

Obesity and Cancer: An Innovative Community Program to Increase Functional Outcomes in African American Cancer Survivors

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WiiCan
Increasing Physical Activity in African American Cancer Survivors



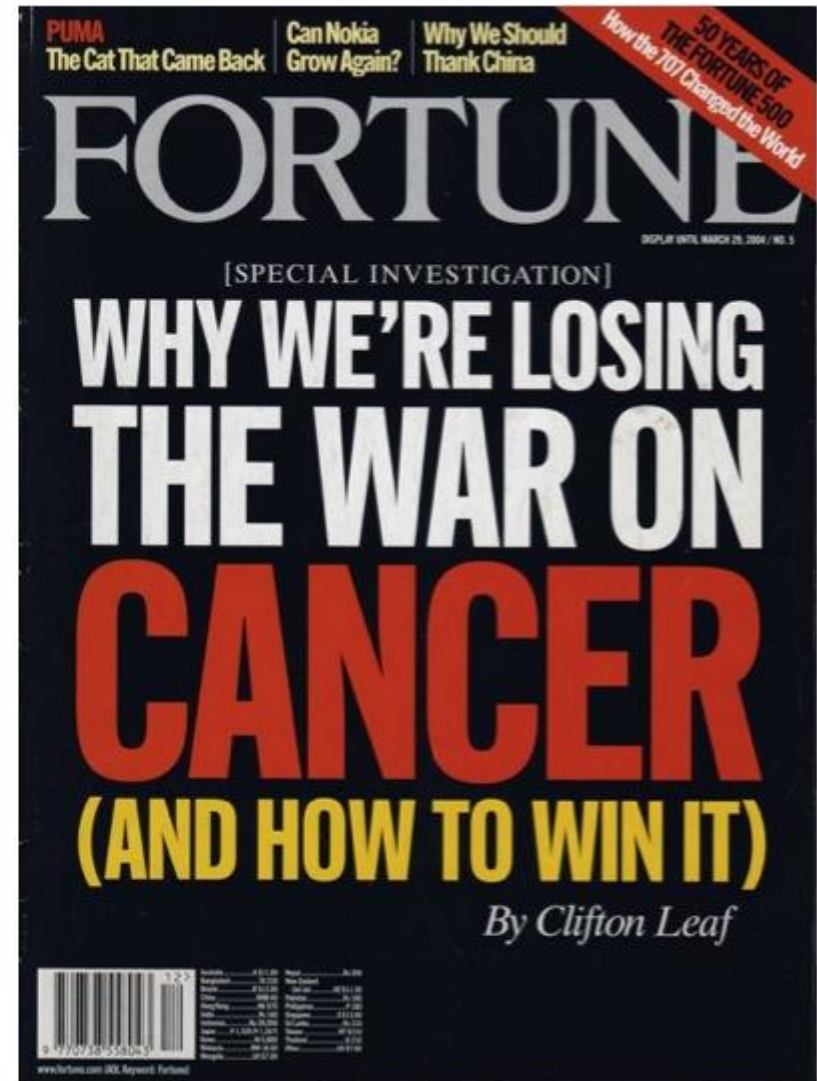
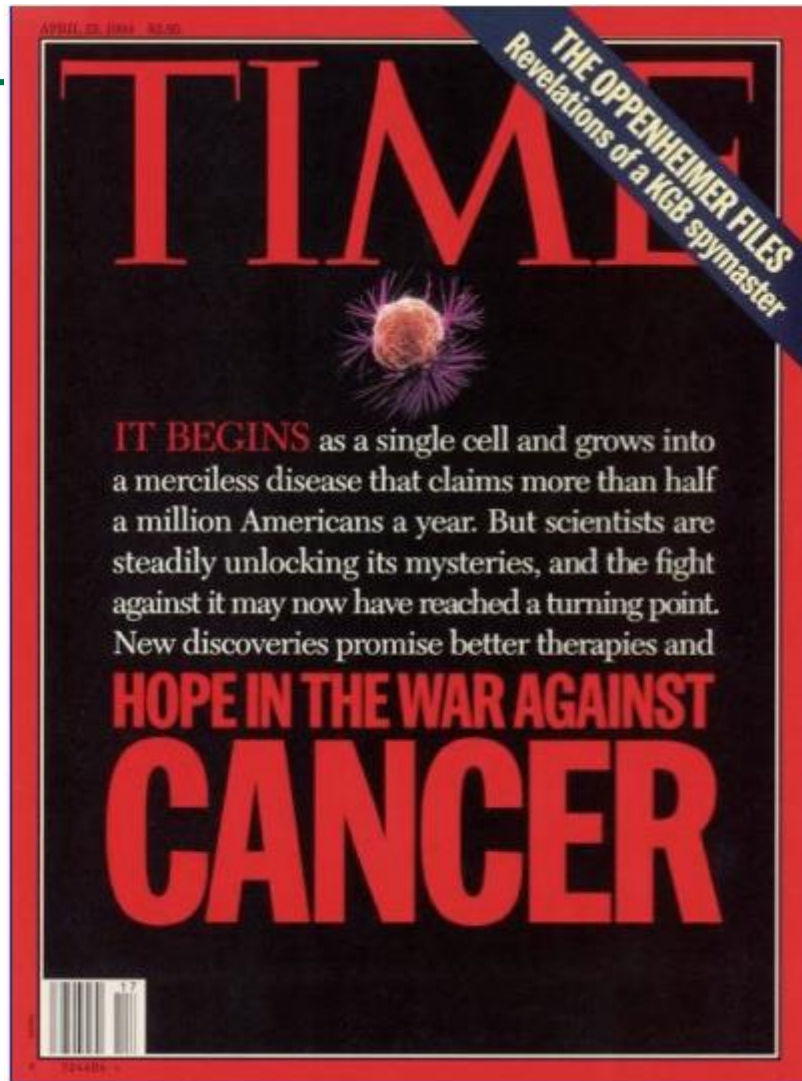
Being physically active has many benefits for cancer survivors.

Do **not** lose out on this great opportunity!

UAB MEDICINE
PREVENTIVE MEDICINE

- Background
 - ◆ Cancer Survivorship
 - ◆ Wii Can
- Aims and Methods
- Preliminary Findings

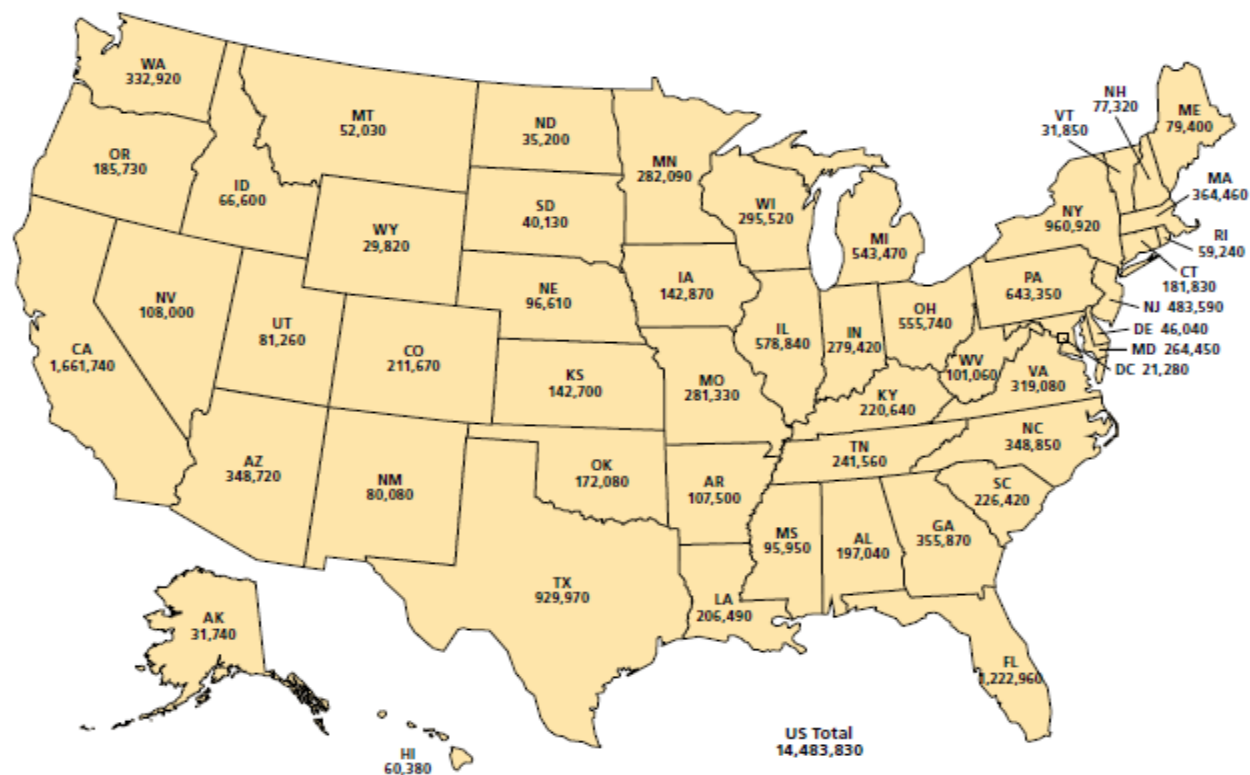
BACKGROUND



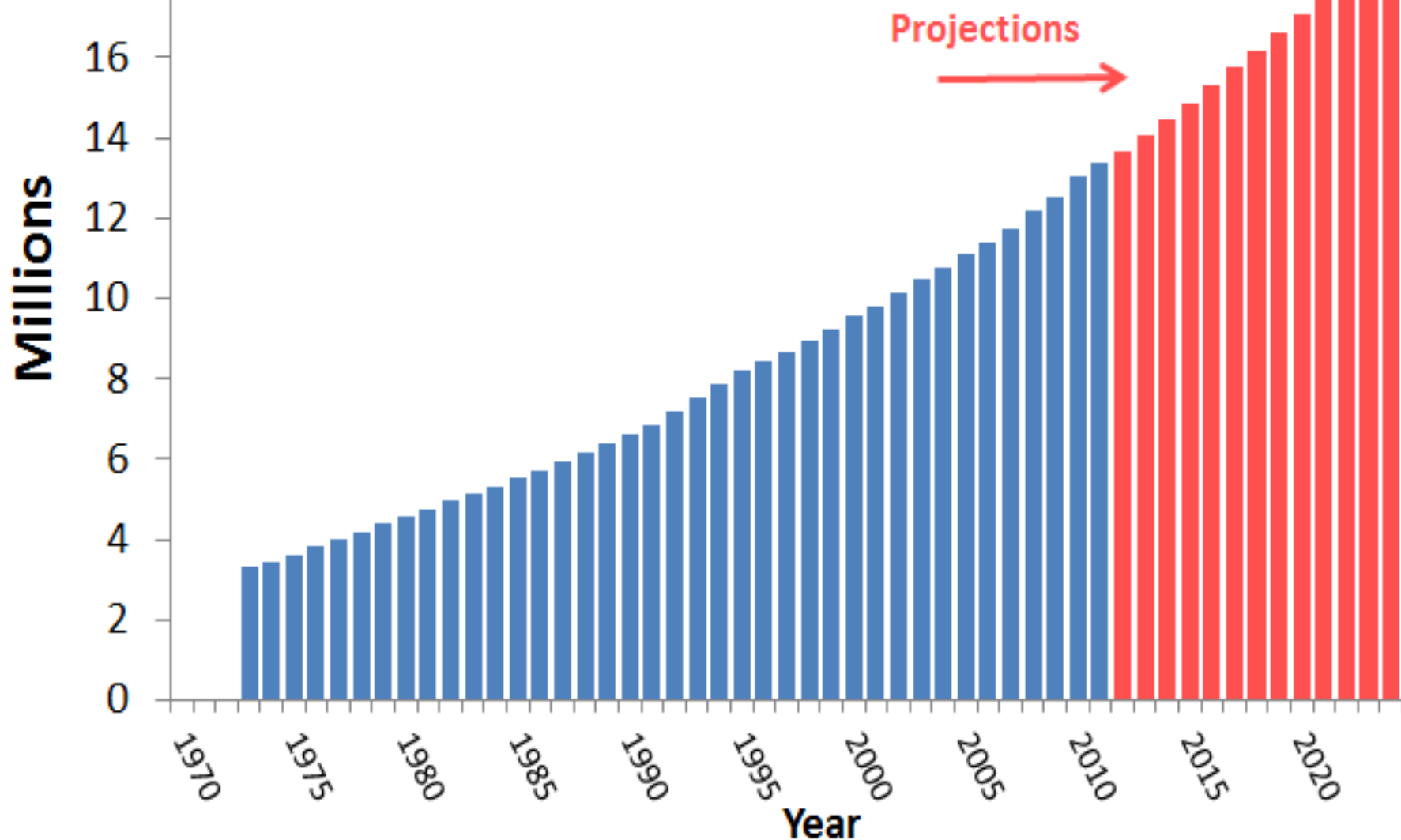
Cancer Treatment & Survivorship Facts & Figures

2014-2015

Estimated Numbers of Cancer Survivors by State as of January 1, 2014



Estimated Number of Cancer Survivors in the US



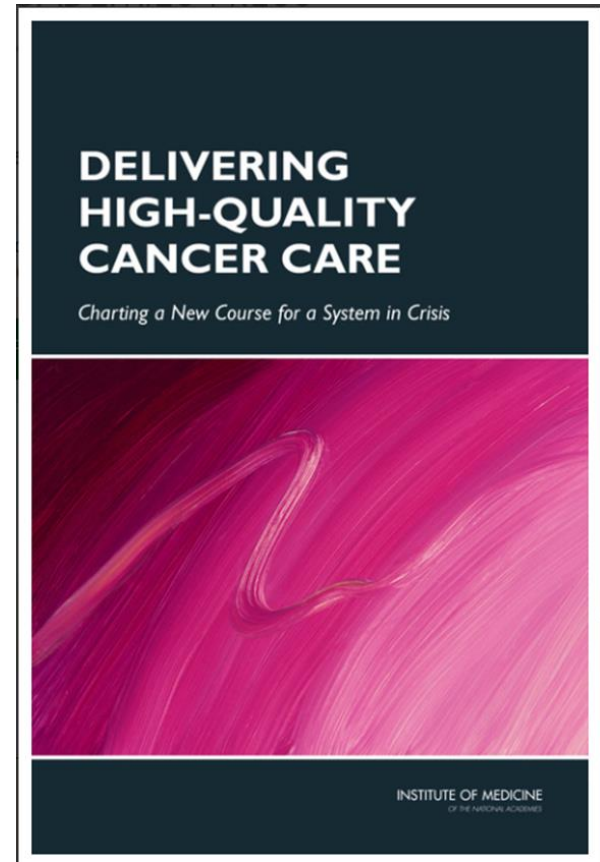
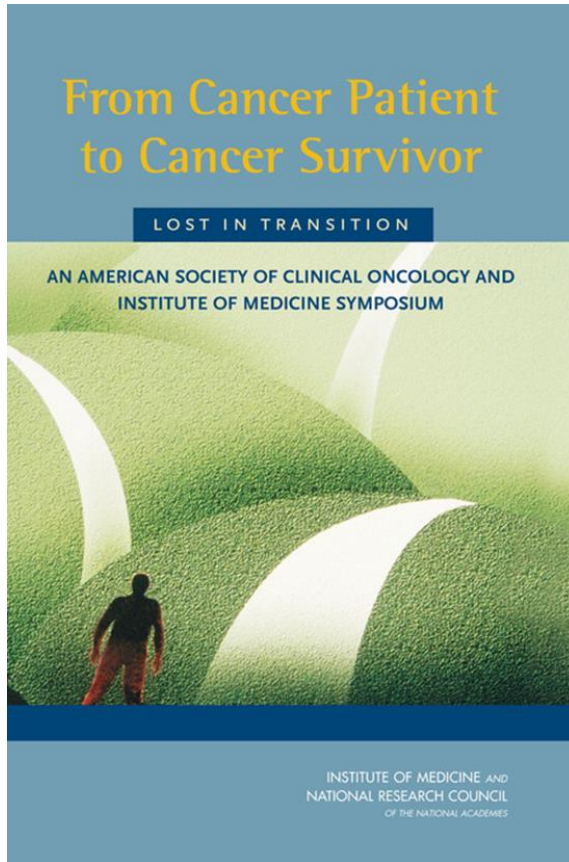
¹ DeSantis C, Chunchieh L, Mariotto AB, et al. (2014). Cancer Treatment and Survivorship Statistics, 2014. CA: A Cancer Journal for Clinicians. In press.

**By 2024, there will be an estimated
19 million cancer survivors in the
United States**

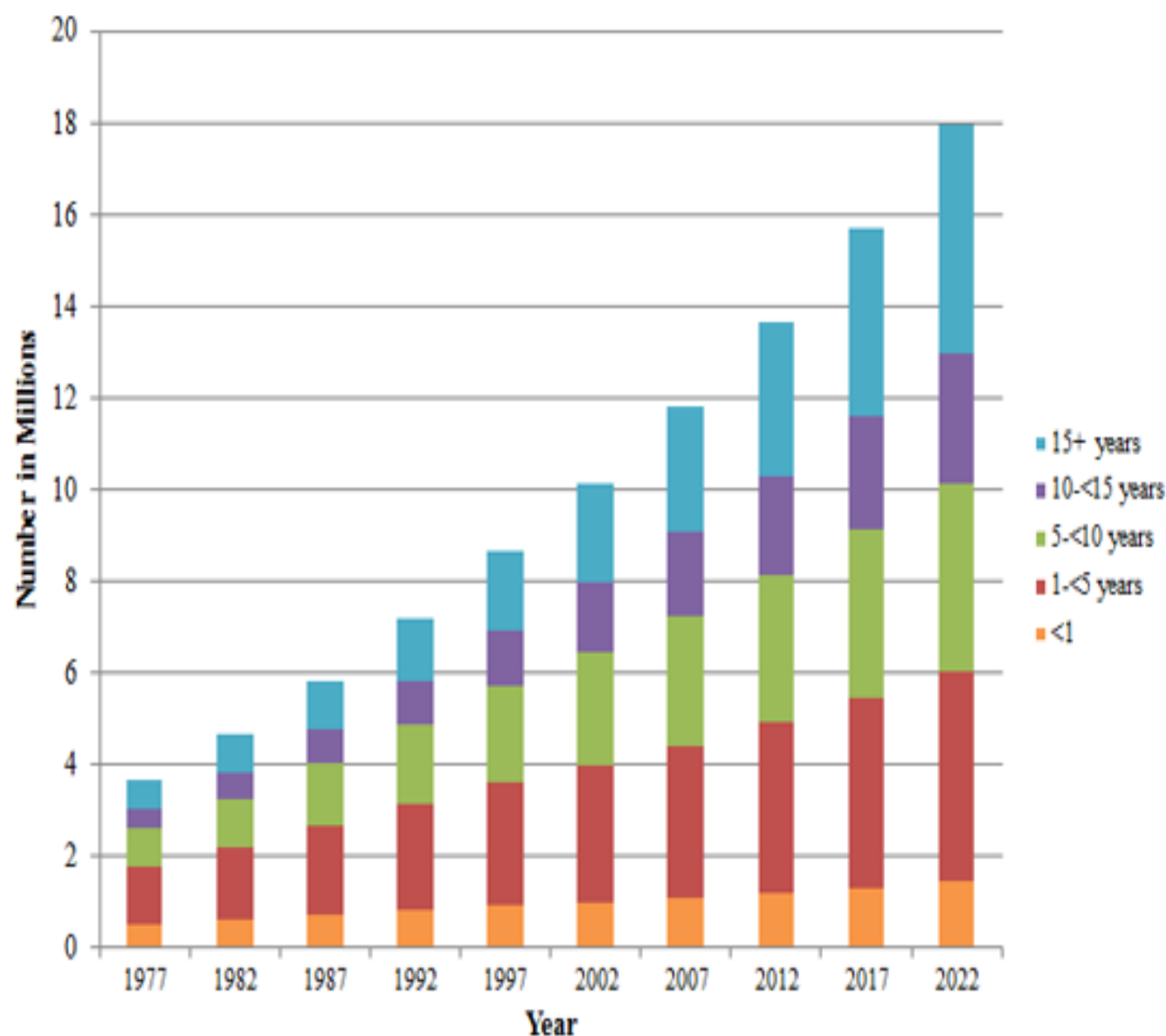
Citation: Office of Cancer

Survivorship:<http://cancercontrol.cancer.gov/ocs/statistics/statistics.html>

National Initiatives



Estimated and projected number cancer survivors in the United States from 1977-2022 by years since diagnosis



de Moor JS, Mariotto AB, Parry C, Alfano CM, Padgett L, Kent EE, Forsythe L, Scoppa S, Hachey M, and Rowland JH. Cancer Survivors in the United States: Prevalence across the Survivorship Trajectory and Implications for Care. *Cancer Epidemiol Biomarkers Prev*. 2013 Apr;22(4):561-70. doi: 10.1158/1055-9965.EPI-12-1256. Epub 2013 Mar 27.

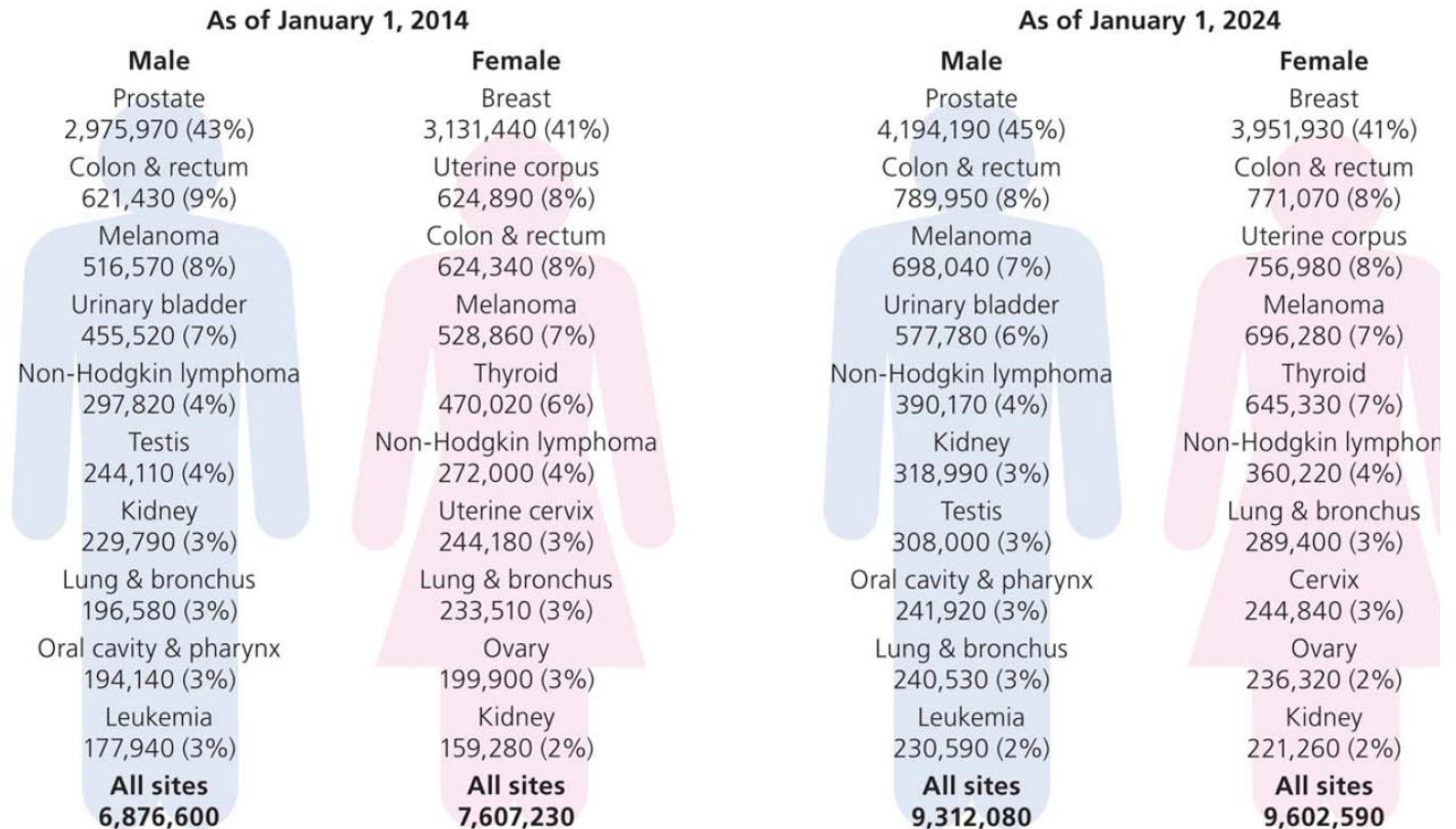
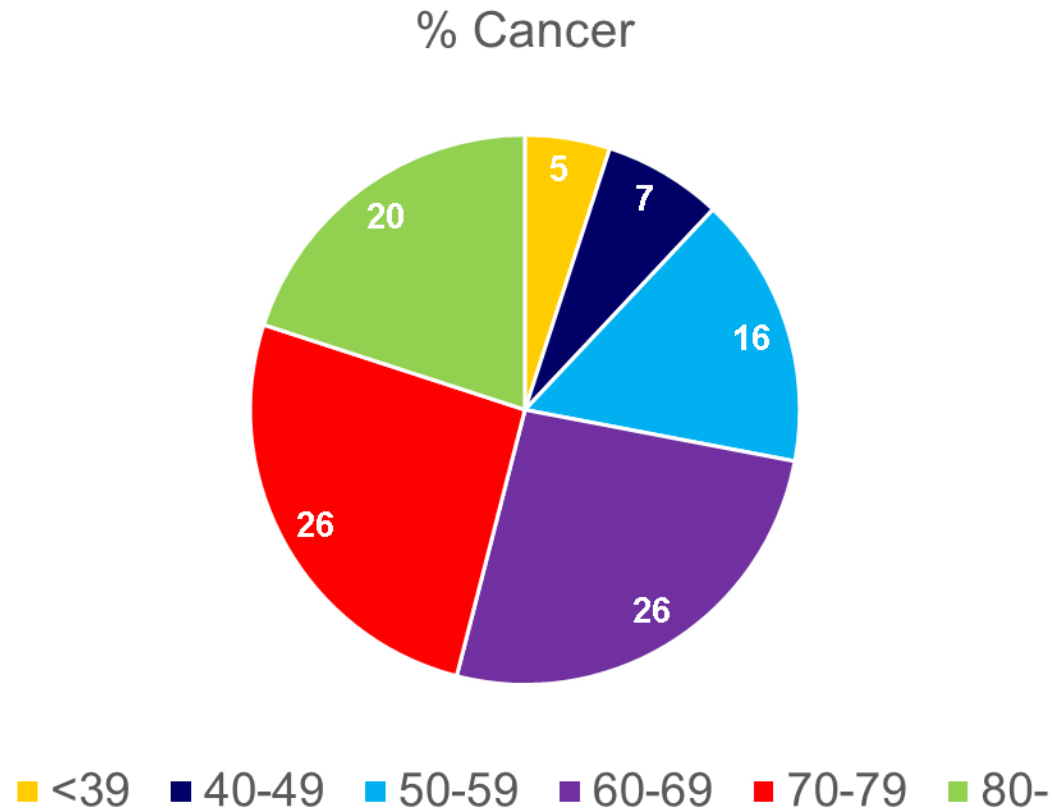


FIGURE 1. Estimated Number of US Cancer Survivors by Site.

Source: Data Modeling Branch, Division of Cancer Control and Population Sciences, National Cancer Institute.

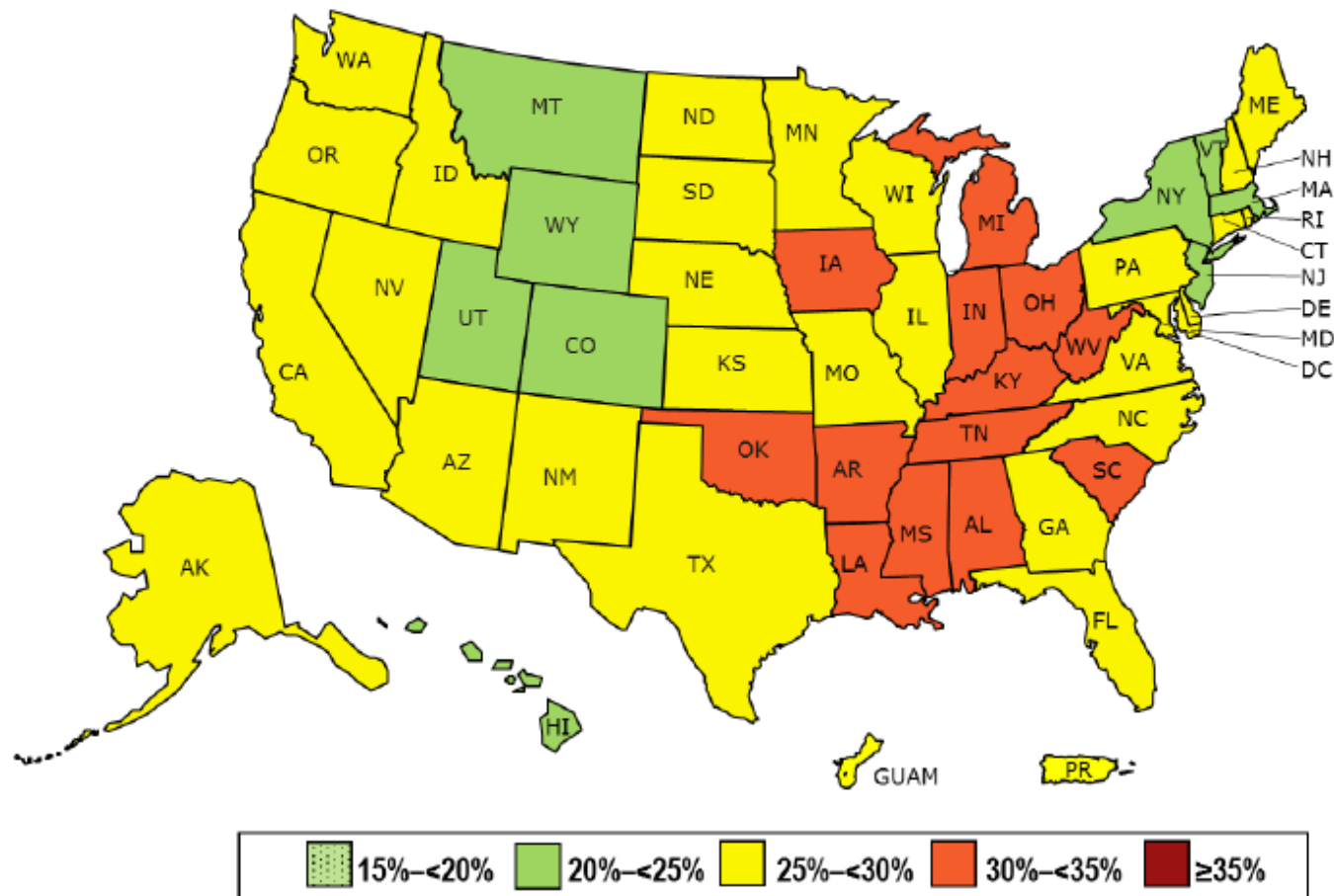
Estimated Number of US Cancer Survivors, by age, as of January 1st, 2014





Prevalence* of Self-Reported Obesity Among U.S. Adults by State and Territory, BRFSS, 2012

*Prevalence estimates reflect BRFSS methodological changes started in 2011. These estimates should not be compared to prevalence estimates before 2011.



Source: Behavioral Risk Factor Surveillance System, CDC.



Up to one third of all new cancer diagnoses in the United States are related to being overweight or obese, physical inactivity, and/or poor dietary habits

Citation:

The Role of Obesity in Cancer Survival and Recurrence

Wendy Demark-Wahnefried¹, Elizabeth A. Platz², Jennifer A. Ligibel³, Cindy K. Blair¹, Kerry S. Courne
Jeffrey A. Meyerhardt³, Patricia A. Ganz³, Cheryl L. Rock⁶, Kathryn H. Schmitz⁷, Thomas Wadden⁸,
Errol J. Philip⁹, Bruce Wolfe¹⁰, Susan M. Gapstur¹¹, Rachel Ballard-Barbash¹², Anne McTiernan¹⁵,
Lori Minasian¹³, Linda Nebeling¹⁴, and Pamela J. Goodwin¹⁶

VOLUME 26 · NUMBER 25 · SEPTEMBER 1 2008

JOURNAL OF CLINICAL ONCOLOGY

ORIGINAL REPORT

VOLUME 29 · NUMBER 25 · SEPTEMBER 1 2011

JOURNAL OF CLINICAL ONCOLOGY

ORIGINAL REPORT

Obesity and Survival Among Black Women and White Women 35 to 64 Years of Age at Diagnosis With Invasive Breast Cancer

Yani Lu, Huiyan Ma, Kathleen E. Malone, Sandra A. Norman, Jane Sullivan-Halley, Brian L. Strom,
Polly A. Marchbanks, Robert Spiras, Ronald T. Burkman, Dennis Deapen, Suzanne G. Folger,
Michael S. Simon, Michael F. Press, Jill A. McDonald, and Leslie Bernstein

Relationship Between Obesity and Pathologic Response to Neoadjuvant Chemotherapy Among Women With Operable Breast Cancer

ARTICLE IN PRESS

PUBLIC HEALTH XXX (2015) 1–9

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Public Health

journal homepage: www.elsevier.com/puhe

ELSEVIER



Original Investigation

Difference in Association of Obesity With Prostate Cancer Risk Between US African American and Non-Hispanic White Men in the Selenium and Vitamin E Cancer Prevention Trial (SELECT)

Review Paper

The effect of body mass index on endometrial cancer: a meta-analysis

VOLUME 32 · NUMBER 25 · DECEMBER 16 2014

JOURNAL OF CLINICAL ONCOLOGY

ORIGINAL REPORT

Breast Cancer Res Treat (2012) 135:647–654

DOI 10.1007/s10549-012-2187-1

REVIEW

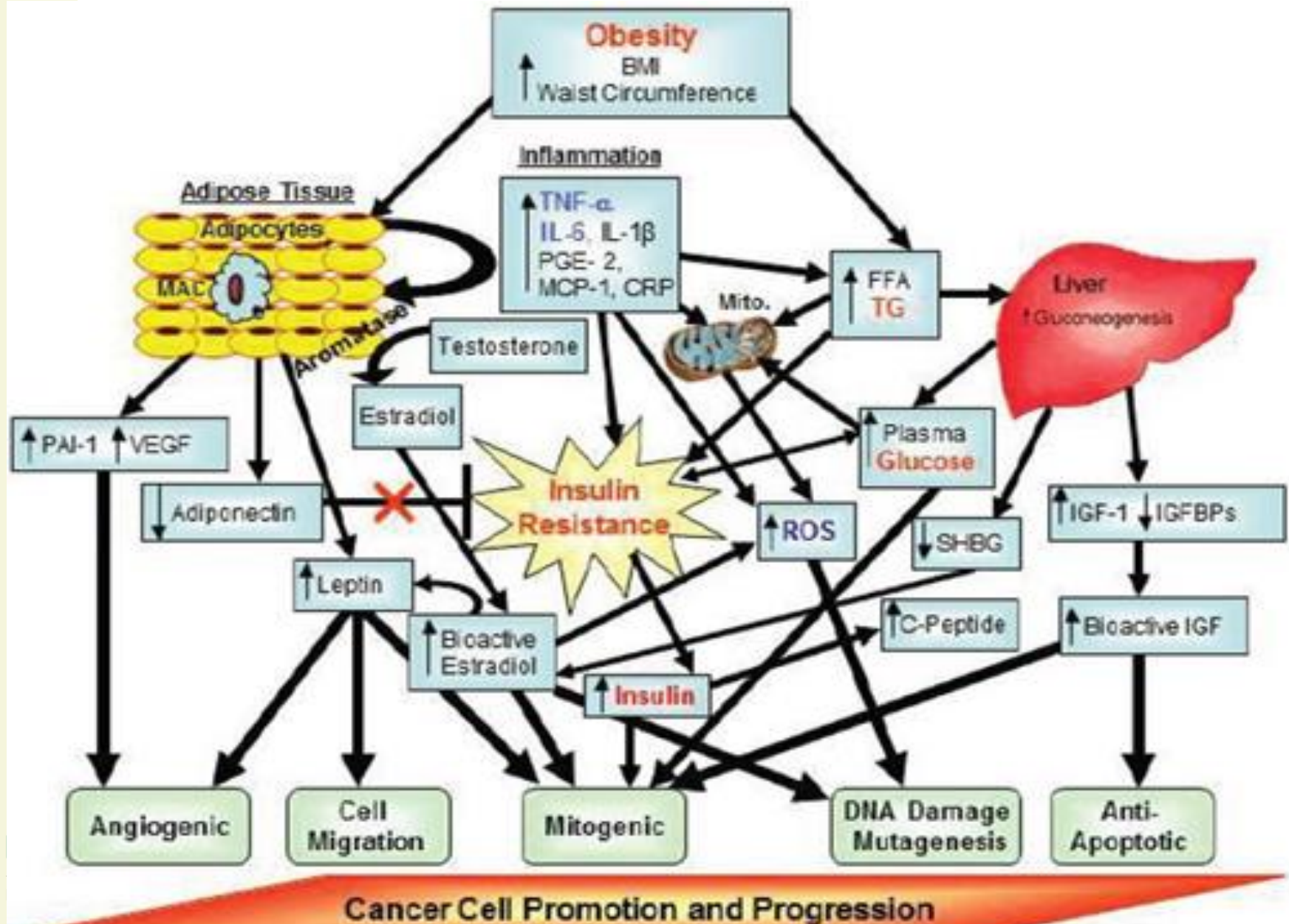
Body Mass Index and Risk of Second Obesity-Associated Cancers After Colorectal Cancer: A Pooled Analysis of Prospective Cohort Studies

Excess body weight and second primary cancer risk after breast cancer: a systematic review and meta-analysis of prospective studies

Obesity and Cancer: Additional Areas of Investigation



Berger Reprinted in IOM Role of Obesity in Cancer Survival and Recurrence Workshop Summary



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Increasing Physical Activity in African American Cancer Survivors



Being physically active has
many benefits
for cancer survivors.

Do **not** lose out on this
great opportunity!

UAB MEDICINE

Knowledge that will change your world

UAB MEDICINE

PREVENTIVE MEDICINE

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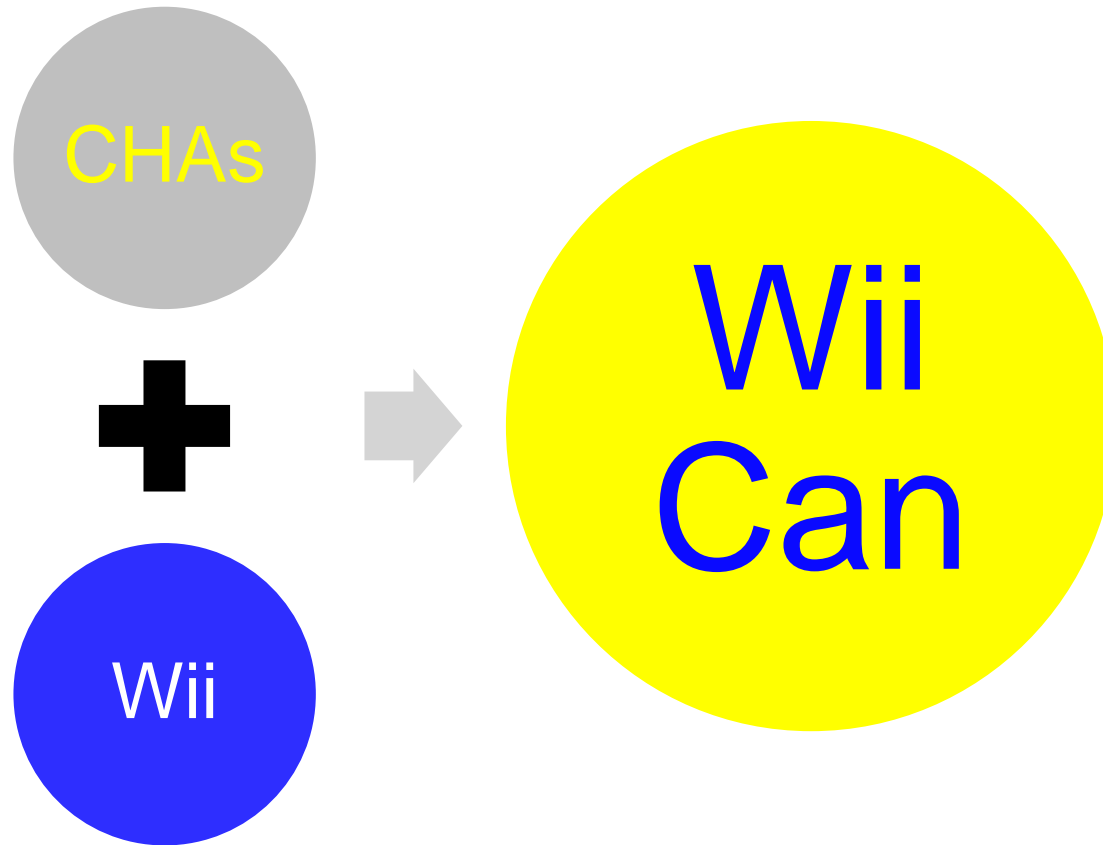
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BACKGROUND OF WII CAN

Population, 2014 estimate 4,849,377



Demographics

	Alabama	Jefferson County	United States
White alone (2013)	69.8%	22.3% ^a	77.7%
Black or AA alone (2013)	26.6%	73.4% ^a	13.2%
Persons below poverty level, percent, 2009-2013	18.6%	30.2%	15.4%
a: 2010 estimates			

African American cancer survivors have lower 5 year survival than whites overall (60% versus 69%) respectively. The differential survival rate is true for:

For each stage of diagnosis and for most cancer sites

Health Status and Behaviors of African American Cancer Survivors

- African American cancer survivors more likely to:
 - ◆ Poorer physical functioning
 - ◆ More symptoms (e.g., more fatigue and sleep quality)
 - ◆ Be disabled
 - ◆ Comorbid conditions
 - ◆ Have shorter survival
 - ◆ Less physically active

Considering Obesity in General

- Obese cancer survivors less likely to:
 - ◆ be active and maintaining healthy diet
 - ◆ to return to pre-cancer physical activity patterns compared to normal weight and overweight survivors
 - ◆ be confident in their ability to be active
- Be physically active than obese women w/o diagnosis

SPECIFIC AIMS

- **Specific Aim 1:** Explore feasibility and acceptability of Wii Can, a home-based, exergame intervention that combines virtual reality video games with the social support of Community Health Advisors.
 - ◆ This aim will be accomplished by assessing accrual, adherence, retention, barriers and facilitators to intervention uptake, satisfaction and adverse events.

- **Specific Aim 2:** Assess the effects of Wii Can on physical activity and physical function.
- **Specific Aim 3:** Assess intervention implementation costs.

Why Focus on Physical Activity?



- Quality of life
- Decreases risk of recurrence
- Increases length of survival

- Randomized Controlled Trial
 - ◆ Immediate Intervention
 - ◆ Intervention group will receive a Wii and be paired with a CHA
 - ◆ Delayed Intervention
- 30 African American cancer survivors
- Baseline, 12 weeks and 24 weeks post-baseline

- Self Determination Theory
 - ◆ Build autonomy, competence, connectedness
- 12 Weeks
 - ◆ Face-to-Face home visit
 - ◆ 7 weekly phone calls
 - ◆ 2 bi-weekly phone calls



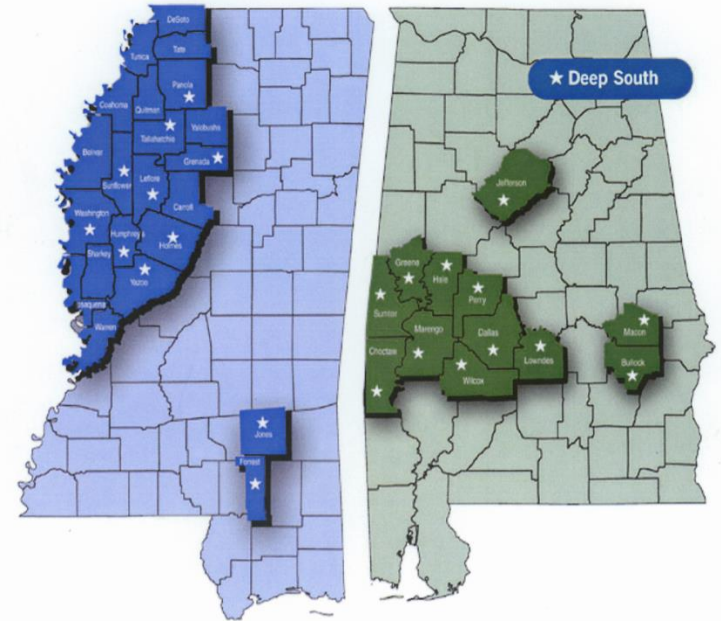


**Deep South
Network for
Cancer Control**

A National Cancer Institute funded
Program of the UAB
Comprehensive Cancer Center

Deep South Network for Cancer Control

- An established network of community health advisors (CHAs) in Alabama and Mississippi
- Trained to improve access to and utilization of proven beneficial cancer interventions
- CHAs will serve as the interventionists



- Via attendance at CHA community meetings
- Obtaining names of those interested
- Conducting an eligibility screener

- Two 4-hour sessions
- Combination of didactics, role play, experiential activities
- Pre-recorded a sample session with a national expert in Self Determination Theory based interventions

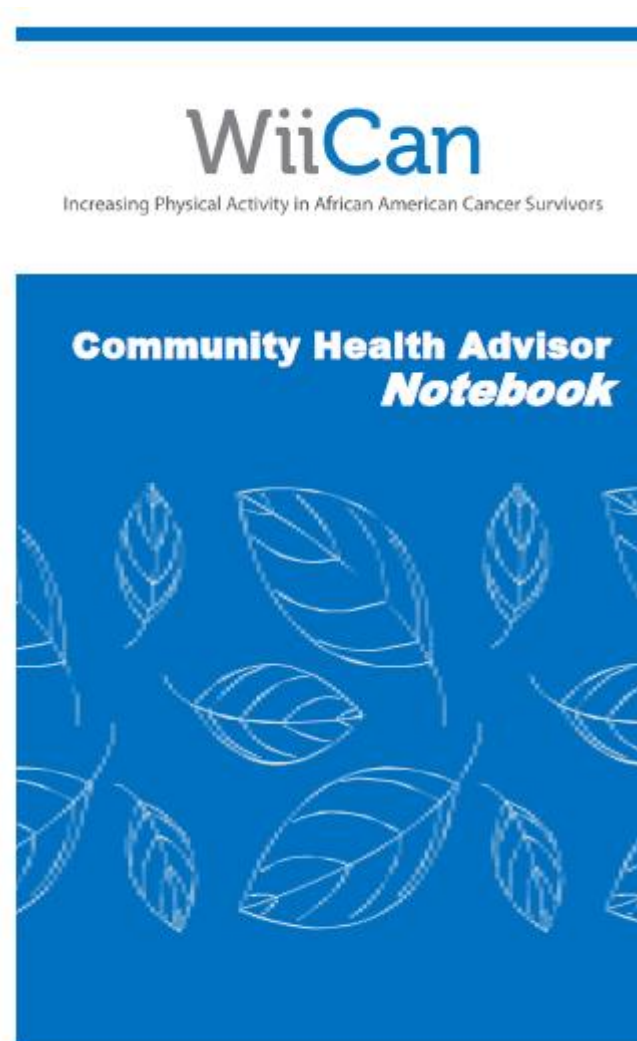
Theoretical Underpinnings



- Eliciting and acknowledging the Survivors' perspectives and feelings.
- Exploring values and how they relate to physical activity.
- Providing clear rationale for advice given.
- Providing options for change and the option of not changing.
- Support Survivor's self initiation for change.
- Minimize pressure and control.

- Being positive that the patient can succeed
- Providing accurate, relevant feedback
- Identifying barriers to change
- Engaging the survivor in skills-building and problem-solving
- Developing a plan that is appropriate for the survivor's abilities

- Developing empathy
- Developing a warm, positive interpersonal relationship
- Remaining non-judgmental and providing unconditional positive regard



WiiCan

Increasing Physical Activity in African American Cancer Survivors

Community Health Advisor *Notebook*

WiiCan

Increasing Physical Activity in African American Cancer Survivors

Build Autonomy by:

- Eliciting and acknowledging the Survivors' perspectives and feelings
- Exploring values and how they relate to physical activity
- Providing clear rationale for advice given
- Providing options for change, and the opinion of not changing
- Support Survivor's self initiation for change
- Minimize pressure and control

Build Competence by:

- Being positive that the patient can succeed
- Providing accurate, relevant feedback
- Identifying barriers to change
- Engaging the survivor in skills-building and problem-solving
- Developing a plan that is appropriate for the survivor's abilities.

Build Connectedness by:

- Developing empathy
- Developing a warm, positive interpersonal relationship
- Remaining non-judgmental and providing unconditional positive regard

Source: Williams et al., The Smoker's Health Project: A self – determination theory intervention to facilitate maintenance of tobacco abstinence. Contemporary Clinical Trials 32(2011) 535-543.

Step 1) Build Rapport

Notes:

Friendly introduction, share study information etc. check that the planned session is still a good time/works for them. Transition to begin the intervention.

Example:

"Let's start talking about using the Wii Fit to increase your level of physical activity. I am here to provide information and help you learn things about yourself so that YOU can make the best decision for YOU about changing your level of physical activity."

7) Make a Plan

- Use 4 Step Plan to set goals for physical activity (for Survivors who decide they are ready to become more active).
- Identify days and times when the person will use the Wii.
- "Lets talk about what you would like your goals to be for the next week! We want you to make the decision that feels right for you given your goals."
- "What would you like to achieve this week with using Wii Fit? In other words, when would you like to use it?"
- "What might you do or put in place to help you be successful in reaching your physical activity goals?"
- "What might be some barriers to accomplishing your goals? How might you prepare for those potential barriers?"

Notes:





Wii Fit Interface

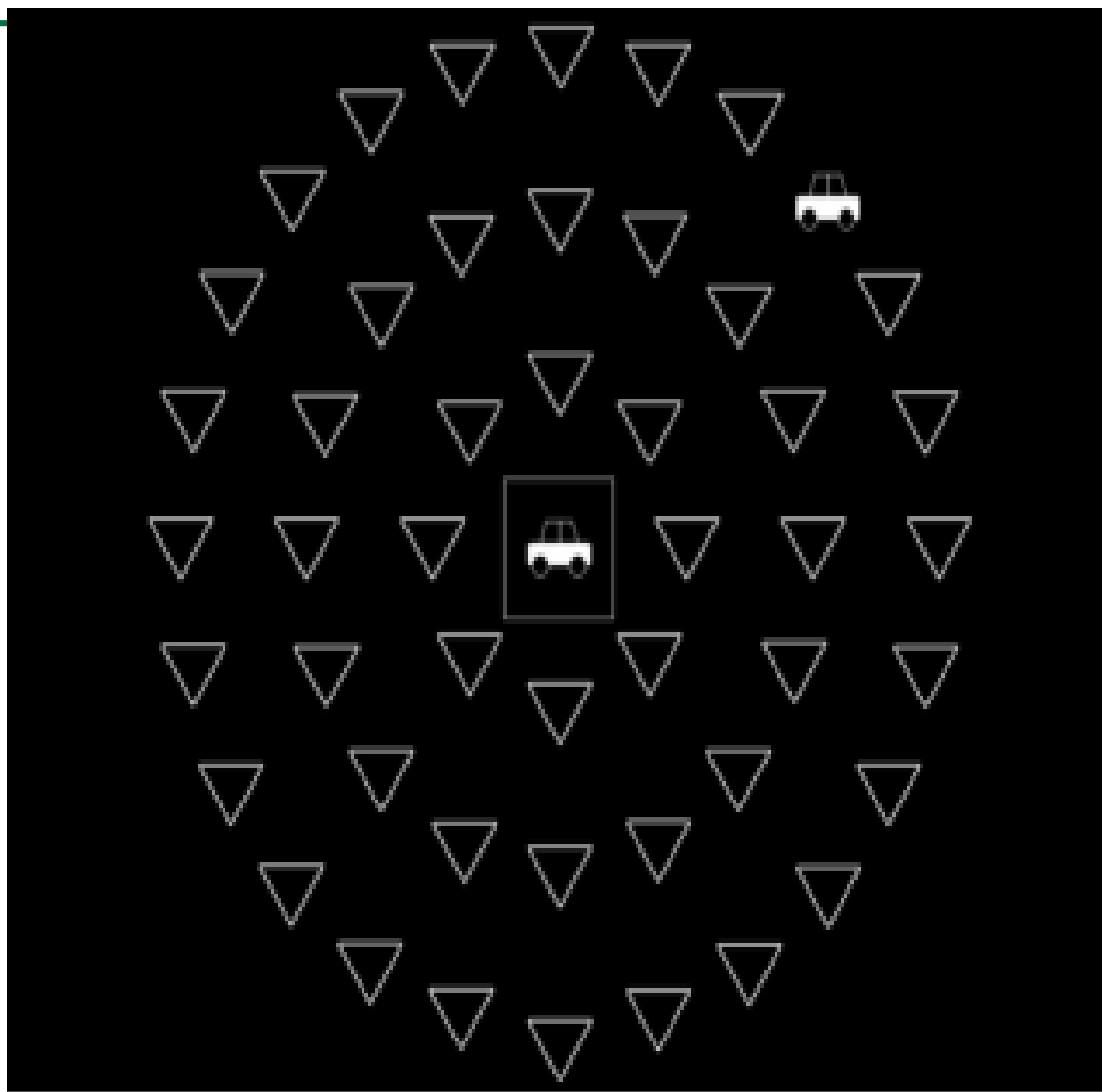


- Cancer survivors seen previously at UAB are sent a letter and a brochure followed by a phone call from project staff
- Complete eligibility screener
 - ◆ Have completed treatment
 - ◆ Physician medical clearance
 - ◆ Relatively sedentary

- Quality of Life (SF-36)
- Health Behaviors
 - ◆ Physical activity (accelerometer, self report, Wii data)
- Functional Capacity
 - ◆ 6 Minute Walk Test
 - ◆ Five Repetition Sit to Stand to Sit Test
 - ◆ Timed Up and Go

- Clinical Variables
 - ◆ Fatigue
 - ◆ Pain disability
- Lifespace
- Biomarkers
- Theoretical Constructs

- Cognitive Skills
 - ◆ Processing speed
 - ◆ Useful Field of View
 - ◆ Trail Making Tests
 - ◆ Mazes



PRELIMINARY FINDINGS

Demographic Characteristics

Demographics	N = 30 (%)
Married	53
Education = or \geq College	47
Age	Mean = 59.9 years Range = 40 – 70 years

Clinical Characteristics

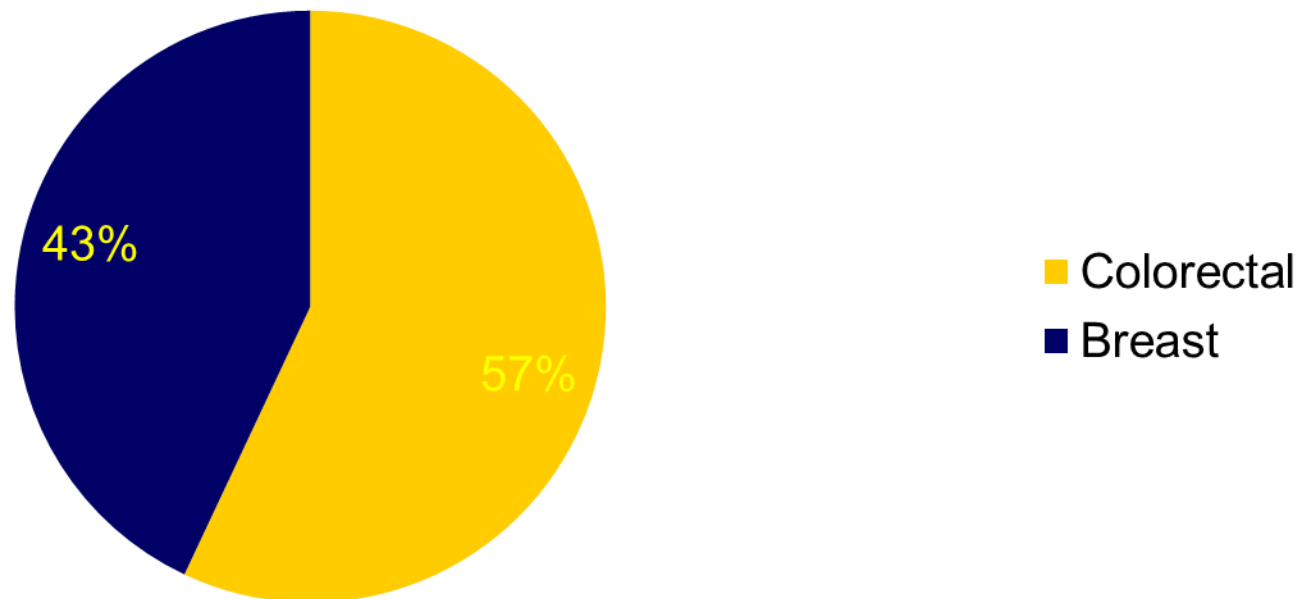
Medical Comorbidities	N = 30 (%)
High cholesterol	50
Body Mass Index	31.47 + 6.9
Arthritis	30
Obesity	30
Hypertension	70
Diabetes	33
Heart Disease	20
Gastrointestinal	27
Depression	33

Treatment Modality	N = 30 (%)
Surgery	93
Chemotherapy	60
Radiation	50

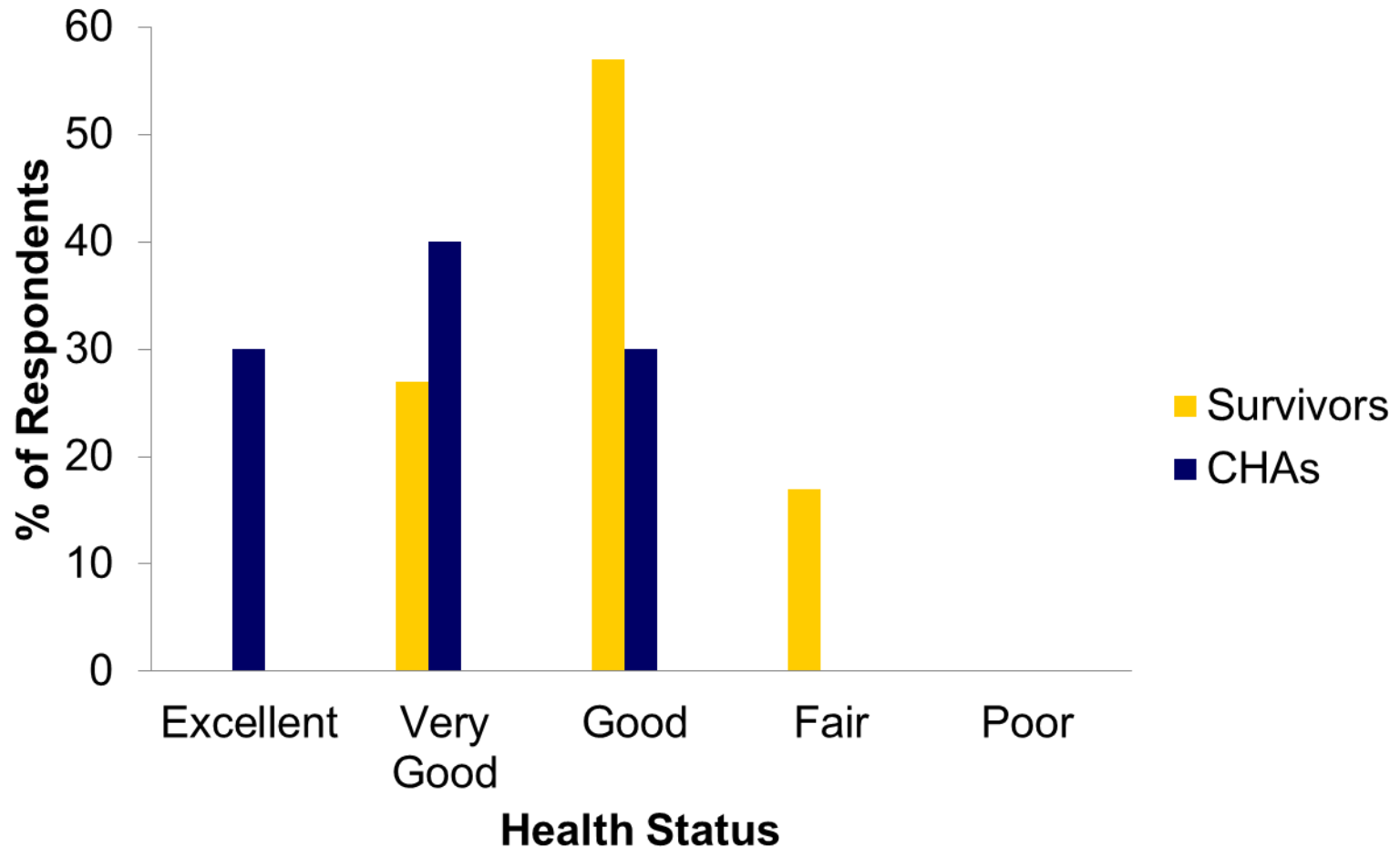
Cancer Stage	N = 11 (%)
1	27
2	27
3	27
4	18

Clinical Characteristics of African American Cancer Survivors

Types of Cancer



Comparison of Health Status: CHAs and Survivors



- Past 4 weeks have you had any of the following problems with your work or other regular daily activities as a result of your **physical** (**emotional**) health?
- **37%** indicated “Yes”
- **33%** indicated “Yes”

Functional Mobility: Timed Up an Go Test

	Baseline (sec)	12-Week (sec)	P-Value
Wii Can	7.07± 1.13	6.71 ± 1.05	0.005
Control	7.31 ± 1.45	8.01 ± 1.31	

Functional Capacity: 6-Minute Walk

	Baseline (meters)	12-Week (meters)	P-Value
Wii Can	493 ± 78.1	507 ± 83.5	0.059
Control	443 ± 65.7	453 ± 64.9	

Weekly Physical Activity: Sedentary

	Baseline (mins)	12-Week (mins)	P-Value
Wii Can*	868 ± 215.6	706 ± 110.9	0.313
Control	852 ± 236.4	750 ± 159.7	
*Within group significance			

Weekly Physical Activity: Light Intensity

	Baseline (min)	12-Week (min)	P-Value
Wii Can*	497 ± 191.5	618 ± 86.5	0.494
Control	509 ± 182.1	594 ± 112.4	
*Within group significance			

Weekly Physical Activity: Moderate Intensity

	Baseline (min)	12-Week (min)	P-Value
Wii Can	68.9 ± 45.1	101.1 ± 66.1	0.165
Control	79.1 ± 83.5	88.4 ± 71.5	

Cognitive Functioning:UFOV

	Baseline (sec)	12-Week (sec)	P-Value
Wii Can (N = 11)	253.0 \pm 109.92	144.27 \pm 80.66	0.05
Control (N = 7)	248.71 \pm 127.59	207.57 \pm 139.7	0.53

Qualitative Feedback from Survivors

Challenging

Enjoyable

Impact on Family

Discipline/Routine

Motivating

Qualitative Feedback from CHAs

- Empowering
- Helping
- Spillover to family
- Focus on health
- Relationship most important
- Stories from the field

Conclusions and Implications

- Significant promise in community-based interventions – care extenders
- We can have meaningful impact on survivors – and improve the quality of life and function, including for those who may have excess weight
- Created an intervention that is accessible and may be sustainable