



# The case for exercise is medicine as an intervention in endometrial cancer survivors

Michele L. McCarroll

Department of Clinical Medicine, College of Osteopathic Medicine, Pacific Northwest University of Health Sciences, Yakima, WA, USA

*Correspondence to:* Michele L. McCarroll, PhD, CCRP, ACSM-CCEP, FAACVPR. Chief Research Officer, Professor of Clinical Medicine, College of Osteopathic Medicine, Pacific Northwest University of Health Sciences, Office of Scholarly Activity, Iron Horse Lodge 2nd Floor, 111 University Parkway, Suite 202, Yakima, WA 98901, USA. Email: mmccarroll@pnwu.edu.

*Comment on:* Armbruster SD, Song J, Gatus L, *et al.* Endometrial cancer survivors' sleep patterns before and after a physical activity intervention: A retrospective cohort analysis. *Gynecol Oncol* 2018;149:133-9.

Received: 22 August 2018; Accepted: 15 September 2018; Published: 18 September 2018.

doi: 10.21037/gpm.2018.09.01

View this article at: <http://dx.doi.org/10.21037/gpm.2018.09.01>

The 2018 American Cancer Society estimates that about 63,230 women will be diagnosed with endometrial, womb or uterine, cancer and 11,350 women will die from endometrial cancer (EC) (1). Worldwide, 320,000 new cases were recorded in 2012, whereby making EC the sixth most common cancer in women, and the 14th most common cancer overall (2). The incidence of EC continues to rise around the world due to its adverse, long-term cardiovascular risk factors like, obesity, hypertension, physical inactivity, hyperlipidemia, and diabetes (3). While most women are survivors of EC, they often succumb to a cardiovascular disease death within five years of EC diagnosis, not to the cancer (4).

EC survivors are the most physically inactive patients, compared to other cancer survivors (5). This is highly important because, increased physical activity is linked to many decreased cardiovascular risk factors; however, the specific frequency, length, bout duration, intensity, and volume of physical activity is inconclusive to impact of a cardiovascular risk profile (6). At large, physical inactivity is a worldwide problem. In 2016, only 22.5% of persons aged 18 years and over in the United States had met the current federal physical activity guidelines (age adjusted); however, the “met” goal of Healthy People 2020 was only set at 20% of the US population (7). In addition, the World Health Organization (WHO) ranked the highest prevalence of insufficient physical activity in the Eastern Mediterranean Region (31%) and the Region of the Americas (32%) (8).

In their article, Armbruster *et al.* (9) examined sleep

patterns of EC survivors and the impact of a physical activity on their sleep quality. The authors reported improved sleep quality as measured by the Pittsburgh Sleep Quality Index (10) with a significant ( $P=0.004$  and  $P=0.050$ ) increase in the weekly total of moderate/vigorous physical activity, as reported by the Community Health Activities Model Program for Seniors (CHAMPS) questionnaire (11). While other outcomes were measured, the relation between sleep quality and physical activity, regardless of weight-loss, provides an important point for most EC patients—better quality of life. Armbruster *et al.* best point was that EC survivors suffer from sleep quality, and the antidote (cure?) to sleep dysfunction should be a prescription for physical activity. However, the case for prescribing exercise as a medicine for treatment is not often used in a gynecologic oncologist toolkit.

According to Tuyan İlhan *et al.*, most EC survivors have disturbance in sleep, and quality issues starting during the early days of their diagnosis (12). To improve EC sleep quality, quality of life, and cardiovascular risk factors, all EC patients should engage in a Survivorship Treatment plan, highlighting a specific prescription for the importance of exercise (13). Unfortunately, most healthcare providers and patients see exercise for the purposes of losing weight, and not for the myriad of other benefits which have a medicinal type of effect on the body (14). Furthermore, increased physical activity levels help to maintain a more positive mood, and increase quality of life, post-diagnosis (15). Some gynecologic oncologists may balk (scoff?) at the idea of

immediately engaging EC patients in an exercise program during the early interventions after an EC diagnosis; however, in a recent Cochran review, there is little to none, serious or life-threatening adverse effects when EC patients undergo a lifestyle exercise program (16).

Thus, there is a case for prescribing exercise as medicine. While there are some risks for engaging in physical activity, weighing those risks in EC survivors seems to tip the scales when it comes to the benefits of improved sleep quality, quality of life, and potentially lessen their cardiovascular risk factors, with recent, more novel approaches to lifestyle management, such as various electronic fitness devices, interactive gaming, and etc. EC women should be empowered and prescribed to exercise. Not only to decrease their risk of additional malignancies, but also other obesity-related diseases (17).

## Acknowledgments

*Funding:* None.

## Footnote

*Provenance and Peer Review:* This article was commissioned by the editorial office, *Gynecology and Pelvic Medicine*. The article did not undergo external peer review.

*Conflicts of Interest:* The author has completed the ICMJE uniform disclosure form (available at <https://gpm.amegroups.com/article/view/10.21037/gpm.2018.09.01/coif>). The author has no conflicts of interest to declare.

*Ethical Statement:* The author is accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

*Open Access Statement:* This is an Open Access article distributed in accordance with the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 International License (CC BY-NC-ND 4.0), which permits the non-commercial replication and distribution of the article with the strict proviso that no changes or edits are made and the original work is properly cited (including links to both the formal publication through the relevant DOI and the license). See: <https://creativecommons.org/licenses/by-nc-nd/4.0/>.

## References

1. American Cancer Society. Key Statistics for Endometrial Cancer. Retrieved on August 16, 2018. Available online: <https://www.cancer.org/cancer/endometrial-cancer/about/key-statistics.html>
2. World Cancer Research Fund. Endometrial cancer - How diet, nutrition and physical activity affect endometrial (womb) cancer risk. Retrieved on August 16, 2018. Available online: <https://www.wcrf.org/dietandcancer/endometrial-cancer>
3. Soisson S, Ganz PA, Gaffney D, et al. Long-term Cardiovascular Outcomes Among Endometrial Cancer Survivors in a Large, Population-Based Cohort Study. *J Natl Cancer Inst* 2018. [Epub ahead of print].
4. Ward KK, Shah NR, Saenz CC, et al. Cardiovascular disease is the leading cause of death among endometrial cancer patients. *Gynecol Oncol* 2012;126:176-9.
5. Schmid D, Behrens G, Keimling M, et al. A systematic review and meta-analysis of physical activity and endometrial cancer risk. *Eur J Epidemiol* 2015;30:397-412.
6. Oja P, Kelly P, Murtagh EM, et al. Effects of frequency, intensity, duration and volume of walking interventions on CVD risk factors: a systematic review and meta-regression analysis of randomised controlled trials among inactive healthy adults. *Br J Sports Med* 2018;52:769-75.
7. Healthy People 2020. Nutrition, Physical Activity, and Obesity Data 2016. Retrieved on August 16, 2018. Available online: <https://www.healthypeople.gov/2020/leading-health-indicators/2020-lhi-topics/Nutrition-Physical-Activity-and-Obesity/data>
8. World Health Organization. World: Prevalence of insufficient physical activity among adults, ages 18+ (age standardized estimates): Both sexes, 2010. Date: 03/Dec/2015. Retrieved on August 16, 2018. Available online: [http://www.who.int/gho/ncd/risk\\_factors/physical\\_activity\\_text/en/](http://www.who.int/gho/ncd/risk_factors/physical_activity_text/en/)
9. Armbruster SD, Song J, Gatus L, et al. Endometrial cancer survivors' sleep patterns before and after a physical activity intervention: A retrospective cohort analysis. *Gynecol Oncol* 2018;149:133-9.
10. Buysse DJ, Reynolds CF 3rd, Monk TH, et al. The Pittsburgh sleep quality index: a new instrument for psychiatric practice and research. *Psychiatry Res* 1989;28:193-213.
11. Stewart AL, Mills KM, King AC, et al. CHAMPS physical activity questionnaire for older adults: outcomes for

- interventions. *Med Sci Sports Exerc* 2001;33:1126-41.
12. Tuyan İlhan T, Uçar MG, Gül A, et al. Sleep quality of endometrial cancer survivors and the effect of treatments. *Turk J Obstet Gynecol* 2017;14:243-8.
  13. Foundation for Women's Cancer Survivorship Toolkit. Endometrial (Uterine) Cancer Survivorship Plan. Retrieved on August 16, 2018. Available online: <https://www.foundationforwomenscancer.org/wp-content/uploads/2018-Endometrial-Survivorship-Plan-FWC-SGO.pdf>
  14. American College of Sports Medicine. Exercise is Medicine – A Global Health Initiative. Retrieved on August 16, 2018. Available online: <http://exerciseismedicine.org/>
  15. Shisler R, Sinnott JA, Wang V, et al. Life after endometrial cancer: A systematic review of patient-reported outcomes. *Gynecol Oncol* 2018;148:403-13.
  16. Kitson S, Ryan N, MacKintosh ML, et al. Interventions for weight reduction in obesity to improve survival in women with endometrial cancer. *Cochrane Database Syst Rev* 2018;2:CD012513.
  17. Laskey RA, McCarroll ML, von Gruenigen VE. Obesity-related endometrial cancer: an update on survivorship approaches to reducing cardiovascular death. *BJOG* 2016;123:293-8.
- (English Language Editor: Jeremy Dean Chapnick, AME Publishing Company)

doi: 10.21037/gpm.2018.09.01

**Cite this article as:** McCarroll ML. The case for exercise is medicine as an intervention in endometrial cancer survivors. *Gynecol Pelvic Med* 2018;1:6.