



# Lifestyle Modifications in Reducing Risk of Recurrence

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IN PURSUIT OF YOUR CURE.®



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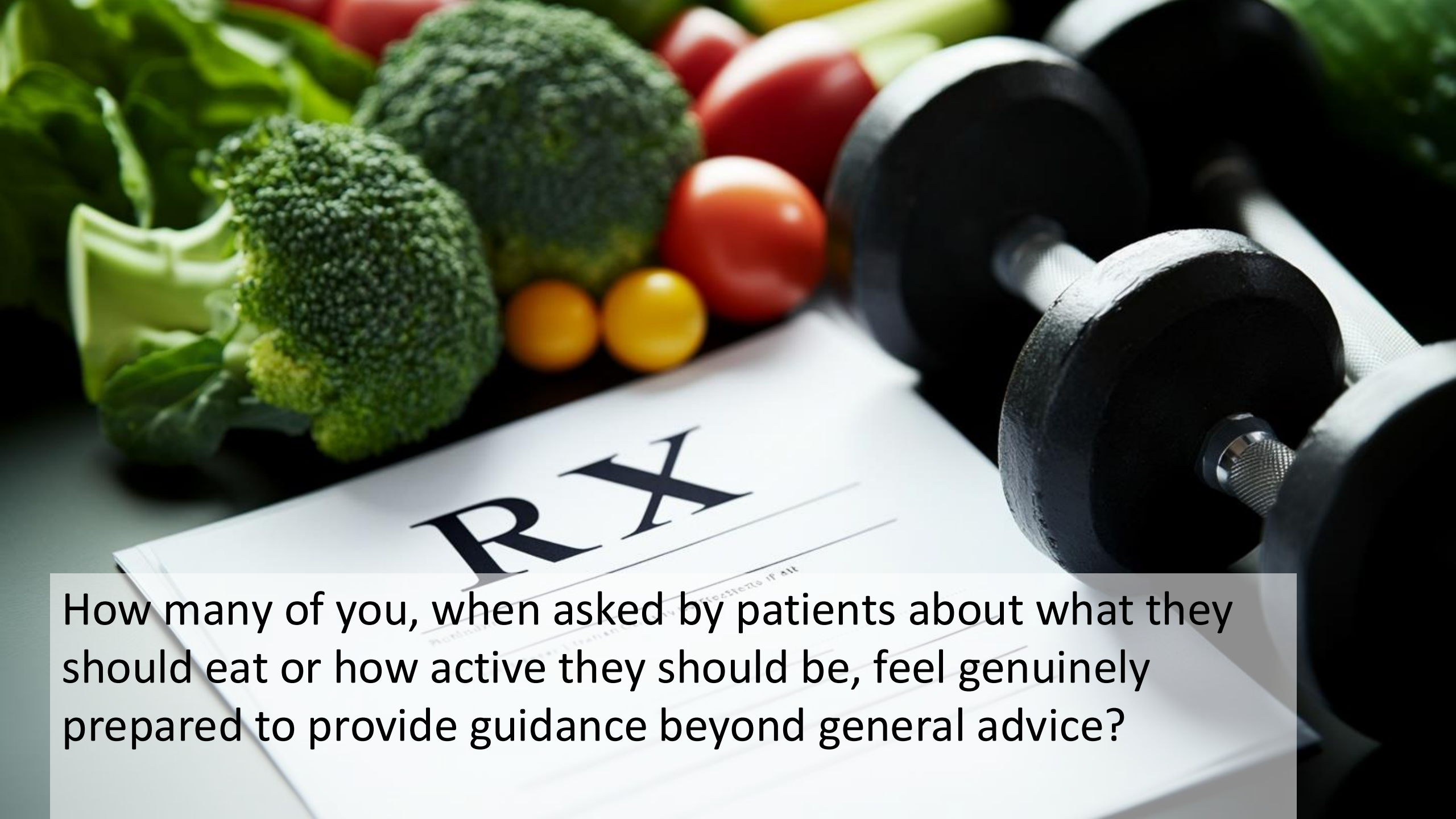




**RX**

Medication

Additional Notes: [Italian Country] bolffoesteris IF all



How many of you, when asked by patients about what they should eat or how active they should be, feel genuinely prepared to provide guidance beyond general advice?

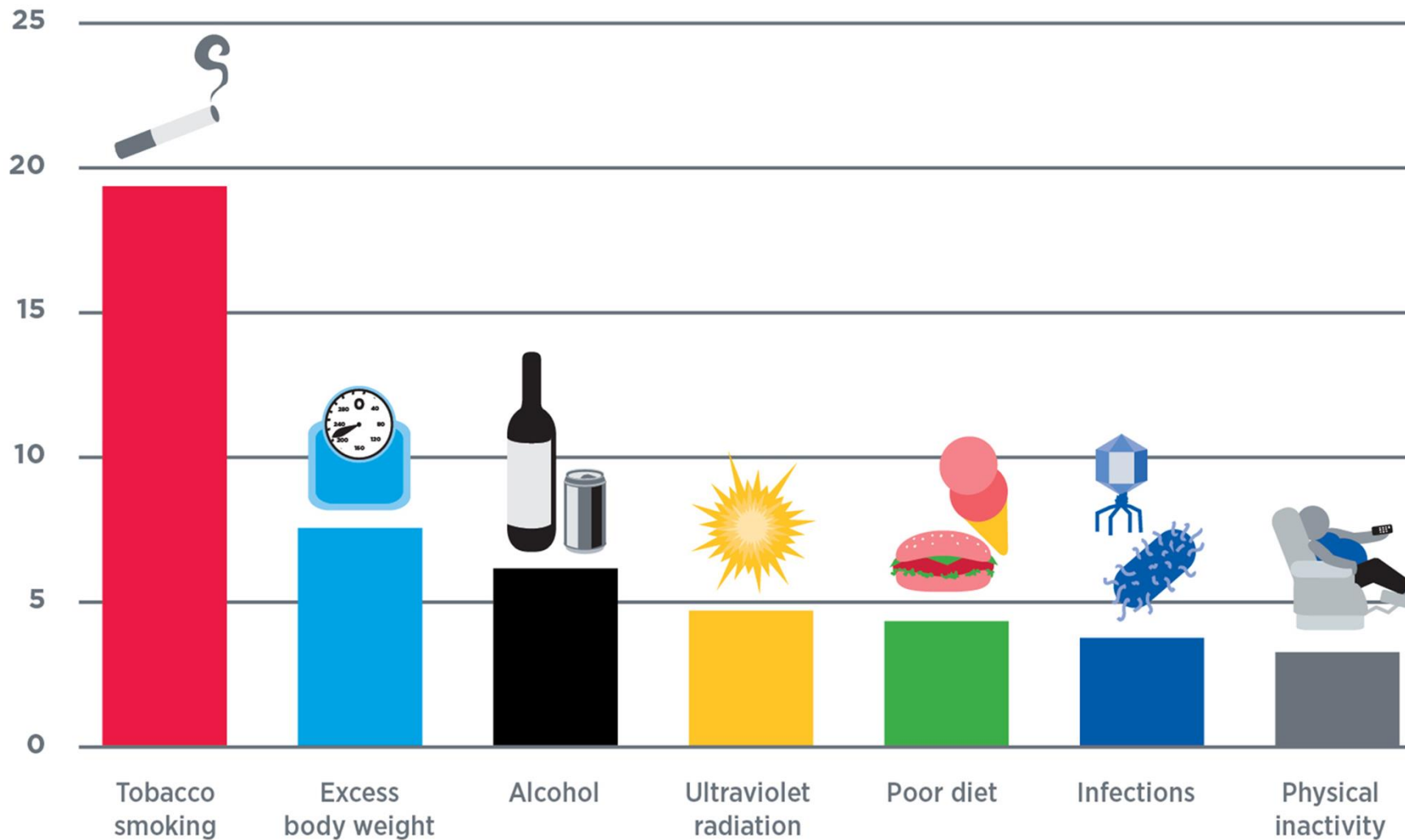
# Objectives

1. Understand the role of nutrition and exercise in cancer treatment.
2. Assess and integrate evidence-based nutritional and exercise interventions.
3. Recognize barriers and develop strategies for implementing nutrition and exercise programs.



# INCREASING CANCER RISK

% U.S. CANCER CASES IN ADULTS AGE >30  
ATTRIBUTABLE TO SELECTED FACTORS



**EXCESS BODY WEIGHT,  
POOR NUTRITION, PHYSICAL INACTIVITY,  
AND EXCESS ALCOHOL CONSUMPTION**



**ABOUT 1 IN 5 CANCER  
CASES**



**OVERWEIGHT OR OBESITY RAISES A PERSON'S  
RISK OF GETTING ONE OR MORE OF**



**13 TYPES  
OF CANCER**

73.6% of US Adults are  
overweight or obese

## Recommendations for Cancer Survivors to Improve Long-term Health and Increase Survival

- Avoid obesity and maintain or increase muscle mass
- Get regular physical activity
- Tailor physical activity to cancer type, treatment, side effects
- Consider comorbidities
- Nutrition based on recommendations to decrease risk
- Follow the American Cancer Society Guidelines for Diet and Physical Activity for Cancer Prevention to reduce risk of a new cancer

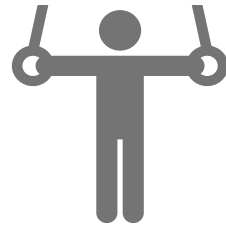




## American Cancer Society (ACS) Physical Activity and Nutrition Guidelines for Cancer Survivors



Avoid obesity and maintain or increase muscle mass



Engage in regular physical activity



Follow a healthy eating pattern

**In 2024 the Health Information National Trends Survey (HINTS), only 4% of cancer survivors adhered to all four ACS guidelines**



# Attention to Lifestyle Behaviors

## Nutrition

- A healthy diet reduces risk of cancer mortality
- <20% of cancer survivors are eating 5 servings of vegetables and fruits per day



## Physical Activity

- 150-180 minutes of moderate or vigorous activity per week is associated with:
  - 24% reduction in recurrence and cancer specific mortality
  - 41% reduction all cause mortality
- <34% of cancer survivors are exercising 150 minutes or more each week



## Body Weight

- Weight loss after treatment is associated with reduced recurrence and improved survival
- ~70% of cancer survivors are overweight or obese and weight gain is common post treatment



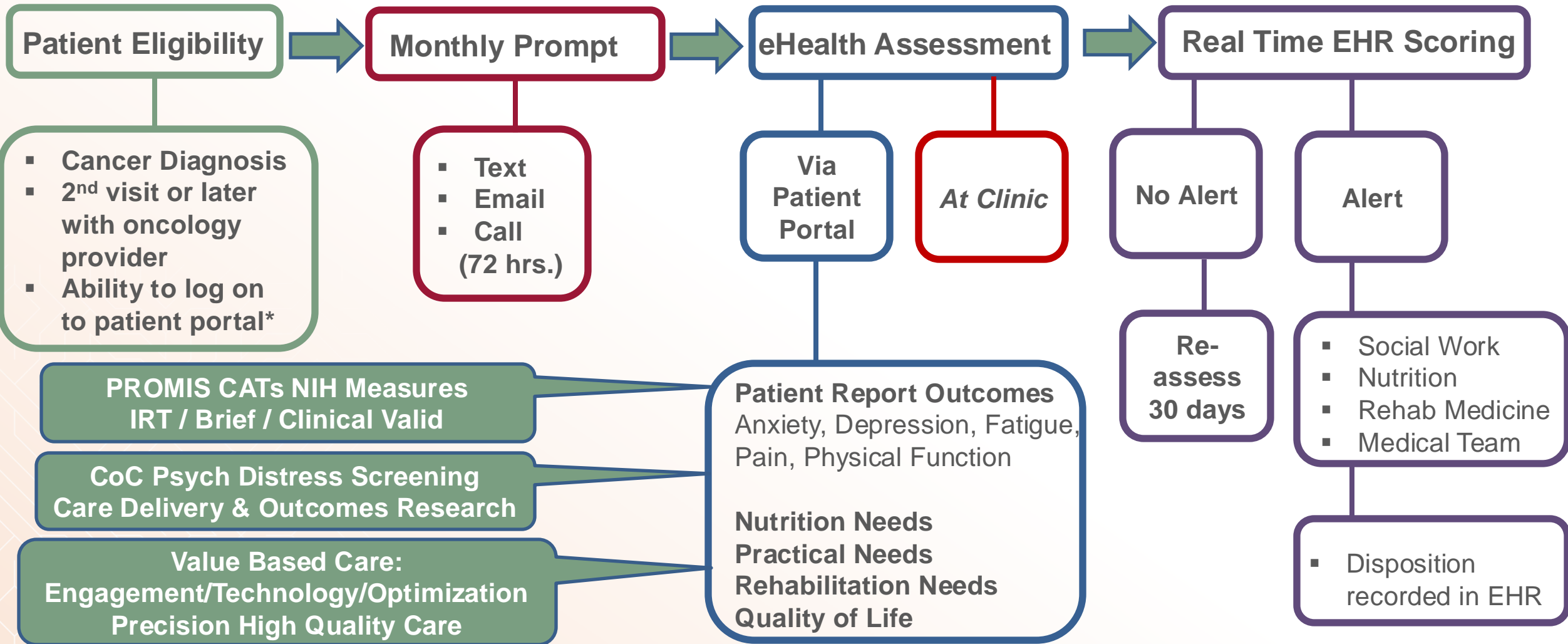
# Healthcare Providers are the Key to Improve Outcomes; However, Barriers Exist

## LIFESTYLE MEDICINE

- **Fewer than 10%** of survivors report being asked or advised about their diet and exercise
- Chart reviews reveal **fewer than a quarter** of oncology providers engage in diet or physical activity counseling
- Lack of time and available programs **key barriers**
- However, **survivors are highly motivated** to change lifestyle behaviors!
  - Recent national survey 72% had changed some component of their diet and/or activity
  - When oncologists provided recommendations, survivors were more likely to report change versus when oncologists did not



# My Wellness Check: In Pursuit of Your Wellness





LIFESTYLE MEDICINE

**Nutriscore Part 1. Weight Loss and Appetite**

**Nutriscore Part 2. Cancer and Treatment Type**

Have you lost weight involuntarily in the last 3 months?

+0  
No

+2  
Unsure

How much weight (in pounds) have you lost?

+1  
2 to 11

+2  
12 to 22  
Or  
Unsure

+3  
23 to 33

+4  
>33

Have you been eating poorly in the last week because of poor appetite?

+0  
No

+1  
Yes

Score

Cancer Type

Treatment Type

+ 0  
Low Risk

Breast, Central Nervous System, Bladder, Prostate, Colorectal, Leukemia other Lymphomas, Other

Targeted Therapy, Immune Checkpoint Inhibitors, Hormone Therapy, Other

+ 1  
Medium Risk

Lung, Liver, Biliary Tract, Renal, Ovaries, Endometrial

Only Chemotherapy, Only Radiation

+ 2  
High Risk

Head and Neck, Esophagus, Gastric, Pancreas, Intestines, Lymphoma with compromised GI tract

Chemotherapy and, Radiation, Hyper Fractionated Radiation Therapy, Hematopoietic Stem Cell Transplant

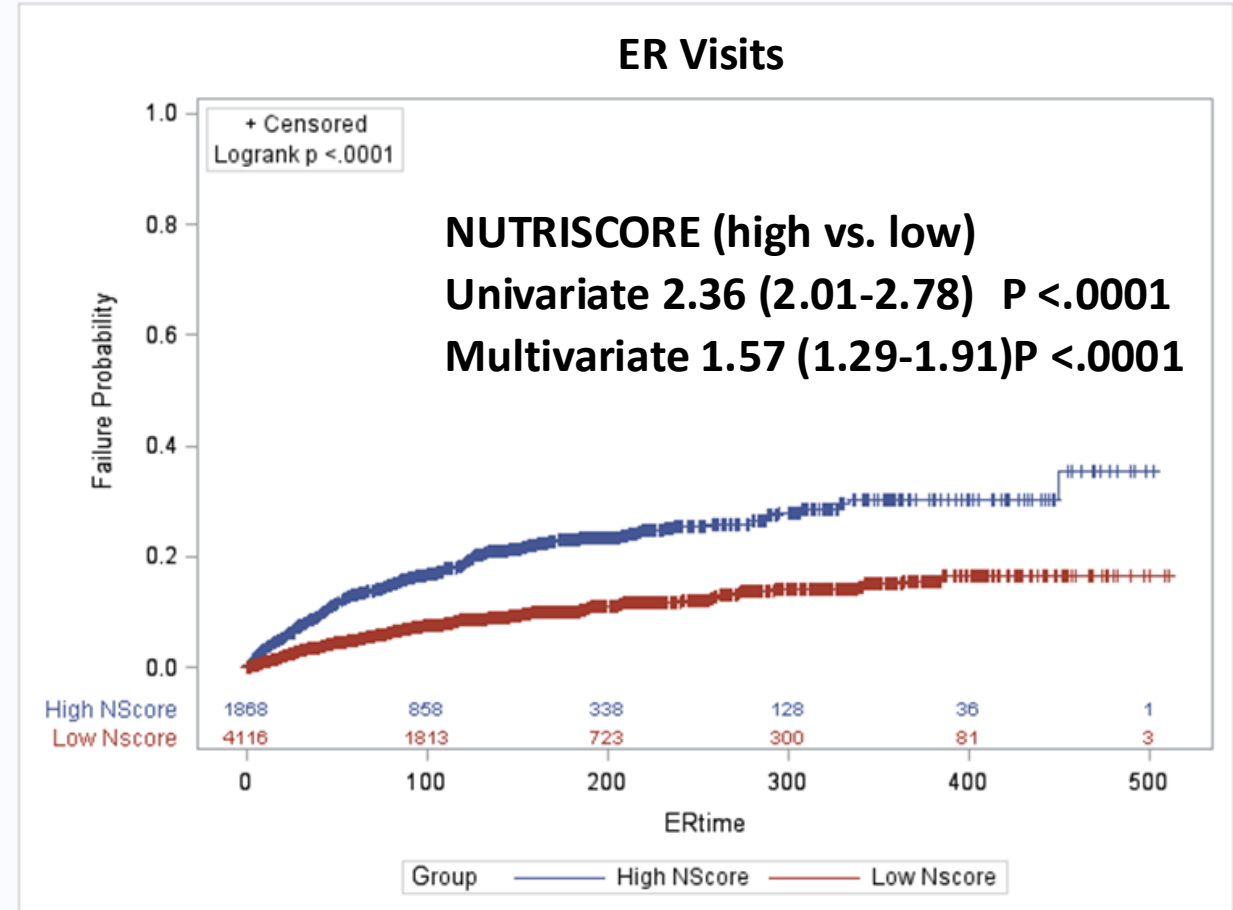
**PART 1 SCORE + PART 2 SCORE = TOTAL SCORE**  
(Score ≥ 5 = Malnutrition Risk)

LIFESTYLE MEDICINE

- 5984 responses
  - 1868 High Score (31%)
  - 4116 Low Score (69%)

High versus Low Nutriscore:

- Women
- Hispanic ethnicity
- Report no/low alcohol intake
- GI, Lung, GYN, Head and neck
- Greater symptom burden



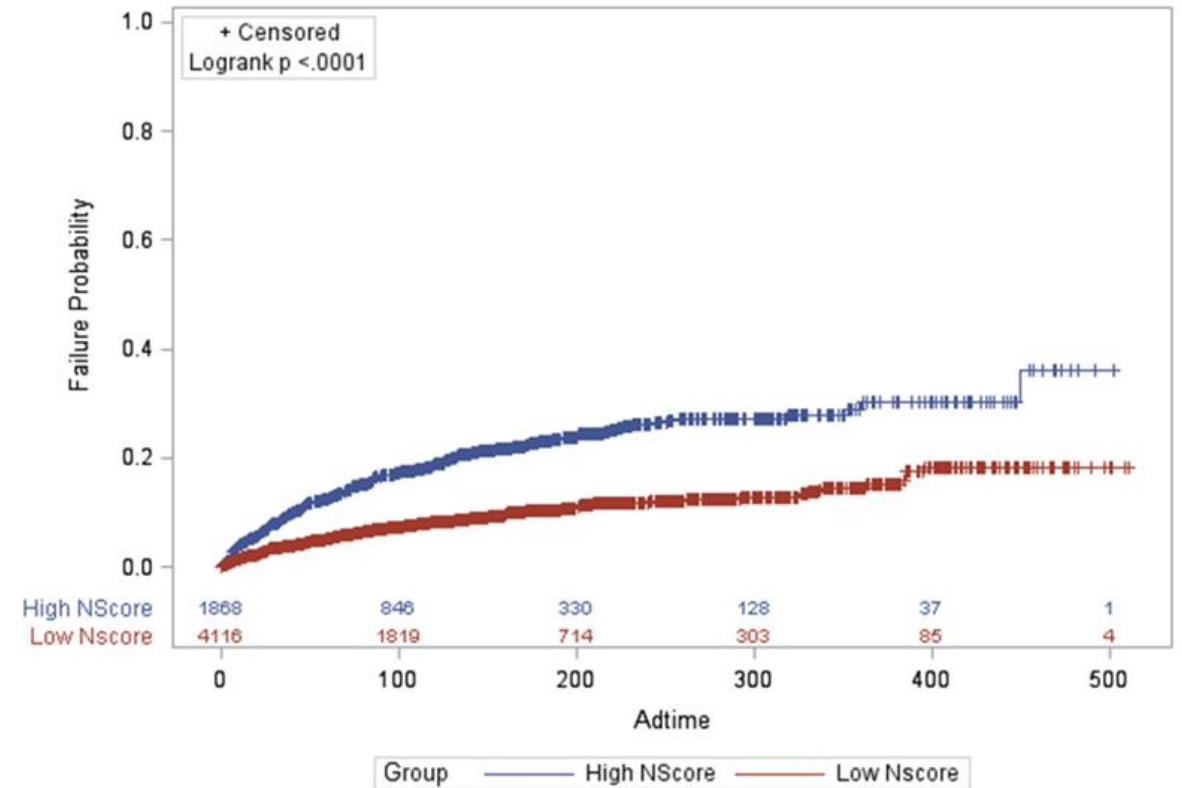
## LIFESTYLE MEDICINE

**NUTRISCORE (high vs. low)**

**Univariate 2.37 (2.02-2.79) P <.0001**

**Multivariate 1.68 (1.37-2.04)P <.0001**

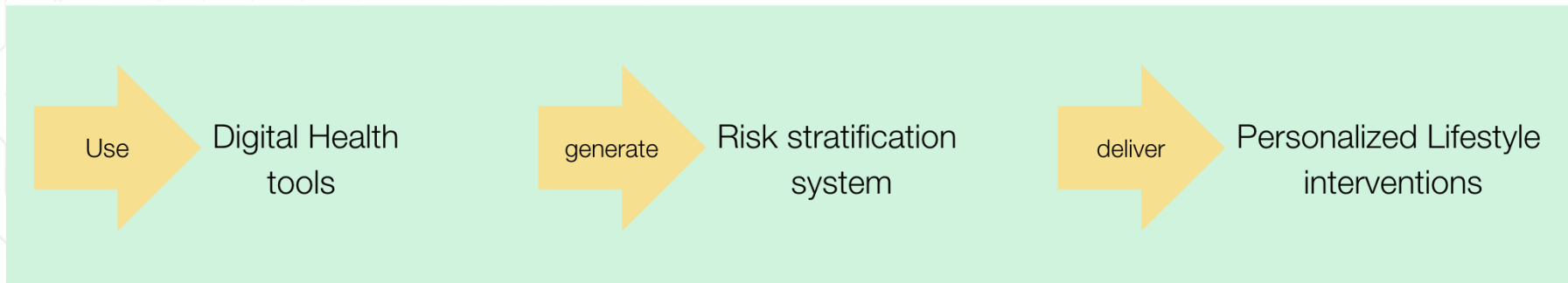
## Hospitalizations





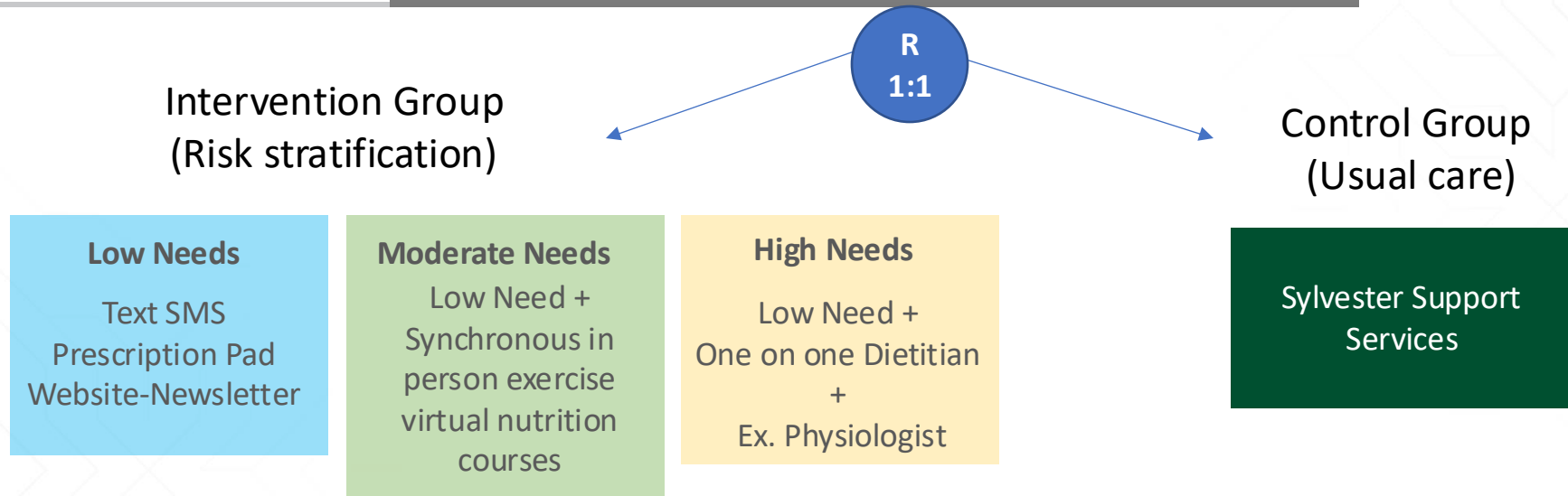
## LIFESTYLE MEDICINE

A patient-centered pathway is needed that can guide oncology and professionals in efficient assessment of an individual's condition and enable personalized referrals to scalable lifestyle interventions depending on the individual needs, informed from their own patient-generated data.

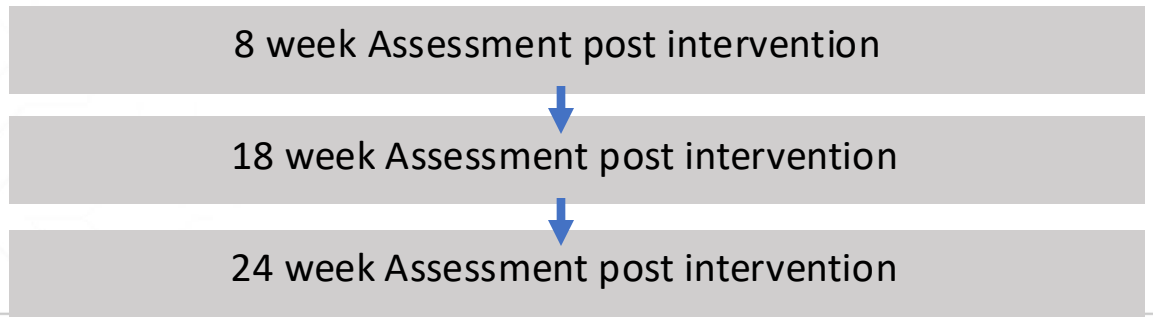


# Study Schema

Breast, prostate and colon cancer survivors  
Baseline Assessments (n = 300)



FitBit + My Wellness Research



Search...

GENERAL

- Dashboard
- Operations
- Reports
- User management
- Scheduling
- Library
- Messaging

OTHER

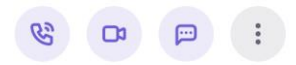
- Notifications 1
- Help & Support
- Settings

Sam Smith Admin

< Back

Veronica Hernandez

Female, Age 65 • TEAL Study

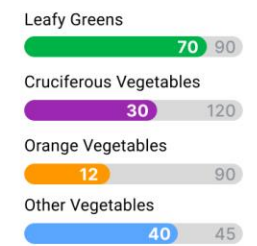


Summary Interventions Assigned Modules Audit Trial

On Treatment (Week 5)

Food Intake

Aug 1 - Sept 31, 2022



Leafy Greens Cruciferous Veg. Orange Vegetables Other Vegetables Missed Serving

Reported severity of general pain is higher than usual.

See Trend

Pain ↑	Nausea ↓	Fatigue ↓
Skin Dryness ↓	Cracking at t... ↓	Anxiety ↓

CALORIES/DAY 3,245	STEPS/DAY 12,345	TRACKING ERROR 2%	+ Add
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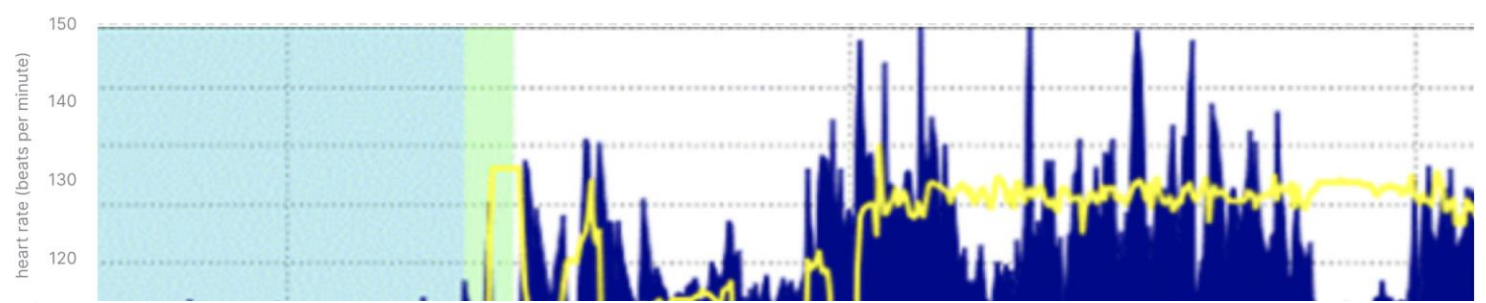
Trends

Actigraphy X Pain (Severity) X + Add

Actigraphy

Yesterday

Configure





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

- Recommend **regular aerobic and resistance exercise during active treatment** with curative intent and **may recommend preoperative exercise** for patients undergoing surgery for lung cancer
- **Neutropenic diets are not recommended to prevent infection** in patients with cancer during active treatment
- **Evidence for other dietary and weight loss interventions** during cancer treatment was **very limited**
- Special considerations, such as exercise in individuals with advanced cancer, and highlights the critical need for more research in this area, particularly regarding diet and weight loss interventions during cancer treatment.

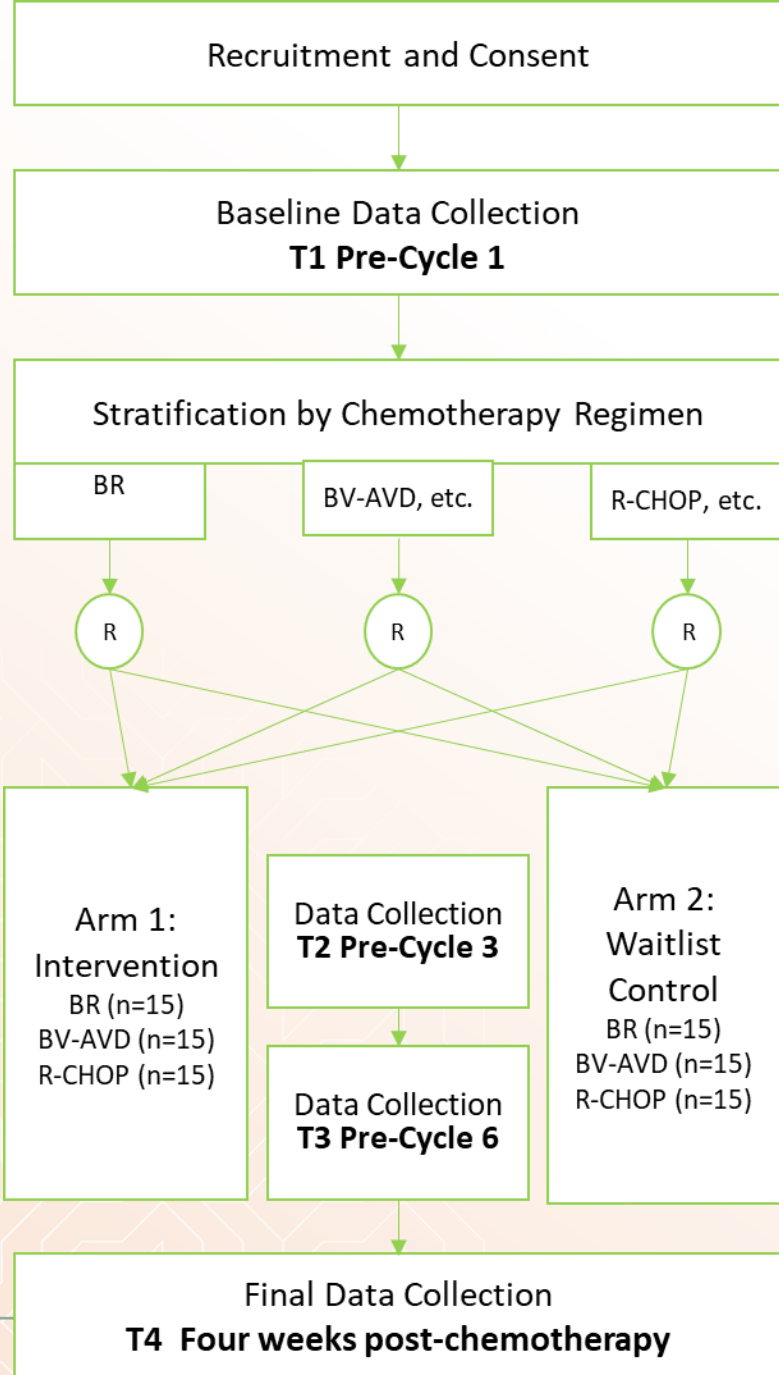


- Newly diagnosed patients with lymphoma starting treatment (n = 120)
- Primary: Reduce toxicities
- Secondary: body composition, metabolomics, PROs
- MPI: Crane/Moskowitz
- Funding: V-Foundation DT2023-008



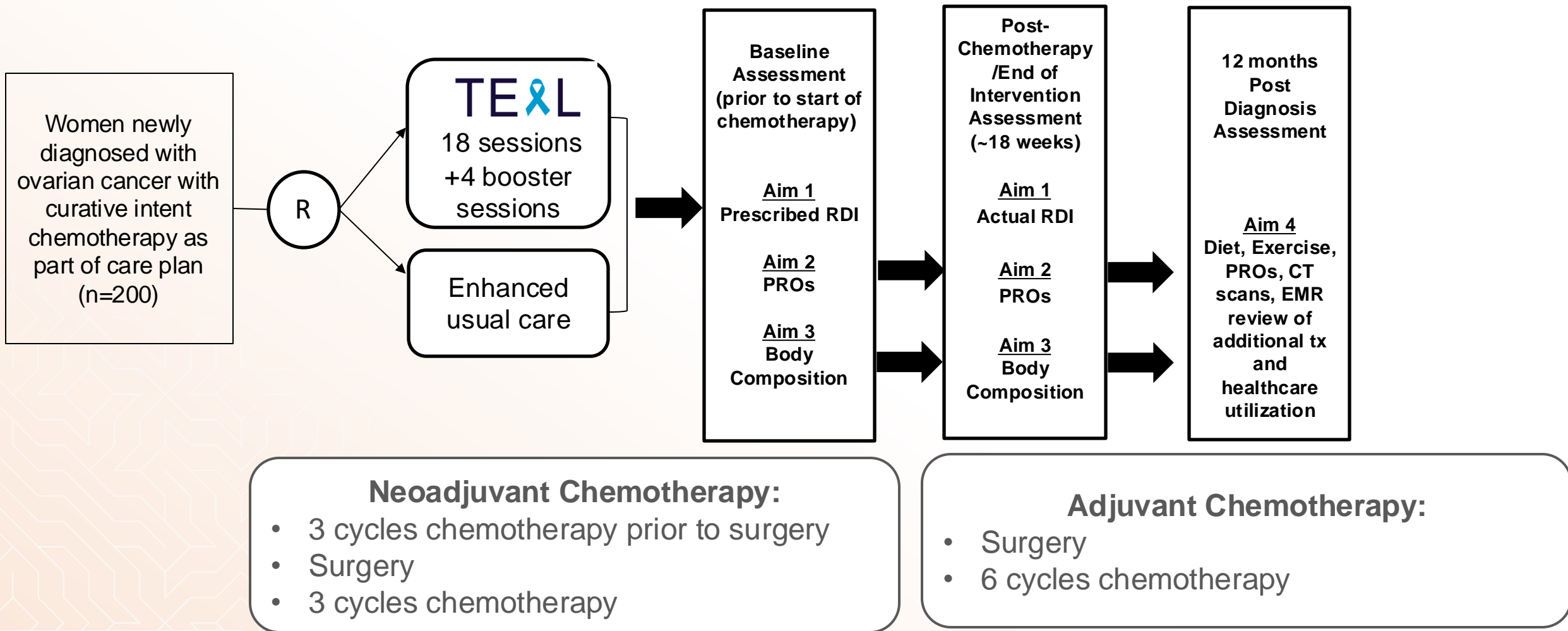
TRIAL OF EXERCISE AND LIFESTYLE  
*in Women with Ovarian Cancer*

- Newly diagnosed women with ovarian cancer starting chemotherapy (n = 200)
- Primary: Relative Dose Intensity
- Secondary: PROs, body composition
- MPI: Crane/Irwin
- Funding: NCI U01CA271278





# Trial of Exercise And Lifestyle (TEAL) in women with ovarian cancer





# Medical Nutrition Therapy and Exercise Intervention

## Nutrition Goals

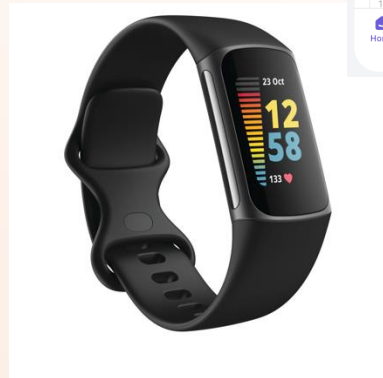
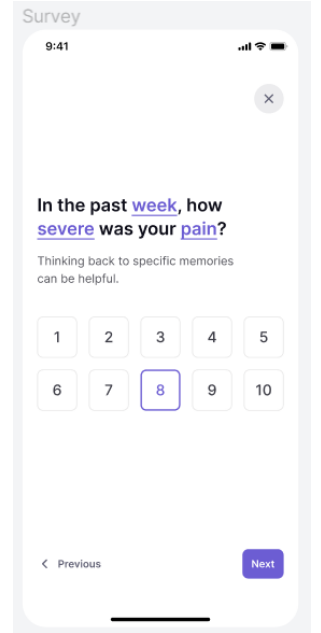
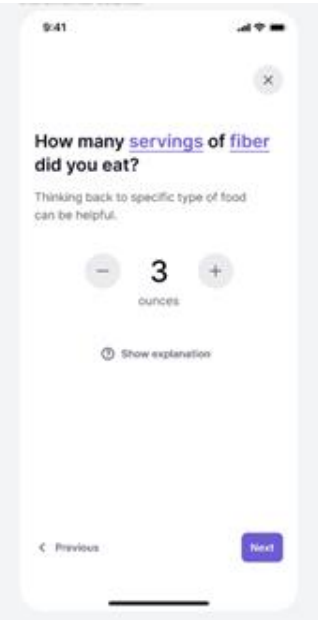
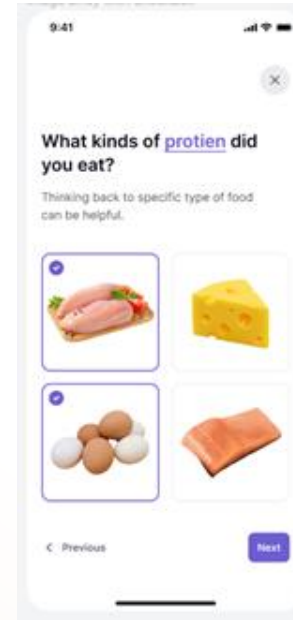
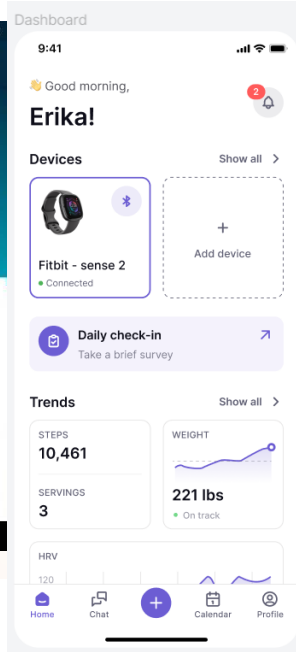
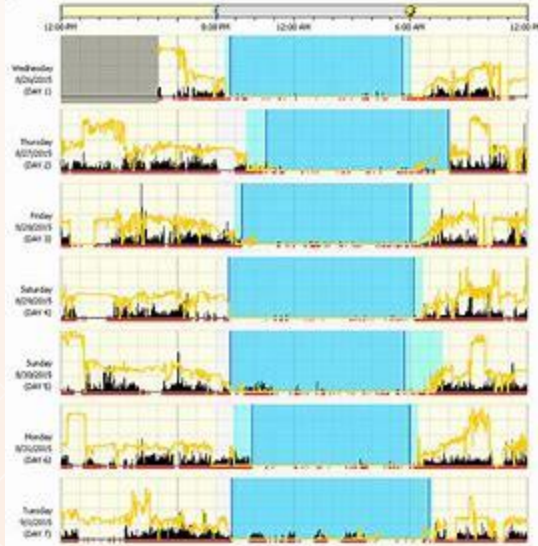


- Combination of  $\geq 5$  servings of vegetables + fruits per day
- $\geq 25$  grams of fiber per day
- Adequate protein 1.2 -1.5g/kg body wt
- $\geq 64$  fl oz of water per day
- Avoid alcohol intake

## Exercise Goals



- $\geq 150$  min mod or 75 min vig intensity physical activity per week
- Twice weekly strength training
- Reduce sedentary time
- Encourage 10,000 steps per day



My    Wellness Research



# VITALITY

EXERCISE AND NUTRITION FOR OLDER  
CANCER SURVIVORS AND THEIR CAREGIVERS

- Older survivors ( $\geq 65$  years) who have completed treatment for breast, prostate, colon and prostate cancer and support person (n = 764 dyads)
- MPI: Crane/Dieli-Conwright
- Primary: Physical Function and Cognition
- Secondary: PROs, Dyadic Interdependence
- Funding: PCORI



VS.





## LIFESTYLE MEDICINE



Exercise Foundations for Cancer Survivors



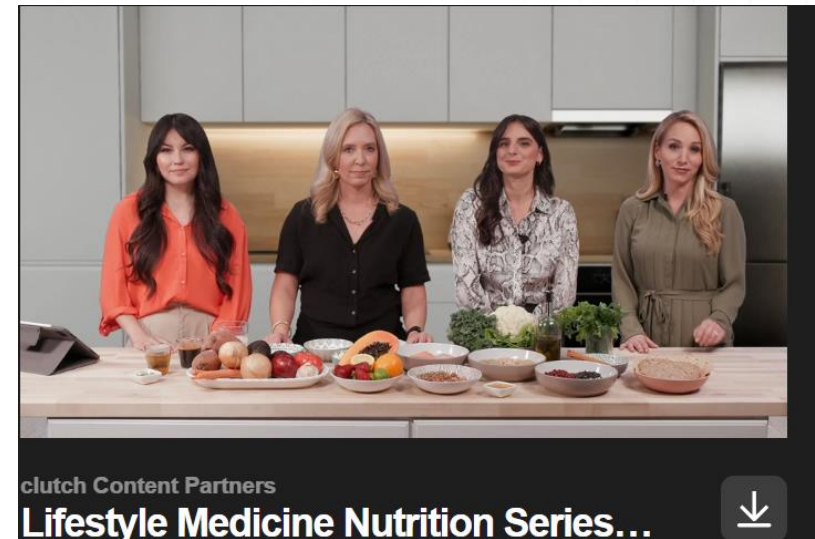
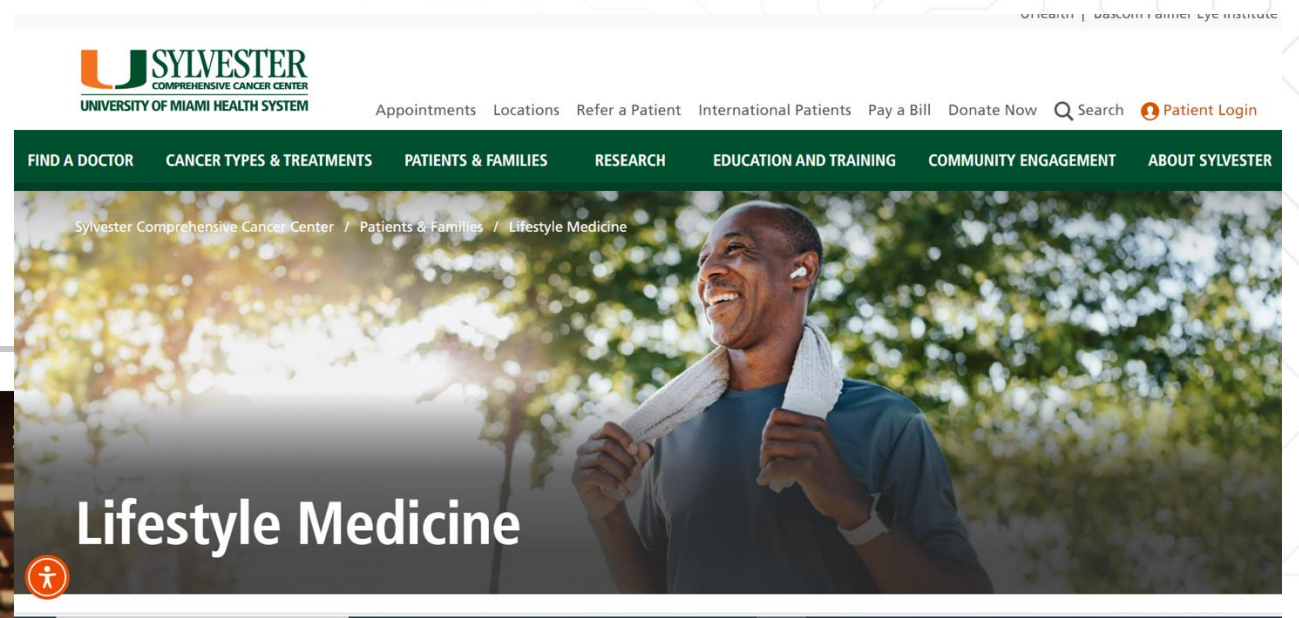
Low Impact 10-Minute Aerobic Workout for Cancer Survivors



20-Minute Full Body Workout with Bands for Cancer Survivors



20-Minute Full Body Circuit Training with Dumbbells for Cancer Survivors

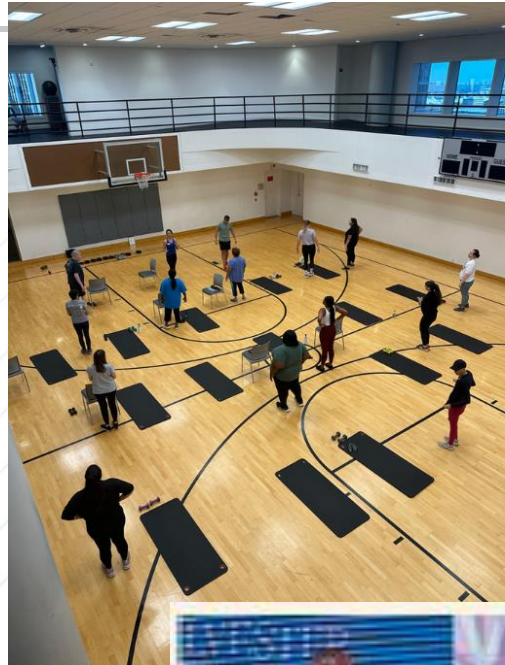


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# Key Points

Variety of ways to  
manipulate  
dietary intake and  
daily activity

Patients are  
interested and  
want to know  
more

Rigorous testing  
of these  
behaviors are  
needed





From nice-to-have to **must-have**

Plan time to talk about diet and exercise interventions

Follow the data and expand your focus on this area

# Acknowledgments

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**CRANE LAB**  
**Cancer Research**  
 Advancing with Nutrition and Exercise





# Thank you

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