Discussion :
Quelles prises en charge pour les cancéreux avec et sans pathologie cardiovasculaire ?

L. Serrano, Puilboreau
M. Lamotte, Bruxelles - BEL,

→Modalités pratiques

→Fonctionnement

Quelle prise en charge :
Le point de vue du kinésithérapeute / moniteur APA / physiologiste

Commencer le plus tôt possible !

Baser l'entraînement sur une évaluation précise (EFX)

- Non contre-indication
- Ajustement de traitement
- Programmation précise (facteurs limitants)

Résultats dépendants du volume, de l'intensité et des modalités

Protection cardiovasculaire volume dépendante

Exercise and Risk of Cardiovascular Events in Women With Nonmetastatic Breast Cancer

Lee W. Jones, Laurel A. Habel, Erin Weltzien, Adrienne Castillo, Dipti Gupta, Candyce H. Kroenke, Marilyn L. Kwan, Charles P. Quesenberry Jr, Jessica Scott, Barbara Sternfeld, Anthony Yu, Lawrence H. Kushi, and Bette J. Caan

Table 2. Age-Adjusted and Multivariable-Adjusted HRs of Cardiovascular Events According to Quartile of Exercise (MET-h/wk)

	Total (N = 2,973)	MET-h/wk ≤ 2 (n = 741)	2.1-10.3 (n = 747)	10.4-24.5 (n = 741)	≥ 24.6 (n = 744)	P_{trend}
Median MET-h/wk	10.3	0.0	5.4	16.3	40.0	
Cardiovascular events*						
No. of events	862	262	243	198	159	
Age-adjusted HR (95% CI)		Ref	0.83 (0.70 to 0.99)	0.72 (0.60 to 0.86)	0.57 (0.47 to 0.69)	< .001
Multivariable-adjusted HR (95% CI)†		Ref	0.91 (0.76 to 1.09)	0.79 (0.66 to 0.96)	0.65 (0.53 to 0.80)	.001
Coronary artery disease						
No. of events	203	68	55	46	34	
Age-adjusted HR (95% CI)		Ref	0.74 (0.52 to 1.06)	0.65 (0.45 to 0.95)	0.51 (0.34 to 0.76)	.01
Multivariable-adjusted HR (95% CI)†		Ref	0.89 (0.62 to 1.28)	0.78 (0.53 to 1.15)	0.63 (0.41 to 0.97)	.04
Heart failure						
No. of events	307	93	97	66	51	
Age-adjusted HR (95% CI)		Ref	0.97 (0.73 to 1.28)	0.67 (0.49 to 0.92)	0.55 (0.39 to 0.77)	.001
Multivariable-adjusted HR (95% CI)†		Ref	1.15 (0.86 to 1.55)	0.77 (0.56 to 1.07)	0.70 (0.49 to 1.01)	.02

J. Clin Oncol 2016

Mortalité spécifique et globale, récidive : Effet volume dépendant : Colon

Impact of Physical Activity on Cancer Recurrence and Survival in Patients With Stage III Colon Cancer: Findings From CALGB 89803

Jeffrey A. Meyerhardt, Denise Heseltine, Donna Niedzwiecki, Donna Hollis, Leonard B. Saltz, Robert J. Mayer, James Thomas, Heidi Nelson, Renaud Whittom, Alexander Hantel, Richard L. Schilsky, and Charles S. Fuchs

Table 3. Impact of Physical Activity on Colon Cancer Recurrence and Mortality (median follow-up of alive patients 2.7 years from completion of questionnaire 2; 3.8 years from trial entry)

	Total MET-Hours per Week										
	< 3		3-8.9		9-17.9		18-26.9		≥ 27		*P* for
Outcome	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	Trend
Cancer recurrence or death from any cause (disease-free survival)											
No. of events	67		42		30		11		22		
No. at risk	273		187		137		84		151		
Unadjusted	Referent		0.94	0.64 to 1.38	0.89	0.58 to 1.37	0.51	0.27 to 0.97	0.58	0.36 to 0.94	.01
Adjusted*	Referent		0.87	0.58 to 1.29	0.90	0.57 to 1.40	0.51	0.26 to 0.97	0.55	0.33 to 0.91	.01
Cancer recurrence (recurrence-free survival)											
No. of events	62		38		27		10		22		
No. at risk	273		187		137		84		151		
Unadjusted	Referent		0.92	0.61 to 1.37	0.87	0.55 to 1.37	0.50	0.26 to 0.98	0.63	0.39 to 1.02	.03
Adjusted*	Referent		0.86	0.57 to 1.30	0.89	0.55 to 1.42	0.51	0.26 to 1.01	[illegible]	0.36 to 1.01	.03
Overall mortality											
No. of events	33		21		13		8		9		
No. at risk	273		187		137		84		151		
Unadjusted	Referent		0.93	0.53 to 1.60	0.75	0.39 to 1.43	0.79	0.37 [illegible] 1.72	0.50	0.24 t[illegible]1.04	.05
Adjusted*	Referent		0.85	0.49 to 1.49	0.71	0.36 to 1.41	0.71	0.32 t[illegible]1.59	0.37	0.16 [illegible] 0.82	.01

Abbreviations: MET, metabolic equivalent task; HR, hazard ratio; CEA, carcinoembryonic antigen.
*Adjusted for sex, age, depth of invasion through bowel wall (T1-2 *v* T3-4), number of positive lymph nodes (one to three *v* [illegible]), presence of clinical perforation at time of surgery, presence of bowel obstruction at time of surgery, baseline CEA (≤ 5 *v* > 5 ng/dL), grade of tumor differentiation (poorly or undifferentiated *v* well or moderately), baseline performance status (0 *v* 1-2), treatment arm, weight change between first and second questionnaire, body mass index at time of second questionnaire, and time between study entry and completion of second questionnaire.

J. Clin Oncol 2006

Mortalité spécifique et globale, récidive : Effets volume & intensité dépendants : Prostate

Physical Activity and Survival After Prostate Cancer Diagnosis in the Health Professionals Follow-Up Study

Stacey A. Kenfield, Meir J. Stampfer, Edward Giovannucci, and June M. Chan

Table 3. Age- and Multivariable-Adjusted HRs According to Physical Activity Category After Prostate Cancer Diagnosis

Measure	Total Activity: < 3 MET-h/wk	3 to < 9 MET-h/wk	9 to < 24 MET-h/wk	24 to < 48 MET-h/wk	≥ 48 MET-h/wk	*P* for Trend
Median MET-hours per week on first postdiagnosis questionnaire	0.6	5.7	16	33.4		
All deaths (n = 548)						
No. of deaths	125	99	143	116	65	
Age-adjusted HR	1.00	0.79	0.63	0.57	0.33	.001
95% CI		0.60 to 1.04	0.49 to 0.80	0.44 to 0.73	0.24 to 0.45	
Multivariable-adjusted HR*	1.00	0.81	0.70	0.66	0.40	< .001
95% CI		0.61 to 1.07	0.54 to 0.90	0.51 to 0.87	0.29 to 0.54	
Multivariable-adjusted HR†	1.00	0.80	0.69	0.65	0.38	.001
95% CI		0.61 to 1.06	0.53 to 0.90	0.49 to 0.86	0.27 to 0.53	
Prostate cancer deaths (n = 112)						
No. of prostate cancer deaths	21	21	25	30	15	
Age-adjusted HR	1.00	0.90	0.61	0.85	0.41	.02
95% CI		0.49 to 1.67	0.34 to 1.10	0.48 to 1.50	0.21 to 0.80	
Multivariable-adjusted HR‡	1.00	0.96	0.65	0.93	0.46	.04
95% CI		0.51 to 1.80	0.36 to 1.20	0.51 to 1.68	0.23 to 0.92	
Multivariable-adjusted HR§	1.00	0.91	0.60	0.83	0.42	.04
95% CI		0.48 to 1.73	0.32 to 1.11	0.44 to 1.55	0.20 to 0.88	

NOTE. Physical activity was updated over follow-up. Men were alive for at least 4 years after their postdiagnosis physical activity assessments, and we only used activity information from 4 to 6 years before death.

Abbreviations: HR, hazard ratio; MET, metabolic equivalent task.

*Adjusted for age at diagnosis, months since diagnosis, clinical stage, Gleason score, treatment, parental history of myocardial infarction at age 60 years or younger, high blood pressure, elevated cholesterol, and diabetes status from the prediagnostic questionnaire; smoking status, body mass index, and alcohol intake from the first postdiagnostic questionnaire; and comorbidities (coded as yes if participant reported any of the following: myocardial infarction, coronary artery bypass or coronary angioplasty, stroke, Parkinson's disease, and emphysema or chronic bronchitis). This variable was updated over follow-up, and comorbidity status was applied one cycle prior to physical activity exposure.

†Additionally adjusted for prediagnosis physical activity.

‡Adjusted for age at diagnosis, months since diagnosis, clinical stage, Gleason score, treatment, and postdiagnosis body mass index.

§Additionally adjusted for prediagnosis physical activity.

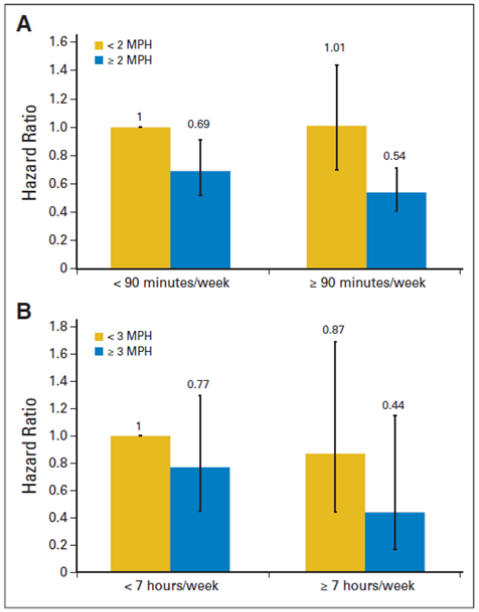


Fig 1. Multivariable-adjusted hazard ratios for (A) all-cause mortality and (B) prostate cancer mortality according to categories of walking duration and pace after prostate cancer diagnosis. An easy pace is less than 2 mile per hour (MPH), a normal pace is 2 to 2.9 MPH, and a brisk pace is ≥ 3 MPH. See footnotes in Table 3 for variables included in the multivariable models for overall and prostate cancer mortality.

J. Clin Oncol 2011

Haute intensité (relative) plus bénéfique

Physical activity and survival after breast cancer diagnosis: meta-analysis of published studies

Ezzeldin M. Ibrahim · Abdelaziz Al-Homaidh

Fig. 3 Summary statistics and corresponding Forest plot for effect of post-diagnosis physical activity on the hazard ratio of breast cancer mortality (Fixed-effects model)

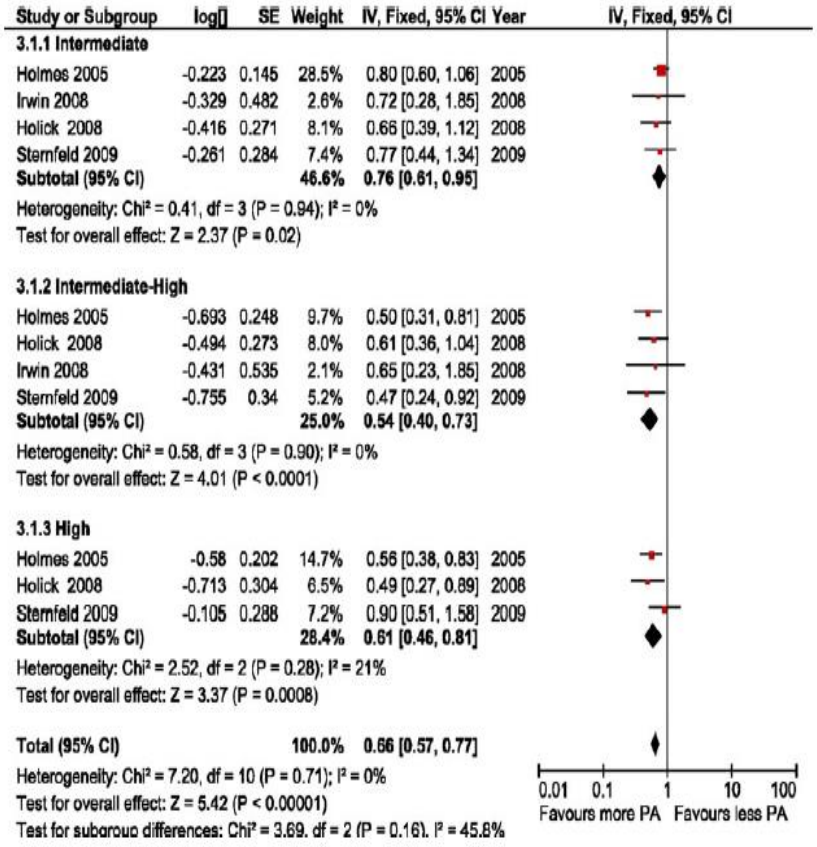
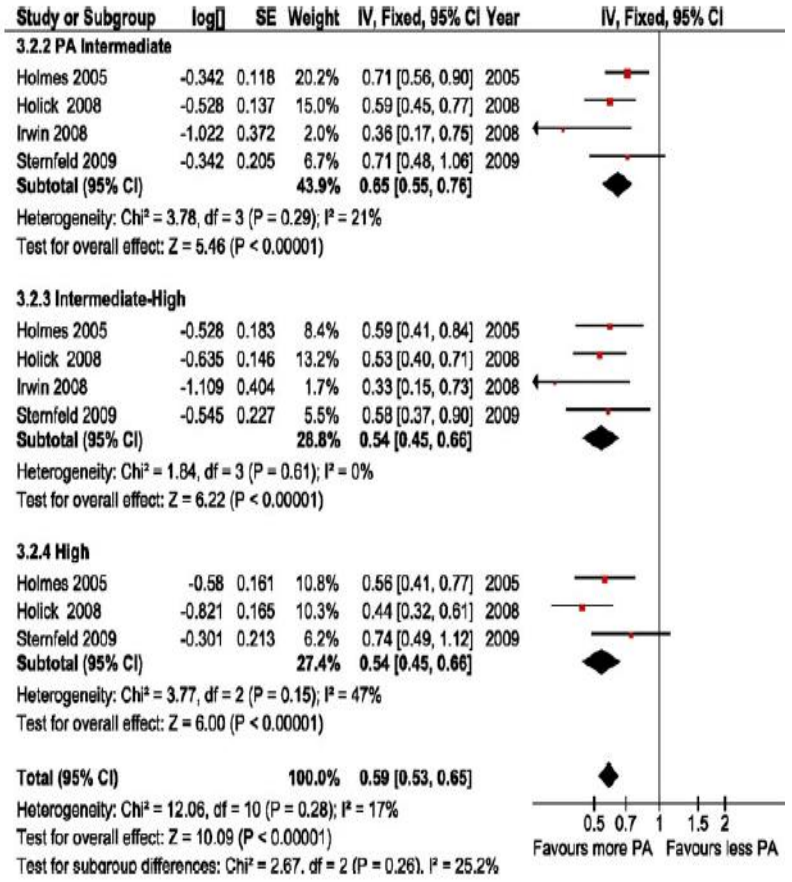


Fig. 4 Summary statistics and corresponding Forest plot for effect of post-diagnosis physical activity on the hazard ratio of all causes cancer mortality (Fixed-effects model)



Med Oncol 2011

Faut il « insister » … ?

Effects of Exercise Dose and Type During Breast Cancer Chemotherapy: Multicenter Randomized Trial

Kerry S. Courneya, Donald C. McKenzie, John R. Mackey, Karen Gelmon, Christine M. Friedenreich, Yutaka Yasui, Robert D. Reid, Diane Cook, Diana Jespersen, Carolyn Proulx, Lianne B. Dolan, Cynthia C. Forbes, Evyanne Wooding, Linda Trinh, Roanne J. Segal

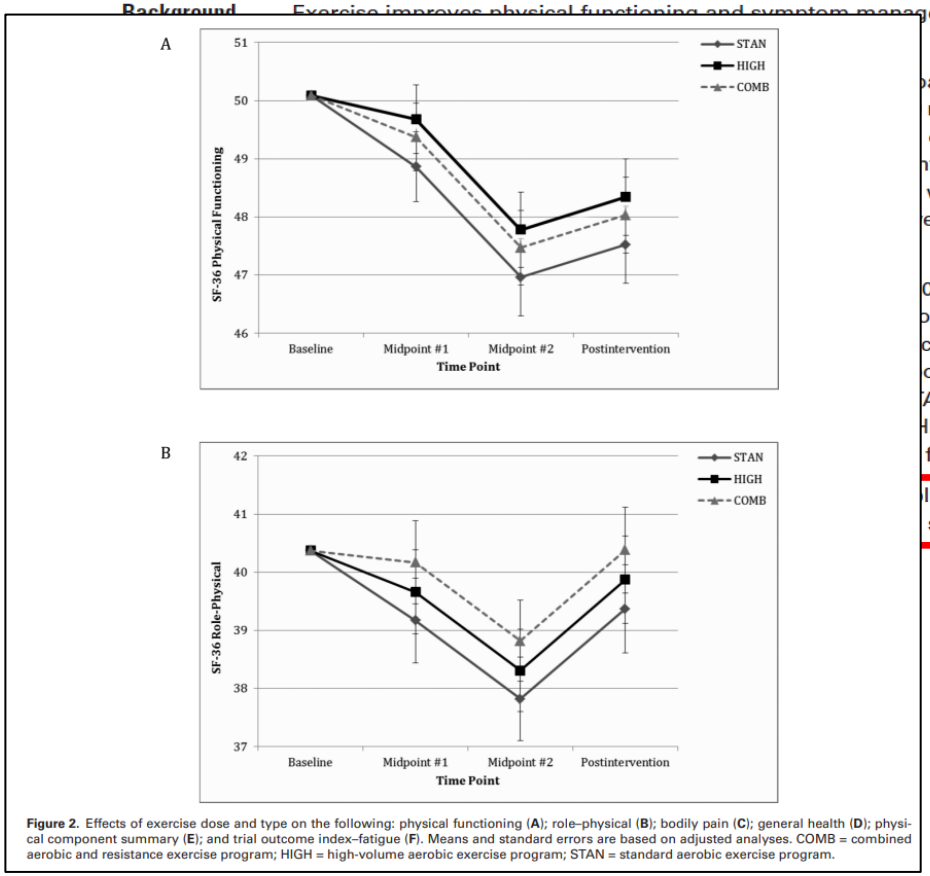
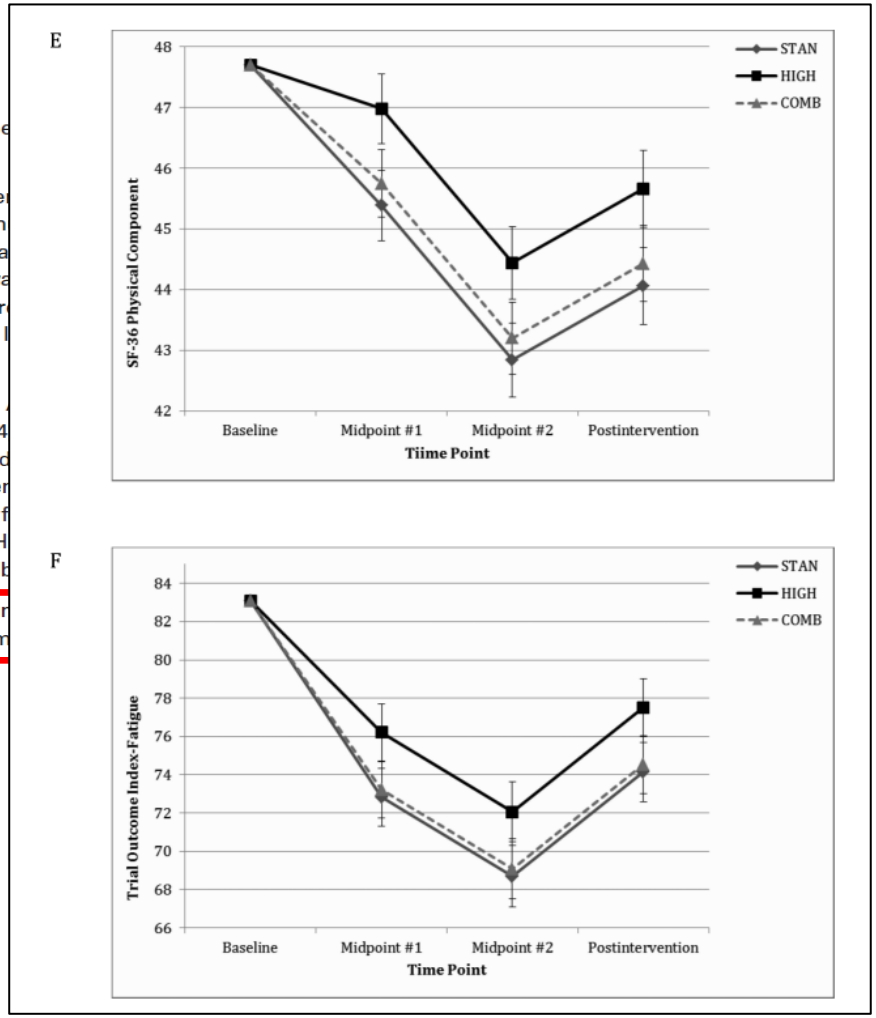


Figure 2. Effects of exercise dose and type on the following: physical functioning (**A**); role–physical (**B**); bodily pain (**C**); general health (**D**); physical component summary (**E**); and trial outcome index–fatigue (**F**). Means and standard errors are based on adjusted analyses. COMB = combined aerobic and resistance exercise program; HIGH = high-volume aerobic exercise program; STAN = standard aerobic exercise program.



J Natl Cancer Inst 2013

Modalités combinées

Implementing the Exercise Guidelines for Cancer Survivors

Kathleen Y. Wolin, ScD; Anna L. Schwartz, PhD; Charles E. Matthews, PhD, FACSM; Kerry S. Courneya, PhD; and Kathryn H. Schmitz, PhD

Summary of the ACSM Exercise Guidelines for Cancer Survivors[a]

	AEROBIC	RESISTANCE	FLEXIBILITY
US Physical Activity Guidelines for Americans (PAGA)[b]	150 min/week of moderate-intensity or 75 min/week of vigorous-intensity activity or an equivalent combination	Muscle-strengthening activities of at least moderate intensity at least 2 days/week for each major muscle group	Stretch major muscle groups and tendons on days other activities are performed
Breast	Follow US PAGA	Start with supervised program and progress slowly	Follow US PAGA
Prostate	Follow US PAGA	Follow US PAGA	Follow US PAGA
Colon	Follow US PAGA	Follow US PAGA except with stoma, where lower resistance and slower progression are recommended to avoid herniation	Follow US PAGA, taking care to avoid excess abdominal pressure if patient has ostomy
Gynecologic	Morbidly obese women may require additional supervision	Data on safety and benefits are not available for women with lower limb lymphedema	Follow US PAGA
Hematologic, no HSCT	Follow US PAGA	Follow US PAGA	Follow US PAGA
Hematologic with HSCT	Recommend starting with lighter intensity and slower progression to greater intensity and duration	Follow US PAGA; resistance training may have particular benefits in this population	Follow US PAGA

Abbreviations: ACSM, American College of Sports Medicine; HSCT, human stem cell transplant.
[a] Adapted from Schmitz et al.[2]
[b] Physical Activity Guidelines Advisory Committee.[6]

+ Evaluation

Rating[1] the Evidence Base Supporting the ACSM Exercise Guidelines for Cancer Survivors[a]

	BREAST (DURING)	BREAST (AFTER)	PROSTATE	HEMATOLOGIC (DURING OR AFTER HSCT)	HEMATOLOGIC (NO HSCT)
Safety	A	A	A	A	
Fitness	A	A	A	C	B
Strength	A	A	A	C	
Body composition	B	B	B		
QOL	B	B	B	C	
Fatigue	B	B	A	C	B
Anxiety	B	B			
Flexibility		A			
Physical function		A	B		
Lymphedema		A (is safe)			
Body image		B			

Abbreviations: ACSM, American College of Sports Medicine; HSCT, human stem cell transplant; QOL, quality of life.
[a] Adapted from Schmitz et al.[2] Evaluation of the evidence was based on NHLBI categories,[3] wherein A indicates overwhelming data from randomized controlled trials; B indicates that few randomized controlled trials exist or they are small and results are inconsistent; C indicates that results stem from uncontrolled, nonrandomized, and/or observational studies; and D indicates evidence insufficient for categories A–C. Blanks (as well as the nonlisting of a specific type of cancer) indicate that there was insufficient evidence to rate the data.

J Support Oncol 2011

Resistance Training in Breast Cancer Survivors: A Systematic Review of Exercise Programs

Leidy Sofía Montaño-Rojas [1,*], Ena Monserrat Romero-Pérez [2,*], Carlos Medina-Pérez [3], María Mercedes Reguera-García [4] and José Antonio de Paz [5]

→ Amélioration de la force, fatigue, qualité de vie, douleur, …

Table 10. Results and safety of resistance training.

Result	Training Safety
During Treatment	
↑Muscle strength [8,9,20,21,23,24,26–30,55]	No adverse events [8,9,20–22,24–30,32–34,55]
↑ Aerobic capacity [24,55]	NR [23,31]
↔ Aerobic capacity [8,9,20,21,26–29]	-
(↑) Aerobic capacity [23]	-
↓ Fatigue [8,9,20,21,26–29]	-
↔ Bodyweight [24]	-
↔ Body composition [24]	-
Attenuates the decrease in BMD [23]	-
↑ LBM [9,20,21]	-
↔ Upper Limbs Volume [9,20,21,25,32–34,55]	-
↓ Sarcopenia and Dynapenia [22]	-
↑ QoL [8,9,20–22,26–29,33,55]	-
↑ Self-perceptions [9,20,21]	-
↓ Anxiety [9,20,21]	-
↔ Depression [8,26–29]	-
↓ Pain [8,25–29]	-
Stronger effects on DFS, OS, DDFS, RFI [9,20,21]	-
(↑) Cognitive performance [8,26–29]	-
↓ IL-6, IL-6/IL-1ra [8,26–29]	-
Not suppress cellular immunity [31]	-
Post Treatment	
↑Muscle strength [7,10,35–38,40–42,45–54,56]	↔ Incidence of fractures or falls [37,46–54]
↑Muscle endurance [56]	NR [7,38–41]
↔ EMG [42]	No adverse events [45–54,56]
(↑) Aerobic capacity [39]	↓ Number and severity of symptoms [46–54]
↓ Fatigue [7,38,41]	-
↑ Perceived exertion [39]	-
(↑) ROM [38]	-
↑ ROM [56]	-
↔ BMI [10,35,36,40,46–54]	-
(↓) BMI [39]	-
↔ Body weight [10,35,36,46–54]	-
↔ Body composition [7,10,35,36,41,46–54]	-
↓ Body fat [45–54]	-
↔ Bone formation [40,46–54]	-

Int. J. Environ. Res. Public Health 2020

Renforcement musculaire ?

The Role of Resistance Exercise on All-cause Mortality in Cancer Survivors

Justin P. Hardee, MS, **Ryan R. Porter, MS**, **Xuemei Sui, MD, PhD**, **Edward Archer, PhD**, **I-Min Lee, MD, ScD**, **Carl J. Lavie, MD**, and **Steven N. Blair, PED**

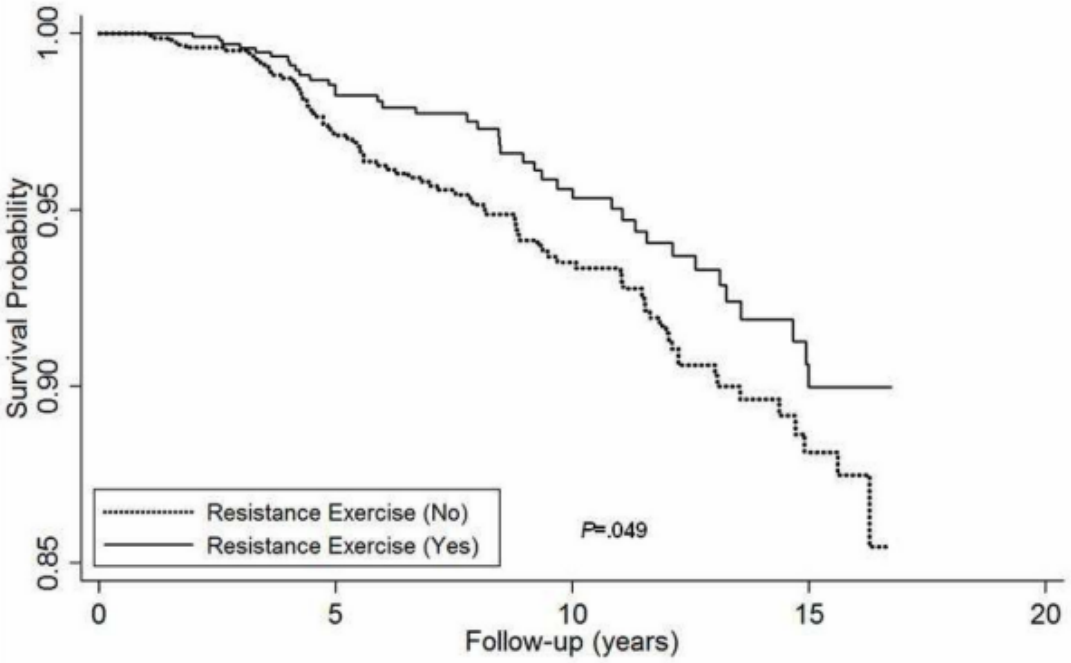


Figure 1.
Kaplan-Meier survival curves for all-cause mortality by resistance exercise among cancer survivors, Aerobics Center Longitudinal Study, Dallas, Texas, 1987 to 2003.

Mayo Clin Proc 2014

Exercise, Diet, and Weight Management During Cancer Treatment: ASCO Guideline

Jennifer A. Ligibel, MD[1]; Kari Bohlke, ScD[2]; Anne M. May, PhD[3]; Steven K. Clinton, MD, PhD[4]; Wendy Demark-Wahnefried, PhD, RD[5]; Susan C. Gilchrist, MD, MS[6]; Melinda L. Irwin, PhD, MPH[7]; Michele Late[8]; Sami Mansfield, BA[9]; Timothy F. Marshall, PhD, MS[10]; Jeffrey A. Meyerhardt, MD, MPH[1]; Cynthia A. Thomson, PhD, RD[11]; William A. Wood, MD, MPH[12]; and Catherine M. Alfano, PhD[13]

RECOMMENDATIONS Oncology providers should recommend regular aerobic and resistance exercise during active treatment with curative intent and may recommend preoperative exercise for patients undergoing surgery for lung cancer. Neutropenic diets are not recommended to prevent infection in patients with cancer during active treatment. Evidence for other dietary and weight loss interventions during cancer treatment was very limited. The guideline discusses special considerations, such as exercise in individuals with advanced cancer, and highlights the critical need for more research in this area, particularly regarding diet and weight loss interventions during cancer treatment.

→Précoce
→Poids & nutrition
→Pluridisciplinarité

J. Clin Oncol. 2022

Which exercise prescriptions optimize $\dot{V}O_2$max during cancer treatment?—A systematic review and meta-analysis

Ann Christin Helgesen Bjørke[1] | Maike G. Sweegers[2,3] | Laurien M. Buffart[2,3,4] | Truls Raastad[5] | Peter Nygren[6] | Sveinung Berntsen[1,7]

Impact of exercise on cardiorespiratory fitness, by study

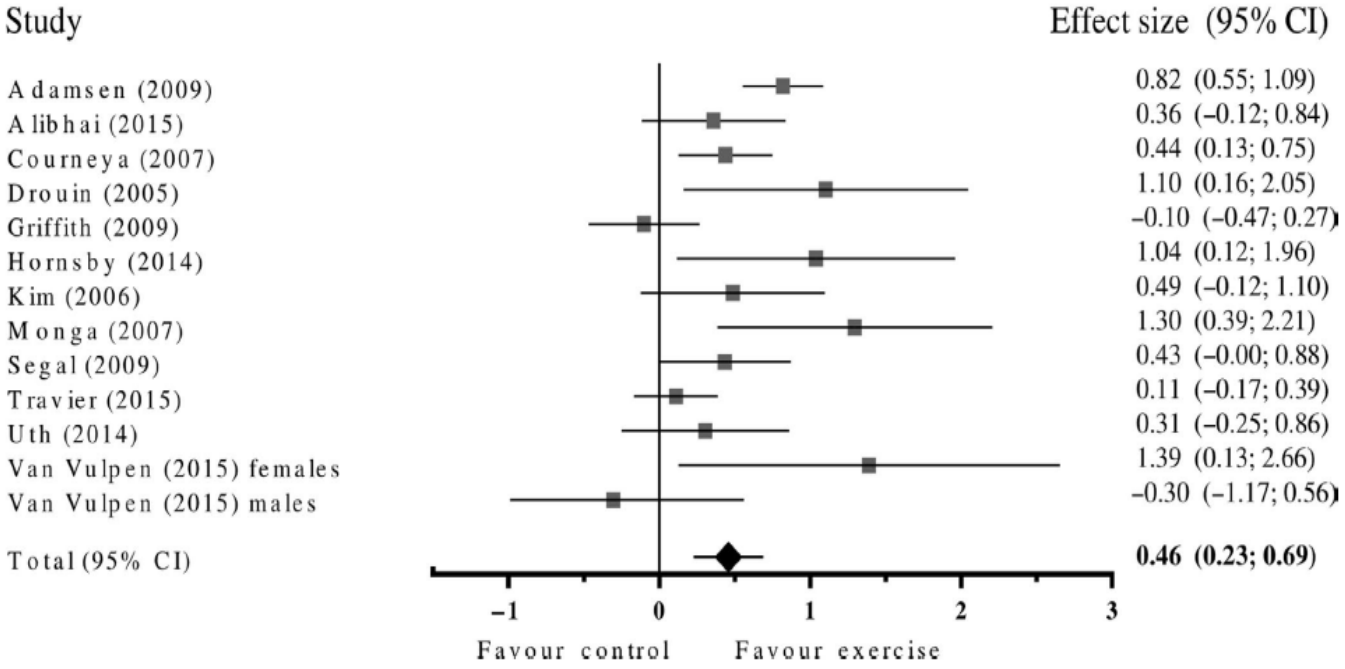


FIGURE 2 Pooled effects of aerobic exercise training compared with non-exercise control on cardiorespiratory fitness

→ Effet volume certainement, intensité sans doute
Pendant les traitement, après les traitements

Scand J Med Sci Sports. 2019

Discussion :
Quelles prises en charge pour les cancéreux avec et sans pathologie cardiovasculaire ?

L. Serrano, Puilboreau
M. Lamotte, Bruxelles - BEL,

→Modalités pratiques

→Fonctionnement

La situation en Belgique

Via les codes physio

Pourparlers FCC avec la SS pour créer une convention

Modèle pluridisciplinaire ambulatoire de cardio

Supervisé par … un cardiologue !

Sensibiliser les patients et le personnel

Initiatives phase III, non prise en charge par la SS

- Pour qui ?
- Par qui ?
- Avec qui ?

Sondage

Est-ce qu'une réadaptation structurée est proposée dans votre structure ?

- Oui
- Non

Si non, pourquoi ?

- Je n'y crois pas
- Manque de connaissance
- Manque de personnel
- Pas de remboursement

Supervisée par ?

- Des oncologues
- Des médecins physique
- Des pneumologues
- Des cardiologues

Un bilan par EFX est il réalisé ?

- Oui
- Non


JE VOUS SOUHAITE TOUT CE QUE VOUS SOUHAITIEZ QU'ON VOUS SOUHAITE
... MAIS EN MIEUX !