



ADT Study Newsletter

Quality of Life and Exercise Research

We are excited to bring you the second newsletter for the exercise and bone health studies! 4 months have passed since the last issue and much has changed. New research has come out and the Bone Health and Exercise studies have progressed further. This newsletter features a new participant testimonial, recent abstracts and summaries from studies, expert advice from a health psychologist (Dr. S. Nicole Culos-Reed) as well as our bone health coordinator (Dr. Maryam S. Hamidi), and an exercise tip that you can start doing right away.

Research Updates

Bone Health Study

While Androgen Deprivation Therapy (hormone therapy) or ADT helps treat prostate cancer, it can lead to bone loss and increase the risk of fractures. The purpose of this research study is to compare the effectiveness of two educational strategies which could help prostate cancer patients on ADT to improve their bone health.

It is with great pleasure that we announced on November 20th, 2014 that we completed recruitment for our study. A total of 119 men agreed to participate, divided in two groups: 60 men who had been receiving hormone therapy for more than one year and 59 men who started treatment less than twelve months ago. A small number of men could not recall that they indeed had a bone mineral density test (BMD) within 2 years and so they could no longer participate in our study.

Currently 67 of the participants have completed the study after six months and 57 are being followed.

Exercise Study

The purpose of this research study is to evaluate the effectiveness of 3 types of exercise program delivery methods for prostate cancer patients on ADT to determine which program type is most effective and feasible.

There are currently 44 (32 in Toronto, 12 in Calgary) participants enrolled in the exercise study. Seventeen participants have completed the 6-month exercise program and are now in the follow-up phase of the study. This phase of the study allows us to better understand changes in health behaviours and exercise adherence following a formal exercise program.

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We would like to thank Fred Perruzza for his contribution to Issue 1 of the ADT Study Newsletter. Fred wrote the participant testimonial: "The Exercise Study Saved Me!". Thank you Fred! We appreciate you taking the time to share your experience with us.

If you have any suggestions or would like to contribute, please email Henriette at hbreunis@uhnresearch.ca or Sara at sara.durbano@uhn.ca. We'd love to hear from you!

We would like to thank Prostate Cancer Canada for graciously sponsoring the Exercise study.



Cancer in Body and Mind

By Marcel Danesi

In 1978, the late writer Susan Sontag (1933-2004) wrote a compelling book, *Illness as Metaphor*, in which she argued that cancer was perceived to be as much a curse as a disease. The reason is that culture influences people to think of specific illnesses in certain ways. Sontag pointed out that the very word *cancer* uttered by a physician to patients was said to have seriously affected some patients who would not have necessarily succumbed to the malignancy from which they suffered: “As long as a particular disease is treated as an evil, invincible predator, not just a disease, most people with cancer will indeed be demoralized by learning what disease they have.” Sontag’s point was that people suffer as much from interpreting their disease in certain ways as from the disease itself.

As a member of the ELLICSR study of exercise for prostate cancer patients receiving hormone therapy, I certainly came to understand the power of mind over matter in the case of dangerous diseases, such as the one I have. The idea is to help us patients cope with deteriorating bones—a side-effect of the therapy—and to develop a positive, optimistic view of our bodies.



Cancer can be beaten—the ELLICSR program suggests—not only by medicine, but also by frame of mind. And ELLICSR certainly allows for a positive attitude to emerge. Through the marvelous friendship developed with the instructors, the camaraderie with the other patients, the absolutely brilliant exercise program that targets bone and muscle systems, and an overall positive reinforcement atmosphere, ELLICSR has contributed significantly to ensuring my continued health, despite the cancer. If cancer is to be beaten, then it needs support from programs such as ELLICSR. Holistic therapy means exactly that—a perfect blend of well-designed physical activity, friendship and encouragement. ELLICSR also makes us aware of what our bodies can and cannot do and allows us to strive for more than what we think we can achieve. The ELLICSR program is evidence that recovery from disease comes from balancing physical and spiritual forces within us.

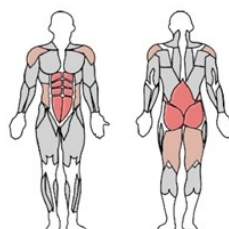
I do admit that when I received news that I had cancer around seven years ago, I felt the “curse effect” that Sontag wrote about. I looked inside myself and sought to find the “sins” I had committed in my life that brought this about. After my operation and the return of the cancer, I changed my mindset and decided to tackle my emotional Self alongside my body. It worked. I feel great today and continue to receive therapy at Princess Margaret with its marvelous doctors and support staff, and in discovering ELLICSR I now realize more than ever before that disease is as much a matter of mind as it is of body. Thanks Sara, Meagan, Holly, and all the others for helping me and the others in the program discover a basic principle of healing.

Exercise Tip: Bird-Dog

By Holly Stacey

Target Muscle Groups:

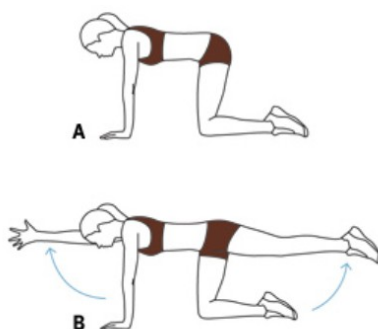
This exercise targets extensor muscles (primarily the back, gluteal muscles, legs, and shoulders) while also activating core muscles to increase strength, stability, and mobility.



How to Complete this Exercise:

A) Kneeling on a mat (or other comfortable surface), place your hands under your shoulders and knees in-line with the hips, forming a table top with your back. Contract the abdominal muscles (as if you were about to receive a punch). This is known as “bracing the abdominals”.

B) While keeping the core contracted, lift and extend the left leg straight back. If you feel stable (balance-wise), lift and extend the right arm in front of you. Hold for 5-10 seconds, repeat with the right leg and left arm.



C) Ensure that the arm and leg do not extend above shoulder and hip height during the movement and be sure to maintain a table top position with your back throughout the movement.

D) Aim to complete a total of 1-3 sets, 8-12 repetitions of this exercise. Remember that if you are able to complete 8 repetitions with ease, then you are ready to increase the total number of repetitions that you are completing.

Ready for a Challenge?

After extending the arm and leg (and holding for 5-10 seconds), bring the knee and the elbow or hand back towards the center, allowing the elbow or hand and knee to touch (or come as close as possible). Return to the extended position and repeat.



We would like to thank the Canadian Cancer Society Research Institute for graciously sponsoring the Bone Health study.



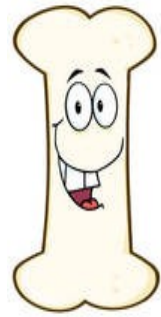
Canadian Cancer Society
Société canadienne du cancer

Research Institute

Bisphosphonate Prescriptions in Men with Androgen Deprivation Therapy Use

Gulamhusein, H., Yun, L., M. Cheung, A., Sutradhar, R., Paszat, L., Warde, P., & S.M.H. Alibhai, S. (2014). Bisphosphonate Prescriptions in Men With Androgen Deprivation Therapy Use. *Journal of the American Medical Association*, 312(21), 2285-2286 .

Androgen deprivation therapy (ADT) is a commonly used therapy for men with prostate cancer. However, bone loss and increased fracture risk are known side effects of ADT. For those receiving ADT who are diagnosed with osteoporosis or have a moderate or high fracture risk, bisphosphonates should be prescribed to protect bone health. This research examines the rate of bisphosphonate prescriptions in men beginning ADT in Ontario. Men with prostate cancer who were prescribed ADT were identified using the Institute for Clinical Evaluative Sciences and the Ontario Cancer Registry databases. Using a drug claims database, bisphosphonate prescriptions were also identified.



Researchers found that the number of bisphosphonates prescribed for men starting ADT who were also diagnosed with osteoporosis or were at a high risk of bone fracture was low. From 2010-2012, approximately only 5 of every 100 people with a prior fracture due to bone loss were prescribed bisphosphonates, while approximately 9 of every 100 people with diagnosed osteoporosis were prescribed bisphosphonates. These are very low numbers considering that these men ideally should all be prescribed bisphosphonates, particularly those with osteoporosis or prior fracture. This suggests that physicians prescribing ADT to patients should be more aware of bone health and the role of bisphosphonates in helping to protect against bone deterioration.

Bottom Line: Doctors should be more aware of bone health for patients on ADT and consider prescribing bisphosphonates for patients with a high risk of fracture.

Changes in Daily Activity Patterns with Age in U.S. Men and Women: National Health and Nutrition Examination Survey 2003-04 and 2005-06

Martin, K. R., Koster, A., Murphy, R. A., Van Domelen, D. R., Hung, M. Y., Brychta, R. J., et al. (2014). Changes in daily activity patterns with age in U.S. men and women: National Health and Nutrition Examination Survey 2003-04 and 2005-06. *J. The American Geriatrics Society*, 62, 1263-1271.

In a recent study, the sedentary (i.e., sitting) and non-sedentary behaviour (i.e., walking) of 5,788 US men and women were examined. Individuals, age 20 years and older, were given a monitoring device to measure their activity for 4 days and nights. Using this monitoring device, researchers were able to collect data on the amount of time each individual spent in sedentary activity and non-sedentary activity (light activity and moderate to vigorous activity). After analyzing the data, the researchers found there were some important differences between the activity levels of men and women as they aged.

The main finding was that young men (aged 20-34 years) spent slightly more time in non-sedentary activity than young women. However, older women (aged 60+ years) spent more time in non-sedentary activity than older men. This suggests that, on average, older men are less active than older women.

These results show that, in general, men become less active than their female counterparts as they age. Men should try to increase their activity and decrease the amount of sedentary time. Sedentary behaviours such as TV watching and using the computer are not beneficial to health. An effort to increase light activities like walking, cooking or doing chores around the house should be encouraged.



Bottom Line: Men should keep busy and move around and minimize the time they are sedentary (sitting for long periods).

How You Can Help Your Physical Activity Adherence: The Role of Behaviour Change Strategies

Dr. S. Nicole Culos-Reed, Faculty of Kinesiology, University of Calgary

If you have started your exercise program through the ADT Exercise Study you will receive lots of support for adding exercise into your regular routine. You'll learn about what exercises you can do to achieve different benefits, how to do them properly, and how to progress so that you continue to see benefits.

But what about some strategies so that you can do the actual exercises when you are “too tired”, “just don't feel like it” or “when other things come up”? That is where building in “behaviour change strategies” to your exercise routine becomes critically important.

Behaviour change strategies are the skills one can learn to support making changes, and keeping these changes over the long term. Behaviour change strategies provide the motivation, and often the skills, which make this happen. In your case, it's making exercise or physical activity part of your daily routine – i.e., making it a habit! Many of these strategies are part of the educational sessions that you will experience over the course of your study involvement (as a participant in the ADT Exercise Trial), and for future reference, you can look at your study manual. Highlighted here are some of the behaviour change strategies that we know are important for maintaining your new habit of engaging in regular physical activity.

First, goal setting for your activity routine. It's okay to have a bigger, long term goal, like engaging in the recommended 150 minutes of moderate to vigorous aerobic activity each week...but what is motivating you on a daily or weekly basis? How can you fit goal setting into this regular routine? Try to use goal setting to set small, practical and achievable goals on a daily and weekly basis. For example, you might have a goal of getting in 10 squats every day...or getting in a 10 minute walk each day...or taking the stairs in your building at home/work. Your goals should be attainable and provide you with an outcome that is beneficial (i.e., make you feel good or stronger!).



The second behaviour change strategy to help motivate you for your activity routine is to use monitoring or tracking. This could be as simple as writing down your activities on a weekly calendar – as well as how you felt after doing the activity. You can also take note about how you feel when you are out of your routine, like when you miss a session. This can be very motivational when you see a pattern of feeling better with the activity and worse without it! And that will undoubtedly help when you have those days when you “are too tired” to move!

Finally, a third behaviour change strategy that will help keep your activity routine on track is to build social support. This doesn't always have to mean having someone to do your activity with – although that can be great! It might be having a supportive family member at home who reminds you to get in your activity minutes, or who helps out with some household tasks so you can get in your planned activity. It might also mean someone driving you to your activity, or checking up with you after (maybe over a tea) to see how you are feeling. Having someone to talk about your activity with – the instructor, fellow participants, or a supportive family member or friend – can go a long way in motivating you to get in your regular exercise.

As important as the exercise, behaviour change strategies are what will make it easier for you to stick to your physical activity routine – and avoid the excuses for why you “just can't do it today”.



Endurance Training Improves Insulin Sensitivity and Body Composition in Prostate Cancer Patients Treated with Androgen Deprivation Therapy

Hvid T., Winding K., Rinnov A., Dejgaard T., Thomsen C., Iversen P., et al. (2013). Endurance training improves insulin sensitivity and body composition in prostate cancer patients treated with androgen deprivation therapy. *Endocrine Related Cancer*, 20, 621–632.

Changes in body composition and insulin resistance are some of the adverse effects of ADT. Body composition changes include loss of muscle mass and gain of fat mass, especially in the abdominal area. Insulin resistance refers to the failure of cells to respond to insulin (the body relies in part on insulin to effectively use energy from the food that you eat). Both of these side-effects are risk factors for type 2 diabetes and men with prostate cancer on ADT have been shown to be at a higher risk for developing type 2 diabetes compared with those not receiving ADT. However, regular exercise has been shown to improve both body composition and insulin sensitivity. But does it also help those with prostate cancer undergoing ADT?



To assess this, 9 men with prostate cancer on ADT and 10 men with prostate cancer who were not on ADT completed 12 weeks of endurance training to see how the training affected their insulin sensitivity and body composition. Participants in both groups improved their aerobic fitness as well as their insulin sensitivity (i.e. insulin became more effective). Body composition also improved in both groups, with a decrease in fat mass and an increase in muscle mass. Being on ADT did not stop the body from benefitting from exercise.

The results from this study demonstrate that men receiving ADT do benefit from regular endurance or aerobic exercise in terms of insulin sensitivity and body composition. Therefore, incorporating regular endurance exercise (i.e., talking, biking, or swimming) is a good way to manage the side effects of ADT.

Bottom Line: When on ADT, exercise still helps get rid of fat and will increase your body's insulin sensitivity, which reduces the risk of developing type 2 diabetes.

If you haven't taken a look at our website for the Exercise Study, please take a look at: www.adtexercisetrial.ca! You can now have easy access to all of the latest study updates, meet the study team, get links to useful resources on our website and much more! If you'd like to support us and our research in prostate cancer, please visit our website and click on the 'Support Us' link.



"Attitude is a little thing but it makes a big difference"

-Winston Churchill

Tumour Genomic and Microenvironmental Heterogeneity for Integrated Prediction of 5-Year Biochemical Recurrence of Prostate Cancer: A Retrospective Cohort Study



Currently, physicians use Prostate Specific Antigen (PSA) tests, biopsies, and national guidelines to determine the risk of cancer progression and how aggressive the disease is. Depending on these tests, physicians will classify prostate cancer into low, intermediate or high risk. Low risk cancers are mostly watched for further progression, but intermediate and high risk cancers usually need to be treated. Treatments vary from therapies such as radiation therapy and radical prostatectomy (RP) or surgery, to hormones or chemotherapy. Physicians may also use a combination of these therapies such as hormones and radiation therapy to better manage the cancer when indicated.

Deciding which therapy is given depends largely on how aggressive the disease is. Usually, with intermediate risk cancers, radiation therapy or RP is used as a treatment and physicians will monitor patients after treatment to see if more advanced therapies are required.

For those treated with radiation therapy or RP alone, cancer recurrence will occur in 30-50% of patients. These patients will require additional treatment. An improved and more personalized way of determining which treatment is best suited for a patient when they are first diagnosed (i.e., radiation alone or radiation plus other treatment modalities) could lead to lower rates of disease recurrence. This study, co-led by Dr. Robert Bristow, a clinician-scientist at the Princess Margaret Cancer Centre, investigates a test that more accurately predicts the aggressiveness of prostate cancer following treatment with radiation or surgery (RP). This test could potentially spare people at lower risk from unnecessary treatment. Such a test may impact the way prostate cancer is treated in the future.

This test uses genetic markers and tumor oxygen levels to accurately predict the relapse of cancer after treatment with just radiation therapy or RP. With this test, physicians more accurately determine whether or not radiation therapy or RP alone will be successful in treating an individual's cancer. People who may require additional treatment will ideally be able to receive such treatment earlier, rather than waiting for cancer recurrence. This test is more accurate at predicting cancer recurrence than 23 previously published tests. Before this test can be implemented clinically, it requires further testing in larger and different populations. However, this test has the potential to allow physicians to prescribe more accurate treatments based on disease characteristics and ideally will prevent the cancer recurrence in patients who may have been previously under-treated with radiation therapy or RP alone.



L Lalonde, AS Ishkanian, J Sykes, et al. (2014). Tumour genomic and microenvironmental heterogeneity for integrated prediction of 5-year biochemical recurrence of prostate cancer: a retrospective cohort study. *Lancet Oncol.* 13, 1521–1532.

Bottom Line: This test could help to better select the men who need to be treated more intensively to prevent recurrence of cancers treated with radiation therapy or surgery. These results need to be confirmed in further studies.

“We can’t direct the wind, but we can adjust the sails”

-Thomas S. Monson

Prostate Cancer and Dairy Concerns

By: Dr. Maryam S. Hamidi

The concerns over dairy products and prostate cancer arose after a few studies reported that men who have a lot of dairy products (three to five dairy servings per day) have a higher risk of prostate cancer compared to men who have two servings of dairy or less per day. However, not all studies show such relationships. For example, a recent study showed that low-fat dairy intake after a prostate cancer diagnosis is not associated with progression in prostate cancer. All these observational studies have scientific limitations and unlike clinical trials, observational studies cannot prove cause and effect relationships.

Dairy foods are a major source of calcium, vitamin D, protein and many other healthy nutrients in North American diets. We want to bring to your attention that not getting enough calcium for men with prostate cancer who are using androgen deprivation therapy may be bad for bone health. This is because low calcium intake increases the risk of bone loss and fractures. If you are concerned about having dairy, you can limit your dairy intake to two servings per day. Examples of one serving of dairy are: one cup of milk, $\frac{3}{4}$ cup of yogurt or 50 grams of cheese. Choose low-fat fermented dairy products such as kefir, yogurt and cheese over milk.

Summary

If you are trying to increase your calcium intake and you enjoy having dairy products, you do not need to cut out dairy from your diet completely; aim for two or fewer servings of dairy per day, preferably low-fat yogurt, kefir and cheese.

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Meet the Team

We are very fortunate to have a very talented team working with us on both the Exercise and Bone Health studies. The principal investigator for both studies is **Dr. Shabbir Alibhai**. **Henriette Breunis** and **Sara Durbano** are the research coordinators for the Bone Health and Exercise trials, respectively. **Darren Au** and **Clifford Taylor** are working as outcome assessors for the exercise trial and **Meagan O'Neill** is the research assistant for the study. **Vikarnan Thiruvarooran** has taken over for **Mustafa Mohamedali** as the research student working on the exercise trial. In addition to these members, we also have **Holly Stacey**, a Certified Exercise Physiologist, who will be taking over for Sara in the coming months, **Dr. Maryam S. Hamidi**, the Bone Health Care Coordinator and **Maria Habibelahian**, a research student helping to deliver exercises. Finally, the newest member, **Joanna Sandoval** will be joining us in the New Year as the new research student. From the team, we would all like to wish you the best of the holiday season!