and where it is in your body
- ◆ The stage of the cancer, which refers to the size of the cancer and if it has spread to other parts of your body
- ◆ The cancer's grade, which refers to how abnormal the cancer cells look under a microscope. Grade provides clues about how quickly the cancer is likely to grow and spread.
- ◆ Certain traits of the cancer cells
- ◆ Your age and how healthy you were before cancer
- ◆ How you respond to treatment

Understanding Statistics About Survival

Doctors estimate prognosis by using statistics that researchers have collected over many years about people with the same type of cancer. Several types of statistics may be used to estimate prognosis. The most commonly used statistics include:

- ◆ **Cancer specific survival.** This is the percentage of patients with a specific type and stage of cancer who have not died from their cancer during a certain period of time after diagnosis. The period of time may be 1 year, 2 years, 5 years, etc., with 5 years being the time period most often used. Cancer-specific survival is also called disease-specific survival. In most cases, cancer-specific survival is based on causes of death listed in medical records.
- ◆ **Relative survival.** This statistic is another method used to estimate cancer-specific survival that does not use information about the cause of death. It is the percentage of cancer patients who have survived for a certain period of time after diagnosis compared to people who

do not have cancer.

- ◆ **Over-all survival.** This is the percentage of people with a specific type and stage of cancer who have not died from any cause during a certain period of time after diagnosis.
- ◆ **Disease free survival.** This statistic is the percentage of patients who have no signs of cancer during a certain period of time after treatment. Other names for this statistic are recurrence-free or progression-free survival.

Because statistics are based on large groups of people, they cannot be used to predict exactly what will happen to you. Everyone is different. Treatments and how people respond to treatment can differ greatly. Also, it takes years to see the benefit of new treatments and ways of finding cancer. So, the statistics your doctor uses to make a prognosis may not be based on treatments being used today.

Still, your doctor may tell you that you have a good prognosis if statistics suggest that your cancer is likely to respond well to treatment. Or, he may tell you that you have a poor prognosis if the cancer is harder to control. Whatever your doctor tells you, keep in mind that a prognosis is an educated guess. Your doctor cannot be certain how it will go for you.

Understanding the Difference Between Cure and Remission

Cure means that there are no traces of your cancer after treatment and the cancer will never come back.

Remission means that the signs and symptoms of your cancer are reduced. Remission can be partial or complete. In a complete remission, all signs and symptoms of cancer have disappeared.

If you remain in complete remission for 5 years or more, some doctors may say that you are cured. Still, some cancer cells can remain in your body for many years after treatment. These cells may cause the cancer to come back one day. For cancers that return, most do so within the first 5 years after treatment. But, there is a chance that cancer will come back later. For this reason, doctors cannot say for sure that you are cured. The most they can say is that there are no signs of cancer at this time.

Because of the chance that cancer can come back, your doctor will monitor you for many years and do tests to look for signs of cancer's return. They will also look for signs of late side effects from the cancer treatments you received.

Source: National Cancer Institute

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Side Effects of Surgery and Radiation

by: Stanley Brosman, MD, Pacific Urology Institute

Men with prostate cancer have many choices to face before deciding on treatment. Although treatment may be effective, there are risks. Many "complications" are really events that can be anticipated. They may be temporary or permanent. Regardless of the type of treatment, whether it is a medication, surgery or radiation, there may be side effects or complications that have the potential to change your life.

Complications associated with surgery are usually evident within the first few weeks or months. Complications that show up years later are rare. Complications associated with radiation therapy can occur early and sometimes many years later. Far and away, the very best way to minimize

complications is to be treated by physicians of the highest caliber, those who are experienced in managing prostate cancer. Just to be clear, a recurrence of the cancer is not considered to be a complication. Surgery and radiation are very effective in eliminating the cancer inside the prostate but if any cancer cells have already escaped, they will not be cured.

COMPLICATIONS ASSOCIATED WITH SURGERY

Concerns about surgery relate to just having a major surgical procedure and general anesthesia. Before surgery an extensive evaluation performed by the internist and cardiologist, ensures that there are no other pre-existing problems. Even after the surgery has been completed there are risks to be considered. Postoperatively, an infection may develop or there may be excessive bleeding necessitating a

blood transfusion or even another trip back to the operating room to stop the bleeding. There is also a risk of developing blood clots in the legs. This risk is minimized by getting men out of bed the same day or next day following surgery. In addition, during surgery a compression device is placed on the calf muscles that automatically inflates and deflates to maintain good blood flow in the legs.

Surgery often causes problems with bladder control

and erections. These may be temporary or permanent. After the operation, a catheter is left in the urethra for about a week until there is adequate healing between the urethra and its new attachment to the bladder. A minority of men have perfect bladder control right after the catheter is removed but you certainly can't count on it. With the prostate out of the way, however, the urine flows just like when you were twenty years old.

INCONTINENCE

The surgical removal of the prostate involves not only the total removal of the prostate but also the section of the urethra that that goes through the prostate. The lymph glands in the pelvis are often removed as well. The most common problem after surgery is that the ability to maintain complete urinary control is compromised. The segment of urethra that is removed contains muscles that participate in the prevention of urine leakage.

The duration of the incontinence can vary from days to months. Most men regain their continence within six to twelve months. The majority of men, regardless of the presence or absence of incontinence, will wear a pad, just incase. Men who are active in sports are advised to wear a pad because a sudden exertion or strain can trigger a squirt of urine.

The severity and recovery of continence correlates with age. Men under 65 years usually have a rapid improvement and more than 90% are completely dry within six months. Men older than 65 will need more time and those over 70 should expect to have some incontinence for a year or more. A 75-year-old, obese man had better stock up on pads and

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diapers because his risk of permanent incontinence is high. Men should initiate pelvic floor muscle exercises prior to surgery and continue after surgery.

These are the same exercises that women use to control incontinence. Men who are using more than three pads a day for more than a year are in the minority but there are remedies. However, they involve some type of surgical procedure. Men with mild to moderate incontinence, as defined by having to wear 2-3 pads a day can be improved with a "sling" procedure. An incision is made beneath the scrotum and a mesh sling is placed under the urethra. The sling lifts up the urethra and is attached to the bones to keep it in place. This compresses the urethra and the added resistance decreases the amount of leakage so that only one pad a day is necessary.

Men with more severe incontinence (3+ pads a day) can be treated by having an artificial urethral sphincter placed around the urethra. This is a cuff-like device similar to a blood pressure cuff that can be inflated. The cuff is kept inflated most of the time and keeps the urethra compressed so that urine cannot leak out. When it's time to urinate, the cuff is deflated by squeezing on a small "switch" that is placed within the scrotum. The cuff deflates for 90 seconds and then automatically inflates again. Although these procedures can improve the incontinence, they can hardly be considered cures.

URETHRAL STRICTURE

Scar tissue can form at the site where the urethra is sewn to the bladder. This is known as a stricture and occurs in about 5% of the surgeries. The symptoms are a weak urine flow, a urine stream that splits and goes in different directions and straining to urinate. Stricture is treated by stretching the scar by passing a series

of instruments of increasing size through the stricture. This is known as a urethral dilation. Another method to open the stricture is to use a laser to make several splits in it.

SEXUAL FUNCTION

The ability to obtain normal, sustainable, satisfying erections is a concern for men who have been having an active sexual life. If the nerves and blood vessels that run on the outer edge, on both sides of the prostate can be saved, there is a good chance that there will be a continuance of good sexual function. But, if there are pre-existing problems or if a man is over the age of 70, don't count on it. Also, if the cancer is extending to the edge or beyond the prostate, there is little hope of having any functional erection after surgery.

COMPLICATIONS RELATED TO RADIATION THERAPY

Urologic and rectal problems can occur but serious problems occur in less than 5% of men. It is rare for a man to develop urinary or fecal incontinence. Sexual function is usually maintained, at least for a while. The older a man is when he is treated, the more likely he is to have problems getting good erections and having perfect bladder control. In general, similar complications can develop regardless of which type of radiation is used. This includes Proton Beam, permanent seed implants (brachytherapy), high-dose,

temporary brachytherapy, IMRT, IGRT, SBRT and any other form of radiation to the prostate.

The intent of the treatment is to deliver sufficient radiation to eliminate the cancer.

However, the urethra, which goes through the center of the prostate, the bottom of the bladder, and the surface of the rectum that is next to the prostate also receive radiation. It is radiation to these areas that causes complications like urinary frequency, urgency, burning with urination and difficult bladder emptying. These symptoms can start during the first few weeks or months following the completion of the therapy and can last for a year. They tend to gradually go away and medications that are prescribed to minimize these problems can be beneficial.

Source: Prostate Insights, May 2015

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In Memoriam

Three members of our Support Group passed away in 2015.

Brian Douglas Erhart
Wm. John Killbery
Dr. Won Kyam Kim

We have valued their attendance at meetings and their readiness to share their cancer journey with others. We have been deeply touched by their willingness to be open and honest in the hope that they could assist others.

We, at the Manitoba Prostate Cancer Support Group send our sincere condolences to their families. We share in your sadness and want to let you know that we care.



Hormone Therapy

The majority of prostate cancers are hormone-sensitive, which means male hormones (androgens) such as testosterone fuel growth of the cancer. About one-third of prostate cancer patients require hormone therapy (also called androgen deprivation), which blocks testosterone production or blocks testosterone from interacting with the tumor cells. This reduces the tumor size or makes it grow more slowly. While hormone therapy may help control prostate cancer, it does not cure it.

Hormone therapy is most often used for late-stage, high-grade tumors (Gleason score of 8 or higher) or in patients with cancer that has spread outside the prostate. However, doctors have different opinions about the length and timing of hormone therapy.

Hormone therapy may be used to treat prostate cancer if:

- Surgery or radiation is not possible
- Cancer has metastasized (spread) or recurred (come back after treatment)
- Cancer is at high risk of returning after radiation
- Shrinking the cancer before surgery or radiation increases the chance for successful treatment

Intermittent hormone therapy is a variation of hormone therapy in which drugs are used for a period of time, then stopped and started again. For some men, this approach to prostate cancer causes fewer side effects. The effectiveness of this approach is still being studied, but it appears particularly useful in some situations.

The types of hormone therapies for prostate cancer are:

Anti-androgens: These drugs,

which include Eulexin® (flutamide or flutamin) and Casodex® (bicalutamide), block testosterone from interacting with the cancer cell. They are taken by mouth every day.

Anti-androgens are used most often in combination with LHRH agonists (see below). Occasionally, anti-androgens are used as an alternative to LHRH agonists if the side effects are excessive for the patient.



LHRH agonists: These drugs work by over-stimulating the pituitary gland to release luteinizing hormone-releasing hormone (LHRH). After an initial surge, this signals the testicles to suppress testosterone production. Treatments are injections, which last from one to six months, or implants of small pellets just under the skin.

LHRH agonists may cause a spike or flare in the testosterone level before treatment takes effect. To offset this effect, anti-androgens may be given for a few weeks before the initial LHRH injection. The effects of LHRH are usually not permanent, such that testosterone production may resume once the medication is stopped.

Orchiectomy: Surgical removal of the testicles. This removes the organ, which produces testosterone, and is another way to keep testosterone from the prostate

cancer. Orchiectomy is an efficient, cost-effective and convenient method of reducing testosterone, and it is an option if you will be treated with testosterone suppression indefinitely. After this surgery, most men cannot have erections.

Side effects of hormone therapies for prostate cancer may include:

- Impotence, inability to get or maintain an erection
- Loss of libido (sex drive)
- Hot flashes
- Growth of breast tissue and tenderness of breasts
- Loss of muscle mass, weakness
- Decreased bone mass (osteoporosis)
- Shrunken testicles
- Depression
- Loss of self-esteem, aggressiveness/alertness and higher cognitive functions such as prioritizing or rationalization
- Anemia (low red blood cell count)
- Weight gain
- Fatigue
- Higher cholesterol levels
- Increased risk of heart attacks, diabetes and high blood pressure (hypertension)

If you are treated with hormone therapy and have side effects, be sure to mention them to your doctors. Many of these side effects can be treated successfully.

Source: University of Texas mdanderson.org

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Notable Abstracts from the 2015 ASCO Meeting in Chicago.

Every year the annual cancer meeting of the American Society of Clinical Oncology (ASCO) in Chicago publishes the preliminary results of thousands of scientific studies. As usual, I reviewed all the scientific presentations related to prostate cancer and picked out a few that are of particular interest or applicable for men with prostate cancer. ASCO tends to publish more studies evaluating the effectiveness of treatments for men with more advanced stages of prostate cancer.

Should Men with A Rising PSA Start Hormone Therapy Immediately?

In **abstract #5007**, Dr. Nigel Spry tested the policy of starting hormone therapy immediately following PSA relapse versus waiting until further progression (metastasis, symptoms, or shortened PSA doubling time). From September 2004 to July 2012, 293 patients entered the study. After 5 years there were 30 deaths in the delayed group compared to only 16 in the men

starting Lupron immediately. Lupron reduces the risk of prostate cancer death and death from other causes.

Should Men with A Rising PSA After Surgery Add Taxotere to Their Hormone Therapy?

In **abstract #5011**, Dr. Michael J. Morris evaluated relapsing patients whose PSA doubling time was less than 9 months and whose PSA was over 1.0. Half of 413 men were treated with Lupron and the other half received Lupron and Taxotere.

The information is preliminary after only 2.5 years of follow-up but a statistical trend towards an improvement in cure rates was observed in the men treated with Taxotere and Lupron.

Can Men with Intermediate-Risk Get A Good Result with Seed Implants Alone?

In **abstract #e16041**, Dr. Barry Goy from Kaiser Permanente in Los

Angeles evaluated the long-term treatment outcomes of seed implants compared to beam radiation in men with intermediate risk prostate cancer. Between 2004 and 2007, 93 patients underwent iodine seed implantation while 597 patients received standard beam radiation in median dosage 7531 cGy. The projected 10 year cure rate for seed implants was 81.7%. For beam radiation it was 54.5%. Dr. Goy's conclusion from the study is that men with intermediate-risk prostate cancer can safely use radioactive seeds without adding beam radiation.

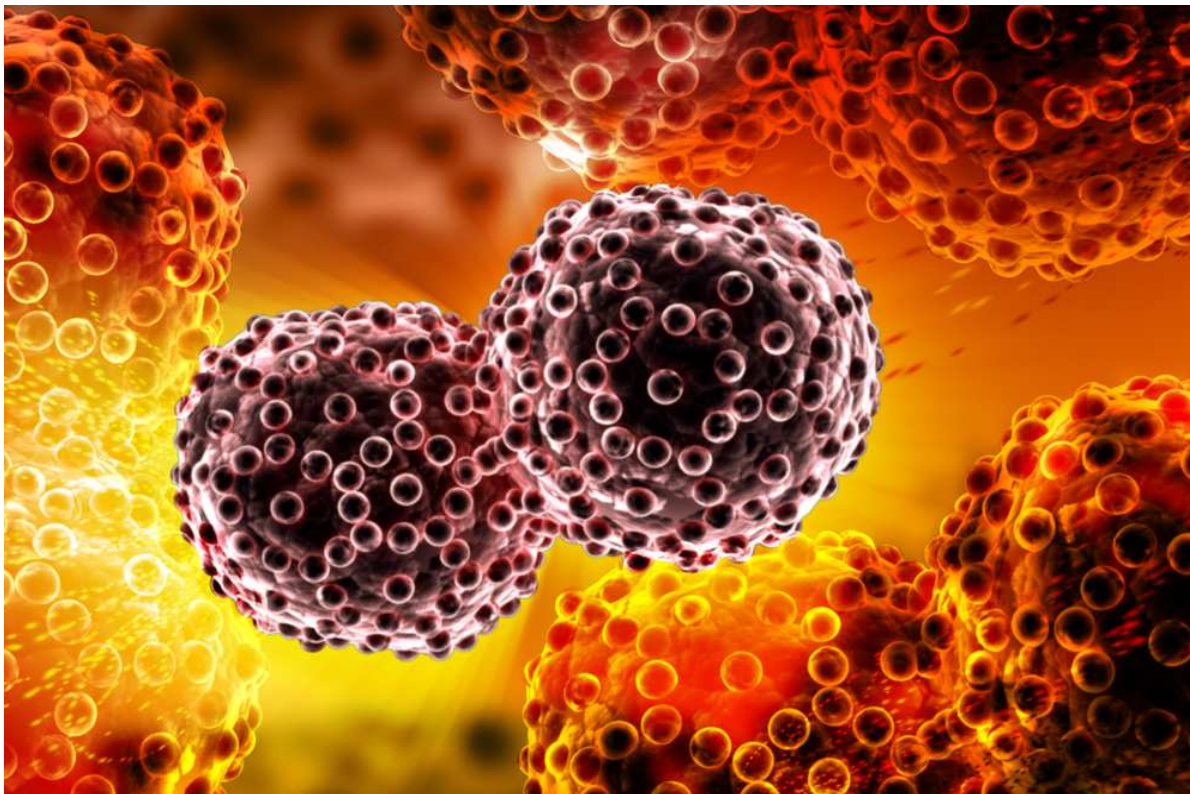
Conclusion

You can see that with all the new agents for treating prostate cancer becoming available, many of the studies are starting to address the optimal way to sequence and combine different therapies. Also, ever since the CHARTED study came out last year documenting a 17-month survival advantage of starting

Taxotere immediately at the time of diagnosis, greater attention is being paid to the importance of studying the potential benefit of using effective agents early after diagnosis. I expect this policy of combining anticancer therapies and using them early will continue to gain adherents.

Source: Prostate Cancer Research Institute August 2015

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Thanks to the Gold Wing Riders and their many donors.

The Manitoba Prostate Cancer Support Group Board would like to send our sincere thanks to the Gold Wing Riders Association of Manitoba for their past 14 consecutive years of support. This long standing relationship has indeed helped our Support Group provide awareness, education and support for those diagnosed with prostate cancer. It is with great admiration and appreciation that we recognize the work done by Grant Ubell, Bruce Zilkowsky, Gary Ross, Diane Houston and others to collect donations. We wish to recognize their dedication and efforts.

Many thanks.



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2016 MEETINGS

- Jan. 21** Dr. Anne Katz, Clinical Nurse Specialist
Topic: Sexuality After PCa:
 What Works and Why
Feb. 18 Dr. Jeff Sarancuk,
 Med. Dir. Prostate Centre
Topic: Prostate Cancer:
 Addressing Today's Issues
Mar. 17 Tom Roche, Social Worker
Topic: Mindfulness Based Stress Reduction
Apr. 21 Dr. Arbind Dubey, Radiation Oncologist
Topic: Modern Radiation Therapy for Prostate Cancer
May 19 Jennifer McLaren, Fitness Consultant
Topic: TBA

All meetings at
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