

Physical activity and breast cancer: mechanisms and interventions?

Kristin Campbell, BSc. PT, PhD
University of British Columbia, Vancouver, Canada

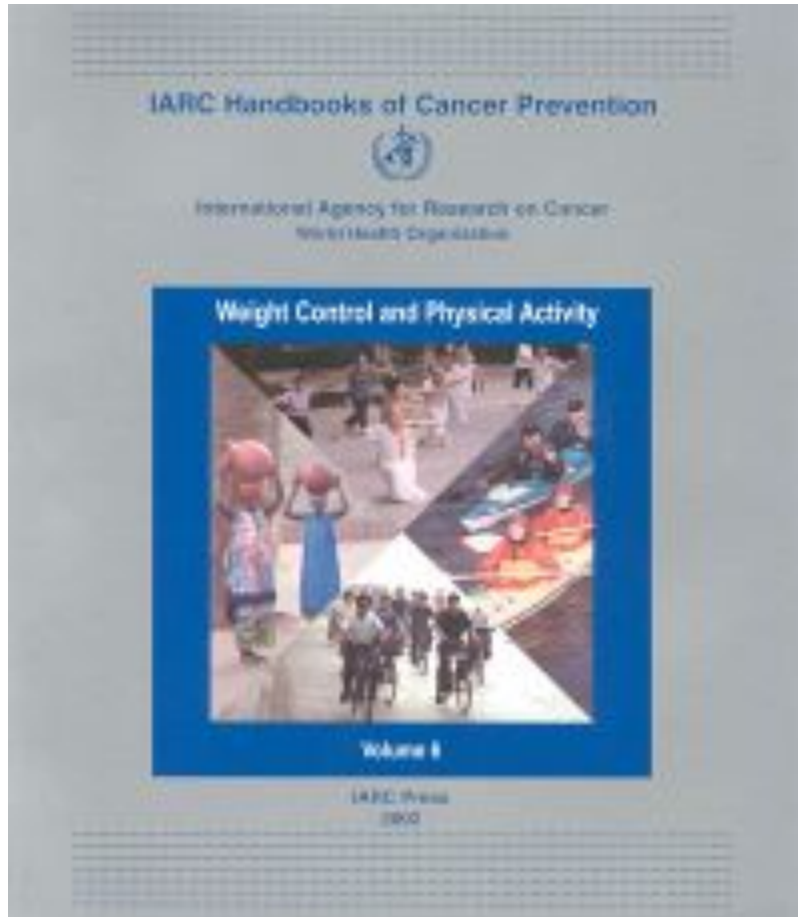
Kristin.campbell@ubc.ca
@cepl_ubc
www.cepl.rehab.med.ubc.ca



a place of mind

THE UNIVERSITY OF BRITISH COLUMBIA

PA and Prevention: Epidemiology



- 25% risk reduction with highest vs. lowest levels of physical activity
- Greatest reduction with recreational physical activity

Breast Cancer Prevention Interventions

Study	Location	N	Physical Activity	Sex hormones
Physical Activity and Total Health (PI: McTiernan) Can Res 2003	USA	173	Aerobic Supervised & Home-based 225 min/wk	-4.4% estradiol -1.8% estrone Both NS
ALPHA (PI: Friedenreich) JCO 2010	Canada	320	Aerobic Supervised & Home-based 225 min/wk	-14% estradiol (sig.) -6.4% estrone (NS)
SHAPE (PI: Monninkhof) JCO 2009	UK	189	Combined aerobic & resistance Supervised & Home-based 150 min/week	No change estrogens

Infrastructure to conduct human trials



Behavioural Medicine Lab; University of Alberta, PI: K. Courneya



Breast Cancer and Exercise Trial in Alberta

PI: Friedenreich

Funded by:
ACF & CCSRI

Recruit 400 postmenopausal
healthy women 50-74 years

Randomize

High volume exercise group

(5 days/wk x 60 mins/session @
70-80% max HRR)

Moderate volume exercise group

(5 days/wk x 30 mins/session @ 70-80%
max HRR)

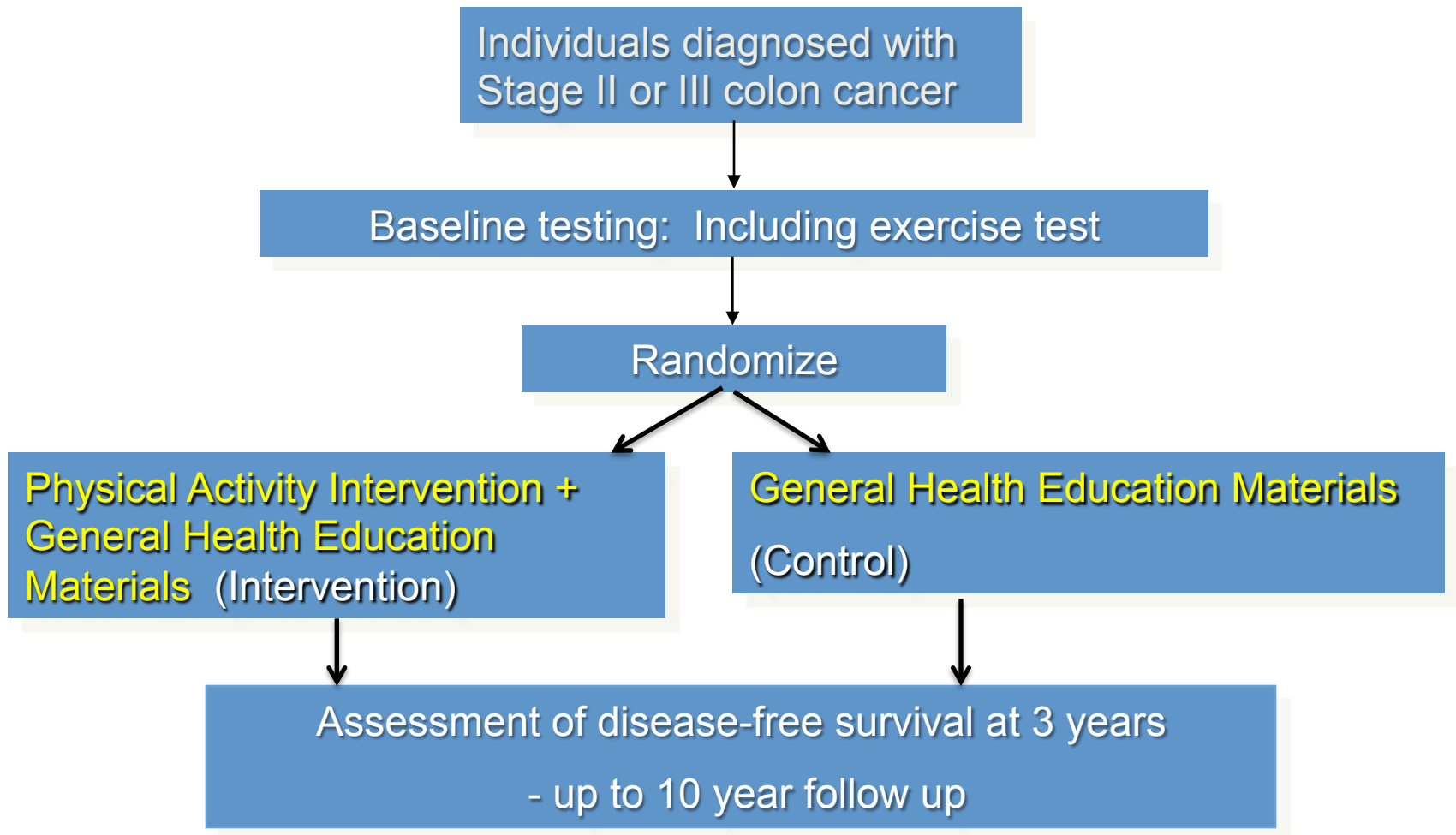
Compare high vs. moderate exercise groups on
**endogenous sex hormones, obesity and inflammatory
markers, insulin, glucose**

Follow-up at 24 months: **examine exercise maintenance
and long term effect on biomarkers**

Alberta Moving Beyond Breast (AMBER) Cohort Study

- Team Leaders: K. Courneya and C. Friedenreich
 - Funded: CIHR Team Grant
 - 1500 women with diagnosis of stage I-IIIc breast cancer
 - Self-report and objective physical activity
 - Maximal aerobic fitness and strength
 - Body composition
 - Baseline, 1, 3, and 5 years (with disease outcomes at 5-10 years)
- Slide courtesy of K. Courneya

Integration of PA Research into Clinical Trials Group CO.21



Next Generation of Researchers

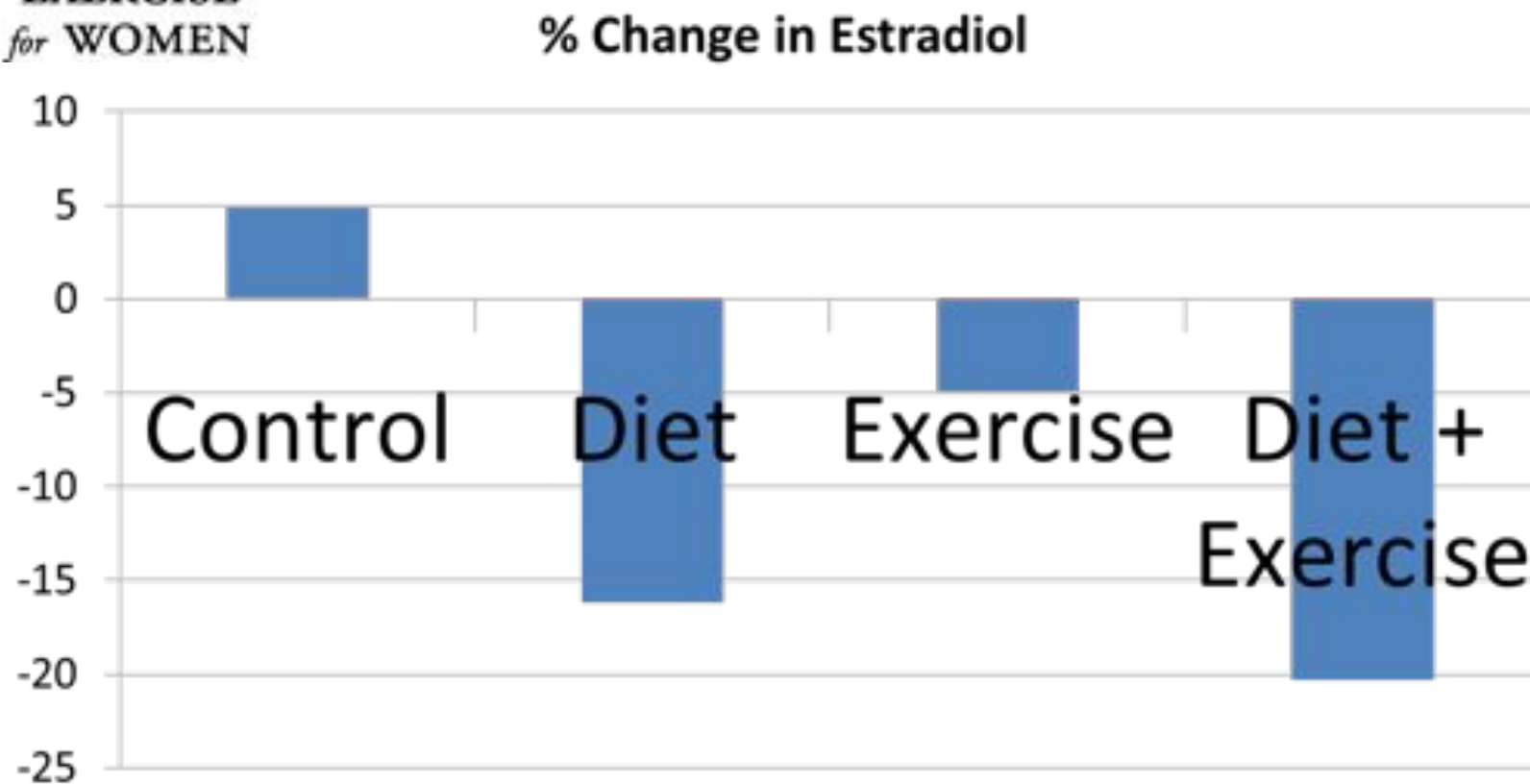


the
N.E.W.
study

NUTRITION *and*
EXERCISE
for WOMEN

Exercise versus Weight loss?

PI: Anne McTiernan



Campbell et al. J Clin Oncol 2012; 30:2314-2326

Physical activity and prevention: Continued momentum in Canada

- CCS UBC Cancer Prevention Centre
- Canadian Breast Cancer Foundation 2020 Report
 - Prevention one of 5 key areas
- New funding opportunities