



Quality of Life and Prostate Cancer Treatment Study Follow-up and Update

Why did we conduct this study?

According to the American Cancer Society, approximately 1 in 6 men will be diagnosed with prostate cancer. Treatment following diagnosis may lead to many changes in physical and emotional functioning. This body of research aimed to assess emotional processes following prostate cancer treatment and the ways in which those processes impact post-treatment physical functioning and quality of life.

Los Angeles and with funding from the UCLA Cousins Center for Psychoneuroimmunology. The study later moved to the University of California, Merced and, at this time, the study is ongoing here at Hunter College in New York City.

This study was designed as a starting point to develop an understanding of how men were coping with and reacting to prostate cancer treatment. The findings presented in this update are just the beginning of an on-going body of research seeking to design and implement supportive programs to

address the needs of men in the midst of prostate cancer diagnosis, treatment, and post-treatment living.

We hope that this study, and future studies, will help us develop a clear picture of the experiences of men at various phases of treatment and recovery from this disease. In that way, we will work to determine how best to provide support for men dealing with prostate cancer.

This study began in 2008, with participation from men undergoing prostate cancer treatment at the University of California,

What did we measure?

In attempting to understand the unique issues of prostate cancer treatment and how these issues impact quality of life following treatment, we measured:

- **EMOTIONS and COPING:** The way men identify and deal with challenges and emotions related to cancer
- **MENTAL HEALTH:** The experience and severity of distress and negative moods.
- **GENDER ROLE:** What “being a man” means in light of the experience of prostate cancer
- **PHYSICAL FUNCTIONING:** Stress hormone levels and markers of body inflammation; Prostate related physical functioning following cancer treatment (e.g. urinary, bowel, and sexual functioning)
- **SLEEP:** The timing, amount, and quality of sleep



Participants engaged with several study elements including:

- Interviews
- Questionnaires
- Saliva Samples
- Blood Samples
- Sleep Monitoring

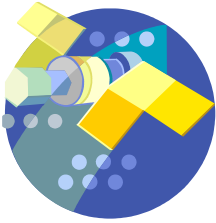
January 2014

What's included in this study update?

- What the study was measuring
- Who participated in the study
- The important findings resulting from the study so far
- Topics of future research that will be informed by the results from this study

Inside the Newsletter:

Description of study participants	2
Summary of initial study findings	2
Take-home messages	3
Future Directions	3
Contact Info	4
References	4



Findings from the study have already made a contribution to the scientific community through peer-reviewed publications and presentations at scientific conferences.

The analysis of this data is ongoing. At this time, we wanted to share the exciting and important initial findings with you.



Who Participated in the Study?

Participants were:

- 71 men with localized prostate cancer
- Ranging in age from 45 to 87 years old
- Primarily (71%) men who underwent prostatectomy/surgery as treatment for their cancer
- Mostly White/Caucasian (84.8%)
- Educated at a high school or higher level (100%)
- Employed or Retired (94%)

What did we find?

After carefully examining the information, we have some initial findings to report. The following sections include a brief summary of the results from the study that have been published in academic journals or presented at scientific conferences.

EMOTIONS and COPING

- | | | | |
|---|--|--|---|
| <p>1) Men who spent time thinking about the meaning of their feelings related to prostate cancer had lower levels of inflammation and better sleep.</p> | <p>2) Men who showed their feelings without thinking about the meaning of</p> | <p>those feelings had more inflammation.</p> | <p>that were quite different from those regularly expected.</p> |
| <p>3) Men who avoid dealing with feelings had poor sleep</p> | <p>4) Men who deal with feelings related to cancer by avoiding them showed stress hormone patterns</p> | | |

MALE GENDER ROLE and SELF CONCEPT

- | | | | |
|---|--|--|--|
| <p>1) Men who thought of treatment side-effects (like erectile dysfunction) as a threat to “being a man” were more likely to have problems with erectile dysfunction, incontinence, and bowel control. These men were also less likely to think through the</p> | <p>2) Men who viewed prostate cancer as interfering with larger life goals had more distress and worse sexual functioning after treatment.</p> | <p>3) Men who thought of themselves as being sexual or placed high value</p> | <p>meaning of their feelings.</p> <p>on their sexuality were more distressed when dealing with erectile dysfunction.</p> |
|---|--|--|--|

PHYSICAL FUNCTIONING and SLEEP

- 1) Men who had significant incontinence also had more physical stress.
- 2) Erectile dysfunction, incontinence, and poor bowel control were experienced more often by men who avoided thinking about the meaning of their feelings related to cancer.
- 3) Men in this study reported more sleep problems than were expected for a group of people who have had cancer treatment.
- 4) As mentioned in the emotion-related findings, less inflammation was found for men who took the time to identify feelings about prostate cancer and think through the meaning of those feelings.
- 5) Poor sleep and more inflammation were experienced by men who avoided dealing with feelings about prostate cancer



What do these findings mean?

These initial findings offer us several take home messages to inform on-going research:

First, thinking through the meaning of cancer-related emotions appears to be linked to better physical and emotional outcomes in several areas. We need to understand more about this relationship. Perhaps educating men about how to think through feelings related to cancer and encouraging men to engage in this behavior

might be helpful both at the time of diagnosis and during treatment.

Second, the way men see prostate cancer in relationship to life goals and sexuality was linked to different outcomes. Understanding and identifying men who feel prostate cancer is conflicting with their goals or sense of masculinity might be important. This may be one way for treatment providers to begin tailoring additional support or educa-

tion during and after treatment to those who will benefit most.

Finally, the relationship between sleep and immune system functioning is important and complex for men with prostate cancer. Future research should work to better understand this relationship and the many impacts it may have on quality of life and physical functioning outcomes.

Where are we going?

Next Steps for this Research

At this time, we are continuing this line of research and designing new projects to build upon the findings of this study.

Currently, we are working on a research paper related to life goals that are challenged by the experience of prostate cancer. We are examining the

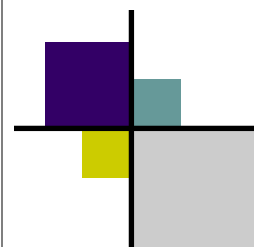
impact these conflicts have on quality of life. This paper should be submitted for peer-review in the near future.

We are also in the initial phase of launching a new, larger study following men with prostate cancer across a full year while regularly tracking several quality of life and physical functioning variables. We hope to better understand how quality of life variables are impacted by prostate can-

cer at each step over the course of diagnosis and treatment. This work will help us down the line to develop and implement supportive services for men with prostate cancer. It will also help us identify optimal timing for these interventions.

We are committed to continuing this work, understanding the experience and unique needs of men with prostate cancer.

Study findings were published during 2013 in *Health Psychology as well as Brain, Behavior, and Immunity.*



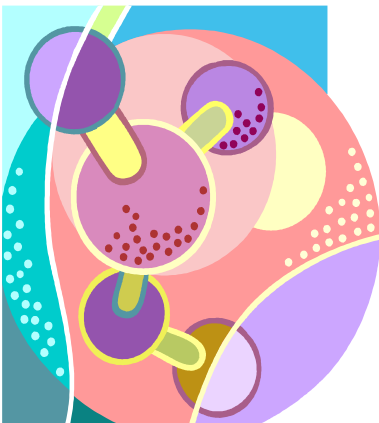
Contact Information:

If you have any questions about the study findings, please feel free to be in touch with Dr. Michael Hoyt at the address/phone number listed below. At the time this study was conducted, Dr. Hoyt was working in the University of California system. He is now an assistant professor with Hunter College in New York City.

Michael Hoyt, PhD

Hunter College
Room 738 HN
695 Park Avenue
New York, NY 10065

Phone: 212-772-5550
E-mail: michael.hoyt@hunter.cuny.edu
Website:
www.hoytcopinglab.org



The Study Team also includes the following researchers at the University of California, Los Angeles:

Annette L. Stanton, PhD
Julienne E. Bower, PhD
Michael R. Irwin, MD
Mark S. Litwin, MD, MPH

And from Pitzer College, Claremont University Consortium:

KaMala S. Thomas, PhD

Thanks for your participation!

We would like to extend our greatest thanks for your participation in our research. Thank you for so generously volunteering your time and sharing your experience. We will continue working to use this information to improve the process of treatment and support for prostate cancer.

References

The results summarized here are an important start to understanding the information participants provided. This study has been recognized as adding valuable contributions to the field through the following peer-reviewed publications and scientific conference presentations:

Corona, R., & Hoyt, M.A. (2012, April). *Subjective and objective sleep quality in men with prostate cancer*. Poster session presented at the annual meeting and scientific session of the Society of Behavioral Medicine, New Orleans, LA.

Corona, R., & Hoyt, M.A. (2013, February). *Sleep quality, coping process, and quality of life in men with prostate cancer*. Poster presented at the annual meeting of the American Psychosocial Oncology Society, Huntington Beach, CA.

Corona, R., & Hoyt, M.A. (2013, March). *Subjective and objective sleep quality in men with prostate cancer*. Poster presented at the annual meeting of the Society of Behavioral Medicine, San Francisco, CA.

Hoyt, M.A. (2010, August). Men, prostate cancer, and emotional approach coping. In P.G. Kaufmann (Chair), *Impact of male norms on prostate cancer diagnosis and recovery*. Symposium at the 11th Annual International Congress of Behavioral Medicine, Washington, DC.

Hoyt, M.A., Bower, J.E., Corona, R., Irwin, M.R., Scott, S., Stanton, A.L., & Thomas, K.S. (2011, March). *Diurnal cortisol rhythm and urinary function in prostate cancer survivors*. Poster presented at the annual meeting of the Association for Psychological Science.

Hoyt, M. A., & Carpenter, K.M. (2014, April). *Sexual self schema and depressive symptoms after treatment for prostate cancer*. Poster presentation at the annual meeting of the Society of Behavioral Medicine, Philadelphia, PA.

Hoyt, M. A., Marin-Chollom, A.M., Bower, J.E., Irwin, M.R., Thomas, K.S. & Stanton, A.L., (2014, March). *Approach and avoidance coping and diurnal cortisol rhythm in prostate cancer survivors*. Poster session to be presented at the 72nd Annual Meeting of the American Psychosomatic Society, San Francisco, CA.

Hoyt, M.A., Stanton, A.L., Bower, J.E., Thomas, K.S., Litwin, M.S., Breen, E.C., & Irwin, M.R. (2013). Inflammatory biomarkers and emotional approach coping in men with prostate cancer. *Brain, Behavior, and Immunity*, 32, 173-179.

Hoyt, M.A., Stanton, A. L., & Thomas, K. S. (2013). Cancer-related masculine threat, emotional approach coping, and physical functioning following treatment for prostate cancer. *Health Psychology*, 32 (1), 66-74.

Wally, C., & Hoyt, M.A. (2012, April). *Blockage of life goals following prostate cancer: Relationships to sexual functioning and psychological distress*. Poster session presented at the annual meeting and scientific session of the Society of Behavioral Medicine, New Orleans, LA.