



Dana-Farber
Cancer Institute

Exercise Clinical Trial Opportunities for Men with Prostate Cancer in the Greater Boston Area

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OVERVIEW

EXERCISE ACROSS THE CANCER CONTINUUM



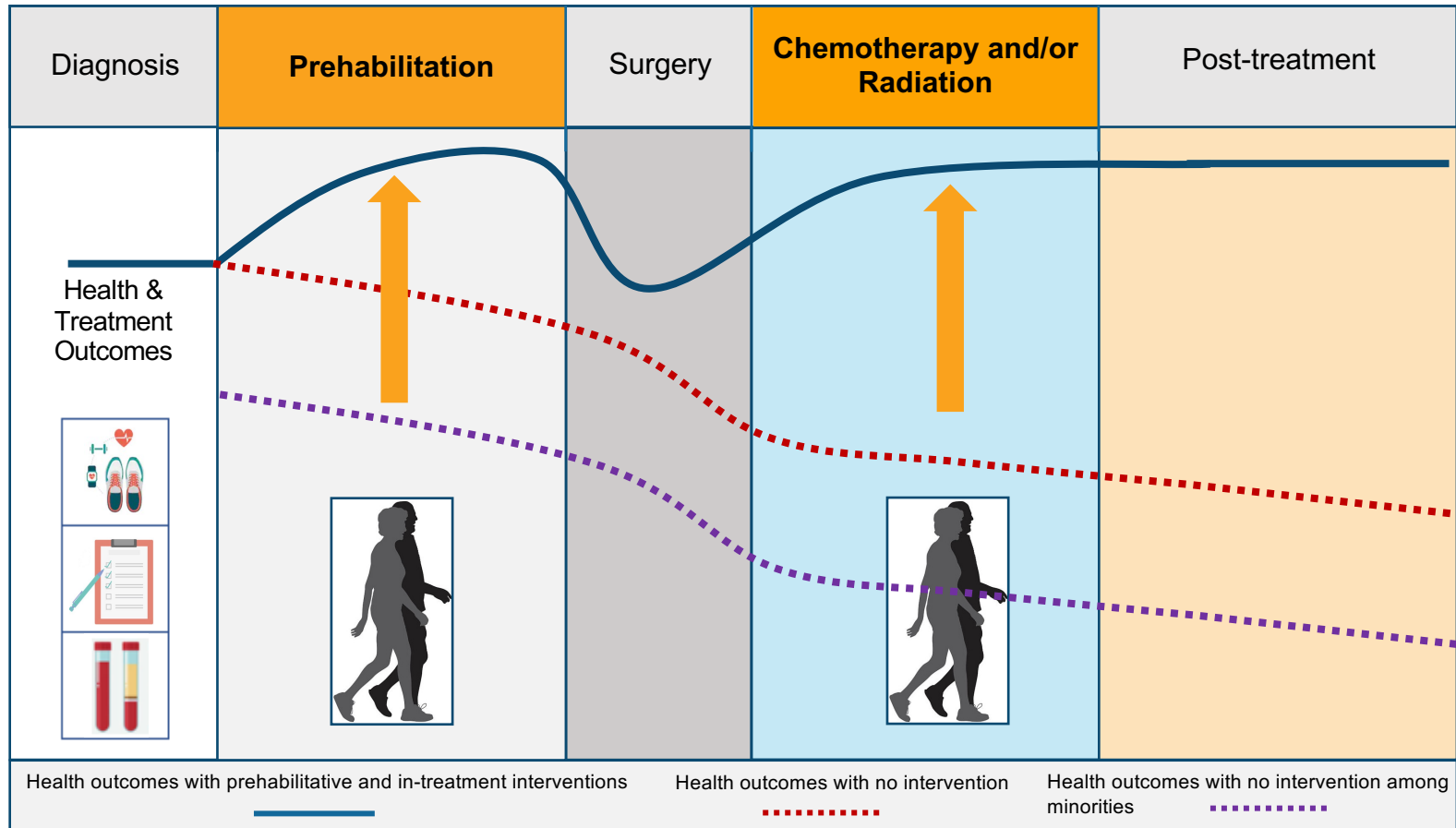
The Problem

**Exercise as
Medicine**

**Exercise
Oncology
Trials in
Boston**

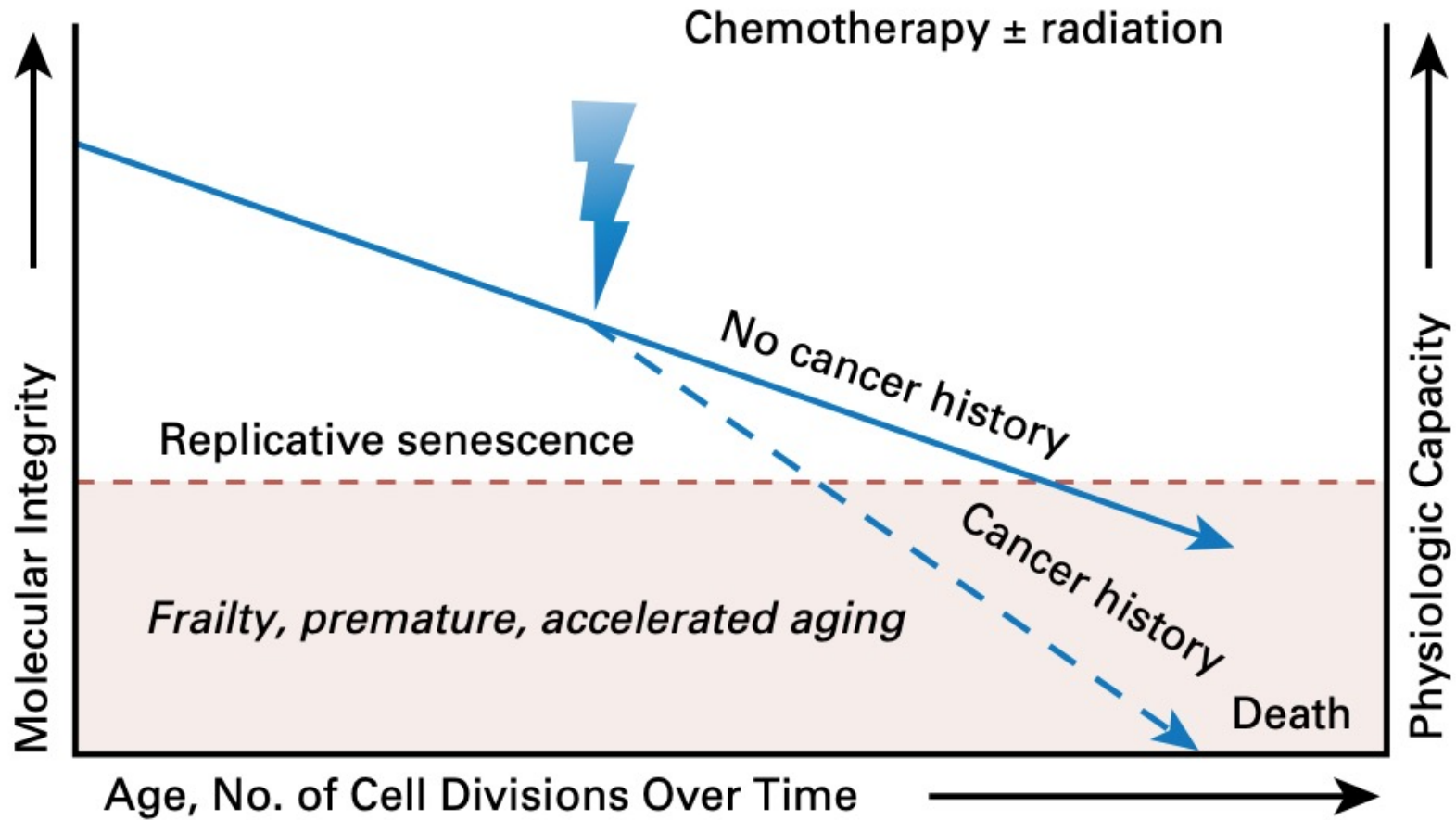
Our Research Goal

To Optimize Treatment Outcomes and Reduce Comorbid Conditions with Exercise In Cancer Survivors to Progress Exercise Oncology Research



The Problem

Cancer survivors are a vulnerable population prone to accelerated aging.



The Problem

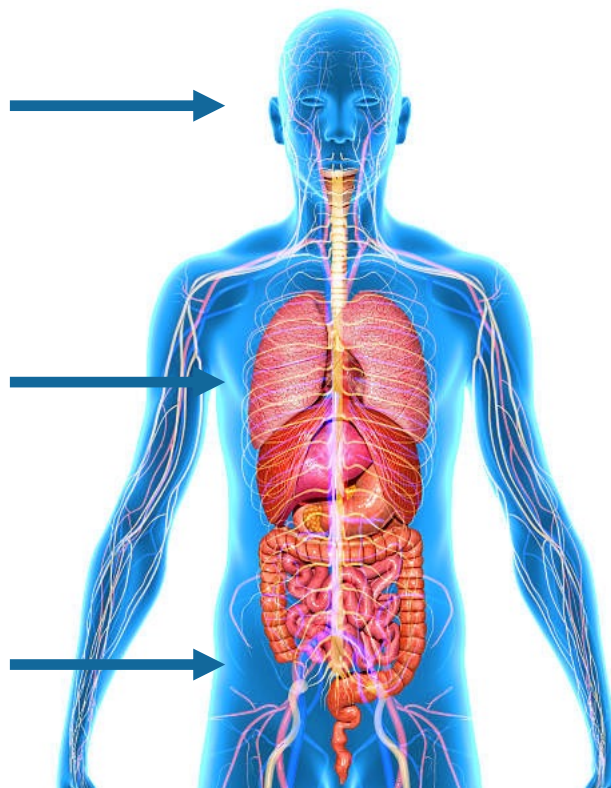
Pre-existing conditions at diagnosis in combination with treatment promote comorbid disease risk in cancer survivors.

Multiple-Hit Hypothesis

Direct Hit-
Cancer
Cancer Treatments

Indirect Hit-
Modifiable Lifestyle
Factors

Baseline Status-
Age, Smoking,
Comorbidities

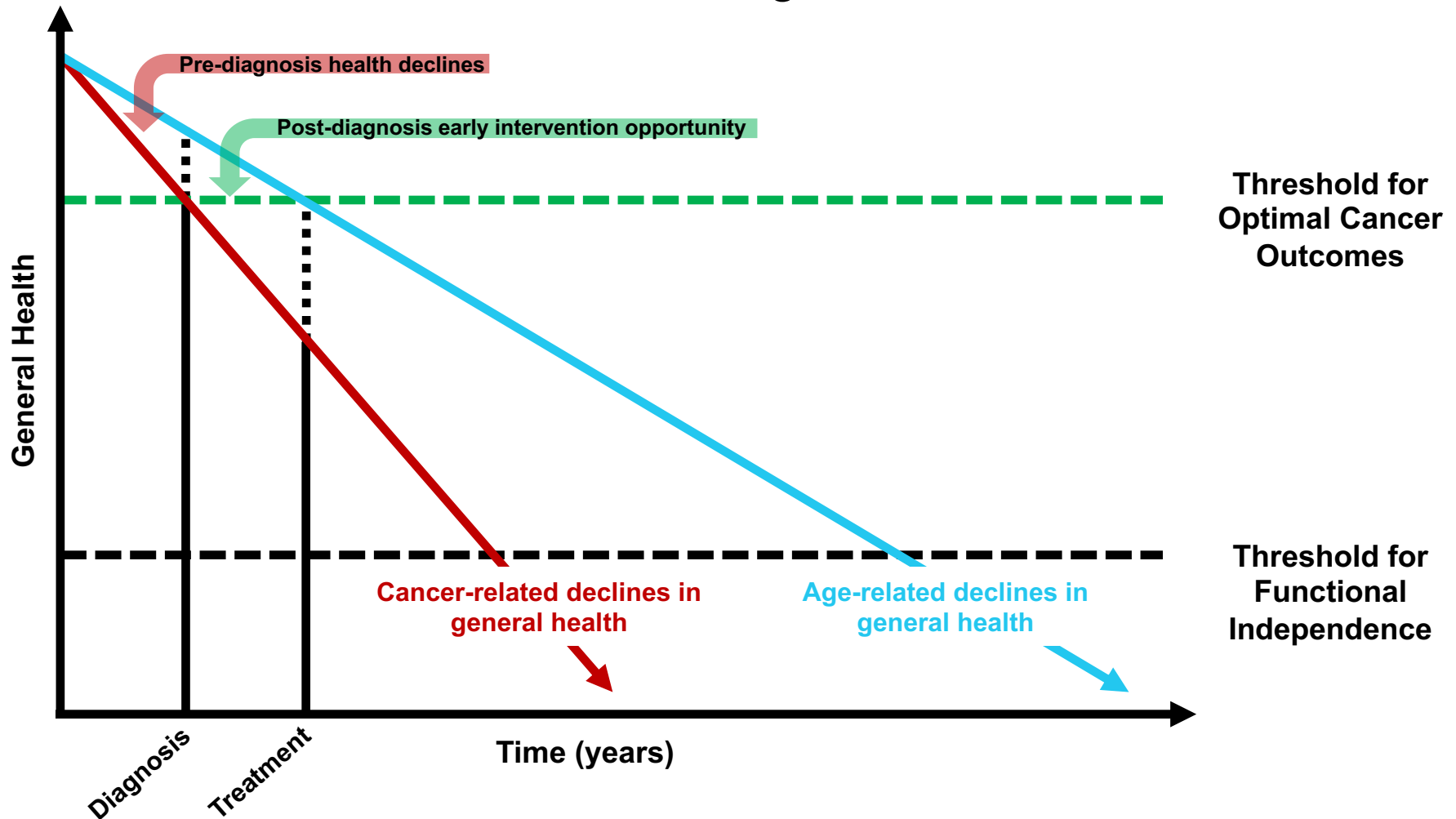


Poor brain health
Immune impairments
Blood disorders
Cardiovascular events
Respiratory problems
Gastrointestinal disease
Weakened bones
Muscle breakdown

Cancer Patient

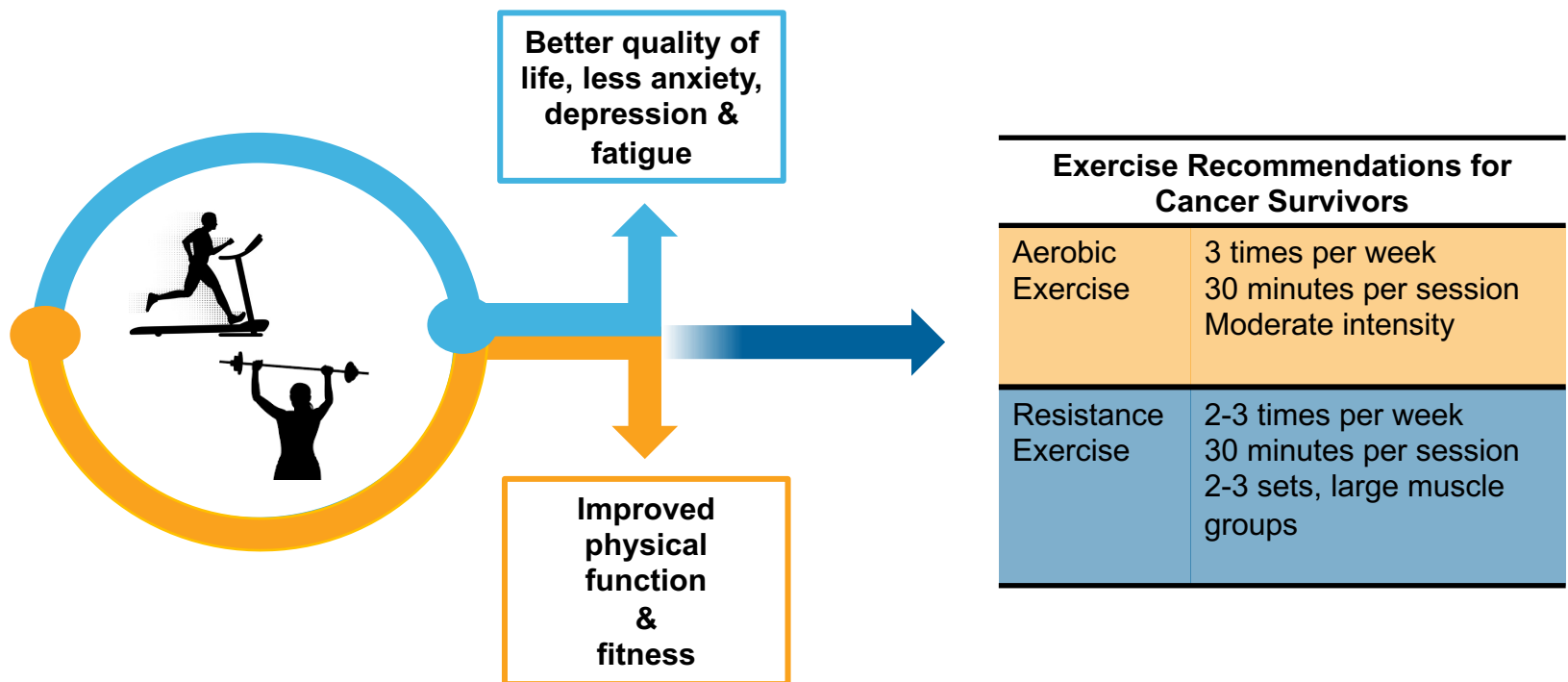
The Problem

Patients with cancer may experience general health declines accelerated by cancer treatments before, during, and following a cancer diagnosis.



A Promising Solution...

Exercise improves health outcomes after treatment among cancer survivors.



Engagement in regular exercise elicits multifaceted benefits among prostate cancer survivors.



*** Minimal evidence to date**

Pre-surgical exercise (prehabilitation) is beneficial for cancer patients.

Meta-analysis (2018)
18 studies

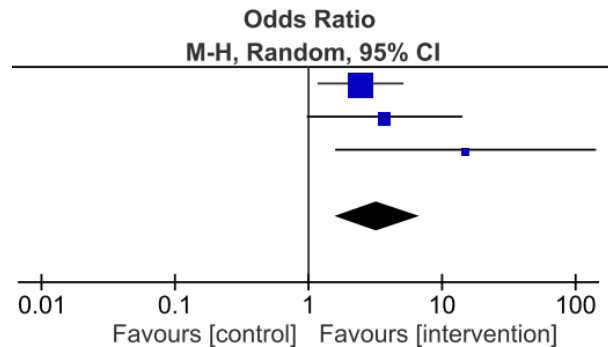


Lung (7), prostate (5),
breast (4), bladder
(1), multiple sites (1)

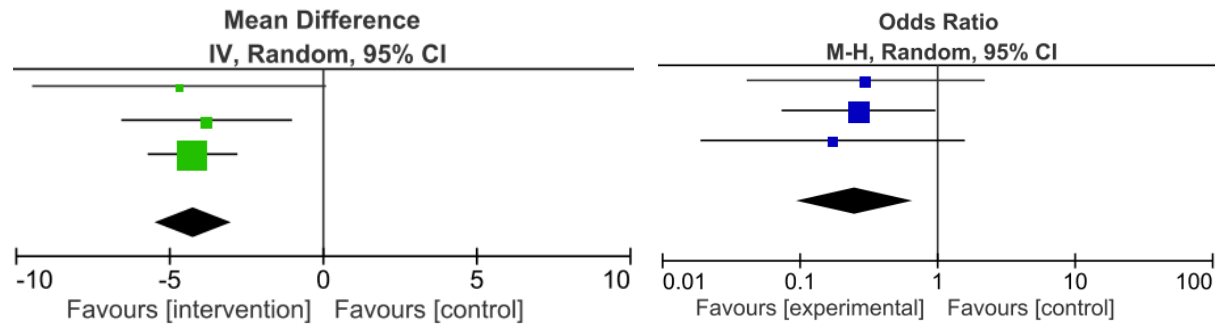


Duration of 1 day to 3
weeks

Pelvic floor muscle training
improves INCONTINENCE



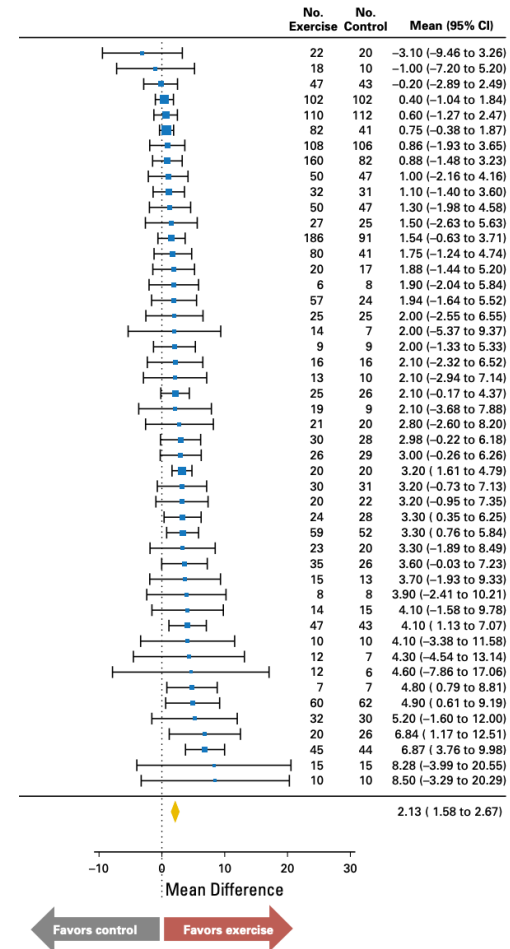
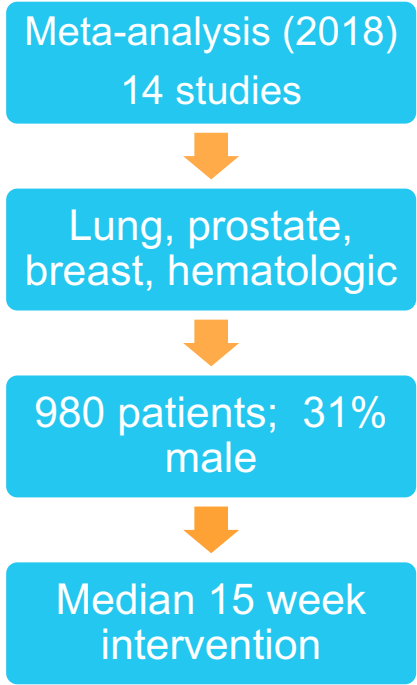
Exercise reduces HOSPITAL STAYS and
POST-SURGICAL COMPLICATIONS



5 fewer days; 55% reduced risk of complications

Exercise during therapy is beneficial for cancer patients.

Exercise improves CARDIORESPIRATORY FITNESS



Exercise during therapy is beneficial for cancer patients.

Exercise improves
MUSCLE STRENGTH and LEAN BODY MASS

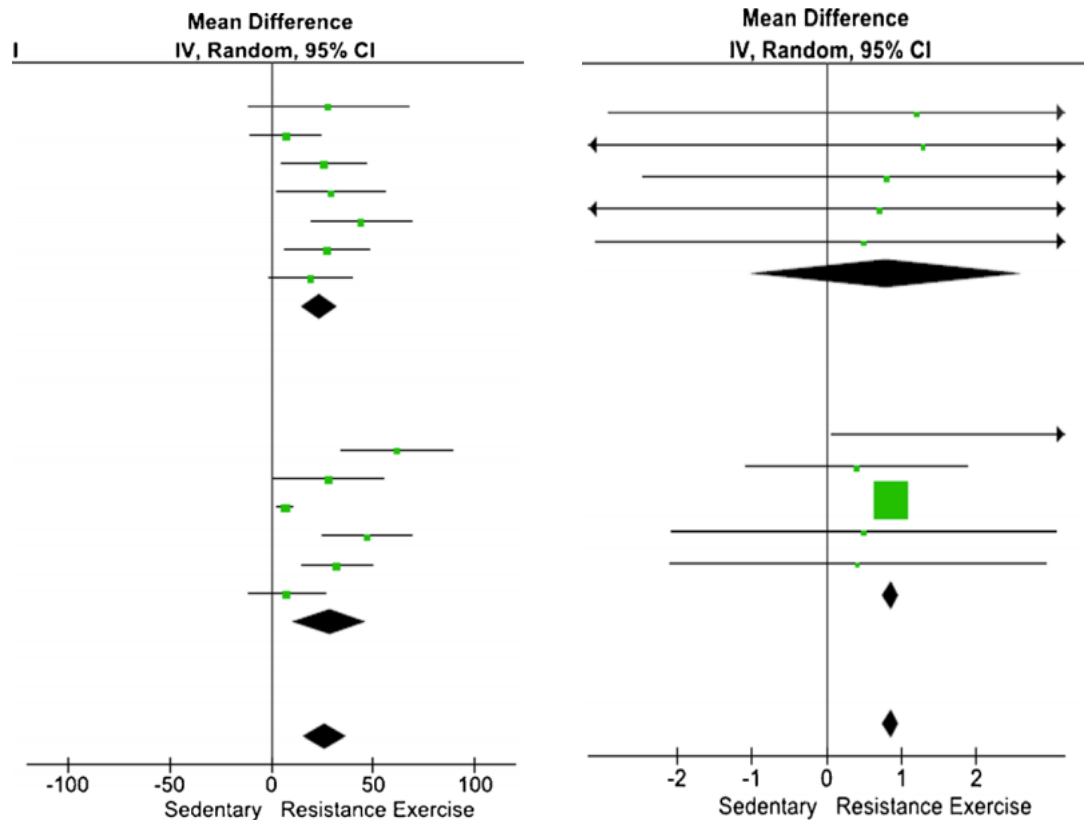
Meta-analysis (2017)

13 studies

Prostate, breast

1152 patients; 43%
male

Median 15 week
intervention

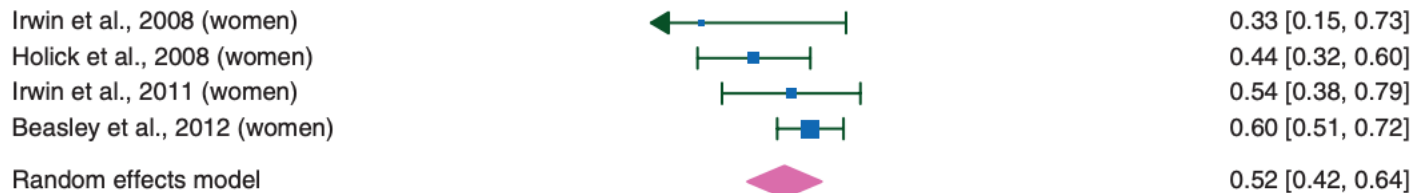


+26 kgs strength; +0.8 kgs lean body mass

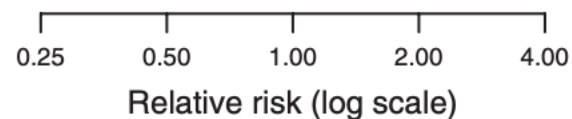
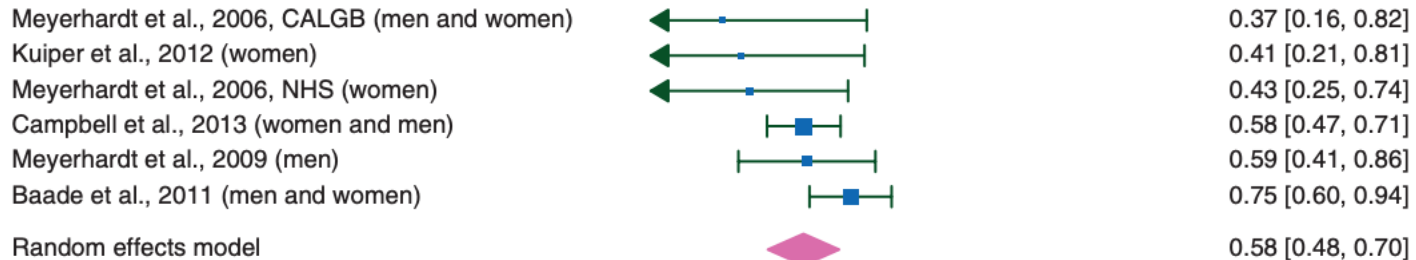
Does exercise improve mortality among cancer survivors?

Exercise performed before or after diagnosis is associated with reduced mortality risk among breast and colorectal cancer survivors.

Breast cancer (post-diagnosis PA)



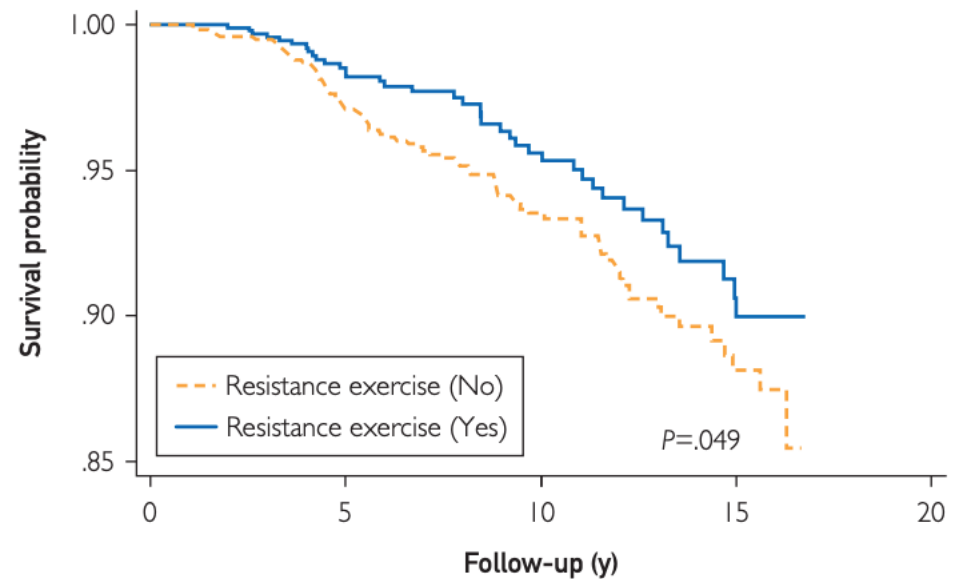
Colorectal cancer (post-diagnosis PA)



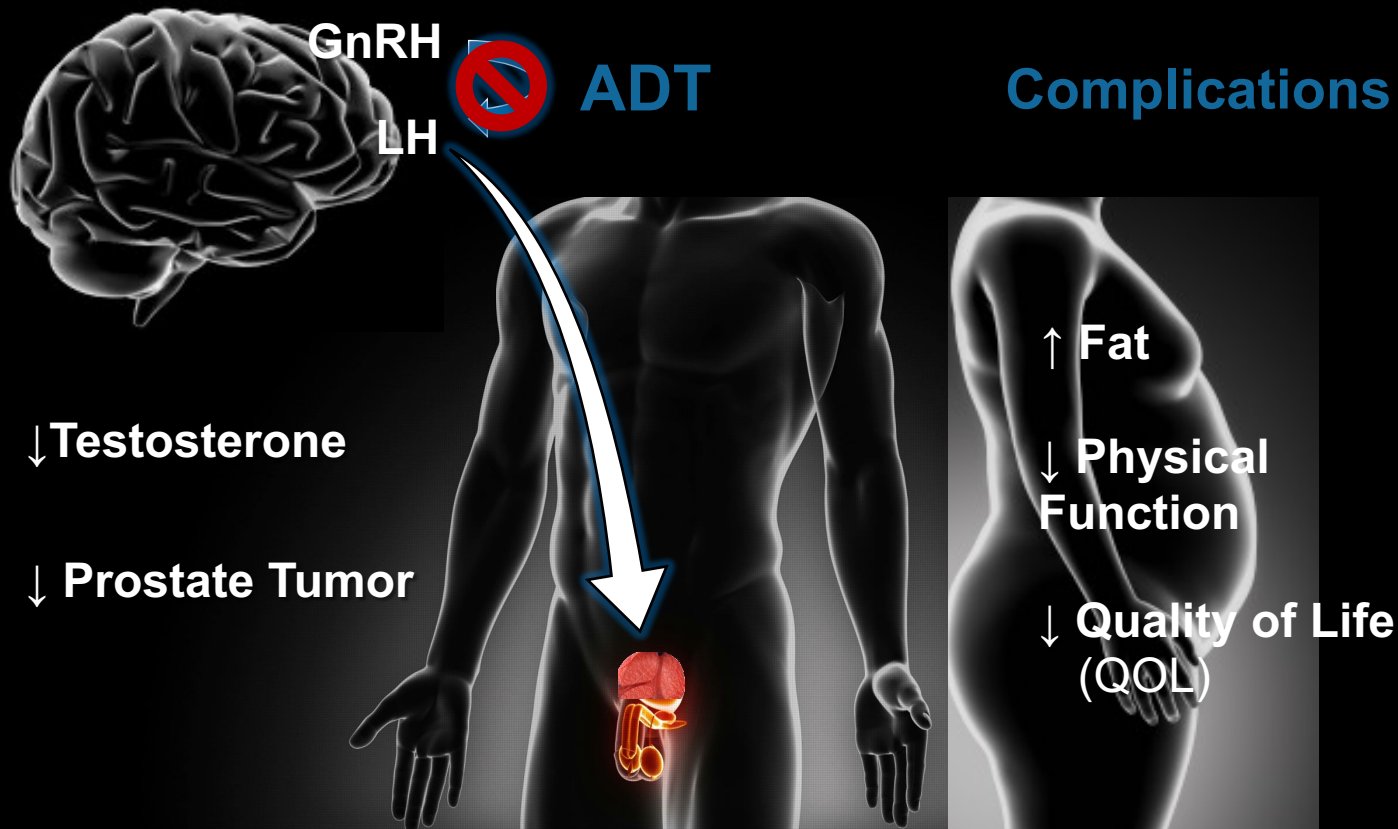
Does exercise improve mortality among cancer survivors?



Resistance exercise is associated with 33% lower risk of all-cause mortality



Androgen Deprivation Therapy (ADT) leads to health complications among prostate cancer survivors.



Does a 12-week periodized resistance training intervention affect health outcomes in prostate cancer survivors on ADT?



Frequency

- 3x/week

Intensity

- Progressed through periodization

Time

- 45 min/session; 3 months

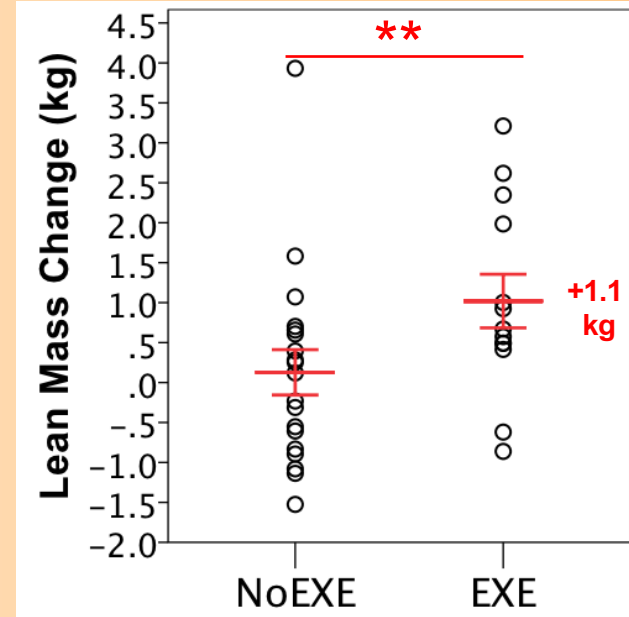
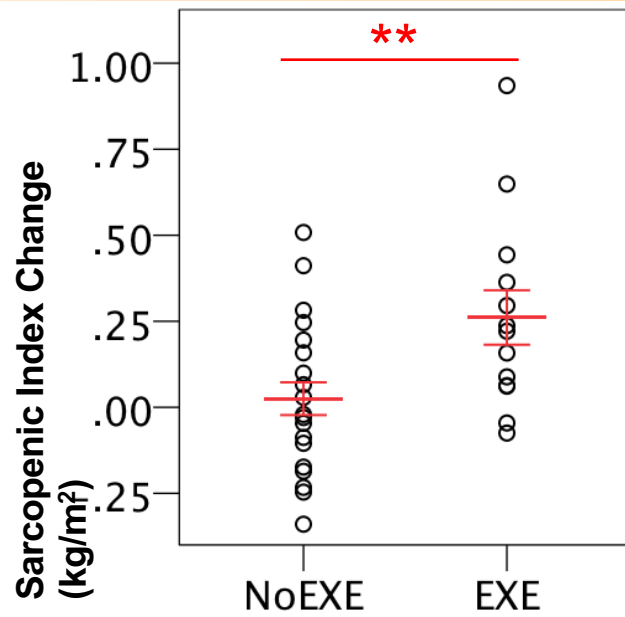
Type

- Machine-based, total body exercises

Periodized Resistance Exercise Improves Lean Mass in Prostate Cancer Survivors on ADT

Sarcopenia Prevalence (Index < 7.26 kg/m²)

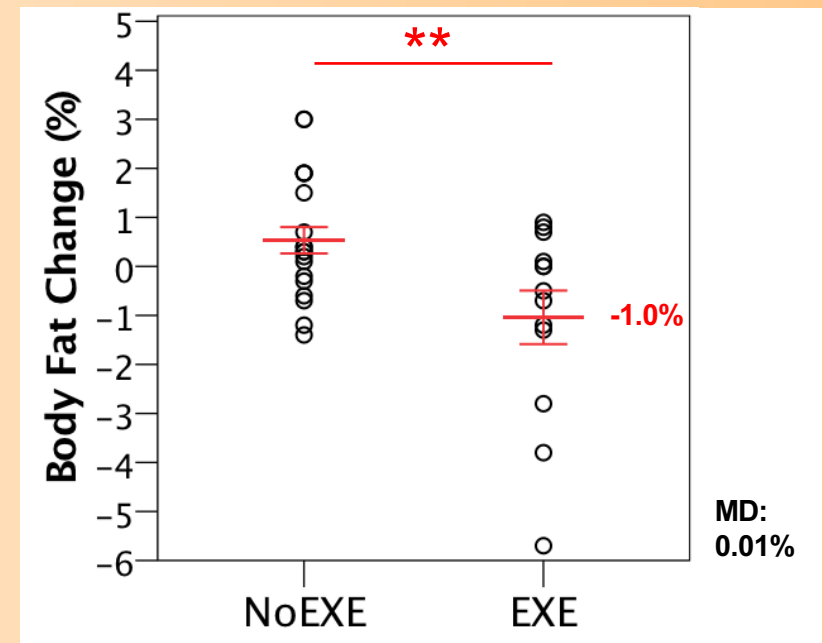
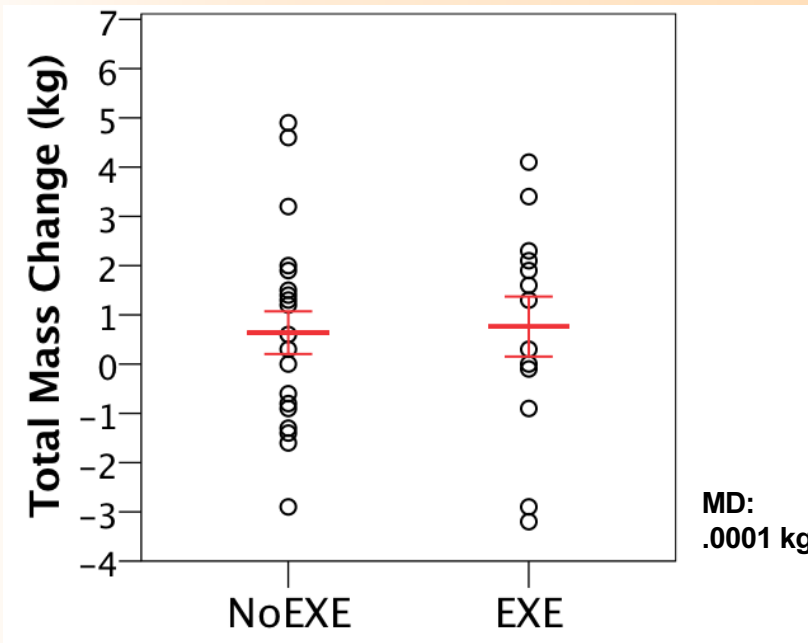
NoEXE (n = 19)		EXE (n = 13)	
Wk 0	Wk 12	Wk 0	Wk 12
47.4%	52.6%	38.5%	15.4%



** P < 0.05, adjusted by baseline values, waist circumference
 ○ Individual change from baseline

— Mean ± SE

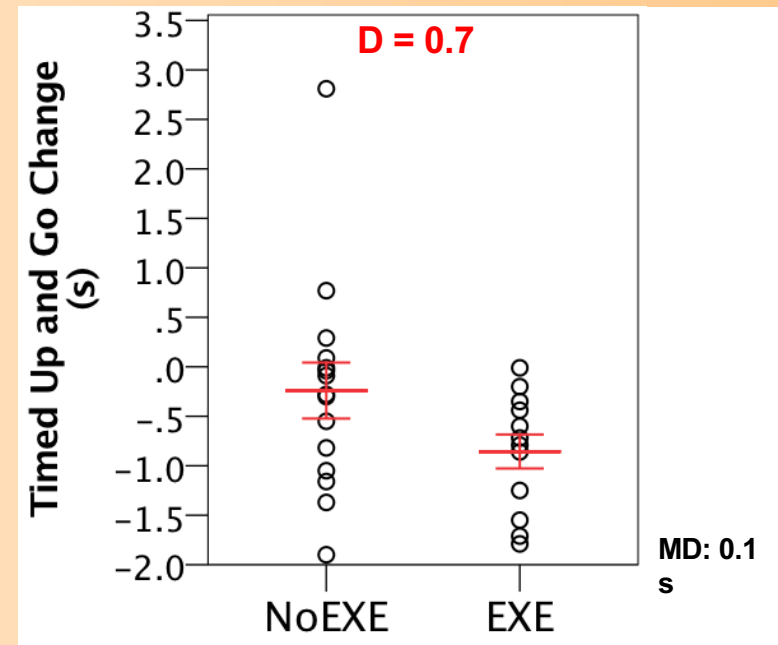
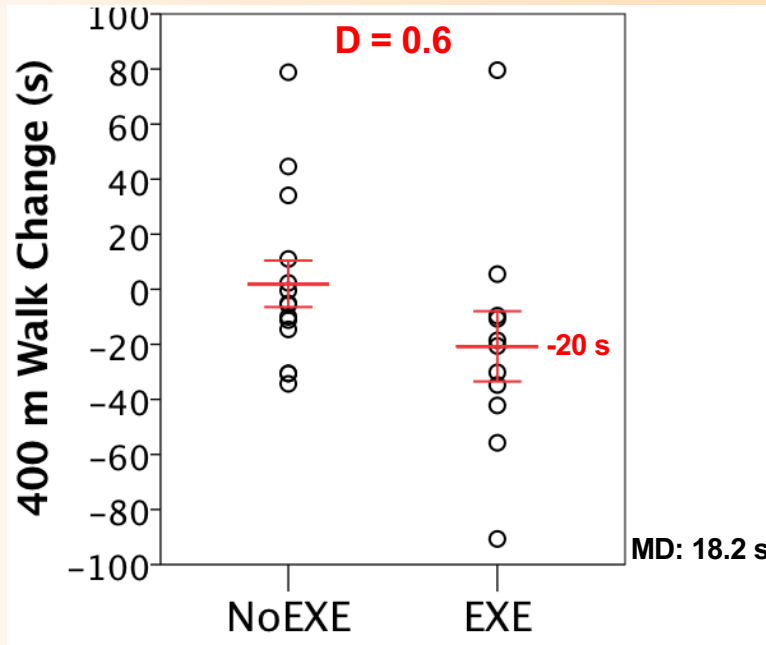
Periodized Resistance Exercise Improves Fat Mass in Prostate Cancer Survivors on ADT



** P < 0.05, adjusted by baseline values, PS, waist circumference
 ○ Individual change from baseline

⊞ Mean ± SE
 MD Minimal difference

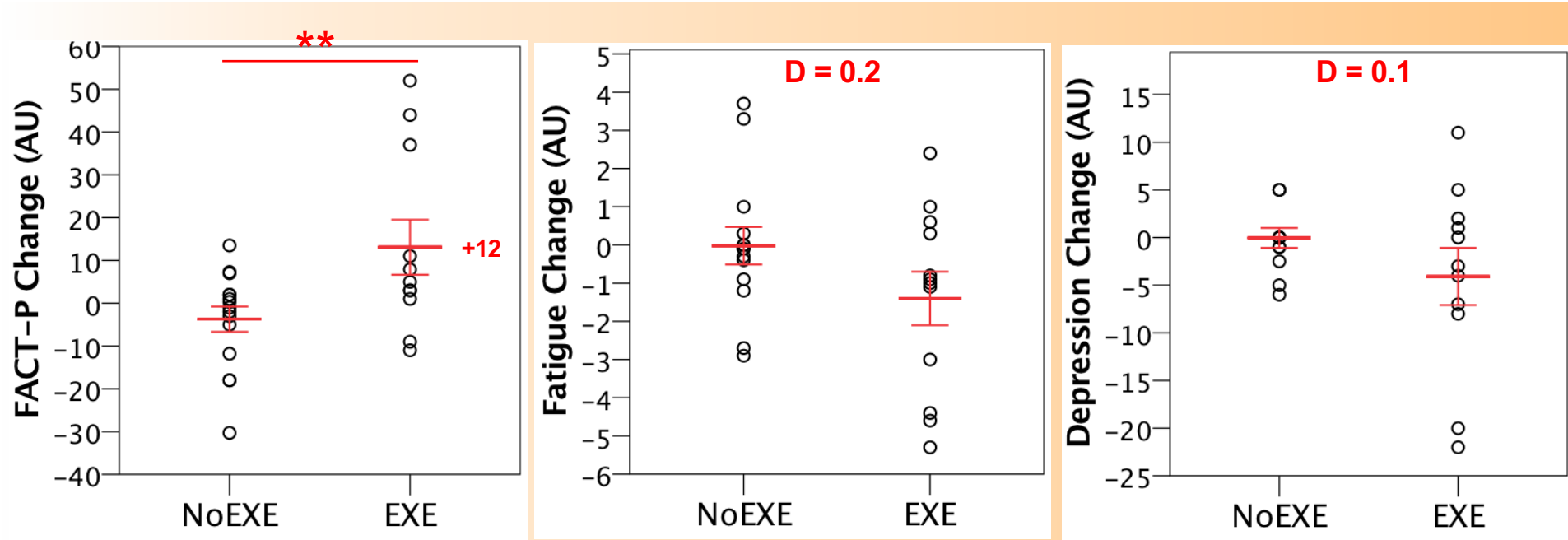
Periodized Resistance Exercise Improves Physical Function in Prostate Cancer Survivors on ADT



** P < 0.05, adjusted by baseline values, PS, lean mass
 ○ Individual change from baseline

⊞ Mean ± SE
MD Minimal difference

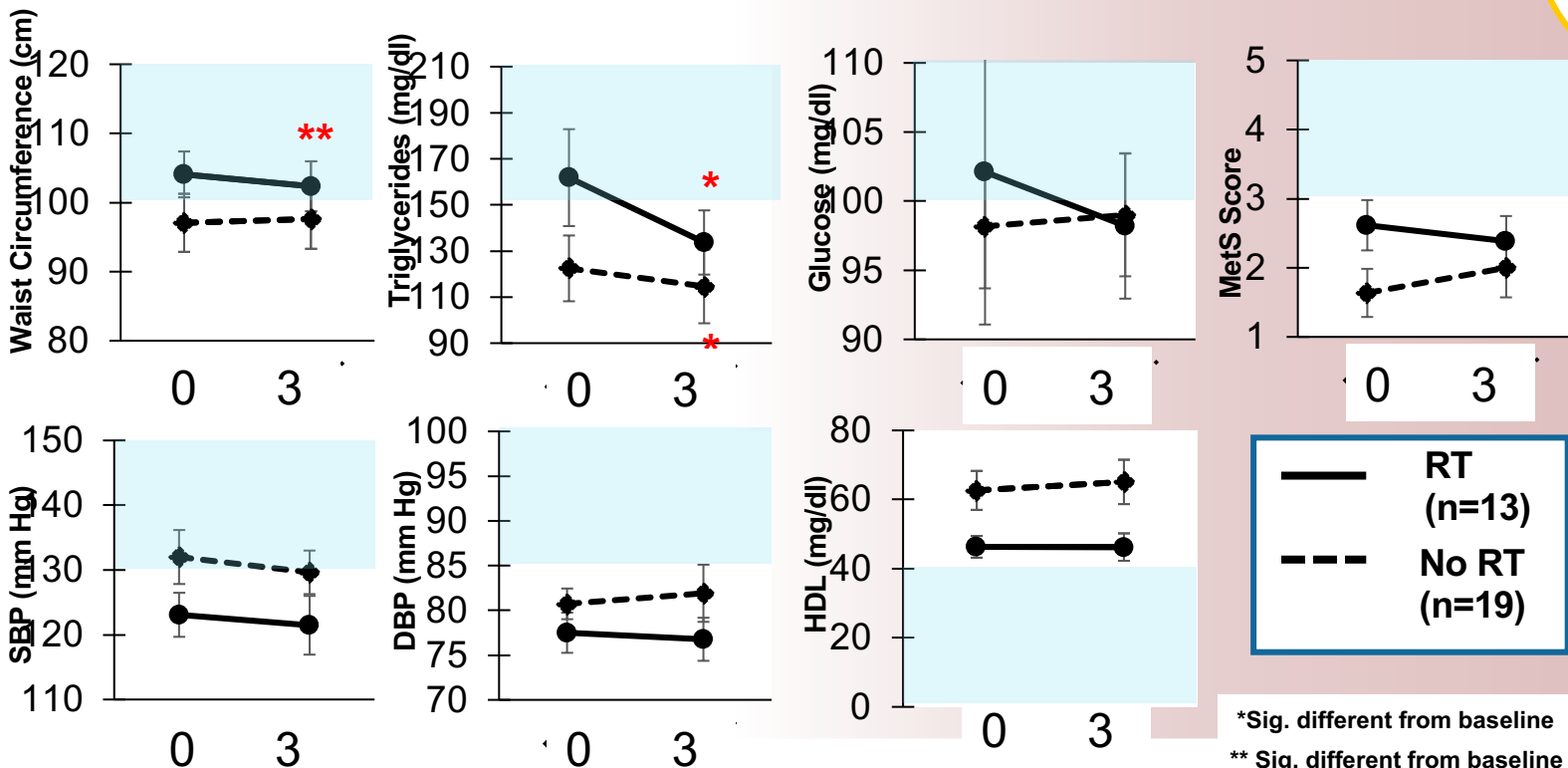
Periodized Resistance Exercise Improves QOL in Prostate Cancer Survivors on ADT



** P < 0.05, adjusted by baseline values, PS, lean mass
 ○ Individual change from baseline

⊞ Mean ± SE
 MD Minimal difference

Periodized Resistance Exercise Improves Waist Circumference and Triglycerides in Prostate Cancer Survivors on ADT



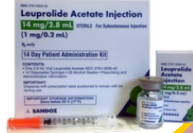
*Sig. different from baseline

** Sig. different from baseline and NoRT post-intervention

Prostate Cancer



Hormone therapy



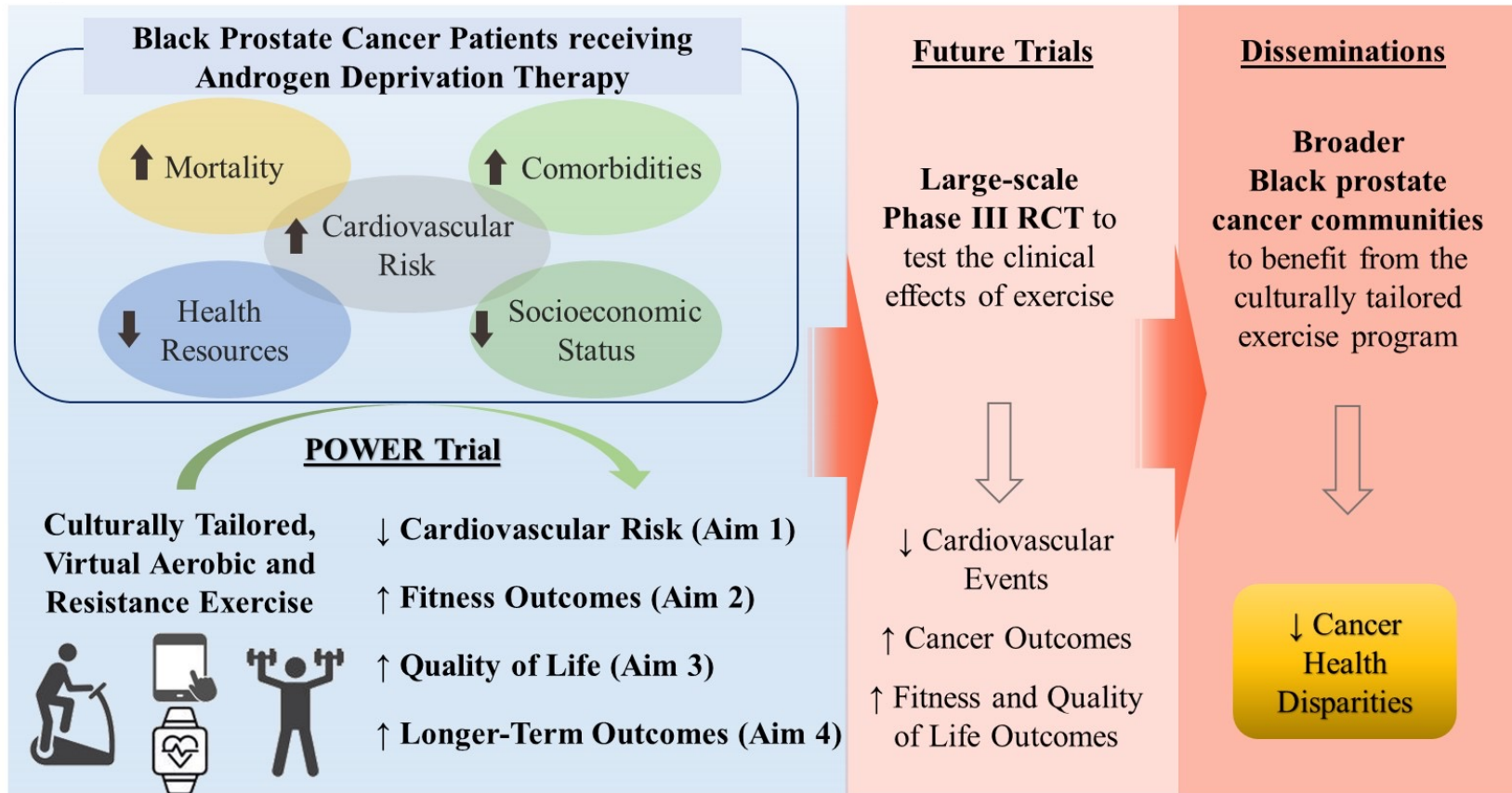
MSY



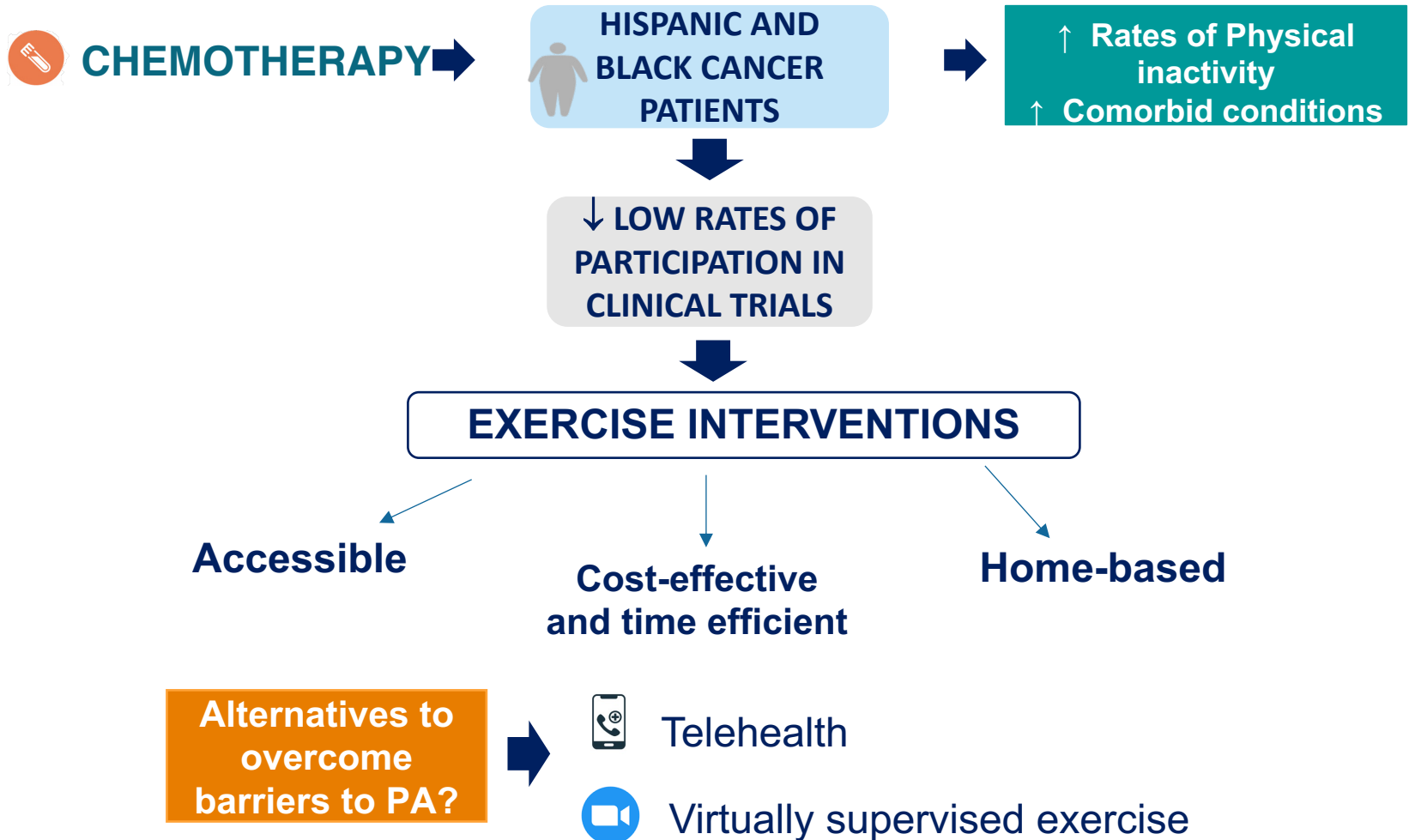
Ongoing Prostate Cancer & Exercise Trials

Trial Name	Full Title	Sponsor
POWER	Exercise to Enhance Cardiovascular Health among Black Prostate Cancer Patients with Androgen Deprivation Therapy	DOD, Pfizer, PCF
THRIVE	Testing Home-based Exercise Strategies to Improve Exercise Participation and Cardiovascular Health in Underserved Minority Patients with Cancer Undergoing Chemotherapy	NIH U54
REMOVE	Exercise for Tumor Suppressive Impact in Black Men with Prostate Cancer on Active Surveillance	PCF
FIERCE	Debunking the Frailty-sarcopenia-ADT axis in metastatic prostate cancer with multi-component Exercise	PCF

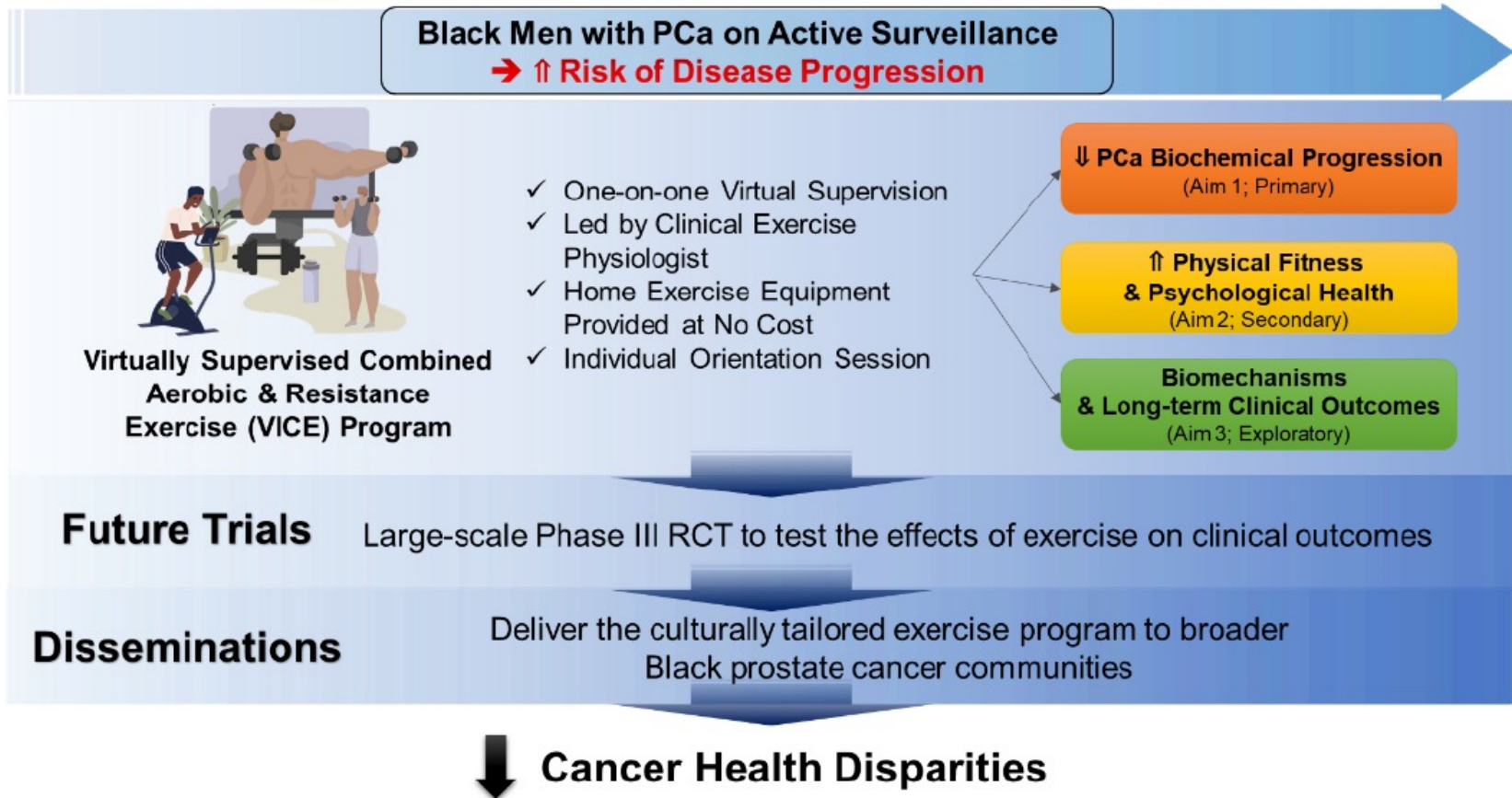
Exercise to Enhance Cardiovascular Health among Black Prostate Cancer Patients with Androgen Deprivation Therapy: The POWER Trial



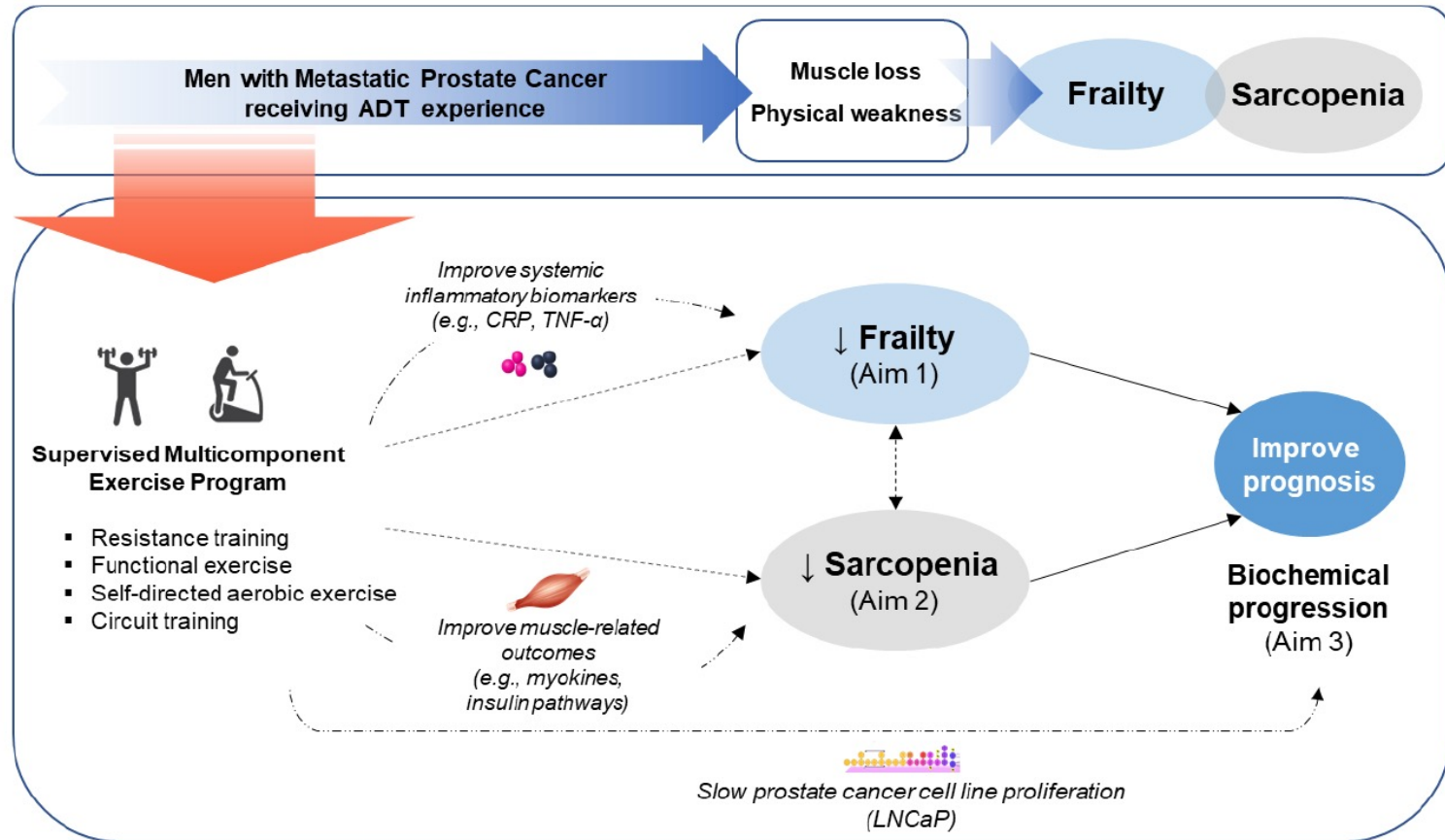
Testing Home-based Exercise Strategies to Improve Exercise Participation and Cardiovascular Health in Underserved Minority Patients with Cancer Undergoing Chemotherapy: The THRIVE Trial



Exercise for Tumor Suppressive Impact in Black Men with Prostate Cancer on Active Surveillance: REMOVE Trial



The FIERCE Trial: Debunking the Frailty-sarcopenia-ADT axis in metastatic prostate cancer with multiComponent Exercise



Ongoing Prostate Cancer & Exercise Trials

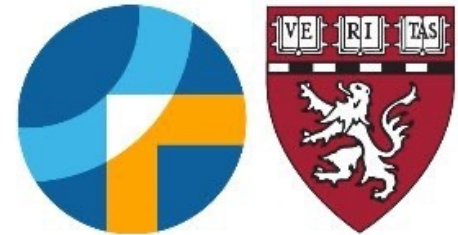
Trial Name	Type (Target N)	Race	Treatment	Primary outcome	Notes
POWER (Recruiting)	Prostate (N=62)	Black/AA	ADT	Framingham Risk Score (cholesterol, BP, age, smoking status)	Exercise equipment is delivered and intervened remotely with no in person follow up required, other than baseline and post-intervention assessments
THRIVE (Recruiting)	Prostate, breast, colorectal (Total N=45)	Black/AA/ Hispanic	Chemo	Physical activity level	
REMOVE (Recruiting)	Prostate (N=68)	Black/AA	AS	Biochemical progression	
FIERCE (Recruiting)	Prostate (N=100)	All	ADT	Frailty	Pre-frail/frail patients only



Contact Us!

- Patient Referral
 - Research Coordinator: John (Jack) Gardiner
 - John_Gardiner@dfci.harvard.edu
 - 617-632-4112
- Study-related Questions
 - Christina Dieli-Conwright, PhD, MPH (Lab PI)
 - ChristinaM_Dieli-Conwright@dfci.harvard.edu

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Dana-Farber
Cancer Institute
Dieli-Conwright Lab

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Questions?



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Dieli-Conwright Lab: <https://dieli-conwrightlab.dana-farber.org/>

