

The Digital Examiner



Directors & Officers

President
Dave Lunn

dlunn@shaw.ca

Executive Director
Kelly Fedorowich
403 455 1916
executive.director@pccncalgary.org

Warriors
Frank Altin
faltin@telusplanet.net

Newly Diagnosed /
Active Surveillance
Ron Singer
rysingerca@yahoo.ca

Wives, Partners & Caregivers
Kelly Fedorowich
kelly@darkside.ca

Chairman
Ron Gorham
ron.gor45@gmail.com

Secretary
Ron Singer
rysingerca@yahoo.ca

Treasurer
Gerry Hawley
pccnc_treasurer@yahoo.ca

Past President
Steve Belway
belways@shaw.ca

Visit us at:
www.prostaidealcalgary.org
www.pccncalgary.org

PROSTAID Calgary
PO Box 72126
RPO Glenmore Landing
Calgary, Alberta
T2V 5H9
403 455 1916



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Change of Horses

On Oct 1, I started chemotherapy. So, time for a 'medical leave' from my role as Executive Director for PROSTAID Calgary. I am

excited to welcome Kelly Fedorowich to the position. Kelly's husband is a prostate cancer survivor. During the past 10 years, Kelly has become very knowledgeable about the disease and its impact on the family. She's a powerhouse of energy, full of ideas, and a skilled writer. I know Kelly will help take us to a higher level.

PROSTAID Calgary has been extremely busy during 2015 through our community activities to increase awareness about prostate cancer. Our efforts reached a peak during September which was Prostate Cancer Awareness Month across Canada. So far during 2015, our promotional efforts, one way or another, have reached out to well over one million people. This is quite an achievement.

BETWEEN THE SHEETS in this issue of **The Digital Examiner**, and in a presentation on October 13 by Dr. Tarek Bismar of the University of Calgary, we focus attention to the emerging role of biomarkers in the diagnosis and treatment of prostate cancer. These presentations will interest members at all stages of their journeys with prostate cancer.

Stewart Campbell, On Medical Leave

Tarek Bismar, MD



Dr. Tarek Bismar is a Professor in the Department of Pathology and Laboratory Medicine at the University of Calgary and an Adjunct Professor in the Department of Oncology at McGill University. He is also an active researcher with the Southern Alberta Cancer Research Institute and the Alberta Prostate Cancer Research Initiative.

Dr. Tarek Bismar is a Professor in the Department of Pathology and Laboratory Medicine at the University of Calgary and an Adjunct Professor in the Department of Oncology at McGill University. He is also an active researcher with the Southern Alberta Cancer Research Institute and the Alberta Prostate Cancer Research Initiative.

October 2015

Number 193

Tuesday, Oct 13, 2015 Meeting Schedule

- 6:30 PM: Newly Diagnosed & Active Surveillance Group**
Room 311 at Kerby Centre
- 6:30 PM: Warriors (Advanced Disease)**
Board Room at Kerby Centre
- 6:30 PM: Wives, Partners & Caregivers**
Room 313 at Kerby Centre
- 7:30 PM: General Meeting**
Kerby Centre Lecture Theatre

Blood Biomarkers in the Management of Prostate Cancer Tarek Bismar, MD

Our General Meetings are open to the public and free. Cookies, fruit and refreshments will be served.

Come join us at the Kerby Centre at 1133 7 Avenue SW, Calgary, AB T2P 1B2.

Parking is FREE at the Kerby Centre in lots on both sides of 7th Ave. The WEST LRT stops at the Kerby Station, right at the front door of the Kerby Centre.

Ladies, family members and caregivers are always welcome at our meetings.

Dr. Bismar earned his MD degree from the University of Damascus, Syria and then performed fellowships in surgical and genitourinary pathology at Wayne State University and Harvard Medical School-Brigham and Women's Hospital in the United States.

In 2012, Dr. Bismar was awarded the Robbins Family—Prostate Cancer Foundation Young Investigator Award and also the Donald Coffey Prize for the best research paper of 2011 published in the British Journal of Urology International.

Dr. Bismar is presently a co-investigator in a \$1.5 million research project funded by a Prostate Cancer Canada—Movember Translation Acceleration Grant. The project is titled "*Blood based detection of the migration switch in prostate cancer to predict metastatic disease*".

Cancer screening through a multi-analyte serum biomarker panel during health check-up examinations: Results from a 12-year experience.

The use of blood-based tumor biomarkers for screening malignancies at early stages has significant advantages, including being convenient, automated, quantitative, objective, and relatively inexpensive compared with histology, endoscopy, and imaging. The authors of this study describe their 12-year experience on the diagnostic usefulness of a biomarker panel consisting of eight molecules (i. e. , α -fetoprotein, carcinoembryonic antigen, prostate-specific antigen (PSA), CA 19-9, CA125, CA 15-3, squamous cell specific antigen, and cytokeratin 19 fragment) for cancer screening in Taiwanese subjects who underwent a health check-up examination at their own expenses.

The sensitivity of the panel for the detection of specific cancers was higher than that of isolated cancer-specific markers. Specifically, the sensitivity of the panel for identifying the four most commonly diagnosed malignancies (i. e. , liver cancer, lung cancer, **prostate cancer**, and colorectal cancer) was 90. 9%, 75. 0%, **100%**, and 76. 9%, respectively. The ability of the panel to detect early-stage (stage 1) hepatocellular carcinoma (HCC) or **prostate cancer** was similar to that observed for advanced malignancies.

The researchers concluded that the multi-analyte biomarker panel is clinically useful during health check-up examinations for the screening of different tumors (especially for the early detection of HCC and **prostate malignancies**).

Source: Ying-Hao Wen, et al. Department of Laboratory Medicine, Chang Gung Memorial Hospital at Linkou, Taoyuan, Taiwan. Clinica chimica acta; International Journal of Clinical Chemistry. 2015 Sep 03 [Epub ahead of print]

The prognostic significance of combined ERG and androgen receptor expression in patients with prostate cancer managed by androgen deprivation therapy

ERG and androgen receptor (AR) are known to function cooperatively in the progression of prostate cancer (PCa). *ERG* is an oncogene—meaning that it encodes a protein that typically is mutated in cancer. The *ERG* gene encodes for a protein, also called ERG, that functions as a transcriptional regulator. Genes in the ETS family regulate embryonic development, cell proliferation, differentiation, angiogenesis, inflammation, and apoptosis. www.wikipedia.com.

The prognostic value of combined ERG and AR expression and potential pathways are not well characterized. The group of Calgary researchers conducting this study assessed ERG and AR protein expression by immunohistochemistry in a cohort of 312 men with prostate cancer diagnosed by transurethral resection of the prostate (TURP – a urological operation used to treat benign prostatic hyperplasia (BPH) and other prostate disorders). Patients were divided into two groups, i.e. those with,

- No prior hormonal treatment (designated as PCa/advPCa), *versus*
- Castrate-resistant PCa (CRPC) undergoing channel TURP to relieve obstructive symptoms.

The expression status was correlated with various clinical-pathological parameters. A Swedish watchful-waiting cohort was used to validate and characterize potential gene signatures associated with ERG and AR.

Patients with combined ERG-positive/AR high expression profile demonstrated higher rates of **prostate cancer-specific mortality (PCSM)** compared with patients with ERG-negative/AR low in patients with no prior treatment (n = 90, P = 0.032), but this was attenuated in the overall cohort which included the CRPC subgroup (n = 125, P = 0.096). The prognostic significance to PCSM was validated in a Swedish watchful waiting cohort. ERG/AR overexpression status characterized 152 genes signatures including Wnt, PI3K/AKT and chemokine signaling pathways known to be deregulated in prostate cancer.

The researchers concluded that:

- *“Combined ERG/AR overexpression signifies a class of patients at highest-risk of PCSM with specific key genetic alteration likely responsible for disease progression.*
- *The prognostic value of combined ERG/AR overexpression and its associated genes should be further investigated as potential prognostic and therapeutic targets in prostate cancer progression.”*

NOTE: This work was supported by a Prostate Cancer Foundation Young Investigator Award to Tarek Bismar, MD; by Prostate Cancer Canada; and by the Movember Foundation.

Source: Kuo-Cheng Huang¹, Mohammed Alshalafa², Samara Hegazy^{1,2,3}, Michael Dolph¹, Bryan Donnelly^{2,4}, and Tarek A Bismar^{1,2,5,6}. ¹Department of Pathology and Laboratory Medicine, University of Calgary and Calgary Laboratory Services, Calgary, AB Canada; ²The Prostate Cancer Center; Calgary, AB Canada; ³Department of Pathology; Faculty of Medicine; Zagazig University; Zagazig, Egypt; ⁴Department of urology; University of Calgary; Calgary, AB Canada; ⁵Departments of Oncology, Biochemistry and Molecular Biology, Calgary, AB Canada; ⁶Southern Alberta Cancer Institute and Tom Baker Cancer Center, Calgary, AB Canada. Cancer Biology & Therapy 15:9 1120-1128, Sept, 2014.

UK Scientists Identify Five Distinct Types of Prostate Cancer

UK scientists have for the first time identified there are five distinct types of prostate cancer and found a way to distinguish between them. The findings could have important implications for how doctors treat prostate cancer in the future, by identifying tumours that are more likely to grow and spread aggressively through the body.

The researchers, from the Cancer Research UK Cambridge Institute and Addenbrooke's Hospital, studied samples of healthy and cancerous prostate tissue from more than 250 men. By looking for abnormal chromosomes and measuring the activity of 100 different genes linked to the disease, they were able to group the tumours into five distinct types, each with a characteristic genetic fingerprint.

This analysis was better at predicting which cancers were likely to be the most aggressive than the tests currently used - including the PSA test and Gleason score. But, the findings need to be confirmed in trials with larger groups of men.

Study author Dr Alastair Lamb, from the Cancer Research UK Cambridge Institute, said: *"Our exciting results show that prostate cancer can be classified into five genetically-different types. These findings could help doctors decide on the best course of treatment for each individual patient, based on the characteristics of their tumour. The next step is to confirm these results in bigger studies and drill down into the molecular 'nuts and bolts' of each specific prostate cancer type. By carrying out more research into how the different diseases behave we might be able to develop more effective ways to treat prostate cancer patients in the future, saving more lives."*

Professor Malcolm Mason, Cancer Research UK's prostate cancer expert, said: *"The challenge in treating prostate cancer is that it can either behave like a pussycat - growing slowly and unlikely to cause problems in a man's lifetime - or a tiger - spreading aggressively and requiring urgent treatment. But at the moment we have no reliable way to distinguish them. This means that some men may get treatment they don't need, causing unnecessary side effects, while others might benefit from more intensive treatment. This research could be game-changing if the results hold up in larger clinical trials and could give us better information to guide each man's treatment - even helping us to choose between treatments for men with aggressive cancers. Ultimately this could mean more effective treatment for men who need it, helping to save more lives and improve the quality of life for thousands of men with prostate cancer."*

Source: <http://www.news-medical>. July 30, 2015 in EBioMedicine.

Applying Precision Medicine to Active Surveillance

The recent introduction of a variety of molecular tests will potentially reshape the care of patients with prostate cancer. These tests may make more accurate management decisions possible for those patients who have been "overdiagnosed" with biologically indolent disease, which represents an exceptionally small mortality risk. There is a wide range of possible applications of these tests to different clinical scenarios in patient populations managed with active surveillance.

TABLE 1. Molecular Risk Assessment Tests Applicable to Active Surveillance

Assay Name (Company)	Biological Process Measured	Result
Oncotype DX: genomic prostate score (Genomic Health, www.genomichealth.com)	RNA quantification/gene expression	Likelihood of freedom from dominant Gleason score 4 and/or non-organ-confined disease
Prolaris: cell cycle progression score (Myriad Genetics, www.myriad.co)	RNA quantification/gene expression	Estimated 10-year risk of Prostate Cancer Specific Mortality or 10-year risk of Biochemical Recurrence
ProMark: proteomic prognostic tests (Metamark Genetics Inc., www.metamarkgenetics.com)	Immunohistochemical protein quantification	Likelihood of freedom from dominant Gleason score 4 and/or non-organ-confined disease; Likelihood of Gleason score 6 and ≤ T3a disease

Source: Chad A. Reichard, MD; Andrew J. Stephenson, MD; and Eric A. Klein, MD. Glickman Urological and Kidney Institute, Cleveland Clinic, Cleveland, Ohio. Cancer. March 2015. DOI: 10.1002/cncr.29496.



TrueNTH Lifestyle Management Pilot Program

Physical Activity and Yoga program for men living with prostate cancer

- 34 men in Calgary, 8 men in Halifax
- Age range of 40-80+
- Class attendance averaged 5-8 men
- Preliminary results and feedback overwhelmingly positive

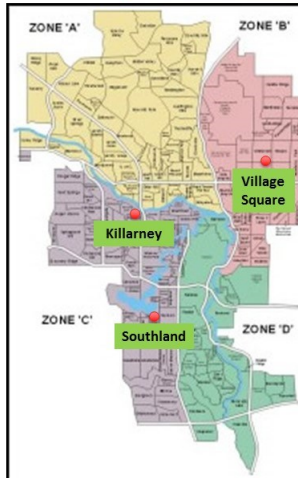
Based on this success, City of Calgary Recreation has offered to host multiple expanded & sustainable TrueNTH LM programs!



- 12 week Program
- 1 physical activity class and 1 yoga class each week
- Group fitness assessments
- Online and print resources and tools
- Facilitated by City of Calgary professionals trained by TrueNTH
- Classes designed by experts to address male issues and concerns
- All elements have been improved based on participant feedback
- TrueNTH staff providing ongoing support to staff and men
- Opportunities to provide feedback



TrueNTH Lifestyle Management City of Calgary



Killarney – Starting Sept 21
Mondays & Thursdays @ 4:45pm

Village Square – Starting Sept 29
Tuesdays @ 2:15pm & Thursdays @ 4:00pm

Southland (Mornings) – Starting Sept 21
Mondays & Thursdays @ 10:35am

Southland (Evenings) – Starting Sept 21
Mondays & Wednesdays @ 5:45pm

For more info or to enroll phone 403-210-8482 or email wellnesslab@ucalgary.ca

calgary.ca/recreation/eregistration



Thank you PROSTAID Calgary for the ongoing support!

Sustained Complete Response to Cytotoxic Therapy and a PARP Inhibitor in metastatic CRPC - A Case Report.

Solid tumors harboring BRCA1 or BRCA2 mutations have been shown to respond to PARP inhibitors. These responses are partial and transient. In this case report, the researchers describe an 82-year-old male with poorly differentiated prostate cancer with metastases to the lung, liver, abdomen, and bowel.

Molecular testing demonstrated alterations in BRCA2, ERG, and TP53. Based on this result, he was enrolled in a therapeutic trial and received carboplatin, gemcitabine, and veliparib, to which he had a partial response. He continued to respond while on veliparib maintenance alone, and after 38 cycles he had a sustained complete response. A sustained complete response to PARP inhibitor-based therapy has not previously been described for prostate cancer. This case suggests that cytotoxic therapy in combination with PARP inhibitors may yield exceptional responses, and molecular studies may help guide patient selection for these therapies.

Source: David J VanderWeele *et al*, Department of Medicine, University of Chicago. *Frontiers in Oncology*. epublish July 22, 2015, Published, September 24, 2015.



What we do:

- ◆ Help men and their families deal with prostate cancer
- ◆ Educate and inform
- ◆ Provide support
- ◆ Build awareness
- ◆ Advocate

Prostate Cancer Canada Network Calgary Society

PO Box 72126, RPO Glenmore Landing, Calgary, Alberta T2V 5H9
Phone: 403-455-1916 Email: info@pccncalgary.org
Website: www.pccncalgary.org YouTube Video Channel: [pccncalgary](https://www.youtube.com/channel/UCpccncalgary)

Breast and Prostate Cancer Survivor Responses to Group Exercise and Supportive Group Psychotherapy.

This study examined an 8 week group exercise and counseling intervention for breast and prostate cancer survivors. Groups exercised 3 days / week, 50 minutes / session, performing moderate intensity aerobic and resistance training.

Groups also underwent 90 minute supportive group psychotherapy sessions once per week. Survivors discussed their experiences in focus groups post intervention. Transcripts were analyzed using interpretative phenomenological analysis. Survivors described how exercise facilitated counseling by creating mutual aid and trust, and counseling helped participants with self-identity, sexuality, and returning to normalcy. When possible, counselors and fitness professionals should create partnerships to optimally support cancer survivors.

Source: Eric Martin, *et al*. Department of Kinesiology, California State University-Monterey Bay, Seaside, USA. *Journal of psychosocial oncology*. Aug 28, 2015[Epub ahead of print], Published Sept 24, 2015.

THE FINE PRINT: *We do not give medical advice, recommend treatments, medications or physicians. Some controversial opinions and ideas may be expressed in The Digital Examiner and at our meetings. It is our firm belief that you are entitled to know all you can about prostate cancer, and thus informed, make your own educated decisions regarding treatment and care, in consultation with your medical team. Qualified healthcare professionals should always be consulted before you make medical decisions.*



We sincerely thank George Brookman and West Canadian Digital Imaging Inc. for their support to print and distribute [The Digital Examiner](#).