

L'attività motoria e l'esercizio nelle patologie oncologiche

I risultati dell'indagine «STIP-ON»

Massimo Lanza



ASSOCIAZIONE
PROVINCIALE
DI BELLA - ONLUS



AZIENDA SANITARIA
LOCALE DI BIELLA

Progetto CHOICE:

l'esercizio fisico per pazienti oncologici

21 FEBBRAIO 2020
dalle ore 8,30 alle ore 13,00

SALA CONVEGNI "ELVO TEMPIA"
NUOVO OSPEDALE DI BIELLA
Via Dei Ponderanesi 2 - Ponderano



UNIVERSITÀ
di **VERONA**

Dipartimento
di **NEUROSCIENZE,**
BIOMEDICINA E MOVIMENTO

Due autonomi fattori di rischio per la salute:

Sedentarietà
e
(in)Attività fisica

Sedentarietà

- The most prevalent form of inactivity is **behaviours where sitting or lying** is the dominant mode of posture and **energy expenditure is low**. These behaviours have recently been clustered under the single term of sedentary behaviour (SB)

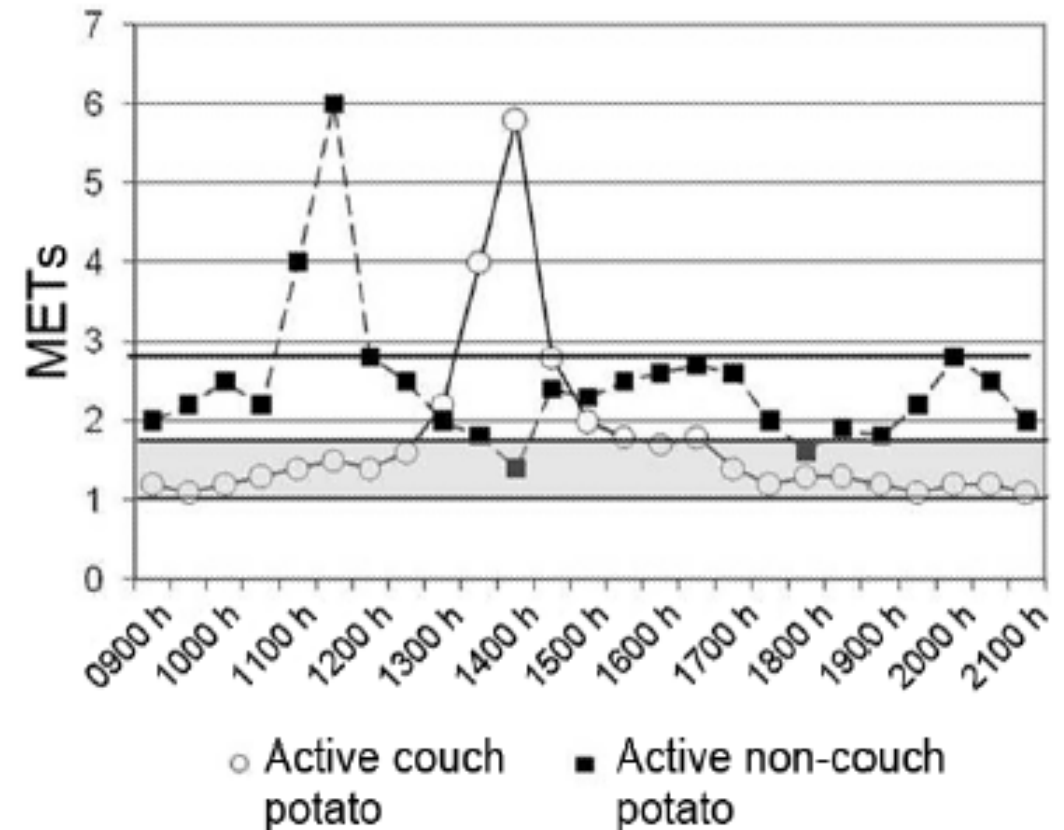
[Letter to the editor: standardized use of the terms “sedentary” and “sedentary behaviours”. Appl Physiol Nutr Metab. 2012;37:540–2.].

- **LOW Energy expenditure ($\leq 1,5$ MET)**

Caratteristiche del comportamento sedentario

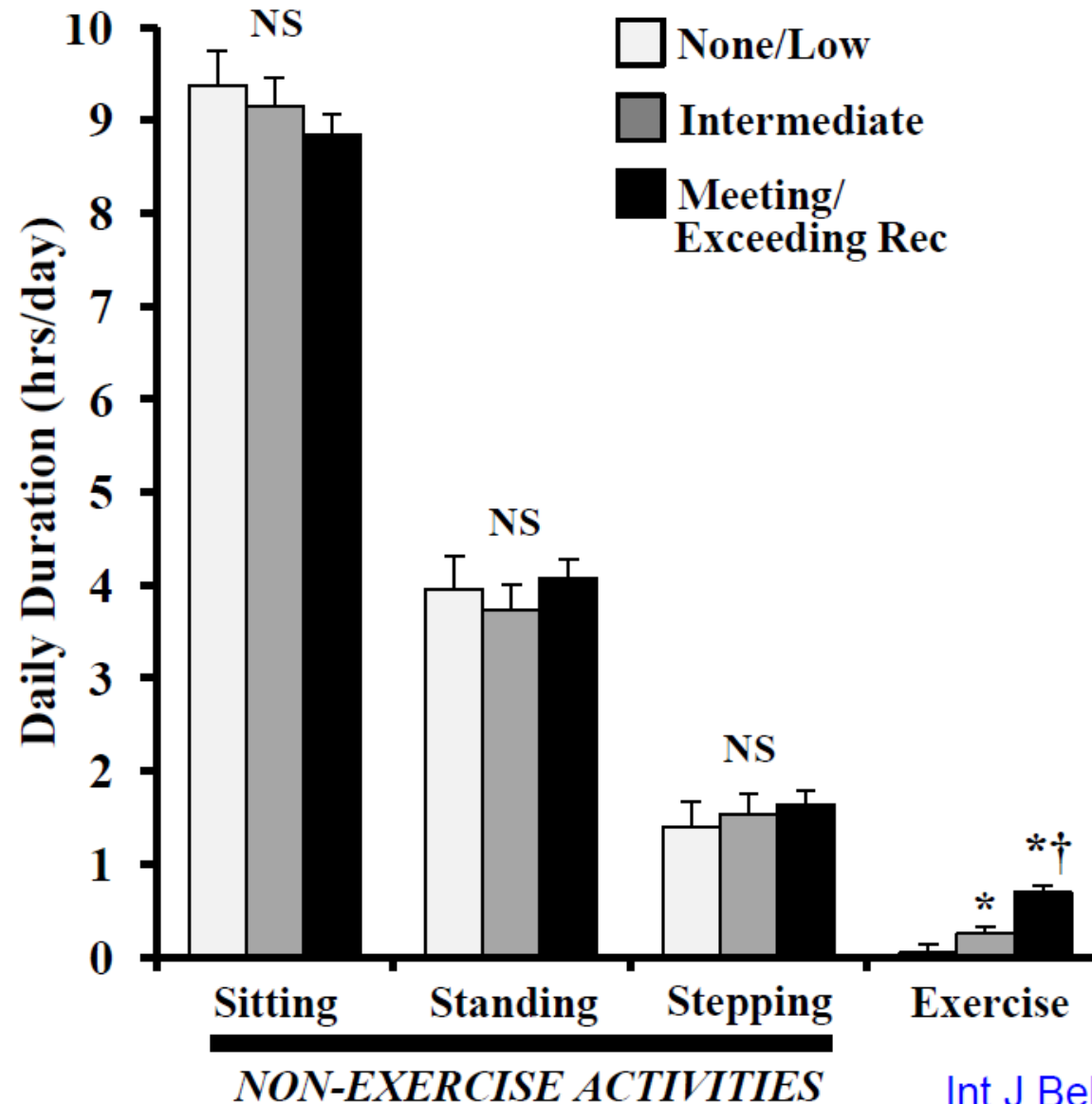
- Posizione seduta
- Attività a bassissimo consumo energetico ($\leq 1,5$ MET)
- Tempi di sedentarietà prolungati (quanto ?)

Fig. 3. Illustration of accelerometer data portraying an active couch potato (moderate to vigorous intensity physical activity meeting guidelines considered “physically active” but also a high level of sedentary behaviour) versus an active non-couch potato (similar level of moderate to vigorous intensity physical activity but low level of sedentary behaviour). (From Dunstan et al. 2010a, reproduced with permission of Touch Briefings, European Endocrinology, Vol. 6, p. 21, © 2010.)



Exercisers are not less sedentary (sit less) than people who do not exercise

Exercisers sit just as much as people who don't exercise



L'attività fisica fa (può fare) bene!

Forma fisica e salute

- Migliora capacità fisiche
- Struttura ossea
- ...
- **Previene moltissime patologie**
- **Aiuta a affrontare meglio moltissime patologie**
- ...

Relazioni sociali

- Socializzazione
- Empatia
- Comprensione e rispetto delle regole
- ...

Sviluppo cognitivo

- Soluzione problemi
- Memoria
- Attenzione
- ...

Attività motoria e prevenzione

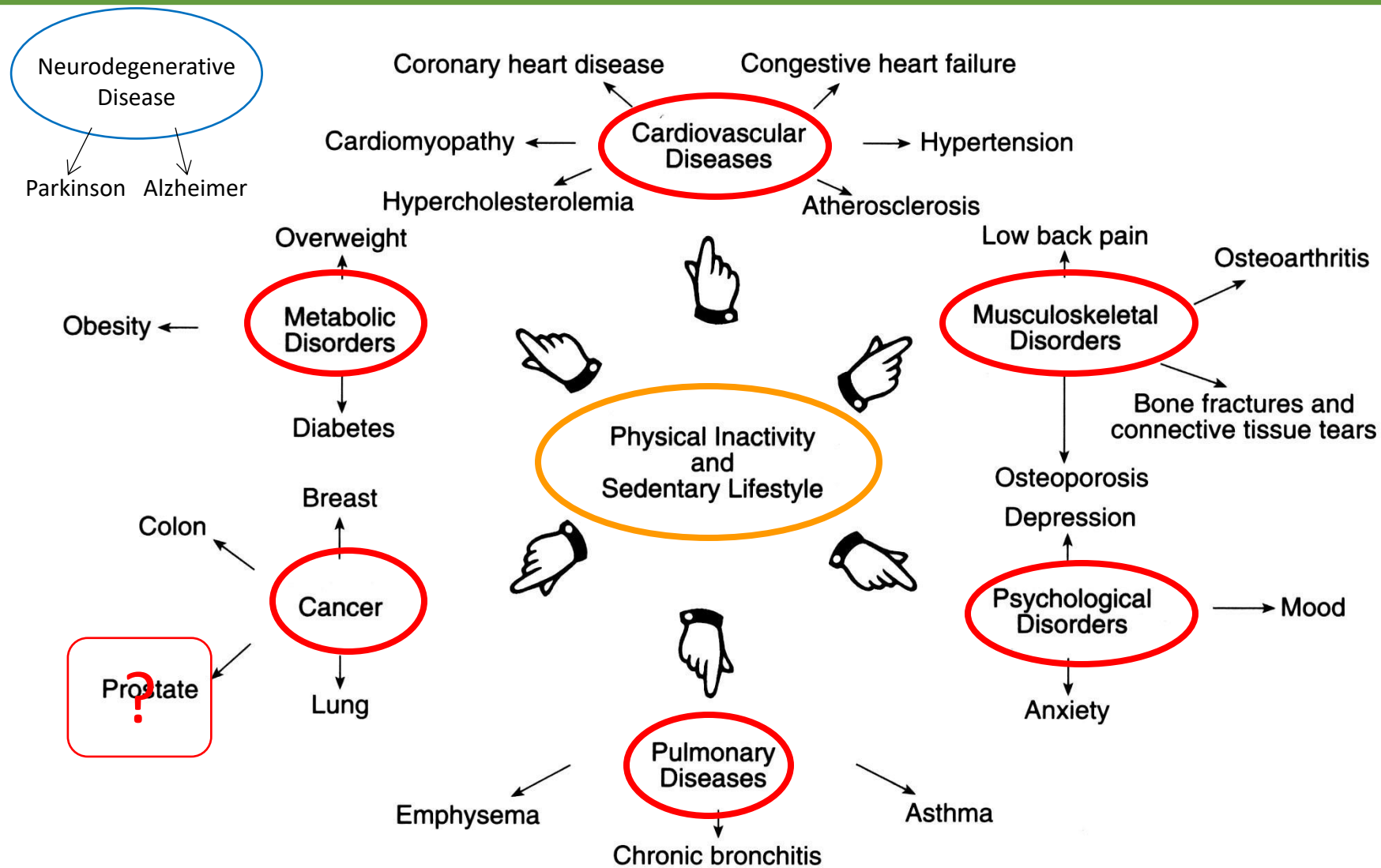


Figure 1.1 Role of physical activity and exercise in disease prevention and rehabilitation.

Quanta attività fisica?

Bambini e Giovani

- **Almeno 1 ora al giorno (moderata e vigorosa)**

Adulti – anziani

- **Almeno 150 minuti settimana (moderata e vigorosa)**

Persone con tumore

- **Almeno 90 minuti di attività aerobica (moderata o/e vigorosa)**
- **Esercizi di forza due volte la settimana**
- **Supervisionata!**

Sedentary Behavior, Exercise, and Cardiovascular Health

Carl J. Lavie, Cemal Ozemek, Salvatore Carbone, Peter T. Katzmarzyk, Steven N. Blair

Time & Intensity

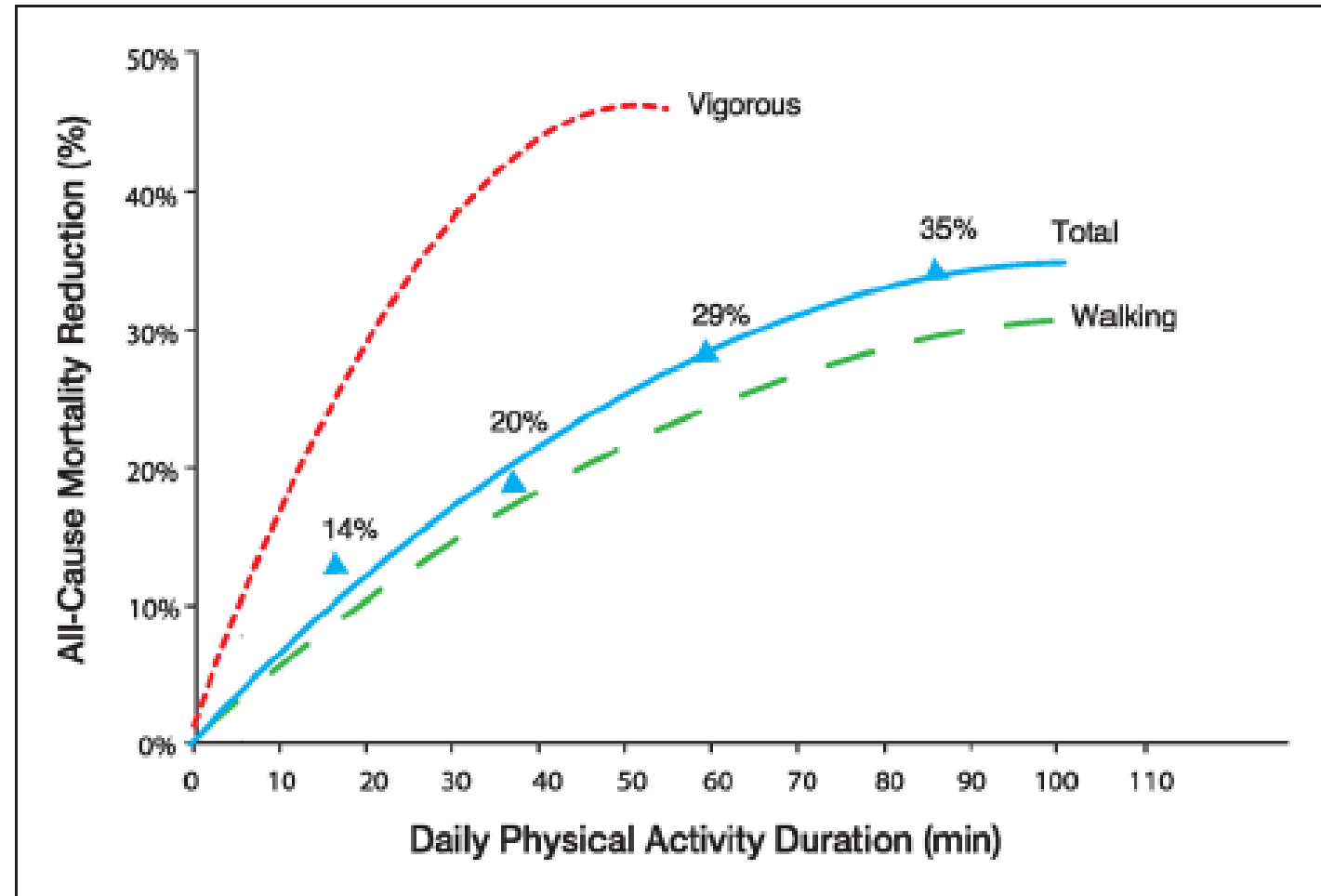
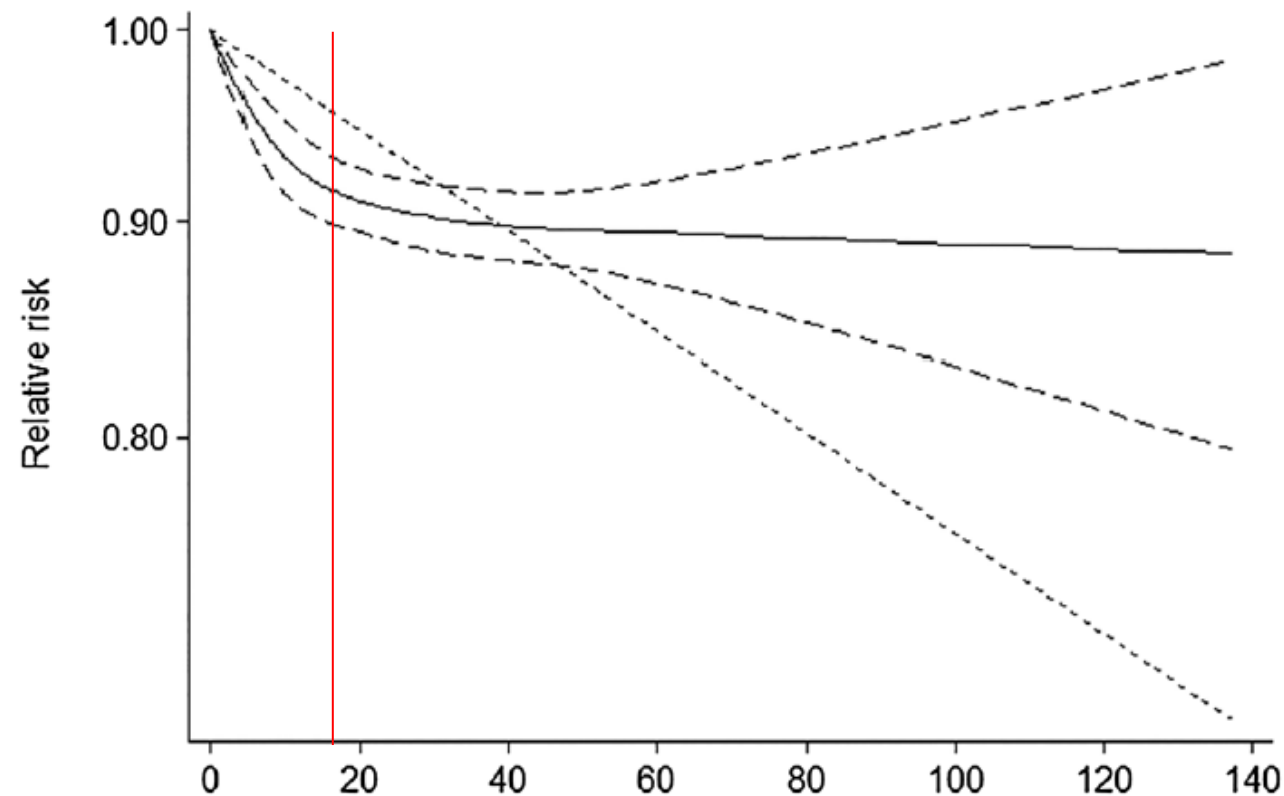


Figure 4. Daily physical activity duration and all-cause mortality reduction. Reprinted from Wen et al⁵⁹ with permission. Copyright ©2011, Elsevier.



Exercise also changes the long-term outlook. In a study of over 15,000 adult childhood cancer survivors followed-up over 10 years, tumor progression, relapse, and mortality was reduced by 40% in physically active patients compared to those with sedentary lifestyles^[13]. Also, there was a positive linear dose-effect correlation between intensity and duration of exercise^[13]. In this study, the optimal exercise exposure for childhood cancer survivors was modeled at 15–18 Metabolic Equivalent of Task (MET) × hours per week^[13], corresponding to about 2 hours of weekly cycling at 25 km/h^[14]. In order to promote a habit of regular exercise, a growing

Quale attività fisica ?



... ma nelle persone con
tumore le evidenze
riguardano solo alcune
tipologie

CANCER E CANCER SURVIVOR

PRIMARY PREVENTION

TERTIARY PREVENTION

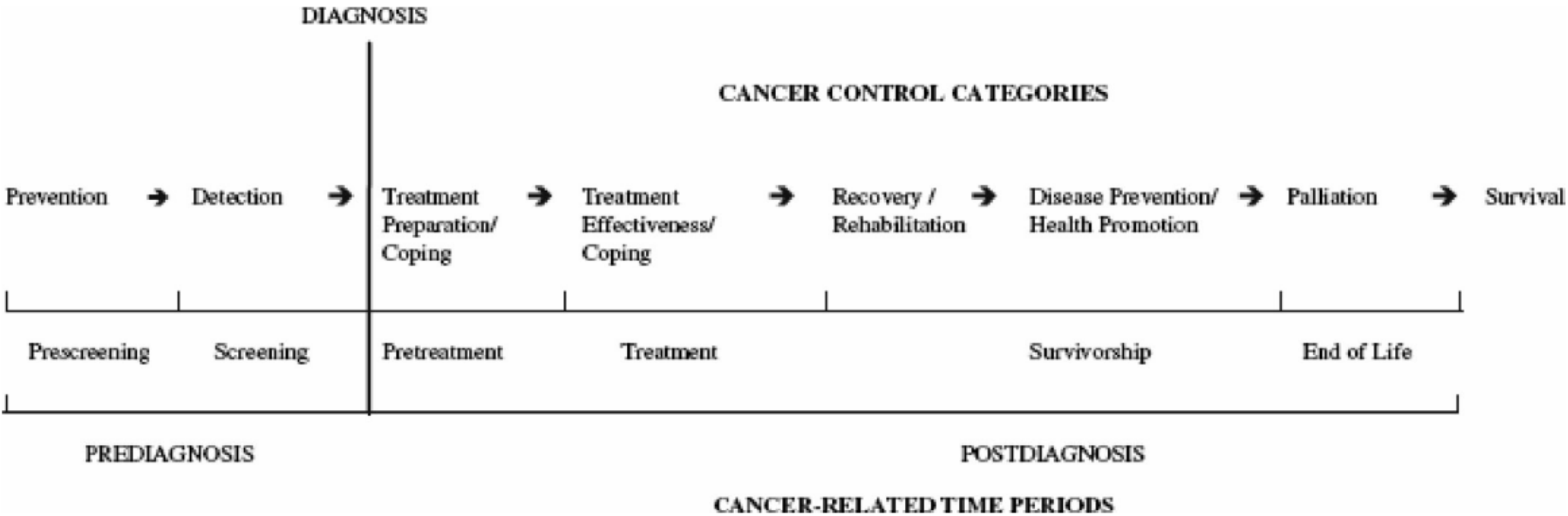


FIGURE 1—Physical activity and cancer control framework. (Reprinted from Courneya KS, Friedenreich CM. Physical activity and cancer control. *Semin Oncol Nurs.* 2007;23(4):242–52. Copyright © 2007 Elsevier. Used with permission.)

Physical activity and primary prevention

Physical Activity Guidelines Advisory Committee Report, 2008

To the Secretary of
Health and Human Services



U.S. Department of Health and Human Services

Original Investigation

Association of Leisure-Time Physical Activity With Risk of 26 Types of Cancer in 1.44 Million Adults

Steven C. Moore, PhD, MPH; I-Min Lee, MBBS, ScD; Elisabete Weiderpass, PhD; Peter T. Campbell, PhD; Joshua N. Sampson, PhD; Carl M. Kitahara, PhD; Sarah K. Keadle, PhD, MPH; Hannah Arem, PhD; Amy Berrington de Gonzalez, DPhil; Patricia Hartge, ScD; Hans-Olov Adami, MD, PhD; Cindy K. Blair, PhD; Kristin B. Borch, PhD; Eric Boyd, BS; David P. Check, BS; Agnès Fournier, PhD; Neal D. Freedman, PhD; Marc Gunter, PhD; Mattias Johansson, PhD; Kay-Tee Khaw, MD, MSc, PhD; Martha S. Linet, MD; Nicola Orsini, PhD; Yikyung Park, ScD; Elio Riboli, MD; Kim Robien, PhD; Catherine Schaller, PhD; Howard Sesso, ScD, MPH; Michael Spriggs, BS; Roy Van Dusen, MS; Alicja Wolk, DMSc; Charles E. Matthews, PhD; Alpa V. Patel, PhD

Moore et al. JAMA Intern Med. 2016;176(6):816-825. doi:10.1001/jamainternmed.2016.1548.

Leisure time physical activity and cancer risk: evaluation of the WHO's recommendation based on 126 high-quality epidemiological studies

Li Liu, Yun Shi, Tingting Li, Qin Qin, Jieyun Yin, Shuo Pang, Shaofa Nie, Sheng Wei

Liu L, et al. Br J Sports Med 2015;0:1–9. doi:10.1136/bjsports-2015-094728

Figure 1. Summary Multivariable Hazard Ratios for a Higher (90th Percentile) vs Lower (10th Percentile) Level of Leisure-Time Physical Activity by Cancer Type

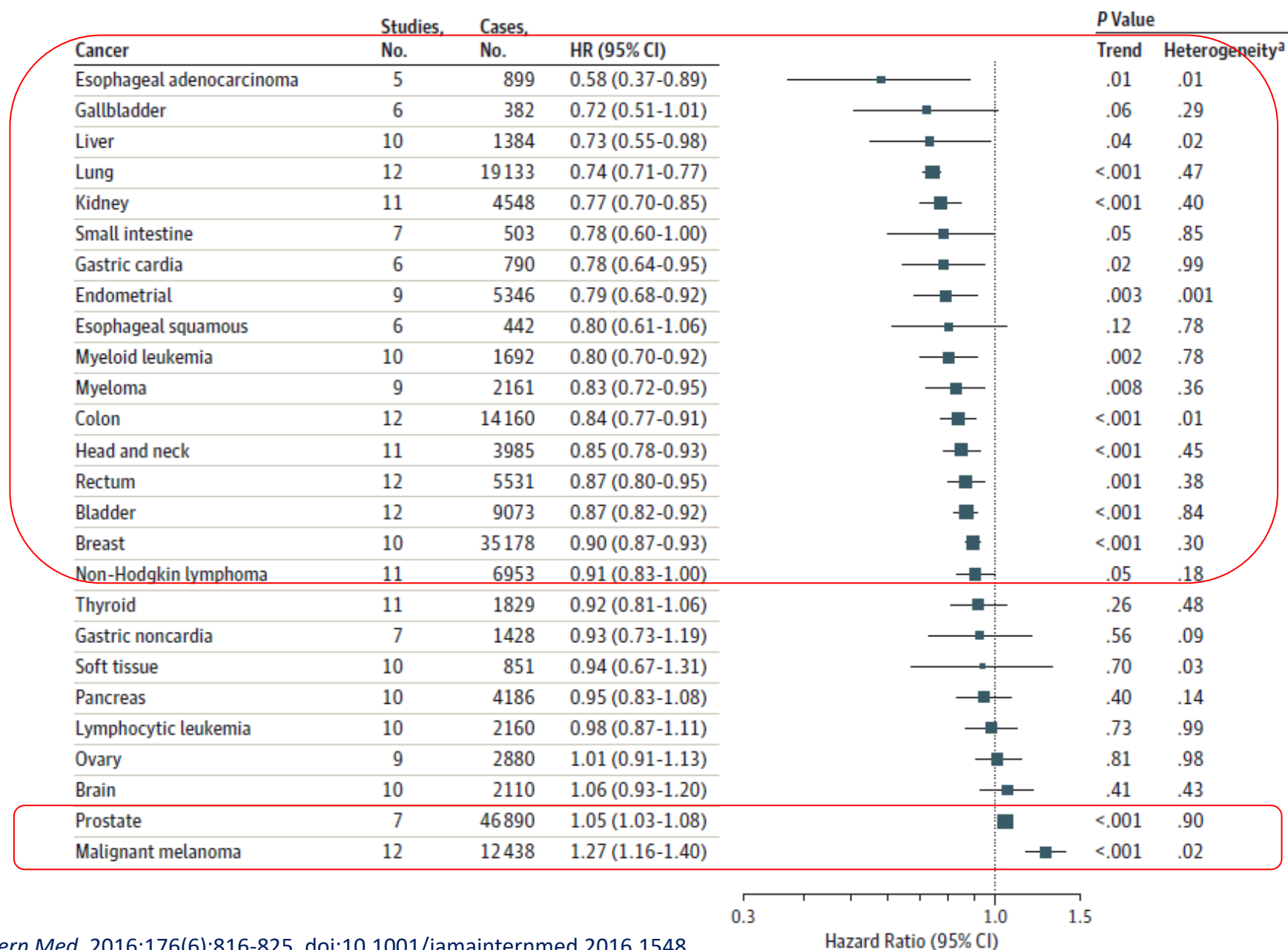
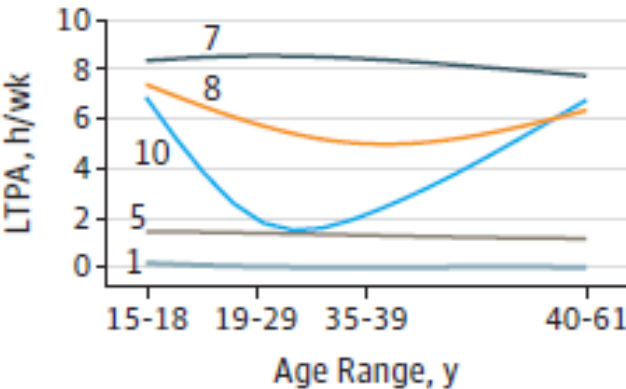


Figure 2. Leisure-Time Physical Activity (LTPA) Trajectories and Respective Hazard Ratios (HRs) for Cancer-Related Mortality Among Maintainers, Increasers, and Decreasers

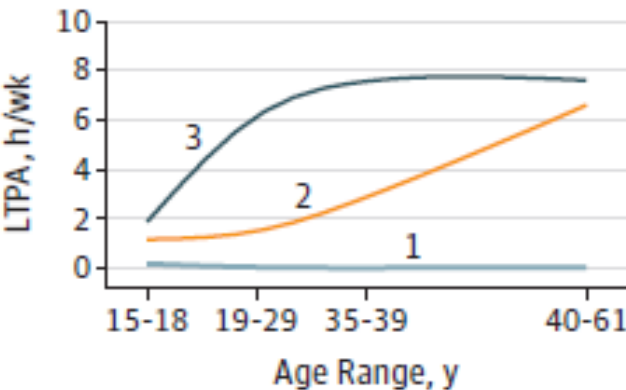
A Maintainers

HR (95% CI)	
Trajectory, No.	Cancer-Related Mortality
7	0.90 (0.83-0.97)
8	0.85 (0.78-0.93)
10	0.86 (0.77-0.97)
5	0.96 (0.88-1.04)
1	1 [Reference]



B Increasers

HR (95% CI)	
Trajectory, No.	Cancer-Related Mortality
3	0.83 (0.75-0.93)
2	0.84 (0.77-0.92)
1	1 [Reference]



C Decreasers

	HR (95% CI)
Trajectory, No.	Cancer-Related Mortality
6	0.99 (0.91-1.08)
4	0.96 (0.87-1.06)
9	0.99 (0.92-1.08)
1	1 [Reference]

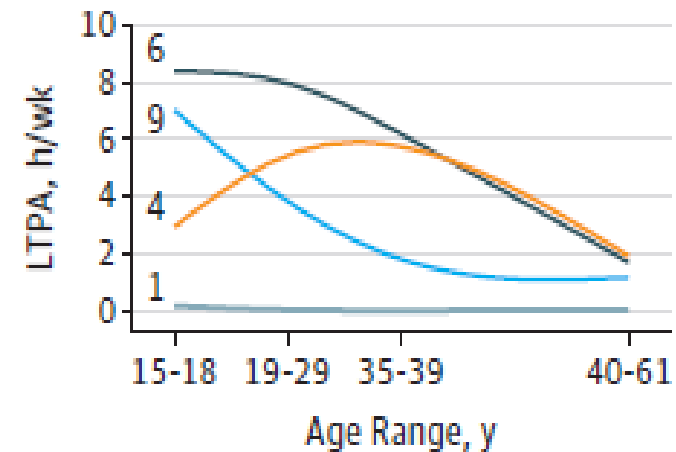
JAMA
Network

Open

Original Investigation | Cardiology

Association of Leisure-Time Physical Activity Across the Adult Life Course With All-Cause and Cause-Specific Mortality

Pedro F. Saint-Maurice, PhD; Diarmuid Coughlan, PhD; Scott P. Kelly, PhD; Sarah K. Keadle, PhD; Michael B. Cook, PhD; Susan A. Carlson, PhD; Janet E. Fulton, PhD; Charles E. Matthews, PhD



Physical activity and tertiary prevention

Exercise Guidelines for Cancer Survivors: Consensus Statement from International Multidisciplinary Roundtable

KRISTIN L. CAMPBELL¹, KERRI M. WINTERS-STONE², JOACHIM WISKEMANN³, ANNE M. MAY⁴, ANNA L. SCHWARTZ⁵, KERRY S. COURNEYA⁶, DAVID S. ZUCKER⁷, CHARLES E. MATTHEWS⁸, JENNIFER A. LIGIBEL⁹, LYNN H. GERBER^{10,11}, G. STEPHEN MORRIS¹², ALPA V. PATEL¹³, TRISHA F. HUE¹⁴, FRANK M. PERNA¹⁵, and KATHRYN H. SCHMITZ¹⁶

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DOI: 10.1249/MSS.0000000000002116

SPECIAL COMMUNICATIONS

Roundtable Consensus Statement

American College of
Sports Medicine
Roundtable on Exercise
Guidelines for Cancer
Survivors

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DOI: 10.1249/MSS.0000000000002116

Increasing Physical Activity and Exercise in Lung Cancer *Reviewing Safety, Benefits, and Application*

Brett C. Bade, MD, D. David Thomas, MS, JoAnn B. Scott, BA, and Gerard A. Silvestri, MD, MS

(J Thorac Oncol. 2015;10: 861–871)

Brain, Behavior, and Immunity

Volume 30, Supplement, 15 March 2013, Pages S75–S87

Advances in Cancer and Brain, Behavior, and Immunity: A Decade of
Progress



Review

Effects and potential mechanisms of exercise training on
cancer progression: A translational perspective

Allison S. Betof, Mark W. Dewhirst, Lee W. Jones

L'attività fisica e sopravvivenza

TABLE 3. Summary of risk estimates for prediagnosis and postdiagnosis physical activity in relation to cancer-specific and all-cause mortality among cancer survivors.

Cancer Site	Prediagnosis Physical Activity				Postdiagnosis Physical Activity			
	Cancer-Specific Mortality		All-Cause Mortality		Cancer-Specific Mortality		All-Cause Mortality	
	N ^a	RR (95% CI)	N	RR (95% CI)	N	RR (95% CI)	N	RR (95% CI)
Breast	17	0.82 (0.73–0.92)	17	0.79 (0.72–0.86)	12	0.69 (0.56–0.84)	13	0.59 (0.48–0.71)
Colorectal	8	0.77 (0.68–0.87)	7	0.75 (0.68–0.83)	7	0.70 (0.54–0.90)	9	0.62 (0.50–0.77)
Prostate	6	0.99 (0.86–1.15)	2	0.87 (0.80–0.96)	4	0.67 (0.52–0.87)	3	0.55 (0.40–0.76)
Endometrium	2	1.04 (0.81–1.36)	2	0.92 (0.77–1.10)	—	—	—	—
Ovarian	2	1.01 (0.80–1.27)	3	0.90 (0.71–1.13)	—	—	—	—
Kidney	1	0.50 (0.27–0.93)	—	—	—	—	—	—
Lung	1	0.78 (0.66–0.93)	—	—	—	—	1	0.67 (0.31–1.48)
Melanoma	1	1.09 (0.69–1.70)	—	—	—	—	—	—
Non-Hodgkin Lymphoma	—	—	1	0.85 (0.73–0.99)	1	0.56 (0.31–1.03)	1	0.63 (0.48–0.81)
Childhood cancers	—	—	—	—	1	0.74 (0.39–1.42)	1	0.79 (0.62–1.00)
Esophageal	—	—	—	—	1	0.31 (0.22–0.43)	—	0.79 (0.55–1.13)
Gastric	—	—	—	—	—	—	1	0.75 (0.61–0.93)
Malignant glioma	—	—	—	—	—	—	1	0.64 (0.46–0.91)

^aAll published articles on physical activity and cancer survival were identified to January 2018 and risk estimates for the highest vs lowest quantiles of physical activity and survival outcomes were extracted. A meta-analysis was conducted to provide overall summary risk estimates by cancer site.

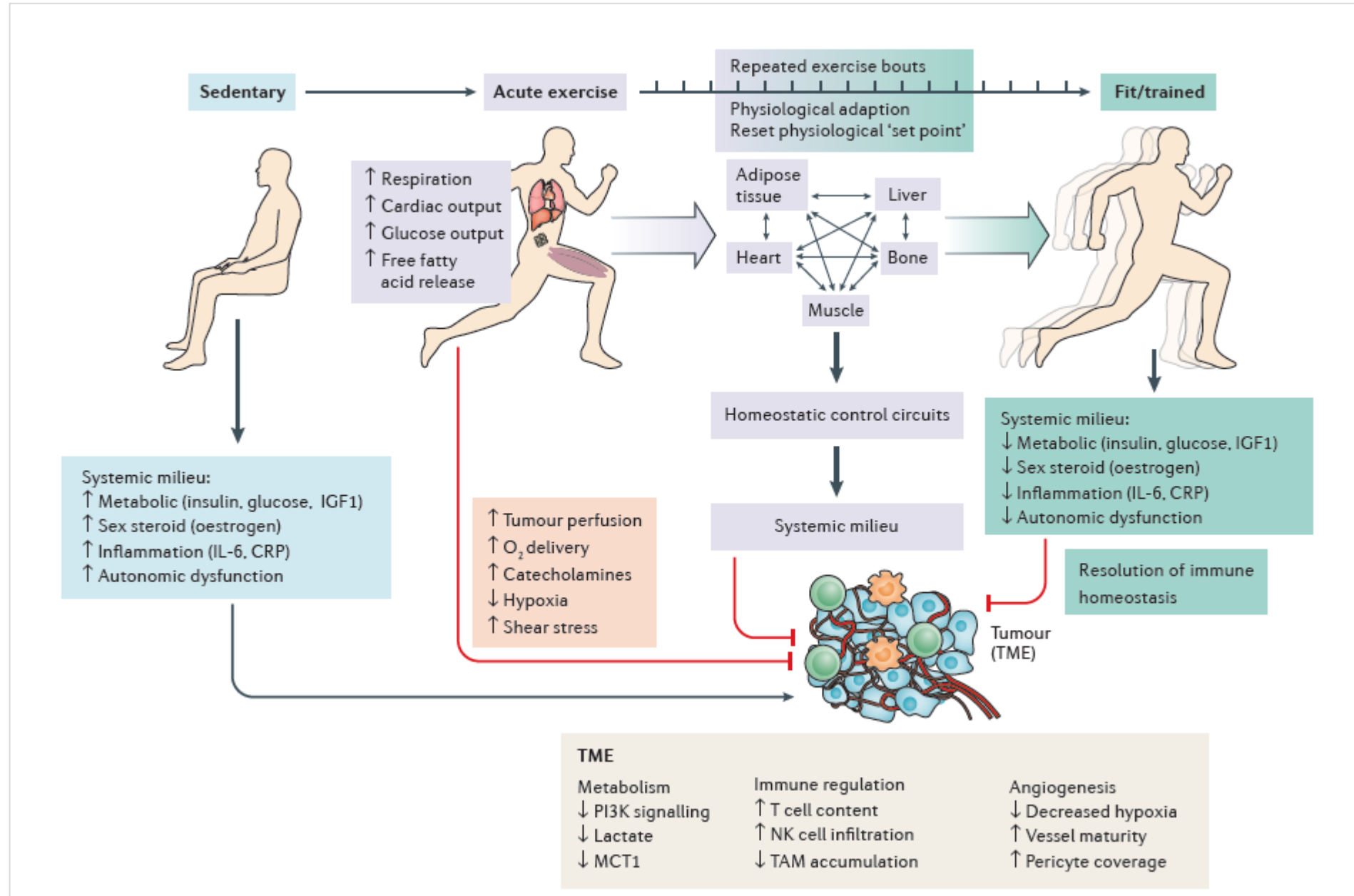
Attività fisica pre-diagnosi:

- Riduzione della mortalità cancro-specifica: **18% mammella; 23% colo-retto;**
- Riduzione della mortalità per tutte le cause: **range tra 13% e 25%.**

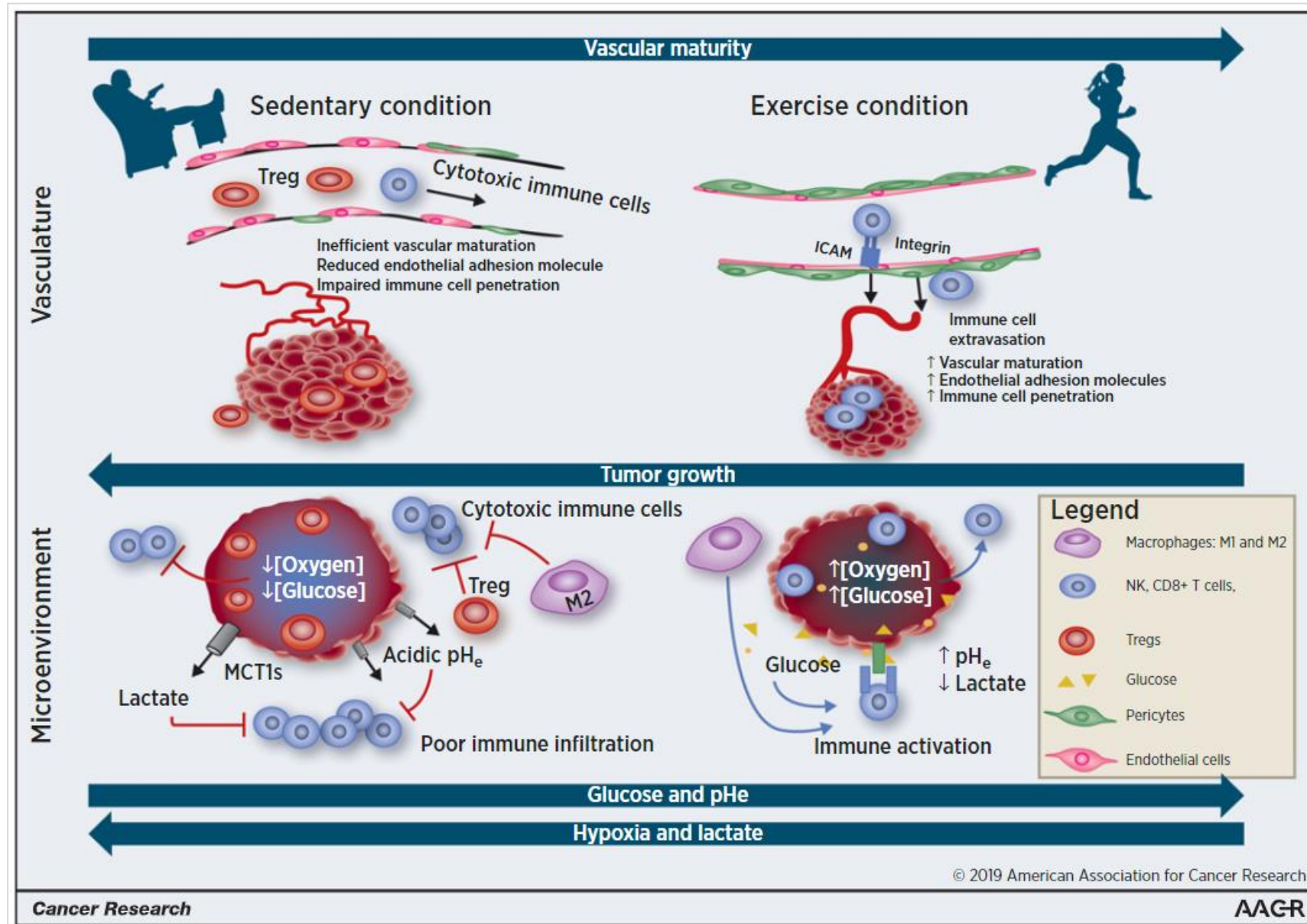
Attività fisica post-diagnosi:

- Riduzione della mortalità cancro-specifica: **range tra 26% e 69%;**
- Riduzione della mortalità per tutte le cause: **range tra 21% e il 45%.**

Meccanismi biologici



Meccanismi biologici



Article | [Free Access](#)

Exercise is medicine in oncology: Engaging clinicians to help patients move through cancer

Kathryn H. Schmitz PhD, MPH✉, Anna M. Campbell PhD, Martijn M. Stuiver PT, PhD, Bernardine M. Pinto PhD, Anna L. Schwartz PhD, G. Stephen Morris PT, PhD, Jennifer A. Ligibel MD ... [See all authors](#) ▾

First published: 16 October 2019 | <https://doi.org/10.3322/caac.21579> | Citations: 1

CA CANCER J CLIN 2019;0: 1–17

TABLE 2. Level of Evidence for the Benefit of Exercise on Cancer-Related Health Outcomes¹⁰

STRONG EVIDENCE ^a	MODERATE EVIDENCE	INSUFFICIENT EVIDENCE
Reduced anxiety	Sleep	Cardiotoxicity
Fewer depressive symptoms	Bone health (for osteoporosis prevention, not bone metastases)	Chemotherapy-induced peripheral neuropathy
Less fatigue		Cognitive function
Better QOL		Falls
Improved perceived physical function		Nausea
No risk of exacerbating upper extremity lymphedema		Pain
		Sexual function
		Treatment tolerance

Abbreviation: QOL, quality of life.

^aEffective exercise programs for improving these outcomes are thrice-weekly, moderate-intensity, aerobic and/or resistance training with one exception. Anxiety and depressive symptoms do not appear to be improved by a program of resistance training alone but do improve with aerobic training alone or in combination with resistance training. The scientific evidence review and scheme used for evidence evaluation are described in another article from the American College of Sports Medicine (ACSM) Roundtable.¹⁰

F.I.T.T. principle

Tipo	Aerobico	Forza
Frequenza	3 volte/sett.	2 volte/sett
Durata	30' a sessione	2 serie / 8-15 reps
Intensità	60-80% FCmax	65-85% 1RM
Durata minima intervento	12 settimane	12 settimane

Attività fisica, quindi !

NO GRAZIE !!!

NEMMENO SE LO DICE IL MEDICO!!!

Prospetto 10.4 Persone di 6 anni e oltre che praticano sport con continuità per sesso, classe di età e ripartizione geografica
Anni 1982, 1985, 1988, 1995, 2000, 2010-2016, per 100 persone con le stesse caratteristiche

SESSO CLASSI DI ETÀ RIPARTIZIONI GEOGRAFICHE	1982	1985	1988	1995	2000	2010	2011	2012	2013	2014	2015	2016
SESSO												
Maschi	21,5	30,4	31,9	23,7	22,7	28,0	26,4	26,7	26,2	27,3	28,5	30,0
Femmine	9,5	14,4	14,4	12,7	13,9	18,0	17,9	17,5	17,1	19,1	19,3	20,7
CLASSI DI ETÀ												
6-10	26,5	37,8	41,2	44,7	44,6	56,6	54,5	57,1	53,9	55,6	58,9	59,7
11-14	43,6	55,1	57,9	50,0	48,4	57,5	56,4	53,6	54,7	57,6	56,3	58,3
15-19	36,9	45,4	44,3	34,3	38,2	43,4	42,1	43,3	42,2	45,9	44,2	48,9
20-29	22,0	32,3	32,2	28,1	28,5	31,8	32,6	32,6	31,8	32,9	35,0	36,2
30-39	13,1	20,8	21,6	18,4	18,4	24,7	22,8	22,7	23,0	25,2	24,9	26,5
40-49	8,2	14,2	15,8	12,4	12,9	20,4	19,1	19,5	19,4	20,4	21,2	23,1
50-59	4,5	8,1	9,4	8,2	10,5	15,4	14,7	15,1	14,4	16,4	18,2	18,6
60 e oltre	1,5	2,3	4,4	3,3	4,1	8,3	8,3	7,8	7,7	8,9	9,3	11,0
RIPARTIZIONI GEOGRAFICHE												
Nord-ovest	17,4	25,0	26,5	22,0	20,4	25,8	25,9	26,2	23,7	26,8	26,9	29,1
Nord-est	18,7	25,9	26,9	20,5	21,3	27,8	28,1	27,2	27,0	26,3	27,6	30,6
Centro	16,6	22,5	23,4	20,0	19,6	24,3	22,6	23,1	23,9	26,6	26,2	27,2
Sud	11,3	18,0	17,9	13,0	13,9	16,8	14,7	15,1	15,4	15,9	16,9	17,6
Isole	13,1	17,8	17,7	12,5	14,5	17,2	16,7	15,4	15,5	17,6	19,9	19,3
Italia	15,4	22,2	22,9	18,0	18,2	22,8	22,0	21,9	21,5	23,1	23,8	25,2

Fonte: Istat, Indagine multiscopo "Aspetti della vita quotidiana" (R)

S.T.I.P.-ON.

Sostenibile Training In Pazienti Oncologici

Caratteristiche della popolazione indagata

403 soggetti, età 59±12, 61% donne.

S.T.I.P.-ON.
(Sostenibile Training In
Pazienti Oncologici)

Variabile	Percentuale	Variabile	Percentuale
<u>Sito</u> (n=400)		<u>Momento rispetto ai</u> <u>trattamenti medici</u> (n=398)	
• Colon-retto	10%	• Deve cominciare	
• Polmone	6%	Attualmente in	3%
• Mammella	26%	corso	84%
• Gastroenterico superiore	43%	• Concluso	9%
• Altro	16%	• Non definito	4%
<u>Stato della patologia</u> (n=400)		<u>Trattamenti e terapie</u> <u>mediche</u> (n=395)	
• Iniziale		• Chirurgia	55%
• Avanzato	22%	• Chemioterapia	86%
• Metastatico	22%	• Radioterapia	29%
• Remissione/guarito	29%	• Ormonoterapia	13%
• Non so	15%	• Altro	7%
	13%		

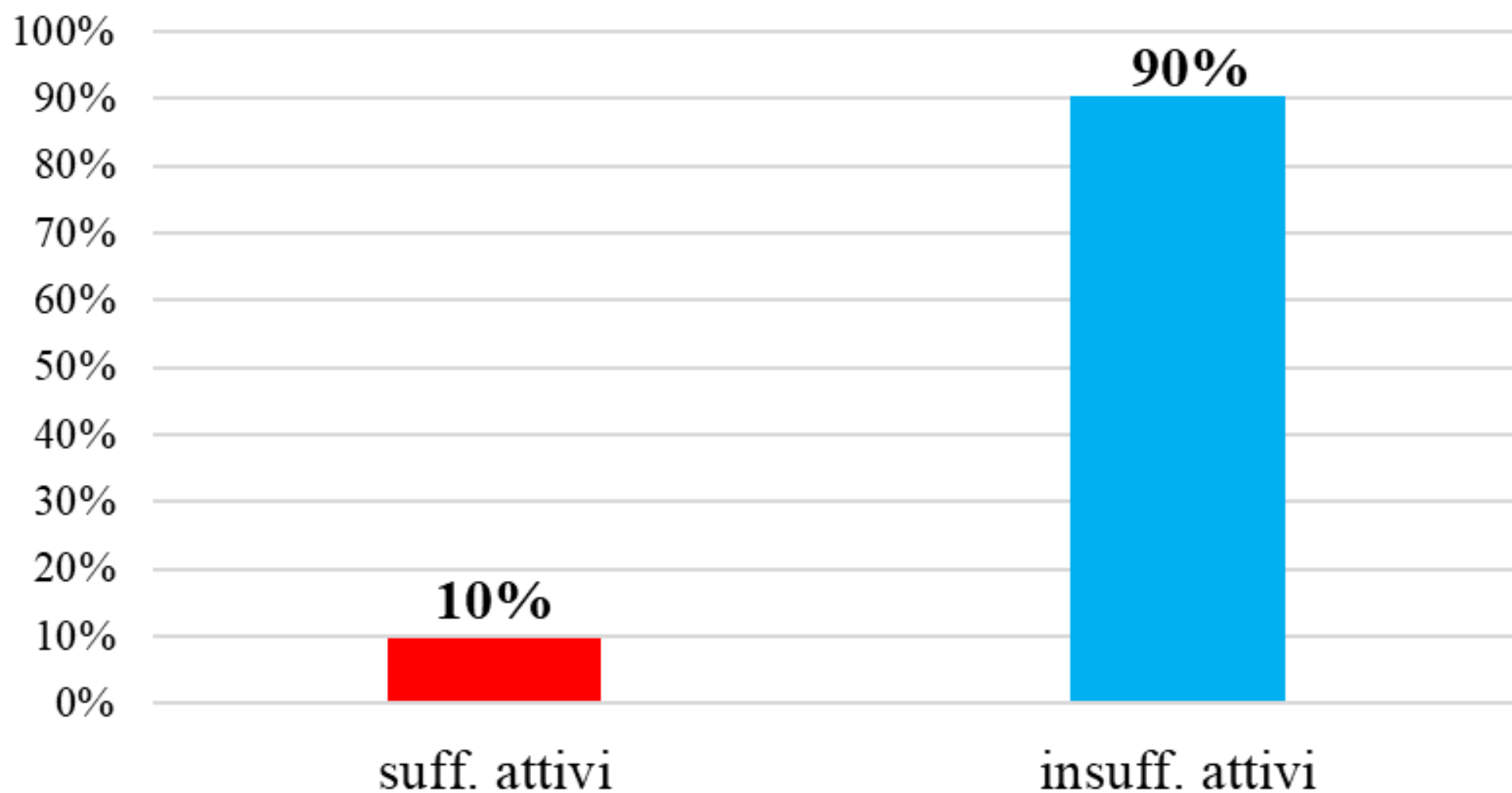
The survey questionnaire (QEX)

Demographic, anthropometry and socio-economic questions;

Physical exercise level and preferences questions;

Questions about cancer diagnosis and treatment.

Quantità di attività fisica praticata (n=401)



Willingness to participate to EX intervention was strongly associated with:

- **Patients' age**

- 14% declaring no willingness among patients <65y ...
- compared to 31% among ≥ 65 y; $p < 0.001$

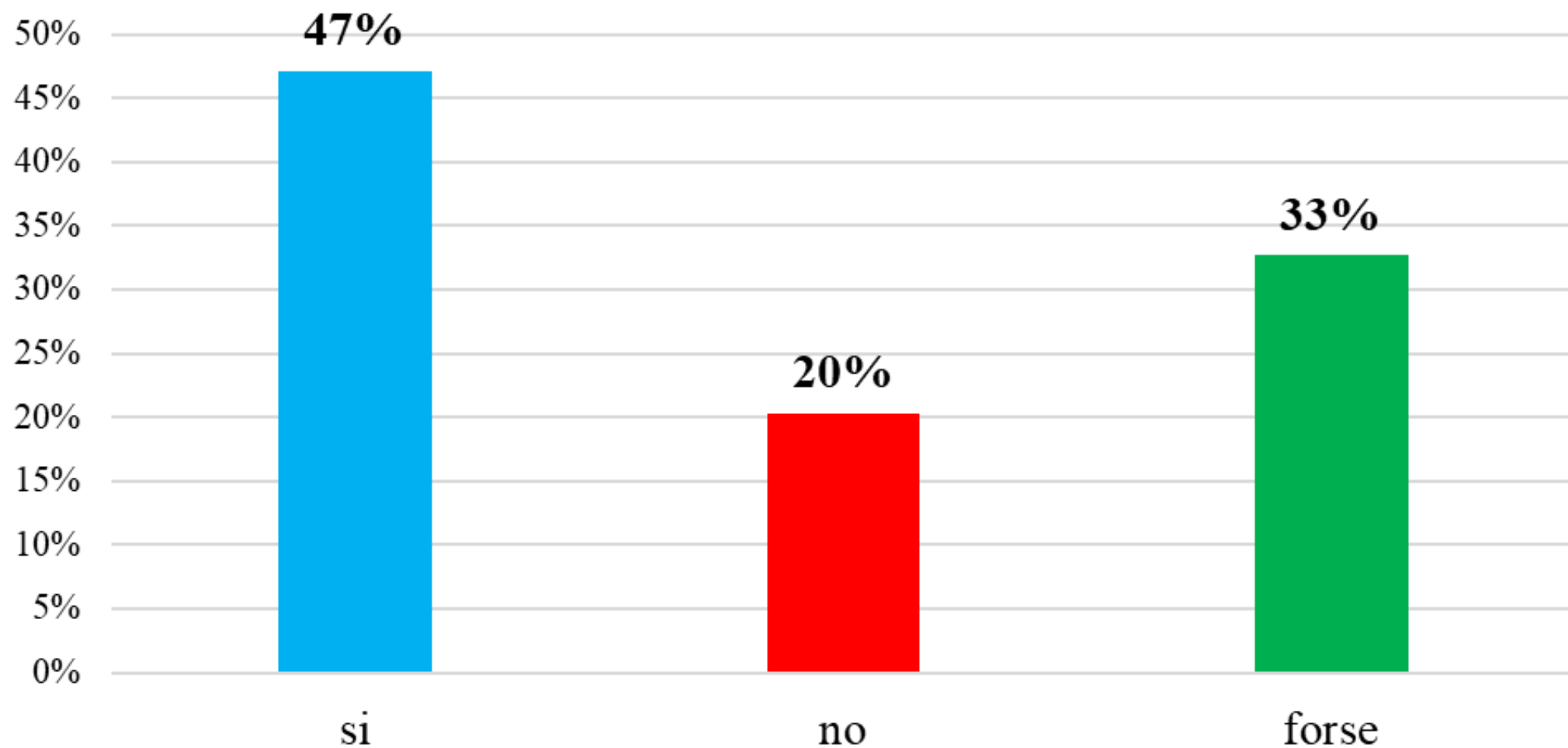
- **Gender**

- 17% of women declaring no willingness to participate ...
- vs. 25% of men y; $p < 0.017$

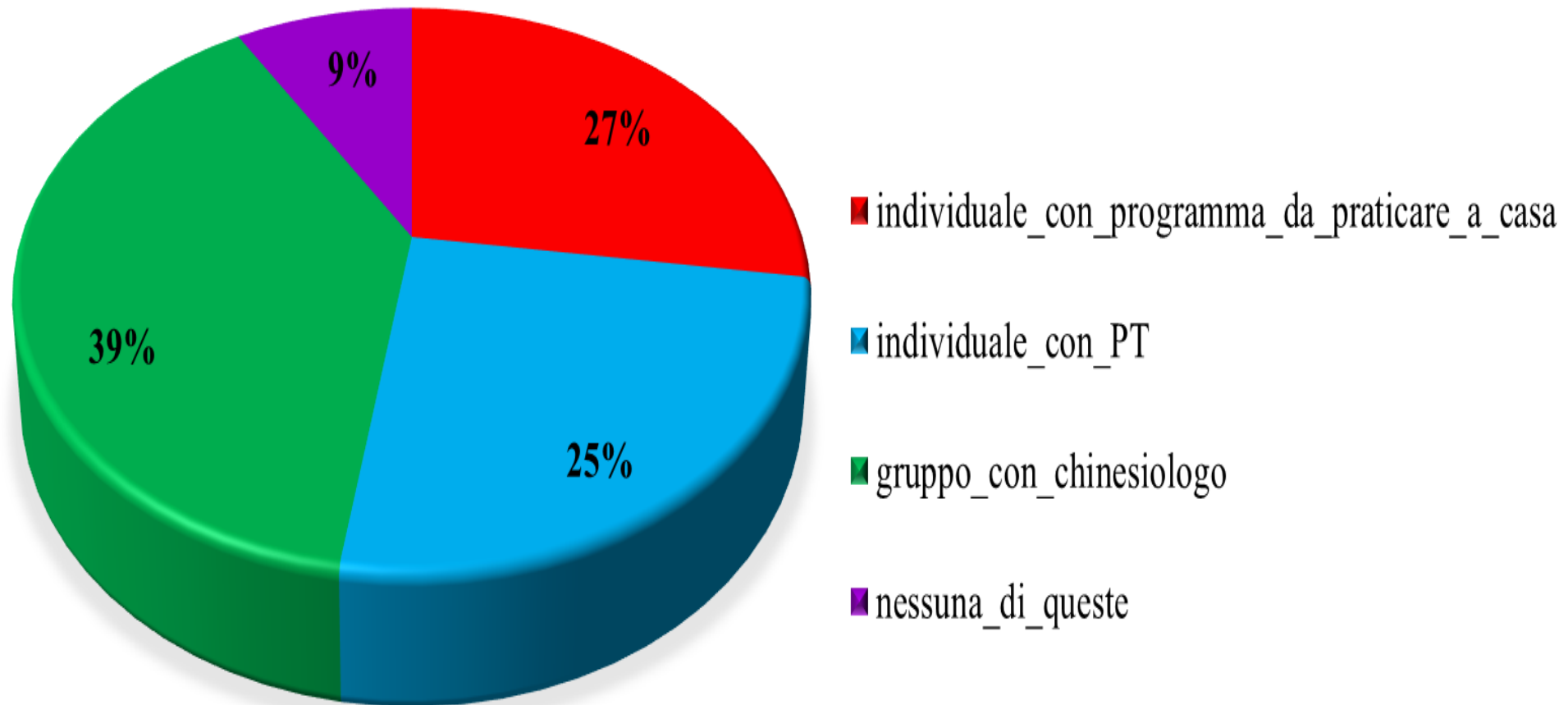
- **Education**

- 17% declaring no willingness to participate among those most highly educated ...
- vs. 44% among the lowest education group; $p < 0.002$

**Sarebbe interessato a partecipare ad un programma di
EX rivolto a persone con diagnosi di tumore? (n=395)**



MODALITÀ DI ESERCIZIO (N=370)



PREFERENZE SULLE MODALITA' DI PROPOSTA DELL'ESERCIZIO FSICO

Counselling

•Persona (n=387)

- Oncologo (60%)
- Fisioterapista (30%)
- Chinesiologo (21%)

Modalità (n=387)

- Persona (71%)
- Non ho preferenze (12%)
- Opuscolo (5%)

Struttura/organizzazione

Gruppo (n=384)

- Altre persone con tumore (27%)
- Non ho preferenze (27%)
- Da solo (16%)

Luogo (n=389)

- Aperto (28%)
- Centri fitness AFA (22%)
- Casa (21%)

Parte della giornata (n=387)

- Mattina (48%)
- Pomeriggio (31%)

Parte della settimana (n=379)

- Durante la settimana (70%)
- Non ho preferenze (22%)

Supervisione (n=373)

- Supervisionata (62%)
- Non supervisionata (15%)
- Non ho preferenze (23%)

Programmazione

Tipo di attività (n=347)

- Cammino (58%)
- Ciclismo (37%)

Frequenza settimanale (n=376)

- 2 volte a settimana (37%)
- 3 volte a settimana (30%)

Intensità di esercizio (n=374)

- Leggera (48%)
- Moderata (40%)
- Vigorosa (7%)

Quindi...

- Percentuale particolarmente bassa di pazienti attive/i
- Alta percentuale di interessate/i
- Maggior parte richiede attività supervisionata
- Richieste differenti tipologie di attività (possibilità di scelta)
- Cammino come risorsa ... da utilizzare nelle forma appropriate
- Intensità moderata ... (e vigorosa)

Grazie per l'attenzione.

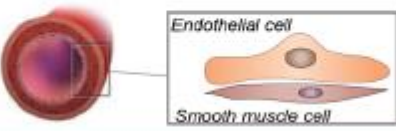
	Mitochondrial 	Skeletal Muscle 	Cardiac Muscle 	Conduit Arteries 
Sedentary 	• ↑ mitochondrial DNA deletions and mutations⁷¹ • Electron transport chain abnormalities⁷² • ↑ mitochondrial fission⁷³ • ↓ mitochondrial content⁷⁴ • ↓ respiration⁴	• ↑ IL-6 and CRP⁸⁰ • Activation of proteolytic systems⁸¹ • Inactivation of the PI3K/Akt/mTOR pathway⁸² • ↓ lean muscle mass⁸³ • Greater proportion of hybrid fibers possibly due to dysregulation in MHC isoform expression⁸⁴	• ↑ AGE accumulation indicative of collagen cross-linking⁸⁷ • ↑ Left ventricular stiffness⁸⁸ • β-adrenergic receptor desensitization resulting in impaired inotropic and chronotropic responses to adrenergic stimulation^{89, 90} • ↓ SERCA2a contributes to prolonged calcium transients⁹¹	• ↓ sympathetic baroreflex sensitivity and ↑ sympathetic activation⁹⁴ • ↑ NOS uncoupling, ↓ NO bioavailability, thereby ↑ oxidative stress⁹⁴ • Extracellular matrix remodeling through elastin degradation by MMPs and formation of AGEs⁹⁵ • Endothelial dysfunction⁹⁶
Physical Activity 	• ↑ mitochondrial protein turnover through degradation of damaged proteins and de novo synthesis of new functional proteins⁷⁵ • ↑ expression of PGC-1α^{76, 77} • ↑ SIRT3 content⁷⁸ • ↑ mitochondrial volume⁷⁹	• ↑ metabolic enzymes profile: citrate synthase, β-HAD, glycogen phosphorylase⁸⁵ • ↓ catabolic mRNA expression (FOXO3a, MuRF-1, Atrogin-1, myostatin)⁸⁶ • ↑ capillary-to-fiber ratio⁸⁵ • ↑ insulin sensitivity⁷⁶	• ↑ SERCA2a mRNA & protein expression⁹² • ↑ phosphorylation of threonine-17 residue of phospholamban allowing for faster reuptake of cytoplasmic calcium⁹² • ↑ contractility and relaxation due to faster systolic rise and diastolic decay time of calcium⁹³ • ↓ Left ventricular stiffness⁸⁸	• Lower expression of the transcription factor p53 which is associated with senescence compared to sedentary counterparts⁹⁷ • Lower markers of senescence (p21 and p16)⁹⁷ • ↓ expression of nitrotyrosine and NADPH oxidase (prooxidant)⁹⁶ • ↑ expression of manganese SOD (antioxidant)⁹⁶

Figure 2. The multidimensional mechanisms associated with the deleterious effects of sedentary behavior and the beneficial effects of physical activity that occur within the mitochondria, skeletal muscle, myocardium, and conduit arteries. β-HAD indicates β-hydroxyacyl CoA dehydrogenase; AGE, advanced glycation end products; Akt, protein kinase B; CRP, C-reactive protein; FOXO3a, forkhead box O3; IL-6, interleukin-6; MHC, myosin heavy chain; MMP, matrix metalloproteinase; mTOR, mammalian target of rapamycin; MuRF-1, muscle RING-finger protein-1; NADPH, nicotinamide adenine dinucleotide phosphate; NO, nitric oxide; NOS, nitric oxide synthase; PGC-1α, peroxisome proliferator-activated receptor γ coactivator 1-α; PI3K, phosphoinositide 3-kinase; SERCA2a, sarcoplasmic reticulum calcium adenosine triphosphatase; and SIRT3; nicotinamide adenine dinucleotide-dependent deacetylase sirtuin-3 SOD.

Table 4. Association¹ of willingness² to participate in exercise program designed for cancer survivors (the STIP-On survey³)

Variable	β coefficient ¹	P-value	[95% confidence interval]
Age ⁴	-0.08	0.49	[-0.29; 0.14]
Education ⁴	1.10	0.03	[-0.09; 2.11]
Body mass index ⁴	0.03	0.32	[-0.03; 0.09]
Sex	0.61	0.04	[-1.17; -0.04]
Widow ⁵	0.94	0.04	[0.05; 1.82]
Family income adequacy ⁴	0.11	0.66	[-0.37; 0.58]
Leisure score Index ⁴	0.28	0.02	[-0.05; 0.50]