

ACS Cancer Conference 2025

March 12-14 | Phoenix, AZ

Exercise Oncology: Ready for Prime Time

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Disclosure

- Lead author on Essentials of Exercise Oncology. Wolters Kluwer 2025.

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ACS Cancer Programs
American College of Surgeons

Overview

- The evidence base in exercise oncology
 - The standards
- The practice of exercise oncology
- Challenges of the business of exercise oncology

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American College of Sports Medicine Roundtable Report on Physical Activity, Sedentary Behavior, and Cancer Prevention and Control

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ABSTRACT

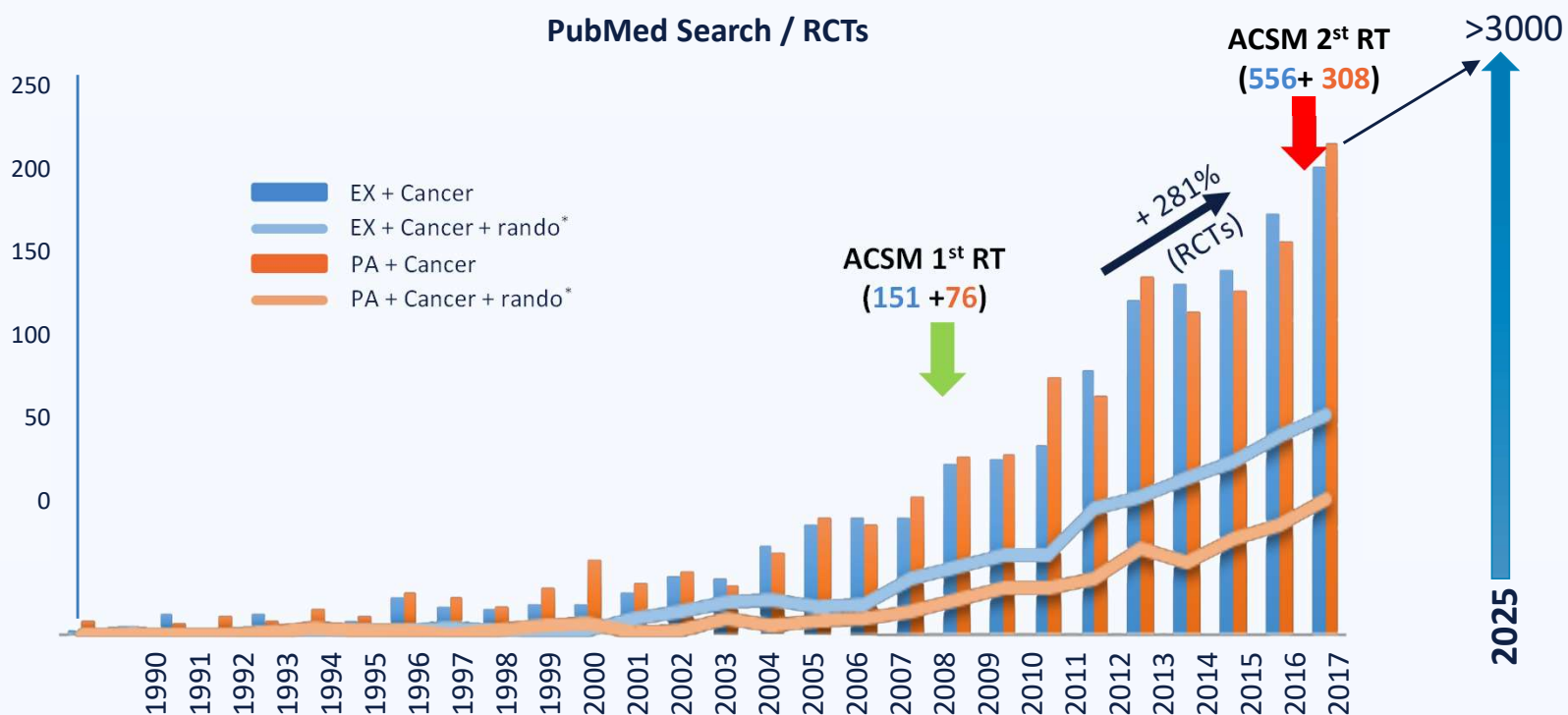
PATEL, A. V., C. M. FRIEDENREICH, S. C. MOORE, S. C. HAYES, J. K. SILVER, K. L. CAMPBELL, K. WINTERS-STONE, L. H. GERBER, S. M. GEORGE, J. E. FULTON, C. DENLINGER, G. S. MORRIS, T. HUE, K. H. SCHMITZ, and C. E. MATTHEWS. American College of Sports Medicine Roundtable Report on Physical Activity, Sedentary Behavior, and Cancer Prevention and Control. *Med. Sci. Sports Exerc.*, Vol. 51, No. 11, pp. 2391–2402, 2019. **Introduction:** The American College of Sports Medicine convened an International Multidisciplinary Roundtable on Exercise and Cancer in March 2018 to evaluate and translate the evidence linking physical activity and cancer prevention, treatment, and control. This article discusses findings from the Roundtable in relation to the biologic and epidemiologic evidence for the role of physical activity in cancer prevention and survival. **Results:** The evidence supports that there are a number of biologically plausible mechanisms, whereby physical activity can influence cancer risk, and that physical activity is beneficial for the prevention of several types of cancer including breast, colon, endometrial, kidney, bladder, esophageal, and stomach. Minimizing time spent in sedentary behavior may also lower risk of endometrial, colon and lung cancers. Conversely, physical activity is associated with higher risk of melanoma, a serious form of skin cancer. Further, physical activity before and after a cancer diagnosis is also likely to be relevant for improved survival for those diagnosed with breast and colon cancer; with data suggesting that postdiagnosis physical activity provides greater mortality benefits than prediagnosis physical activity. **Conclusions:** Collectively, there is consistent, compelling evidence that physical activity plays a role in preventing many types of cancer and for improving longevity among cancer survivors, although the evidence related to higher risk of melanoma demonstrates the importance of sun safe practices while being physically active. Together, these findings underscore the importance of physical activity in cancer prevention and control. Fitness and public health professionals and health care providers worldwide are encouraged to spread the message to the general population and cancer survivors to be physically active as their age, abilities, and cancer status will allow. **Key Words:** PHYSICAL ACTIVITY, SEDENTARY TIME, CANCER, PREVENTION, SURVIVAL

Summary of State of Evidence on Physical Activity and Cancer Survival: Major Sites

Cancer Site	Pre-diagnosis PA		Post-diagnosis PA	
	Cancer-Specific	All Cause Mortality	Cancer-Specific	All Cause Mortality
Breast	↓↓	↓↓	↓↓	↓↓
Colorectal	↓↓	↓↓	↓↓	↓↓
Prostate	Null	↓↓	↓↓	↓↓
20-40% reduction in mortality risk, depending on the amount of exercise				
Kidney	↓	NA	NA	NA
Endometrium	Null	Null	NA	NA
Ovarian	Null	Null	NA	NA

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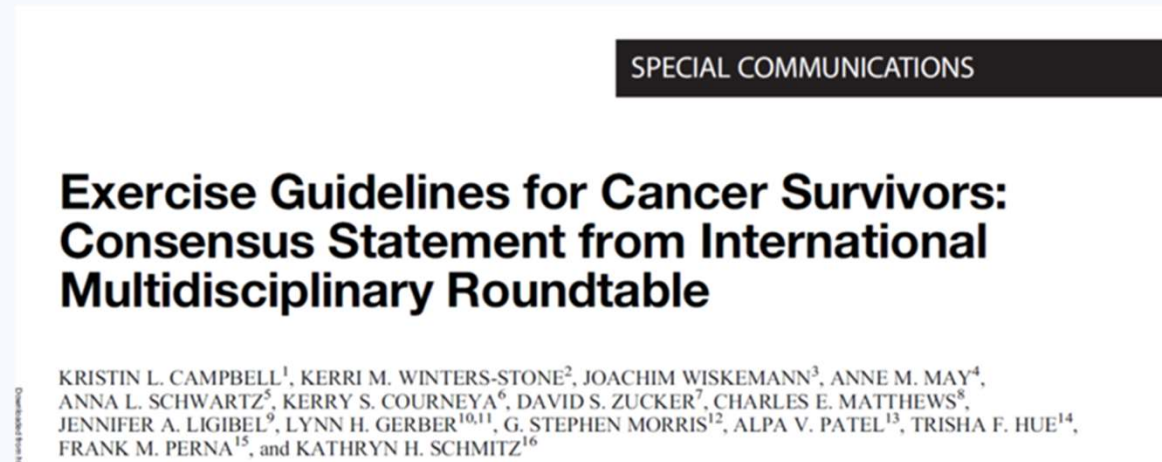
Proliferation of RCTs in the Field of Exercise Oncology (80% in Breast)



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Documented Benefits of Exercise during Cancer Tx

- Fatigue
- Sleep
- Quality of life
- Anxiety
- Depression
- Body composition
- Function
- Breast cancer related lymphedema



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Guidelines

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SPECIAL COMMUNICATIONS

CA CANCER J CLIN 2022;0: 1–33

American Cancer Society nutrition and physical activity guideline for cancer survivors

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ASCO special articles

Exercise, Diet, and Weight Management During Cancer Treatment: ASCO Guideline

Jennifer A. Ligibel, MD¹; Kari Bohlke, ScD²; Anne M. May, PhD³; Steven K. Clinton, MD, PhD⁴; Wendy Demark-Wahnefried, PhD, RD⁵; Susan C. Gilchrist, MD, MS⁶; Melinda L. Irwin, PhD, MPH⁷; Michele Late⁸; Sami Mansfield, BA⁹; Timothy F. Marshall, PhD, MS¹⁰; Jeffrey A. Meyerhardt, MD, MPH¹; Cynthia A. Thomson, PhD, RD¹¹; William A. Wood, MD, MPH¹²; and Catherine M. Alfano, PhD¹³

Guideline Question:

For adult patients with cancer undergoing active treatment with systemic antineoplastic therapy or radiotherapy, or who are in the peri-operative period, do interventions involving exercise, diet, and/or weight control compared with no intervention, lead to meaningful improvements in outcomes related to treatment toxicity, quality of life, or cancer control?

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Guideline Recommendations: Exercise

Question 1: Does exercise during cancer treatment safely improve outcomes related to QoL, treatment toxicity, or cancer control?

Recommendation 1.1. Oncology providers should recommend aerobic and resistance exercise during active treatment with curative intent to mitigate fatigue, preserve cardiorespiratory fitness, physical functioning, and strength; and in some populations, improve QoL and reduce anxiety and depression. In addition, exercise interventions during treatment have low risk of adverse events. Evidence was not sufficient to recommend for or against exercise during treatment to improve cancer control outcomes (recurrence or survival) or treatment completion rates.

Recommendation 1.2. Oncology providers may recommend preoperative exercise for patients undergoing surgery for lung cancer to reduce length of hospital stay and postoperative complications (Type: evidence based, benefits outweigh harms; Evidence quality: low; Strength of recommendation: weak).

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Guideline Recommendations: Diet and Weight

Question 2: Does consuming a particular dietary pattern or food(s) during cancer treatment safely improve outcomes related to QoL, treatment toxicity, or cancer control?

Recommendation 2.1. Ketogenic or low-carbohydrate diets are not recommended to prevent infection in patients with neutropenia. Evidence quality: low;

Currently insufficient evidence to recommend for or against dietary interventions during treatment

Recommendation 2.2. Neutropenic diets (specifically diets that exclude raw fruits and vegetables) are not recommended to prevent infection in patients with neutropenia. Evidence quality: low;

Neutropenic diets (diets that omit raw fruits and vegetables) for the purpose of decreasing infection are not recommended during active treatment

Question 3: Do interventions to promote intentional weight loss or avoidance of weight gain during cancer treatment safely improve outcomes related to QoL, treatment toxicity, or cancer control?

Recommendation 3. There is currently insufficient evidence to recommend for or against weight loss/prevention of weight gain interventions during treatment.

Currently insufficient evidence to recommend for or against weight loss/prevention of weight gain interventions during treatment

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NAPBC Standards as of 2024

- New standards, recently adopted, will require breast program to declare a plan for
 - Functional evaluations prior to surgery, radiation, medical oncology (leading to referrals)
 - **Documented exercise recommendations in medical oncology**
 - Exercise referrals at the point of survivorship



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4.6 Rehabilitation Care Services

4.6 Rehabilitation Care Services

Definition and Requirements

If available, it is recommended that a rehabilitation professional attend the cancer committee meeting to lead the discussion and provide the report.

Oncology Rehabilitation and Exercise Oncology exist on a continuum. Exercise Oncology is not mentioned in this standard.

Rehabilitation is an essential component of comprehensive cancer care, beginning at the time of diagnosis and being continuously available throughout treatment, surveillance, and, when applicable, through end of life.

Rehabilitation professionals associated with cancer rehabilitation typically include, but are not limited to:

- Physiatrists
- Physical therapists
- Occupational therapists
- Speech language pathologists

Types of rehabilitative care services may include, but are not limited to:

- Screening, diagnosis, and management of physical dysfunction, impairments, and disabilities
- Interventions to manage identified functional impairments and disabilities
- Screening, diagnosis, and management of pain and non-

care services are provided on-site and by referral

- Cancer committee minutes that document the required yearly evaluations of the rehabilitation care services

Measure of Compliance

Each calendar year, the cancer program fulfills all of the compliance criteria:

1. The cancer committee develops policies and procedures to guide referral to appropriate rehabilitation care services on-site or by referral.
2. The process for referring or providing rehabilitation care services to cancer patients is monitored and reviewed by the cancer committee and documented in the cancer committee minutes. The review meets the requirements outlined on page V under "Standards Requiring Annual Review."

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Standard 4.7 is Oncology Nutrition Services

4.7 Oncology Nutrition Services

Standard 4.7 provides an opportunity for adding exercise oncology, in light of the ASCO standard and other guidelines.

requirements and recommendations throughout the continuum of cancer care, including prevention, diagnosis, treatment, survivorship, and palliative care.

Multi-modality cancer treatments can impair a cancer patient's ability to consume, digest, and absorb essential nutrition and hydration. RDNs—also known as Registered Dietitians (RDs)—are uniquely trained to address treatment-related symptom management, nutrition support, and quality-of-life concerns through medical nutrition therapy and education. In addition, RDNs are qualified to discuss diet, nutrition, and lifestyle recommendations for survivorship, health promotion, and disease prevention.

The cancer program defines and identifies the nutrition services provided on-site and by referral. Components of oncology nutrition services include, but are not limited to:

Nutritionist

- Cancer committee minutes that document the required yearly evaluations of the oncology nutrition services

Measure of Compliance

Each calendar year, the cancer program fulfills all of the compliance criteria:

1. Oncology nutrition services are provided, on-site or by referral, by a Registered Dietitian Nutritionist.
2. The process for referring or providing oncology nutrition services to cancer patients is monitored and reviewed by the cancer committee and documented in the cancer minutes. The review meets the requirements outlined on page V under "Standards Requiring Annual Review."

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4.8 Survivorship program

4.8 Survivorship Program

Definition and Requirements

The cancer committee oversees the development and implementation of a survivorship program directed at meeting the needs of cancer patients treated with curative intent.

Survivorship Program Team

The cancer committee appoints a coordinator of the survivorship program per the requirements in Standard 2.1: Cancer Committee.

The Survivorship Program Coordinator develops a survivorship program team. Suggested specialties include physicians, advanced practice providers, nurses, social workers, nutritionists, physical therapists, and other allied health professionals.

The survivorship program team determines a list of services and programs, offered on-site or by referral, that address the needs of cancer survivors who have completed their first course of treatment. These services and programs must address the needs of patients who have completed their first course of treatment, but may also be utilized by patients in active treatment.

Survivorship Program Services

Services utilized by the survivorship program may include, but are not limited to:

- Treatment summaries
- Survivorship care plans
- Screening programs for cancer recurrence
- Screening for new cancers
- Seminars for survivors
- Rehabilitation services
- Nutritional services
- Psychological support & psychiatric services
- Support groups and services
- Formalized referrals to experts in cardiology, pulmonary services, sexual dysfunction, fertility counseling
- Financial support services
- Physical activity programs

Survivorship Care Plans (SCP)

The CoC recommends and encourages that patients receive a survivorship care plan (SCP), but delivery of such plans is not a required component of this standard. Delivery of SCPs may be utilized as one of the services offered to survivors to meet the requirements of this standard. If so, then the program defines the population to receive care plans.

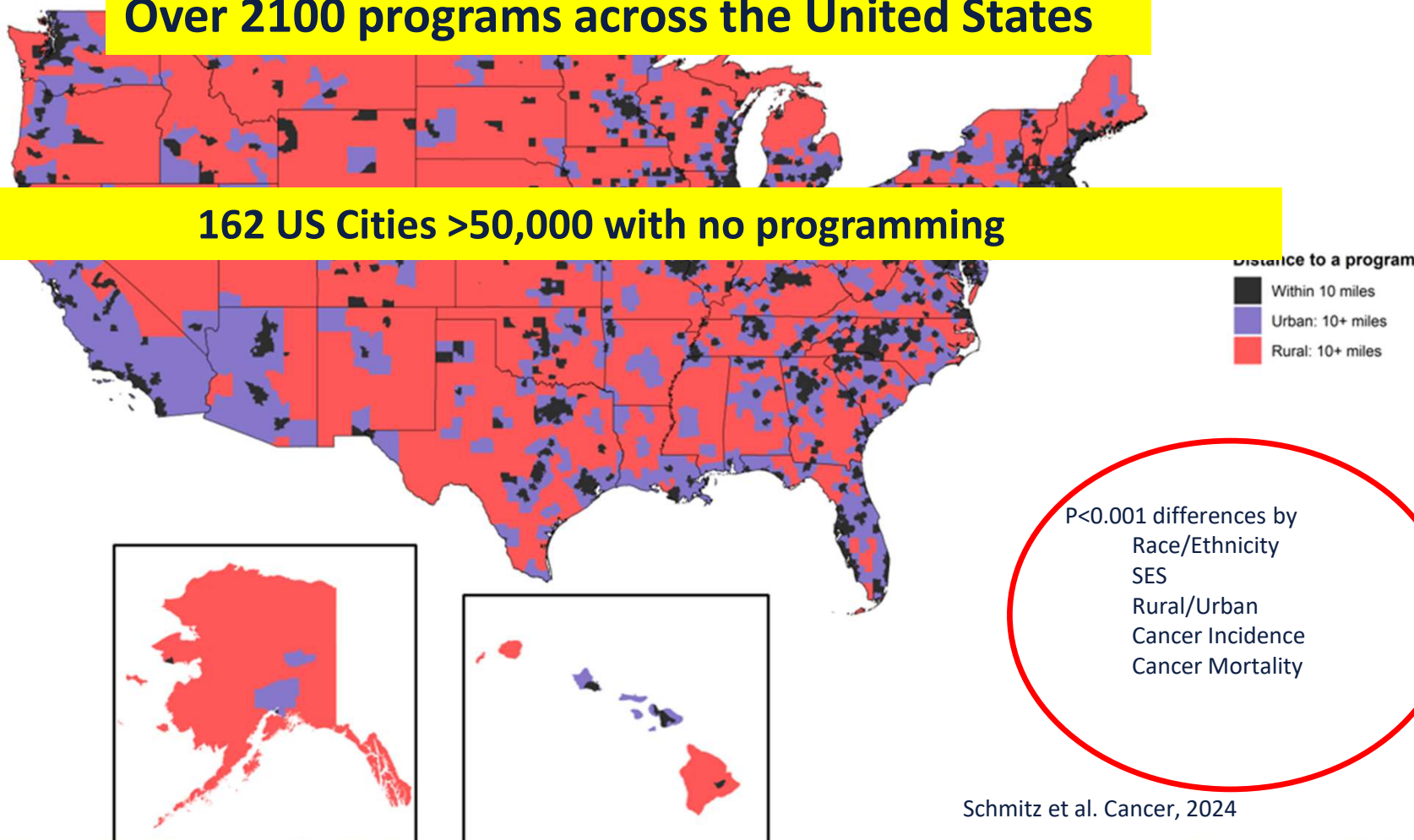
Physical activity
is one of 12
options, not
required

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Geographic Distribution of Cancer Rehab and Exercise Oncology Programs in the U.S.

Over 2100 programs across the United States

162 US Cities >50,000 with no programming



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Review of 5 programs

- University of Vermont Steps to Wellness
- Cancer Wellness for Life (Kansas)
- Maple Tree Cancer Alliance (Ohio)
- Huntsman Cancer Institute POWER program (Utah)
- Memorial Sloan Kettering Healthy Living Program (New York)

Gorzelitz et al TJACSM 2025

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Planning, Implementing and Sustaining Exercise Oncology Programs

- Planning
 - Organizational readiness
 - Leadership buy in
 - Alignment with institutional priorities
 - Gathering advocates/champions
- Implementation
 - Program costs
 - Program structure
 - Risk Management
 - Cost recovery options
- More Implementation
 - Understanding clinical workflow
 - Negotiating referral processes
 - Incorporation into EMR
 - Clinician education
 - Clinician/Patient education
 - Roles and responsibilities
- Sustainability
 - Navigating leadership changes
 - Infrastructure for program eval
 - Communication of program value to leadership

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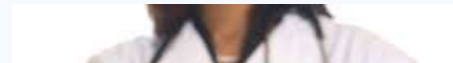
Analogy.... Doctors prescribe chemo



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Analogy... Exercise professionals prescribe exercise

We know 'brochure therapy' does not work.



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Conclusion

- The evidence base is robust enough for ASCO to use the word 'SHOULD' in its guidelines
- NAPBC has added a specific guideline for exercise recommendations while patients are under the care of a medical oncologist
- There are opportunities to pivot COC guidelines to match the evidence
 - 4.6
 - 4.7
 - 4.8

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