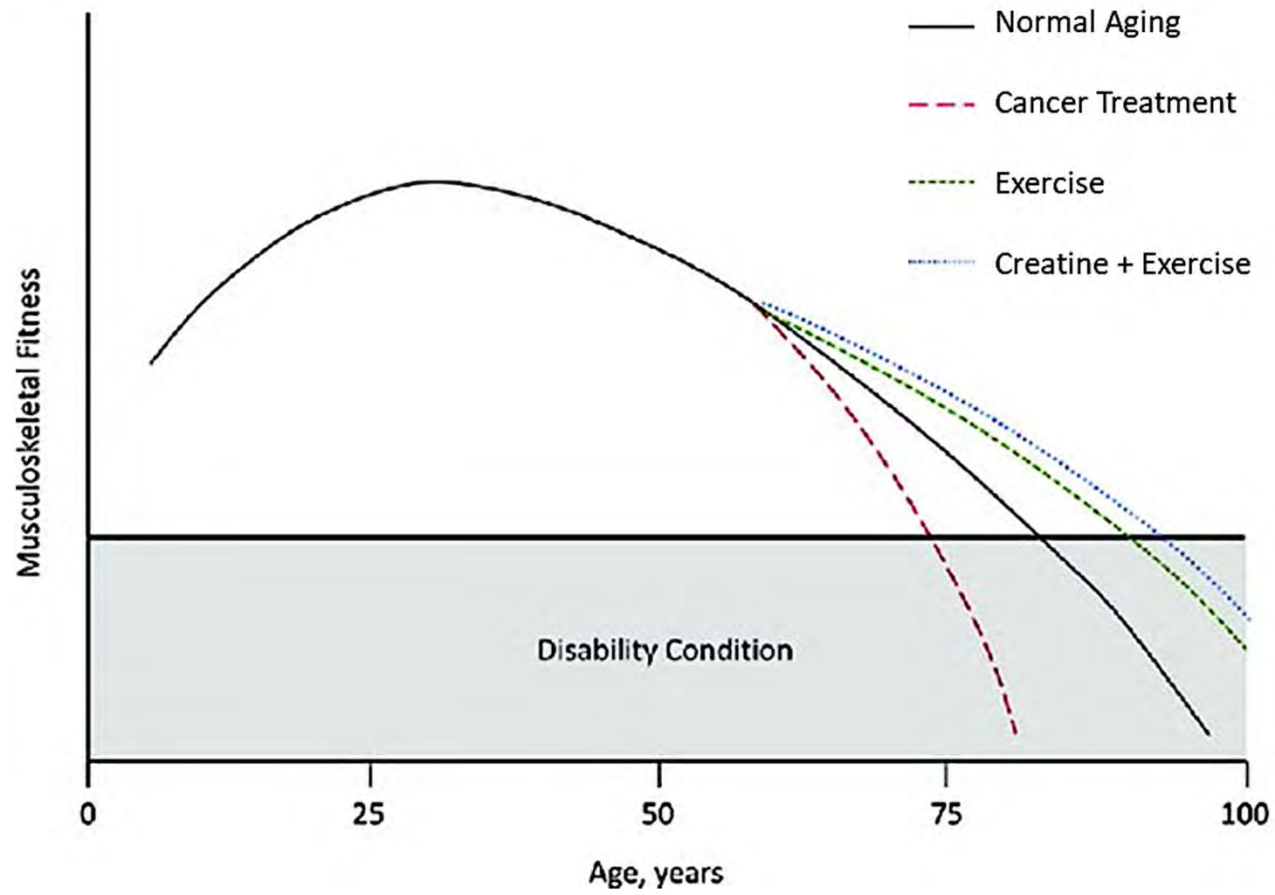


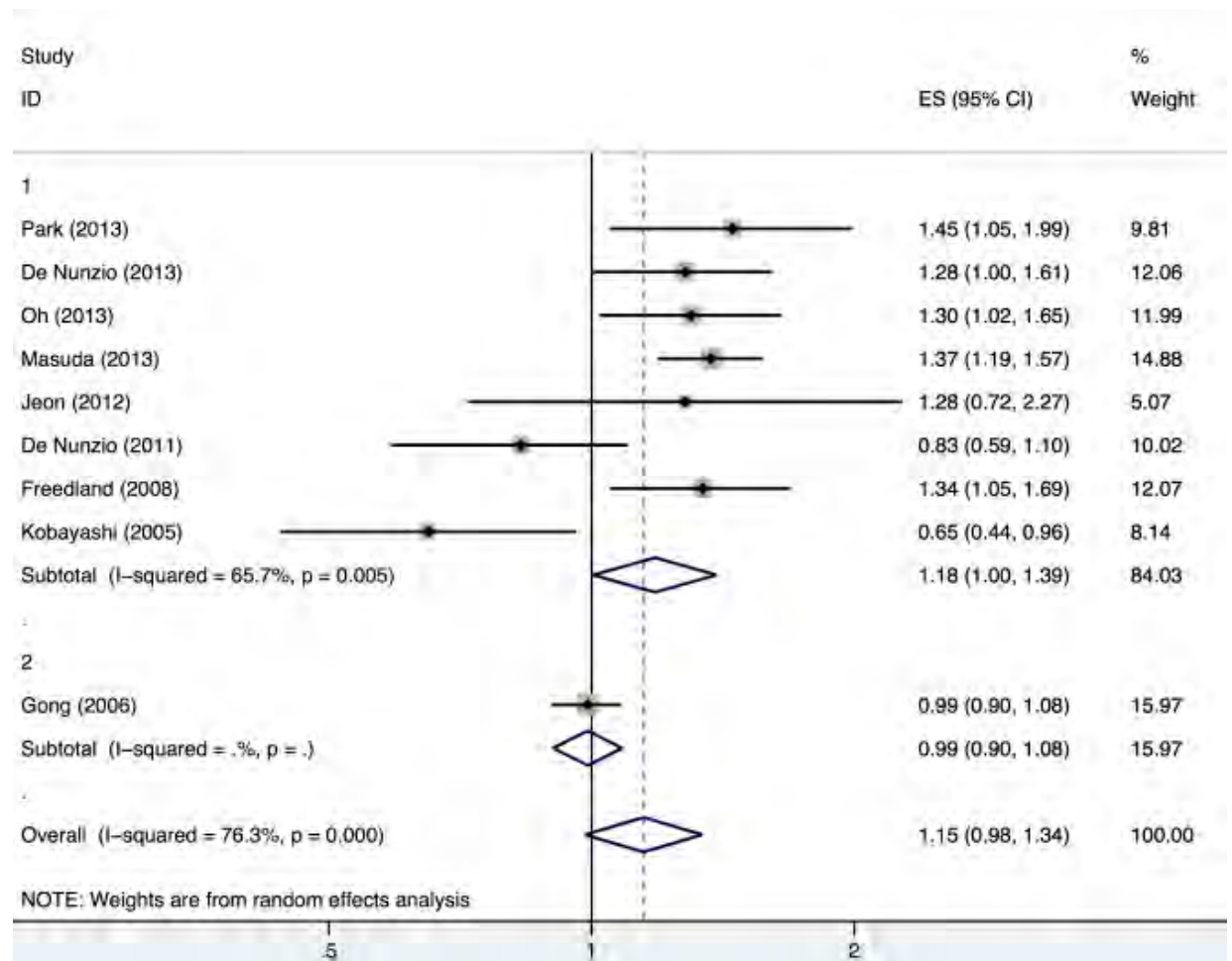
Integrative Medicine in Cancer Care

Alexis Ortiz, PT, PhD, SCS, CSCS, FACSM





High body mass index correlated positively with prostate cancer detection



Obesity associated with PCa recurrence

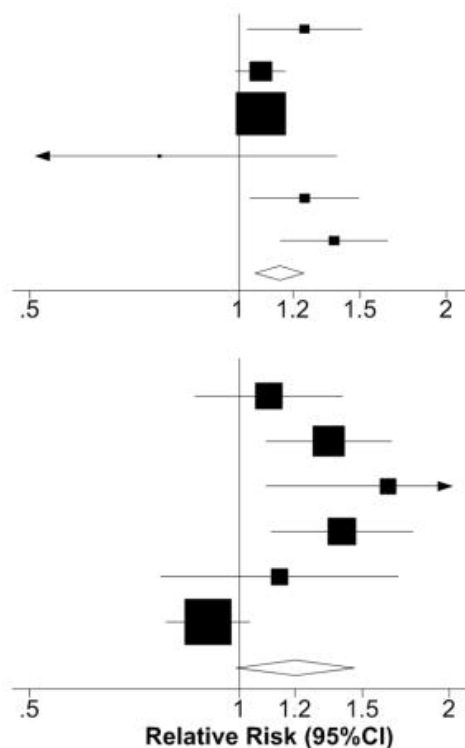
Source **Relative Risk (95%CI)**

Population-based cohort study

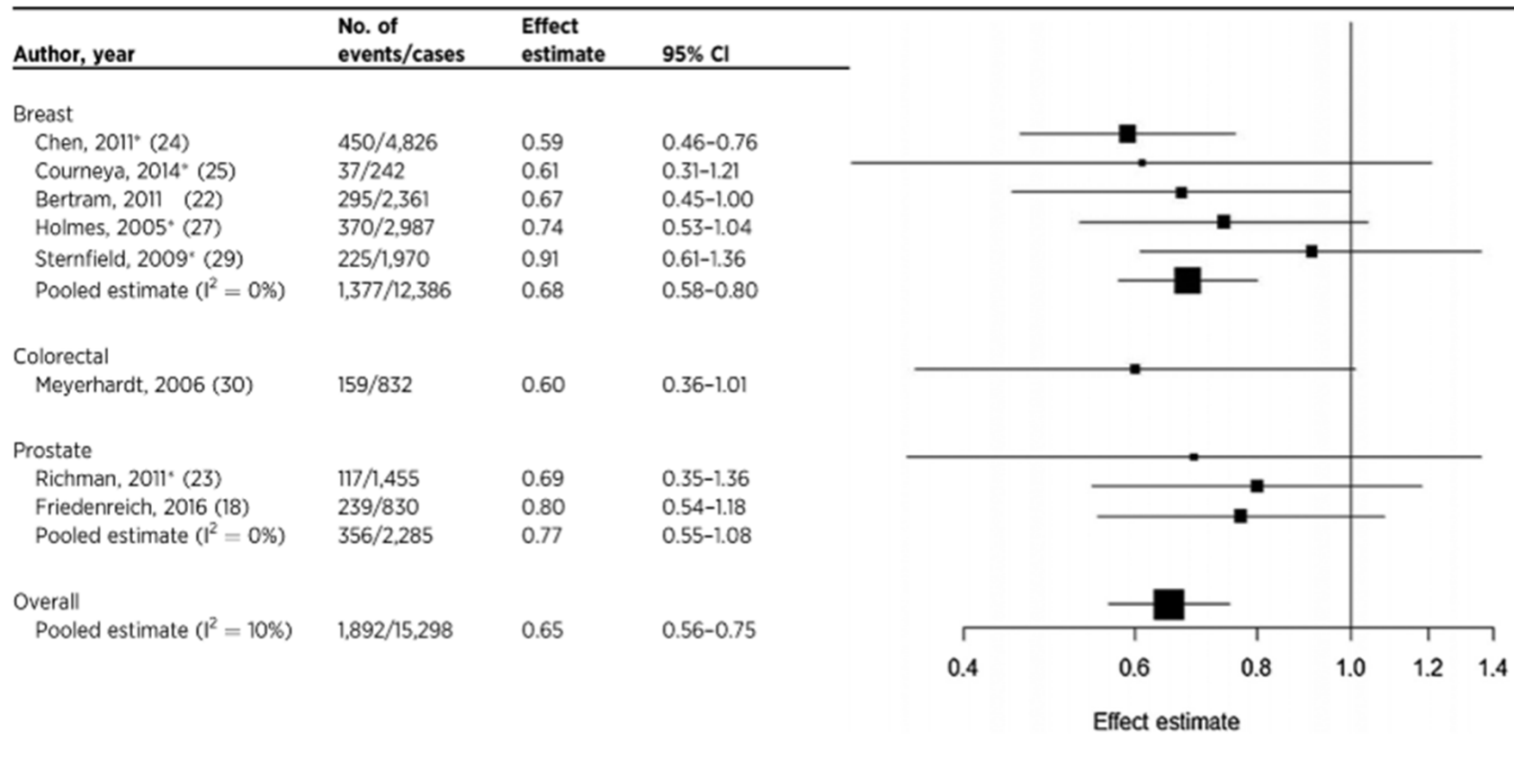
Andersson (1997, Sweden)	1.25 (1.03-1.51)
Rodriguez (2001, USA)	1.08 (0.99-1.17)
Calle (2003, USA)	1.08 (1.04-1.12)
Eichholzer (2005, Switzerland)	0.77 (0.70-2.29)
Wright (2007, USA)	1.25 (1.04-1.50)
Giovannucci (2007, USA)	1.38 (1.16-1.66)
Overall	1.15 (1.06-1.25)

Post-diagnosis survival study

Siddiqui (2006, USA)	1.10 (0.86-1.40)
Efstathiou (2007, USA)	1.34 (1.09-1.65)
Gong (2007, USA)	1.63 (1.09-2.44)
Ma (2008, USA)	1.40 (1.10-1.76)
van Roermund (2009, Netherlands)	1.14 (0.77-1.69)
Davies (2009, USA)	0.90 (0.78-1.03)
Overall	1.20 (0.99-1.46)



Exercise reduces cancer recurrence



Cardiometabolic Risk Factors

Variable	Data	Threshold
Cardiometabolic		
BMI	31	> 30 Obesity
WC	91.9	> 88 cm
W:H	0.9	> 0.85
%Fat	33	> 34.5% Poor
Physical Activity		
MVPA	76.5 min/wk	> 150min/wk (health)
Sedentary Behavior		
Sedentary Time	42.3 hr/wk	> 35 hr/wk (detrimental)

Mean age: 56 y/o

Physical Function

Variable	Data	Threshold
Cardiorespiratory Endurance		
6MWT	436.4 m	385-585 m (75-84 yo)
LE Muscle Endurance		
Sit-to-Stand	11.6 reps	70-79: 10-15 reps 80-89: 9-14 reps 90-94: 4-11 reps
Strength		
Shoulder	16.4 kg	25 th percentile >22 kg
Grip	10.3	< 47 kg poor (60-69 yo)

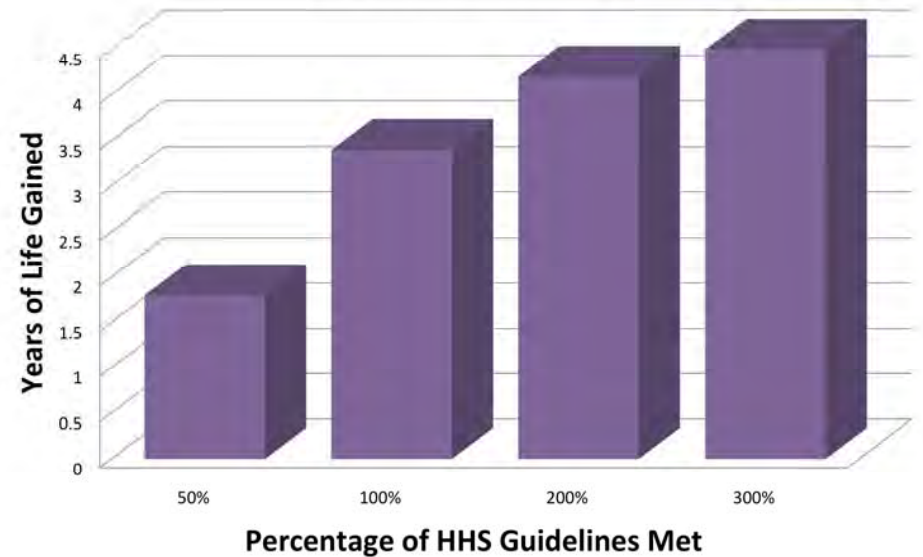
Mean age: 56 yo

FITT RECOMMENDATIONS FOR INDIVIDUALS WITH CANCER
(194,196,258,259)

	Aerobic	Resistance	Flexibility
Frequency	3–5 d · wk ⁻¹	2–3 d · wk ⁻¹	≥2–3 d · wk ⁻¹ with daily being most effective
Intensity	Moderate (40%–59% $\dot{V}O_2R$; 64%–75% HR_{max} ; RPE of 12–13) to vigorous (60%–89% $\dot{V}O_2R$; 76–95% HR_{max} ; RPE of 14–17)	Start with low resistance (e.g., <30% 1-RM) and progress with smallest increments possible.	Move through ROM as tolerated.
Time	75 min · wk ⁻¹ of vigorous intensity or 150 min · wk ⁻¹ of moderate intensity activity or an equivalent combination of the two	At least 1 set of 8–12 repetitions	10–30 s hold for static stretching
Type	Prolonged, rhythmic activities using large muscle groups (e.g., walking, cycling, swimming)	Free weights, resistance machines, or weight-bearing functional tasks (e.g., sit-to-stand) targeting all major muscle groups	Stretching or ROM exercises for all major muscle groups. Address specific areas of joint or muscle restriction that may have resulted from treatment with steroids, radiation, or surgery.

1-RM, one repetition maximum; HR_{max} , maximal heart rate; HRR, heart rate reserve; ROM, range of motion; RPE, rating of perceived exertion; $\dot{V}O_2R$, oxygen uptake reserve.

Life Expectancy Gains from Physical Activity



Moore SC, et al. Leisure Time Physical Activity of Moderate to Vigorous Intensity and Mortality: A Large Pooled Cohort Analysis. PLoS Medicine. November 6, 2012.

Few Recommendations

Legs



Balance



Arms





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