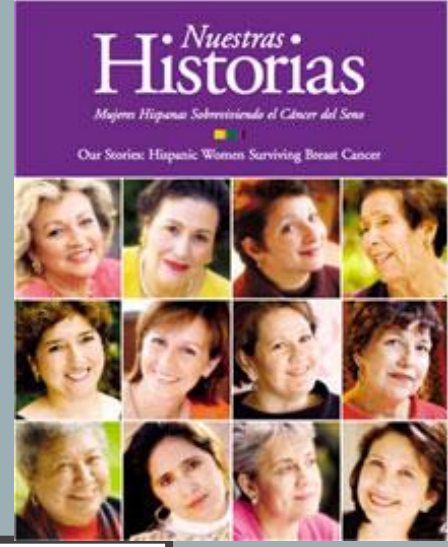


MEETING THE NEEDS OF DIVERSE POPULATIONS

Melinda Stolley, PhD

Associate Director of Prevention and Control

Medical College of Wisconsin Cancer Center

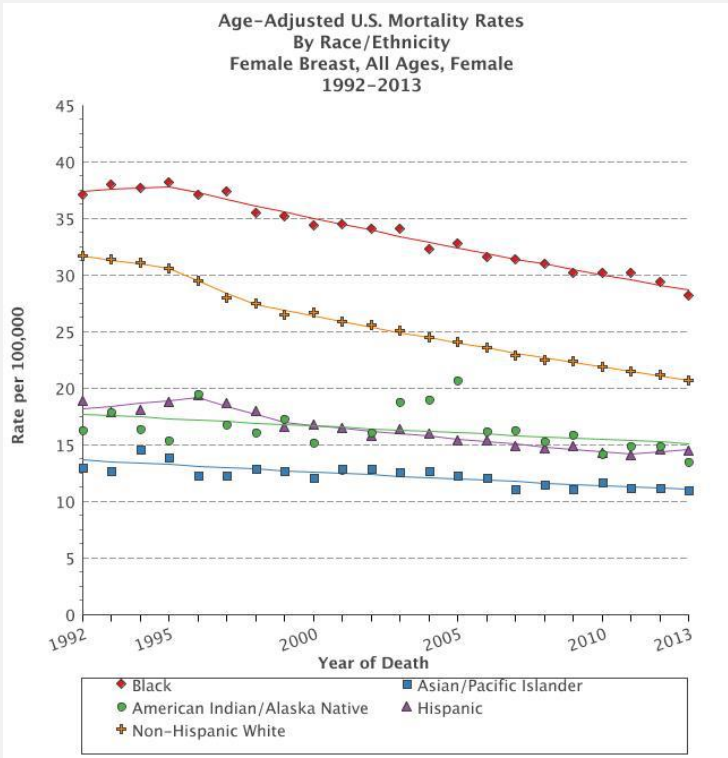
National Cancer Policy Forum, 2017

MEDICAL COLLEGE OF WISCONSIN

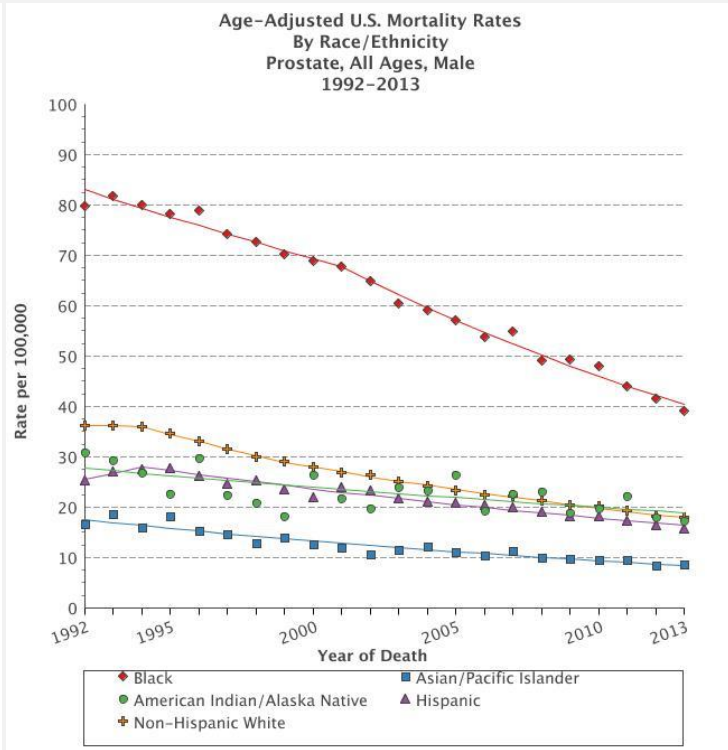
CANCER DISPARITIES

- "Adverse differences in cancer incidence (new cases), cancer prevalence (all existing cases), cancer death (mortality), cancer survivorship, and burden of cancer or related health conditions that exist among specific population groups in the United States."
- More common in low-income and/or racial/ethnic minority population groups.
- Multiple complex and interrelated factors including obesity and lifestyle

National Institutes of Health. NCI center to reduce cancer health disparities (CRCHD);Warnecke RB, et al. ,*Am J Public Health*. 2008;98(9):1608-1615.; King D, et al., *Cancer*. 2010;116(2):264-269.

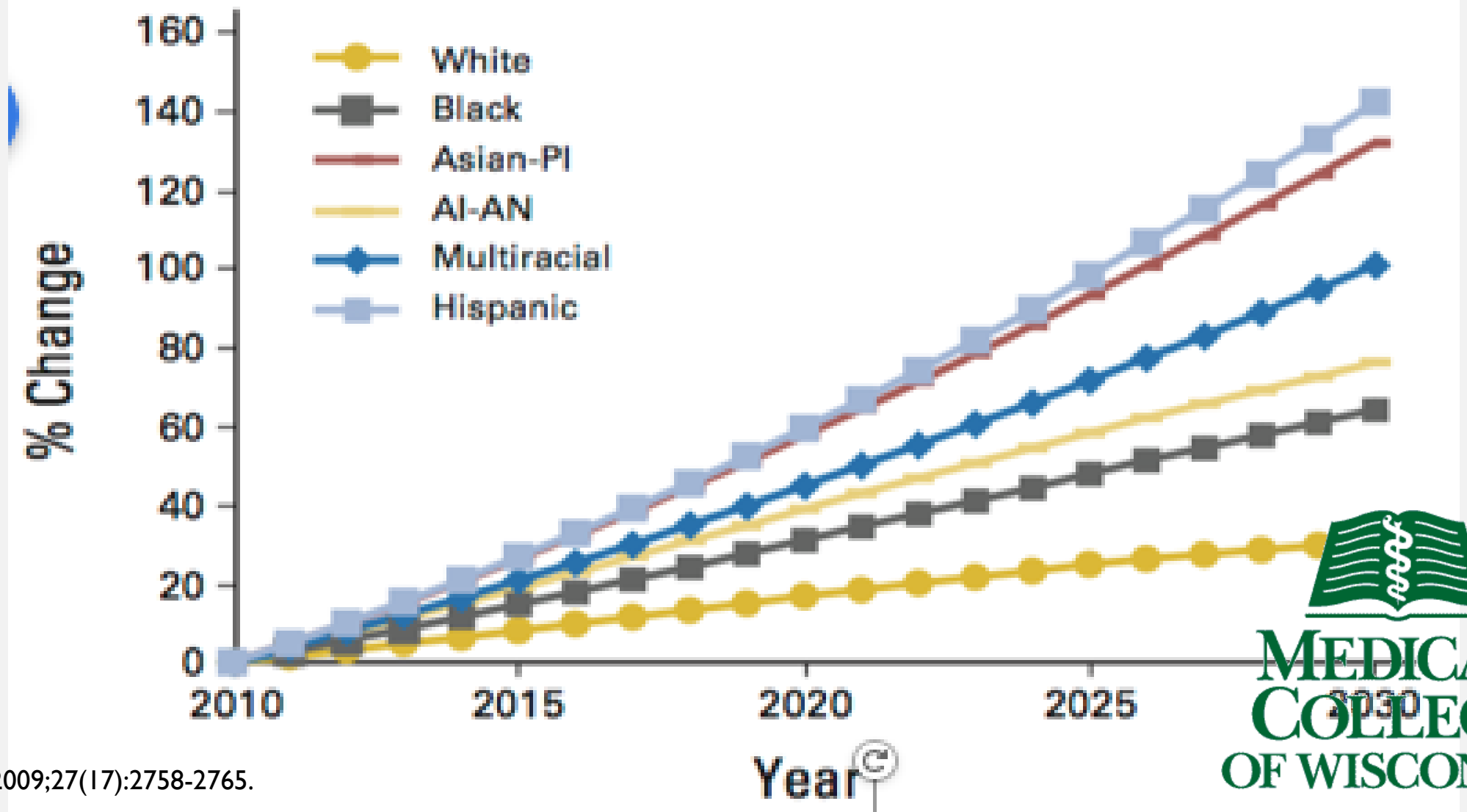


BREAST



PROSTATE

PROJECTED INVASIVE CANCER INCIDENCE



Smith BD *Clin Oncol*. 2009;27(17):2758-2765.

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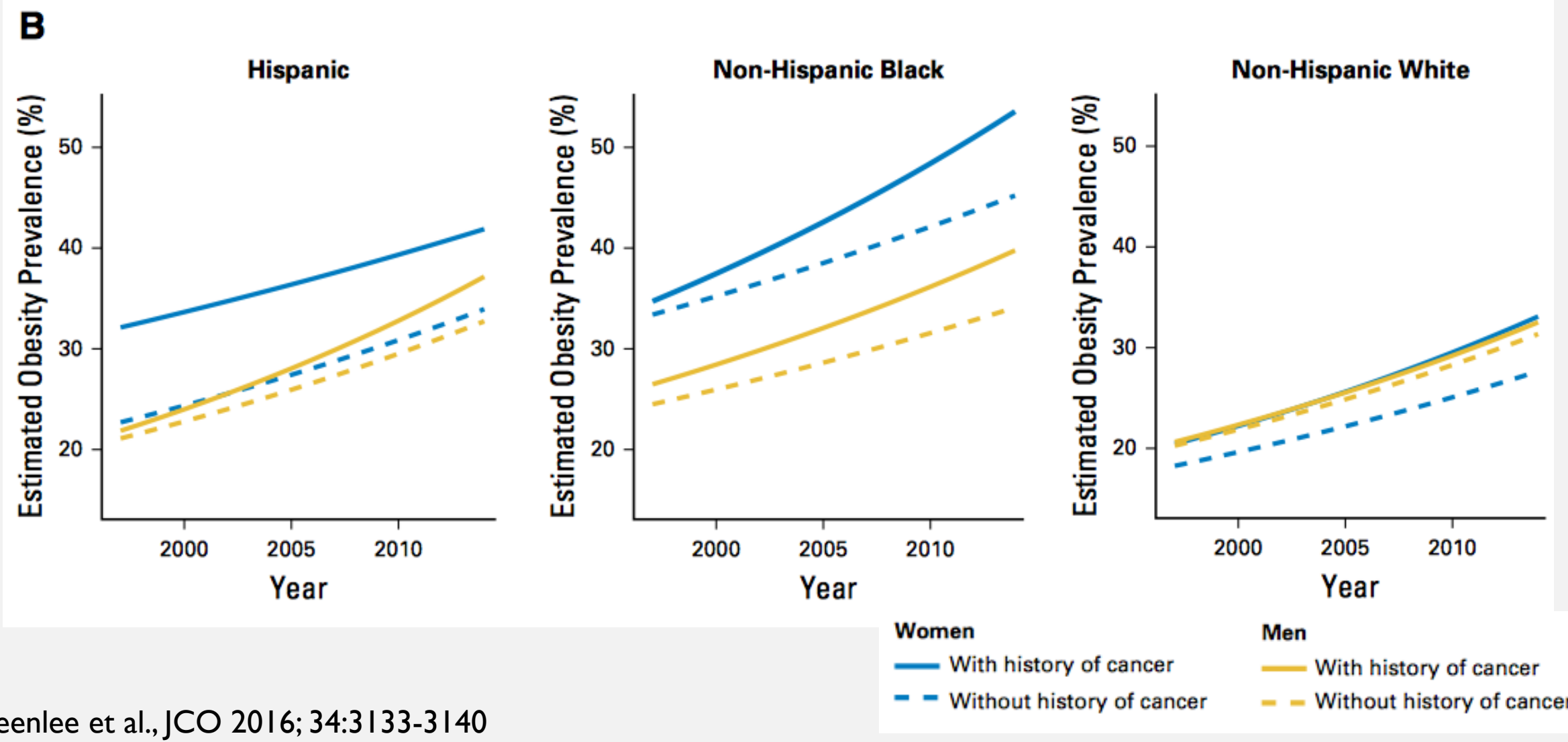
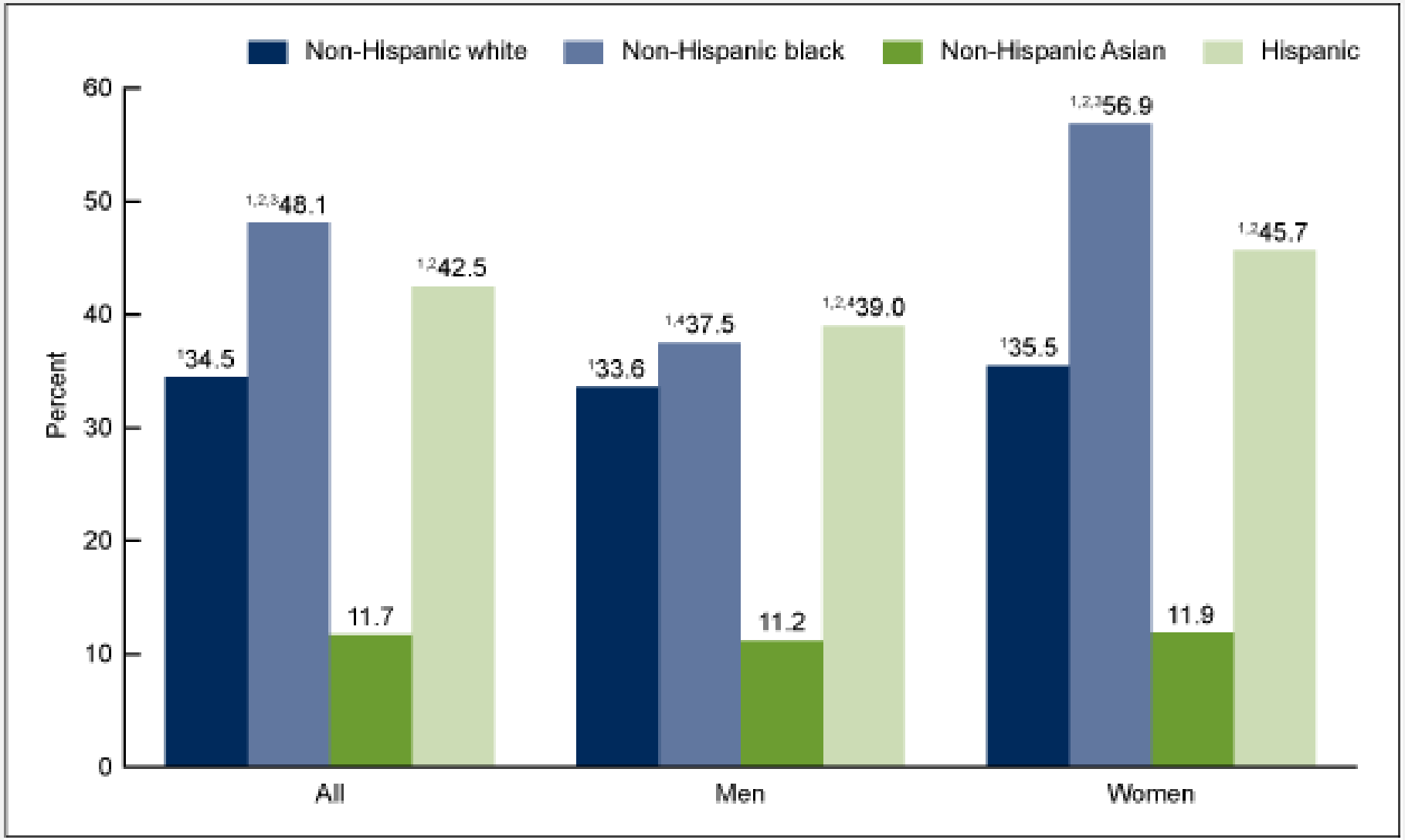
TRENDS IN OBESITY PREVALENCE IN ADULTS WITH CANCER (1997-2014)



Greenlee et al., JCO 2016; 34:3133-3140

OBESITY PREVALENCE AMONG ADULTS AGED 20 AND OVER BY SEX AND RACE AND HISPANIC ORIGIN: UNITED STATES 2011-2014



Native Americans (both genders)
42.3%
NHIS, 2014

BEHAVIORS, COMORBIDITIES, QUALITY OF LIFE AMONG MINORITY SURVIVORS

- Low adherence to nutrition and physical activity guidelines
- High rates of obesity-related comorbidities
- More likely to report fair-poor health status compared to minority controls and other survivors

Dennis-Parker et al., Integrative Cancer Therapies, 2014;13:114-120; Paxton R et al, Cancer, 2012;118:4024; Nayak P et al. *Am J Prev Med*. 2015;48(6):729-736; Nichols HB et al., *Cancer Epidemiol Biomarkers Prev*. 2009;18(5):1403-1409; Weaver KE, J Cancer Surviv, 2013;7:253-261; Tammamagi et al., Ansa B et al., International Journal of Environmental Research and Public Health; Stolley MR, Health Education and Behavior

Lifestyle Variable	Total N (%)
Weight	
Do you consider yourself overweight now?	
Overweight and obese (BMI ≥ 25 Kg/M^2)	124 (66.3)
Underweight (BMI < 18.5 Kg/M^2)	6 (3.2)
Healthy weight (BMI = 18.5–24.9 Kg/M^2)	54 (28.9)
Don't Know	3 (1.6)
Is being overweight associated with BC recurrence?	
Yes	98 (52.7)
No	57 (30.6)
Don't Know	31 (16.7)
Will BC recurrence be prevented by losing weight?	
Yes	63 (33.5)
No	62 (33.0)
Don't know	63 (33.5)
Physical Activity	
Is lack of physical activity/exercise associated with BC recurrence?	
Yes	91 (48.7)
No	43 (23.0)
Don't Know	53 (28.3)
Does increasing physical activity/exercise prevent BC recurrence?	
Yes	89 (47.9)
No	41 (22.0)
Don't Know	56 (30.1)
Dietary Intake	
Is high fat diet associated with BC recurrence?	
Yes	117 (63.2)
No	27 (14.6)
Don't Know	41 (22.2)

BELIEFS

- Fatalism associated with poorer health behaviors

Ansa B et al., Int J Environmental research and public health, 2016;13; Stolley et al., Health Education & Behavior; Anderson AS, J Genetic Couns, 2017;26:40-51

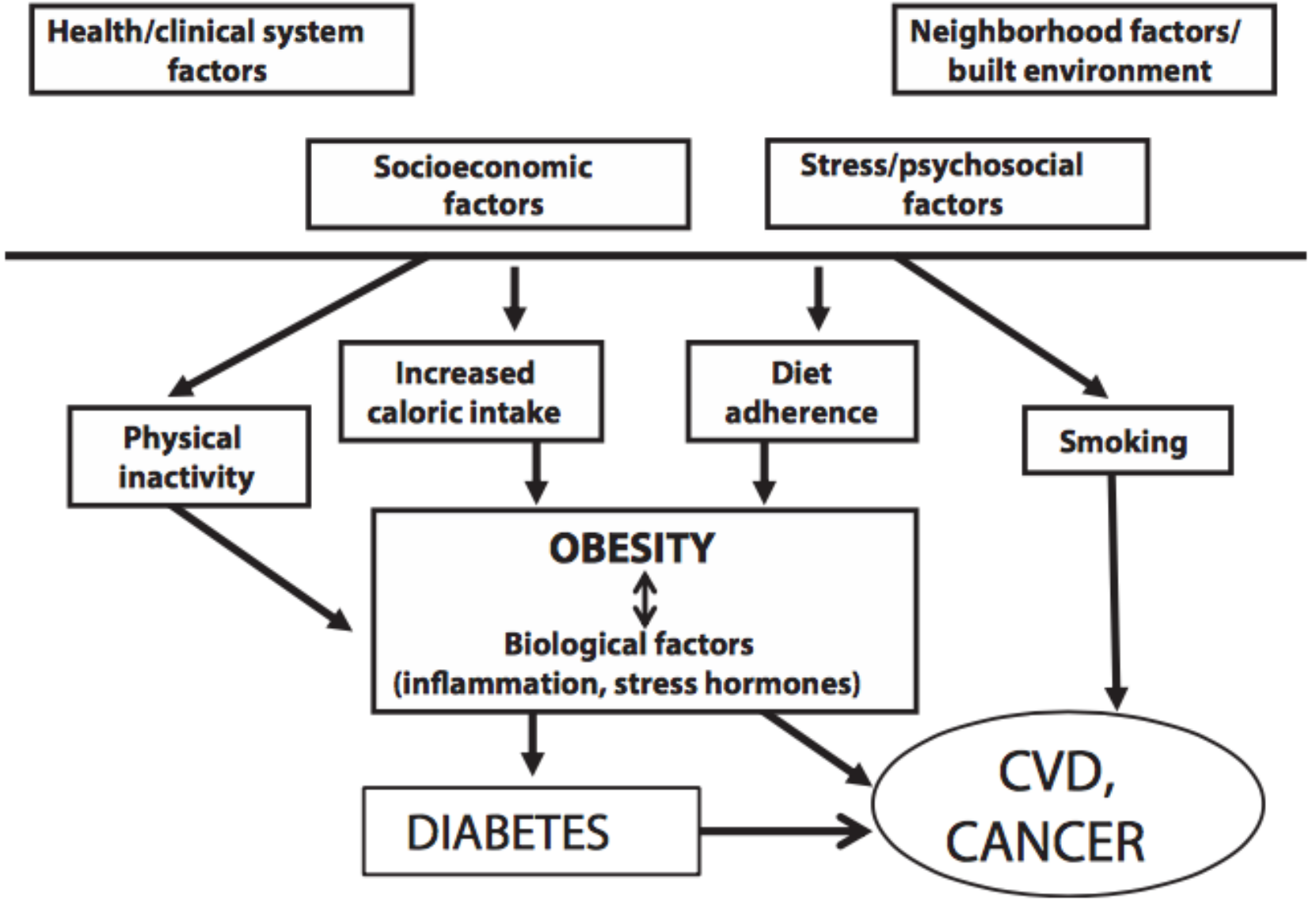


FIGURE 1—Effect of biological, behavioral, clinical, and nonclinical factors on disease pathways in cardiovascular disease (CVD) and cancer: Transdisciplinary Cardiovascular and Cancer Health Disparities Training.

Golden et al.,

ENVIRONMENTAL CONTEXT – WHY DOES IT MATTER?

- High segregation
- Low neighborhood socioeconomic status
- High traffic density
- High crime rates
- High number of fast food restaurants
- Low access to full service supermarkets
- Low access to safe, affordable options for exercise

Associated with higher odds of overweight or obesity

Minority communities more likely to face such negative living conditions

Shariff-Marco et al, 2017, CEBP; Mellerson et al., Health Place, 2010; 16:613; Zenk et al., 2005

CULTURAL CONTEXT…WHY DOES IT MATTER?

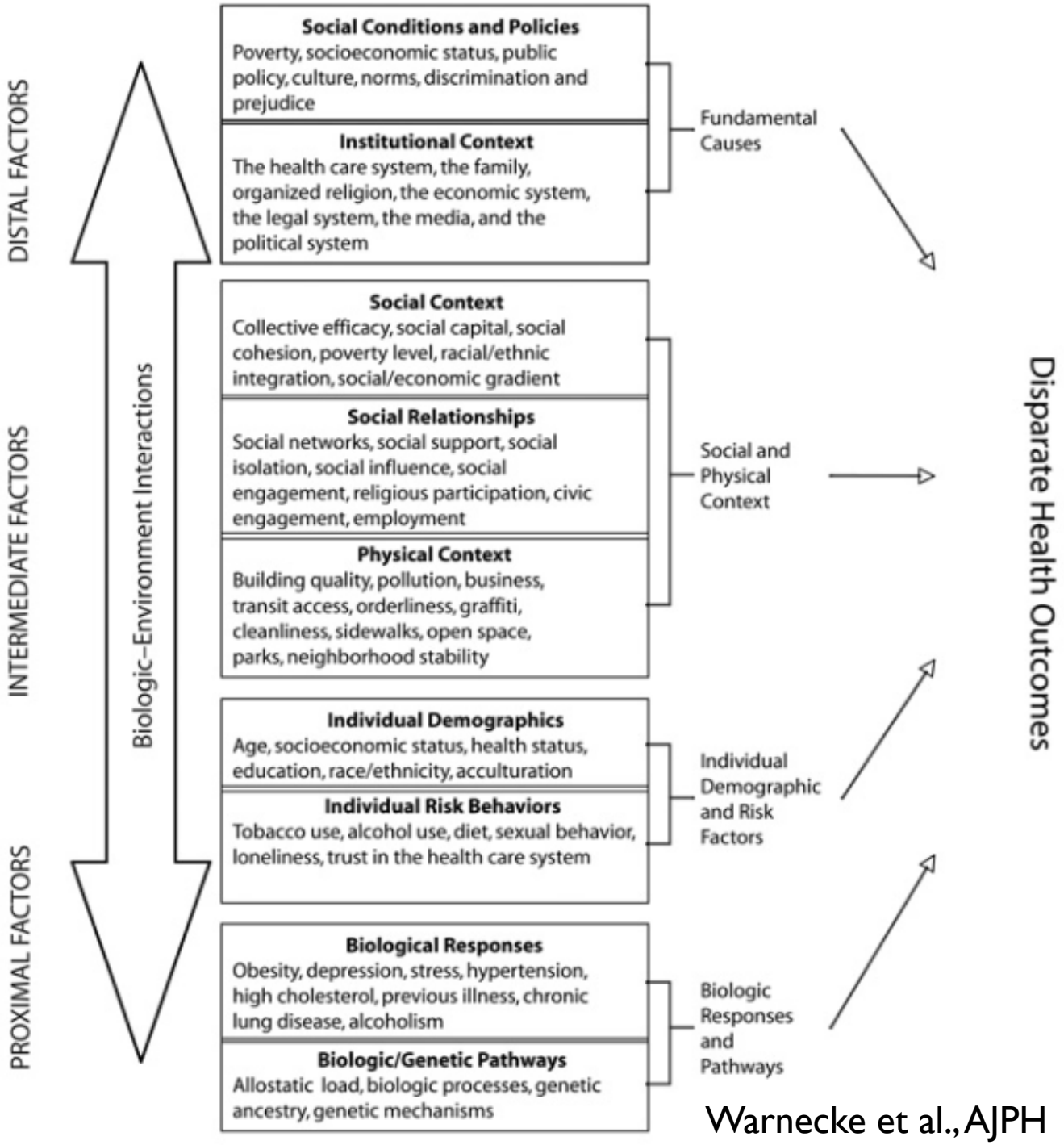
- Culture influences:
  - Perceptions of disease and their causes
  - Belief systems related to health, healing, and wellness
  - Help seeking behaviors and attitudes toward health care
  - Use of traditional and non-traditional approaches to health care
- Populations vary in their historical and personal experiences of biases which impact relationships with health care and research – even within population groups
- Acculturation impacts values, beliefs and behaviors

Kreuter M et al., HEB, 2003;30:133-146; Lindberg N et al., J Obesity, 2013;Whitt-Glover M Obesity Reviews, 2014;15(suppl 4):1-4; Lim J et al., Suport Care Cancer, 2009;17:1137

SURVIVOR CONTEXT…WHAT MATTERS?

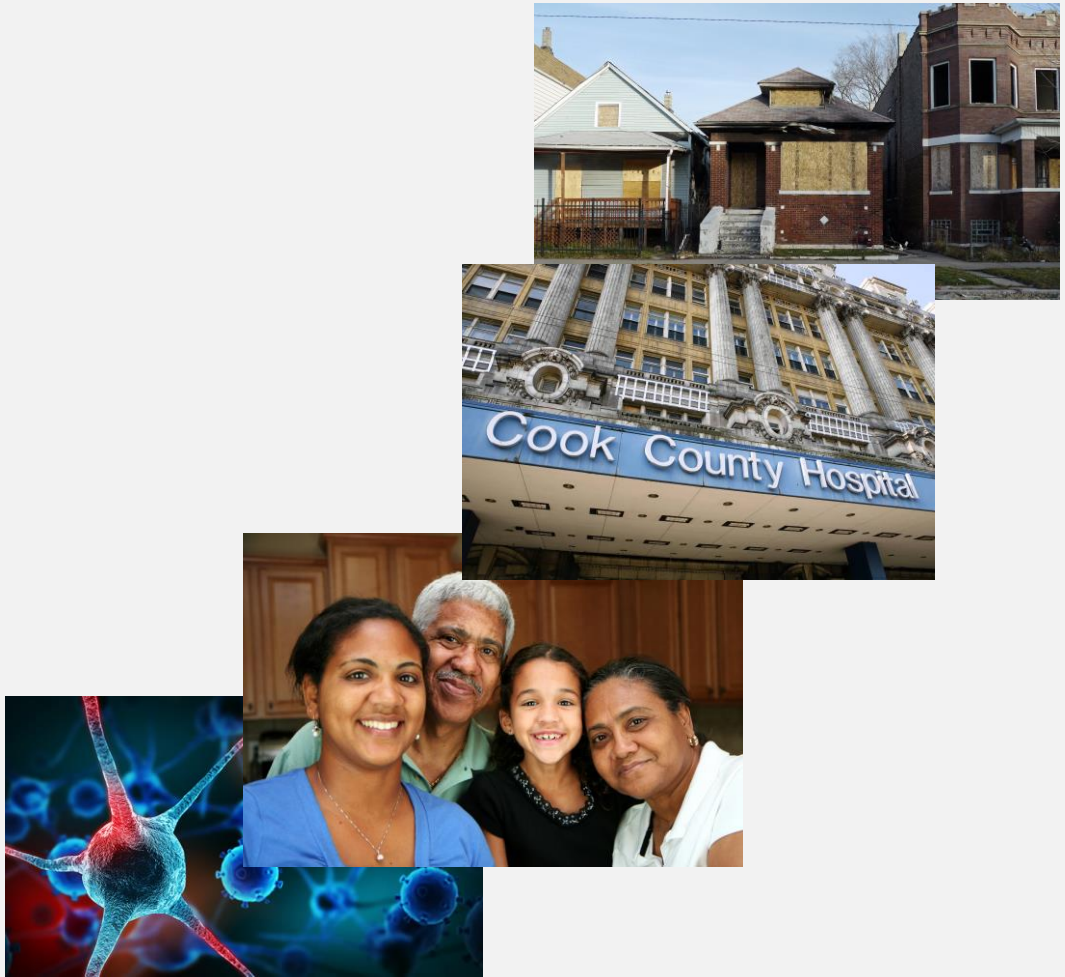
- LIFE (context) matters; honor resilience and individual/community assets
- Interest in lifestyle/weight loss interventions is high
- Motivators: social support, social modeling, self-efficacy, improvements in strength and function, weight loss
- Barriers: family, comorbidities, pain, access, stigma, fatalism
- Why do we need programs specific to cancer survivors?
  - Breast cancer survivors are interested in comprehensive lifestyle programs offering relevant education and support that integrates cultural values and promotes realistic changes
    - What do other survivors want – particularly male survivors? Muscles matter, so does feeling masculine.

Hughes et al., SpringerPlus, 2015;4:416; Sheppard et al., Contemp Clin Trials, 2015;46:106; Mama S et al., Psycho-Oncology, 2015; Spector D et al., Oncol Nurs Forum, 2013;40:472-80; Smith A et al., 2009; Stolley et al., Health Education and Behavior, 2006;



Warnecke et al., AJPH

Understanding and addressing cancer disparities – and obesity - requires a biopsychosocial framework that integrates biological, behavioral and community based research.



Interventions with AA and Hispanic survivors (N = 12; 10 AA, 4 Hispanic)

Author & (Design if RT)	N & Cancer	Interv/Setting	Outcomes
Wilson DB et al 2005	24 AA BC	8wks, Church	Wt, step
Djuric Z et al., 2009 (RT)	31 AA BC	Wt watchers	Wt. maintenance
Greenlee H et al 2013 (RT)	42 AA, Afro-Carib, Hisp BC	6mos, Curves	Wt, diet, physical activity, biomarkers
Griffith K et al., 2012	8 AA BC	1 yr, not clear	Wt maint, diet, biomarkers
Nock N et al., 2013 (RT)	19 AA BC	20wks, CA supp org	Physical activity, fitness, biomarkers
Spector D et al., 2014	17 AA BC	16wks, home	Physical activity, fitness, wt, % body fat
Conlon B et al, 2014	66 AA, Hisp; 75% BC	12 or 4wks, community sites	Diet, physical activity, diabetes, RE-AIM
Sheppard V et al. 2016 (RCT)	22 AA BC	12wks, not clear	Wt, diet, physical activity, fitness
Greenlee H et al, 2015 (RCT)	70 Hisp BC	12wks, University	Diet, biomarkers
Rossi A et al., 2015 (RT)	25 AA, Hisp, NHW Endom	12wks, medical ctr fitness ctr	Wt, Fitness, Walking time
Chung S et al., 2016	22 AA BC	24wks, CA supp org	Wt, Mindful eating
Hughes et al. (RCT)	89 Hisp BC	16wks, home	Physical activity

INTERVENTION RESULTS TO DATE

- Feasible, acceptable, few adverse events
- Significant, yet modest weight losses (range 1lb to 8lbs; 0% to 3.7%)
- Significant, yet modest changes in diet and physical activity patterns
- Benefits are many:
  - improved quality of life and decreased symptom burden
  - increased social support, self-efficacy
  - decreased cancer-related anxiety
  - improved biomarkers of health and breast cancer recurrence (inflammation, insulin resistance, DNA methylation

GAPS AND OPPORTUNITIES (IN SHORT….NEED MORE EVIDENCE)

- **Design:** Few randomized trials – consider comparative effectiveness
- **Study sample**: Small samples - partnerships address recruitment and retention challenges
- **Setting:** Community based is best, little information on factors that impact scalability in community settings;
- **Intervention:** No published studies on web- or mobile phone based; limited focus on maintenance
- **Outcomes -** extend beyond weight and behavior to include:
  - Relevant physiological outcomes to understand impact of modest weight loss
  - Mediators of weight loss that may differ from the general population
  - Implementation process and outcomes to inform scalability and sustainability
- **Populations:**
  - Other cancers, Men, Native Americans, Alaskan Native/Pacific Islanders are not represented
  - Refugee and immigrant communities – new populations deserving attention

CASE STUDY: MOVING FORWARD

N= 246 African-American breast cancer survivors

Independent → **Mediators** → **Outcomes**

Guided

OR

Self-Guided

Individual
Self-Efficacy

Interpersonal
Social Support

Community
Access to Healthy Eating and Exercise Community Resources

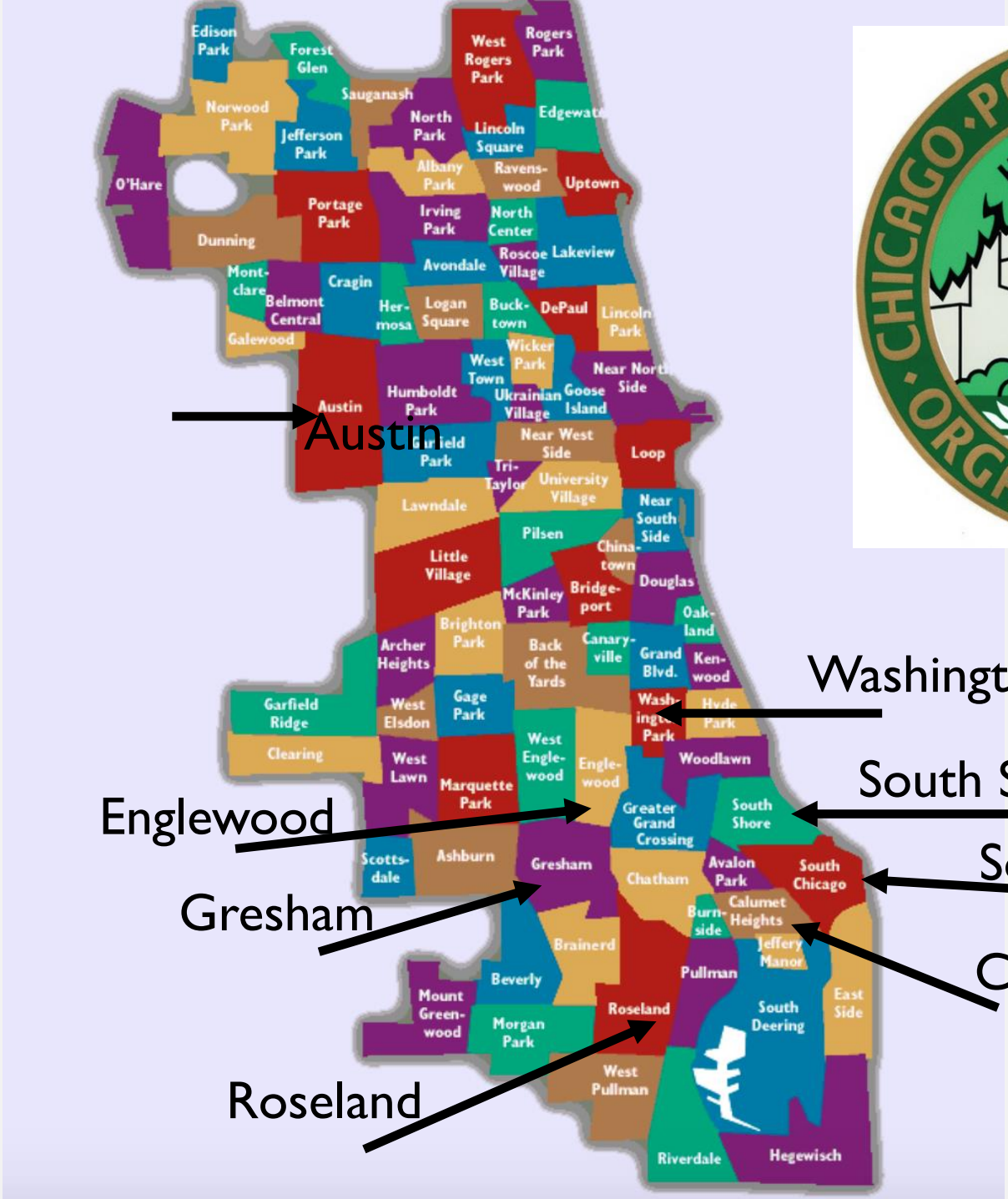
Anthropometrics
Weight, BMI, Waist:Hip, Body composition

Behavioral
Diet
Physical Activity

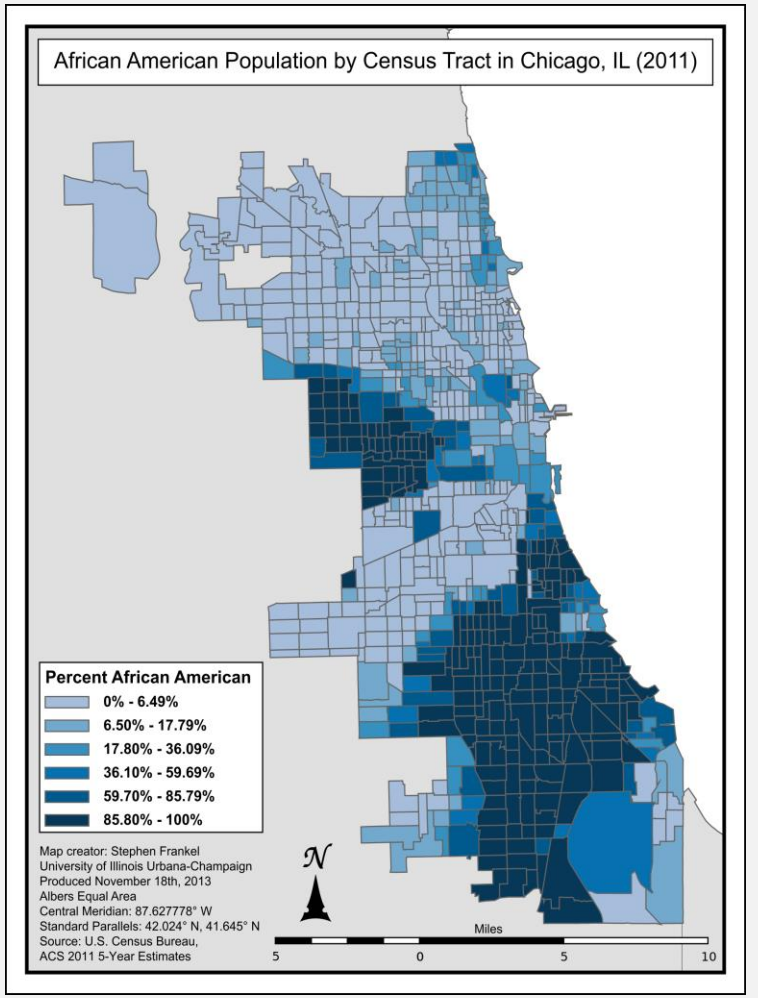
Biological
Lipids, Blood Pressure, HbA1c, Insulin Resistance (C-peptide), Inflammation (CRP), Adipokines

Psychosocial
Quality of Life, BC Symptoms, Fatigue

Stolley et al., BMC Cancer, 2015


Edison Park
Forest Glen
West Rogers Park
Rogers Park
Norwood Park
Sauganash
Jefferson Park
North Park
Lincoln Square
Edgewater
O'Hare
Albany Park
Ravens-wood
Uptown
Portage Park
Irving Park
North Center
Dunning
Avondale
Roscoe Village
Lakeview
Mont-clare
Belmont Central
Cragin
Her-mosa
Logan Square
Buck-town
DePaul
Lincoln Park
Galewood
Wicker Park
West Town
Near North Side
Humboldt Park
Ukrainian Village
Goose Island
Austin
Near West Side
Loop
Tri-Taylor
University Village
Lawndale
Near South Side
Pilsen
Little Village
China-town
Douglas
McKinley Park
Bridge-port
Oak-land
Brighton Park
Archer Heights
Back of the Yards
Canary-ville
Grand Blvd.
Ken-wood
Garfield Ridge
West Elsdon
Gage Park
Wash-ington Park
Hyde Park
Clearing
West Lawn
West Engle-wood
Engle-wood
Woodlawn
Marquette Park
Greater Grand Crossing
South Shore
Scotts-dale
Ashburn
Gresham
Chatham
Avalon Park
South Chicago
Calumet Heights
Burn-side
Brainerd
Jeffery Manor
Beverly
Pullman
Mount Green-wood
Morgan Park
Roseland
South Deering
East Side
West Pullman
Riverdale
Hegewisch
Austin
Washington Park
South Shore
South Chicago
Englewood
Gresham
Calumet Hts
Roseland


CHICAGO · PARK · DISTRICT · SEAL
HORTUS IN URBE
ORGANIZED · 1934


African American Population by Census Tract in Chicago, IL (2011)
Percent African American
0% - 6.49%
6.50% - 17.79%
17.80% - 36.09%
36.10% - 59.69%
59.70% - 85.79%
85.80% - 100%
Map creator: Stephen Frankel
University of Illinois Urbana-Champaign
Produced November 18th, 2013
Albers Equal Area
Central Meridian: 87.627778° W
Standard Parallels: 42.024° N, 41.645° N
Source: U.S. Census Bureau,
ACS 2011 5-Year Estimates
N
Miles
5
0
5
10

STRATEGIES TO ENHANCE CULTURAL APPROPRIATENESS

Don't equate race or ethnicity with culture. Substantial differences within population groups

- Peripheral: materials designed/chosen to appear culturally appropriate (i.e., logo, recruitment materials, exercise session music)
- Evidential: enhanced relevance of targeted health issues by presenting evidence of its impact on AA BCS (i.e., breast cancer disparities, impact of obesity, comorbidities in the AA community)
- Constituent-Involving: drew directly on the experiences of the target group (i.e., staff represented target group; inform intervention using qualitative data from AA BCS; advisory group provided feedback on study materials and procedures)
- Sociocultural: discussed health-related issues in the context of broader social and/or cultural values (i.e., role of God and faith in one's daily life, woman's central role in families, cancer fatalism and stigma, body image ideals, and the traditional roles of food)
- Linguistic: (not relevant for this, but relevant for other programs) make health education programs and materials more accessible by providing them in the dominant or native language of target group

Kreuter M et al., HEB, 2003;30:133-146

Partnerships supporting recruitment and retention

Westside Health Authority
EVERY BLOCK A VILLAGE

Salem Baptist Church of Chicago
The Greatest Church in the World
SALEM
CONFORMED TO THE IMAGE OF CHRIST

Sisters Network® Inc.
A National African American Breast Cancer Survivorship Organization

Robert H. Lurie Comprehensive Cancer Center
of Northwestern University

Access Community Health Network

UIC University of Illinois at Chicago

The University of Chicago

Reasons for Study Participation

#1 Weight Loss

#2 Health

#3 Helping Others

#4 Social Support

#5 Being involved in research that can make a difference

6 MONTH INTERVENTION

Goals

Anthropometrics: Lose body weight; Increase lean mass decrease fat mass,
Diet: Decrease daily caloric intake (-500 cals)
Decrease dietary fat (to 30% of daily calories), increase fruits & vegetables (5 per day)
Physical Activity: Increase weekly physical activity (150+ mins per week)

Guided

2x weekly meetings with supervised exercise
2x weekly text messaging, Program binder, Newsletter

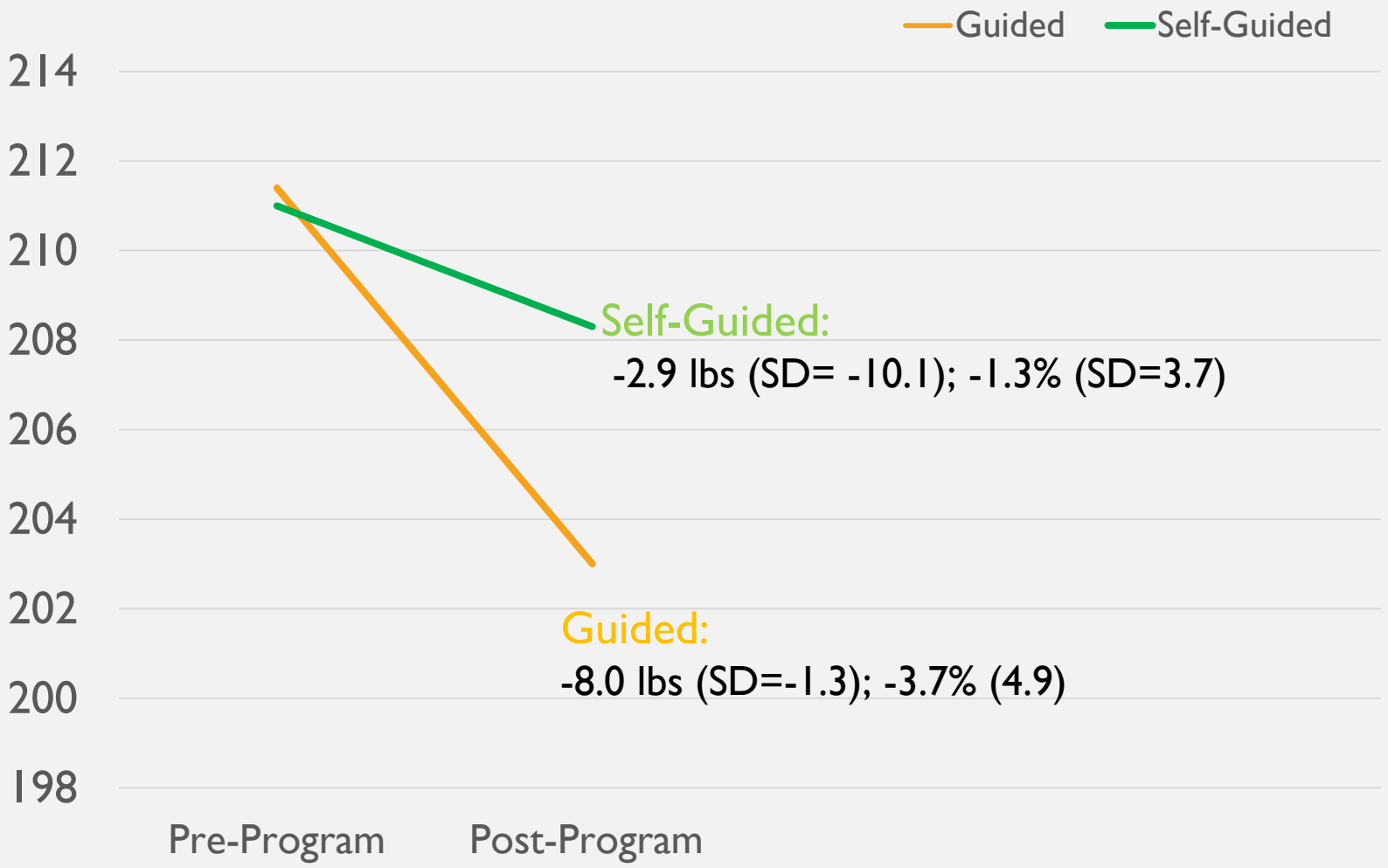
Self-Guided

Program Binder, Monthly calls, Newsletter

PRELIMINARY RESULTS: BODY WEIGHT

Retention at 6 months: 86%

Retention at 12 months: 84%



WHAT CAN WE DO…AS HEALTHCARE PROVIDERS, STAKEHOLDERS, RESEARCHERS, POLICY-MAKERS AND GOOD CITIZENS?

- **Improve access to and support of weight loss/lifestyle counseling** through improved insurance coverage, community based programs (and mobile technology?)
- **Provide cultural competency training** for those working with diverse cancer survivors
- **Talk with survivors about value of lifestyle changes.** Evidence that suggests this is less likely to happen with minority, lower educated OR non-English speaking women.
- **Improve access to and availability of healthy food choices** at existing markets and restaurants, limit fast food chains, improve transportation.
- **Recognize and support community assets and resources** such as Community gardens, YM & YWCAs, public rec systems, community health workers
- **Address barriers related to language** in everything we do within healthcare settings and in the community

WHAT CAN WE DO TO MAKE INTERVENTIONS MORE EFFECTIVE? IN SHORT….MULTILEVEL

- **Involve the priority populations and engage community stakeholders in development.** Job opportunities (i.e., CHWs, research staff) for targeted community will benefit all.
- **Tailor obesity intervention content and structure** to reflect diversity of cultures and to meet needs related to lifestyle AND to being a survivor.
- **Provide hands-on learning opportunities** such as demonstrations, taste tests, and recipes of how to prepare traditional foods in a healthier way; how to shop healthfully and economically.
- **Use established settings.** Maximize participation by having meetings or events at convenient locations and times. Schedule intervention activities with other church or community social events.
- **Engage friends and family.** Social support and social networks are key in supporting behavioral change and change maintenance.
- **Create linkages between cancer survivorship healthcare and community organizations (i.e, Lifestyle navigators).** Survivors need and want resources in their communities. Community based organizations are looking for partnerships.

Crookes et al., 2015;10:291; Nock et al, 2013; Stolley et al., 2006; Whitt-Glover et al., 2014

THANK YOU

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