Le rôle de l'exercice physique et des saines habitudes de vie sur la santé cognitive

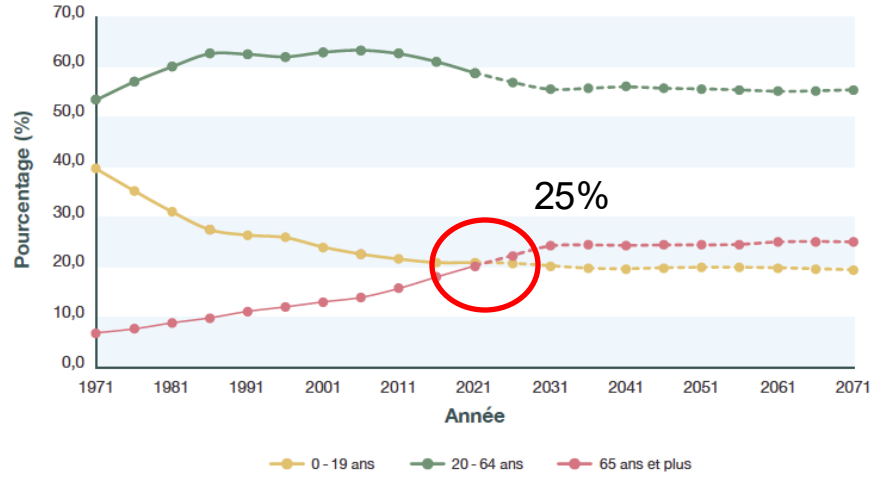
Louis Bherer, Ph.D. FCAHS
Professeur titulaire, Département de Médecine, Université de Montréal,
Chercheur et Directeur du Centre ÉPIC, Institut de cardiologie de Montréal
Chercheur, Institut Universitaire de Gériatrie de Montréal

IVPSA - Québec
17 novembre 2025

Vieillissement démographique

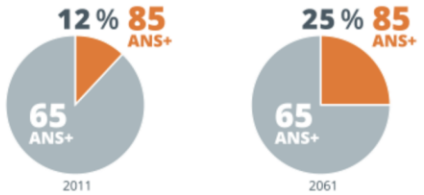
PORTRAIT DÉMOGRAPHIQUE

FIGURE 6.
ÉVOLUTION DE LA PROPORTION DE DIFFÉRENTS GROUPES D'ÂGE, QUÉBEC, 1971 À 2071



Des aînés de plus en plus âgés

En 2011, la proportion d'aînés âgés de 85 ans et plus était de 12 %, alors qu'elle frôlera les 25 % en 2061[1].



Malgré un écart qui s'amenuise entre les hommes et les femmes, elles sont toujours plus nombreuses à accéder aux âges avancés de la vie. Ainsi, en 2011, elles représentaient 70 % des 85 ans et plus[12].

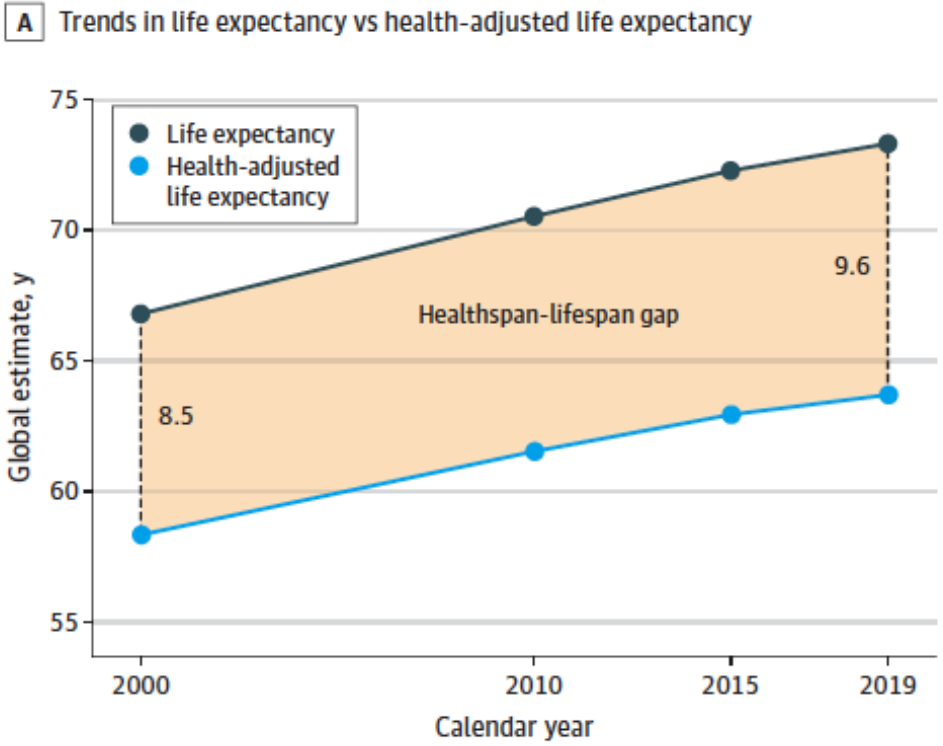
ICM-01-01-2012-08

JAMA Network Open. 2024;7(12):e2450241. doi:10.1001/jamanetworkopen.2024.50241

Original Investigation | Global Health

Global Healthspan-Lifespan Gaps Among 183 World Health Organization Member States

Armin Garmany, BS; Andre Terzic, MD, PhD

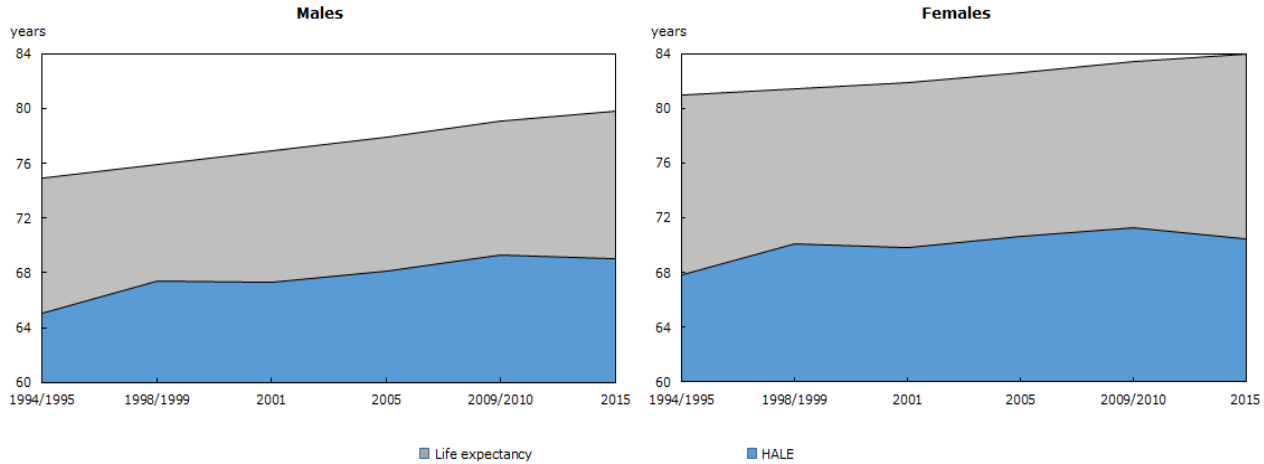


ICM-01-01-2012-08

Aging demographic vs. HALE

Health-adjusted life expectancy

Figure 1
Life expectancy and health-adjusted life expectancy (HALE) at birth, by sex, household and institutional populations combined, Canada, 1994/1995, 1998/1999, 2001, 2005, 2009/2010 and 2015



Sources: 1994/1995 and 1998/1999 National Population Health Survey; 2001, 2005, 2009/2010 and 2015 Canadian Community Health Survey; 1996, 2001, 2006, 2011 and 2016 Census of Population; life tables for 1993-to-1995, 1997-to-1999, 2000-to-2002, 2004-to-2006, 2009-to-2011 and 2013-to-2015.

Au Canada,

Gap = +10

80% des 65+ on une maladie chronique

90% des 60+ un FRCV

https://www150.statcan.gc.ca/n1/pub/82-003-x/2018004/article/54950/c-g/c-g01-eng.htm

ICM-01-01-2012-08

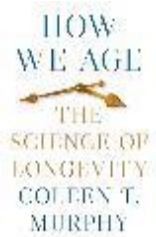
“Every man desires to live long, but no man wishes to be old.”

Jonathan Swift (1667-1745), Gulliver’s Travels

Deux approches scientifiques au « problème » du vieillissement.

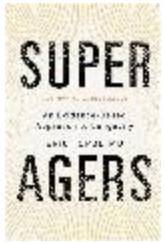
1-Ralentir les mécanismes du vieillissement cellulaires.

(How we Age: The science of Longivity, C.T. Murphy 2023)



2-Prévenir les maladies chroniques pour vieillir plus longtemps.

(Super Agers: An Evidence-Based Approach to Longevity, Eric Topol, 2025)



ICM-01-01-2012-08

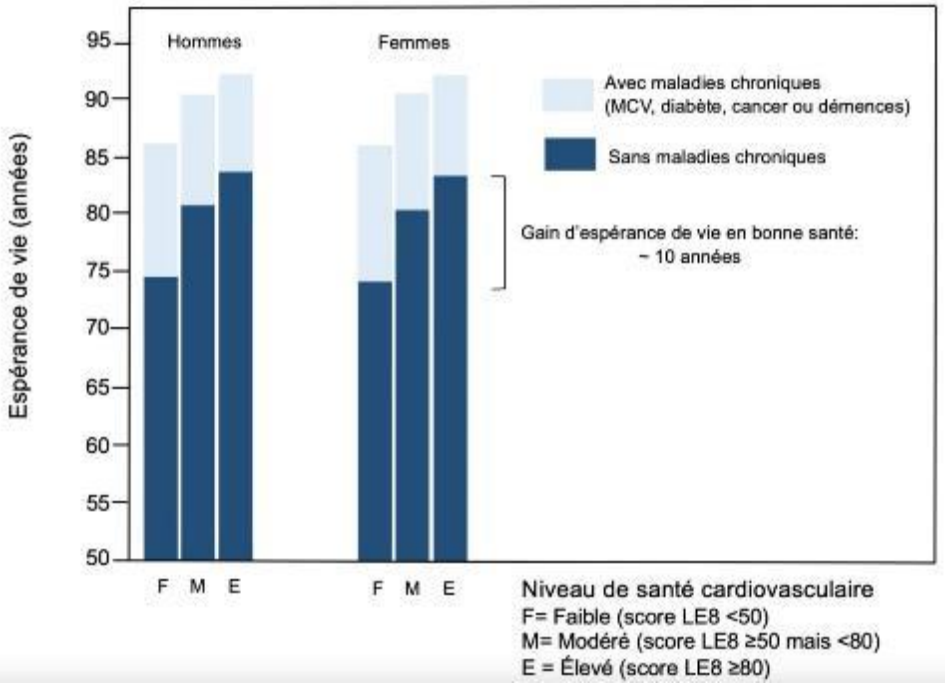
Les habitudes de vie sont la clé pour améliorer l'espérance de vie en bonne santé

14 Juin 2023 | Dr Martin Juneau, M.D., FRCP

L'adoption d'une série de mesures qui optimisent la santé cardiovasculaire est associée à une hausse significative du nombre d'années de vie sans maladies chroniques.

OBSERVATOIRE DE LA PRÉVENTION

INSTITUT DE CARDIOLOGIE DE MONTRÉAL



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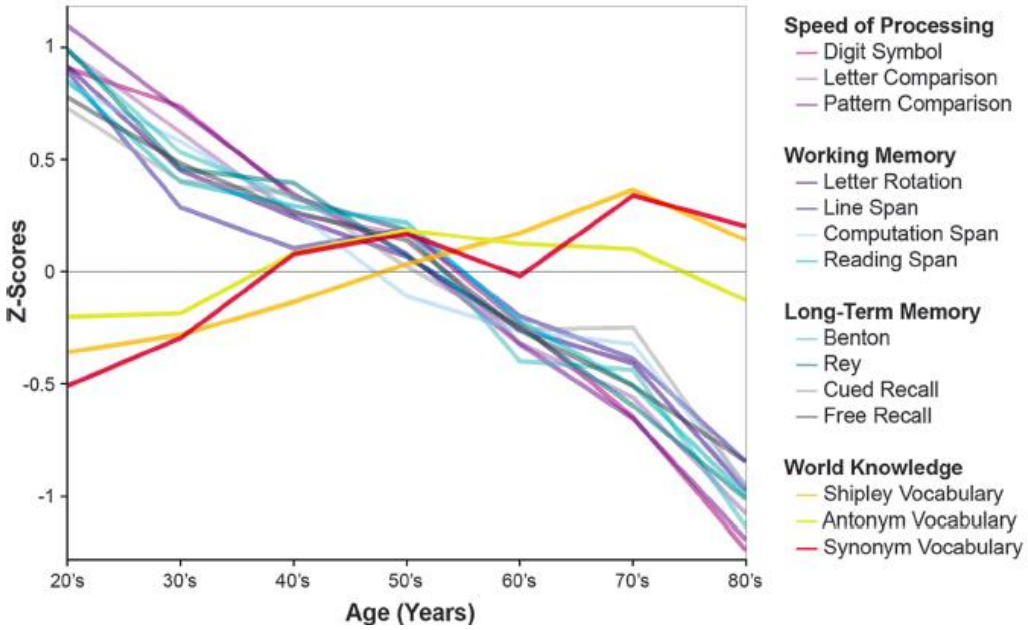
INSTITUT DE CARDIOLOGIE DE MONTRÉAL

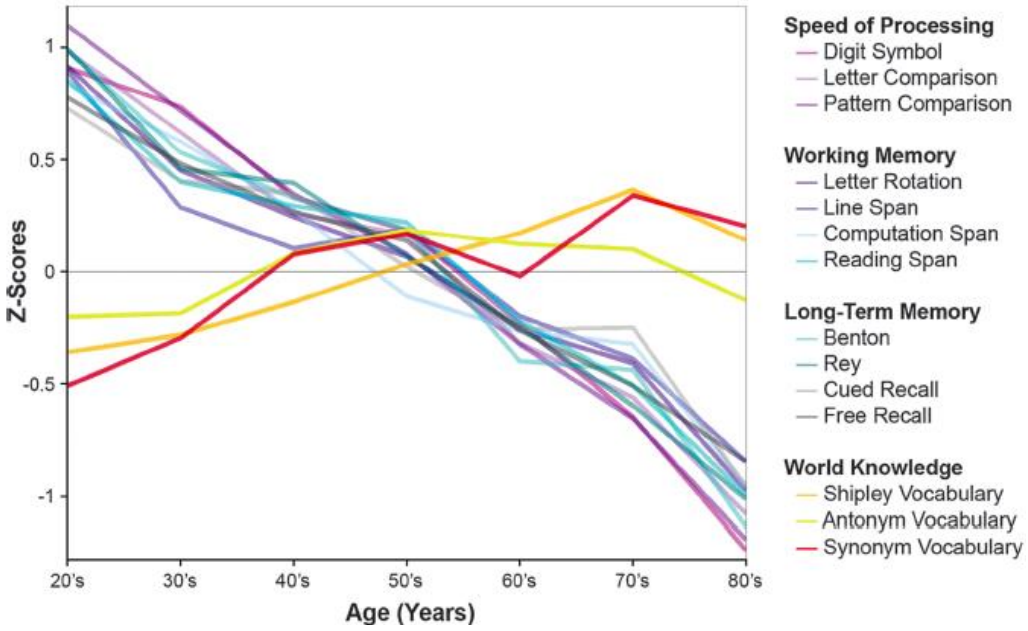
Université de Montréal

Prévenir le déclin cognitif ?



ICM-01-01-2012-08

Prévenir le déclin cognitif ?



Potential Mechanisms of Cognitive Decline

Cognitive decline during aging is a multidimensional issue that deserves a broader perspective. Hence, the division into central, central-peripheral, and peripheral factors/mechanisms seems to be the most appropriate and is summarized in Figure 1.

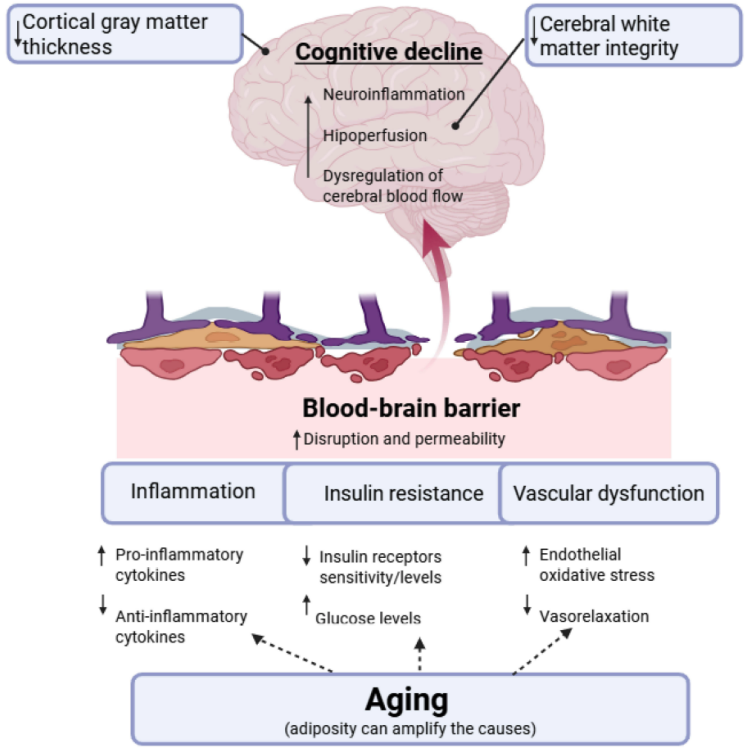


Figure 1 Factors affecting cognitive decline in aging.

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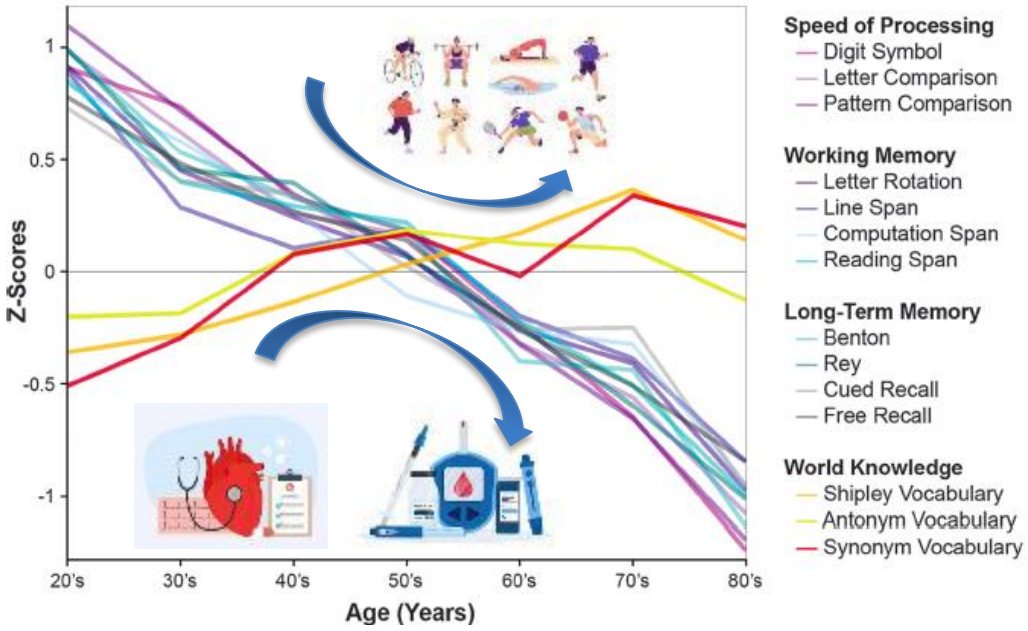
Prévenir le déclin cognitif ?



Potential Mechanisms of Cognitive Decline

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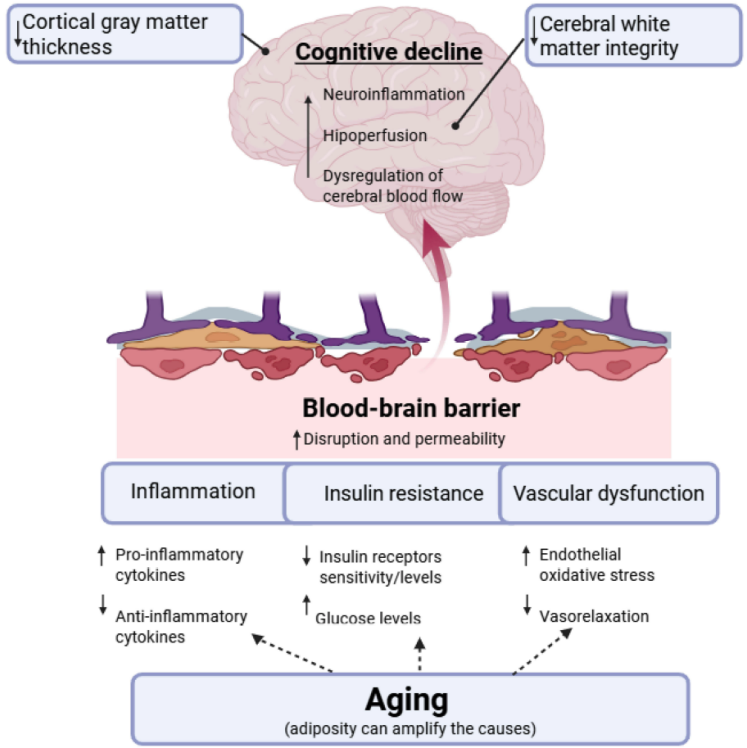

Figure 1 Factors affecting cognitive decline in aging.

ICM-01-01-2012-08

Dementia prevention, intervention, and care: 2024 report of the *Lancet* standing Commission

www.thelancet.com Vol 404 August 10, 2024

Gill Livingston, Jonathan Huntley, Kathy Y Liu, Sergi G Costafreda, Geir Selbæk, Suvarna Alladi, David Ames, Sube Banerjee, Alistair Burns, Carol Brayne, Nick C Fox, Cleusa P Ferri, Laura N Gitlin, Robert Howard, Helen C Kales, Mika Kivimäki, Eric B Larson, Noeline Nakasujja, Kenneth Rockwood, Quincy Samus, Kokoro Shirai, Archana Singh-Manoux, Lon S Schneider, Sebastian Walsh, Yao Yao, Andrew Sommerlad, Naaheed Mukadam**

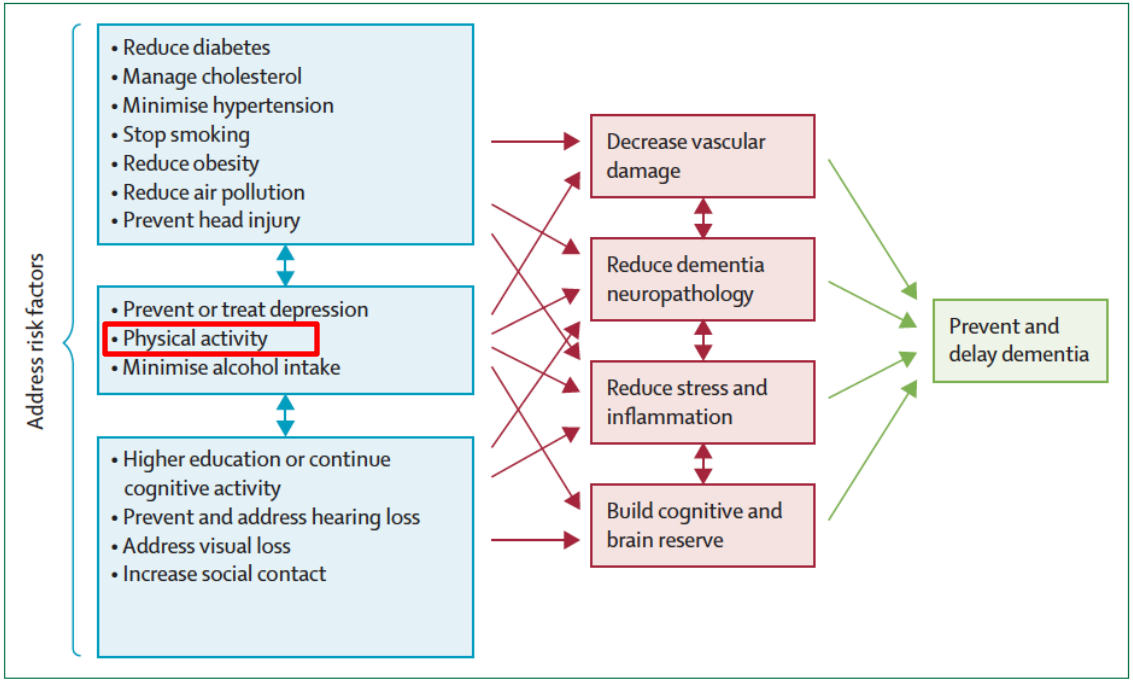

Figure 2: **Possible brain mechanisms for enhancing or maintaining cognitive reserve and risk reduction of potentially modifiable risk factors in dementia**

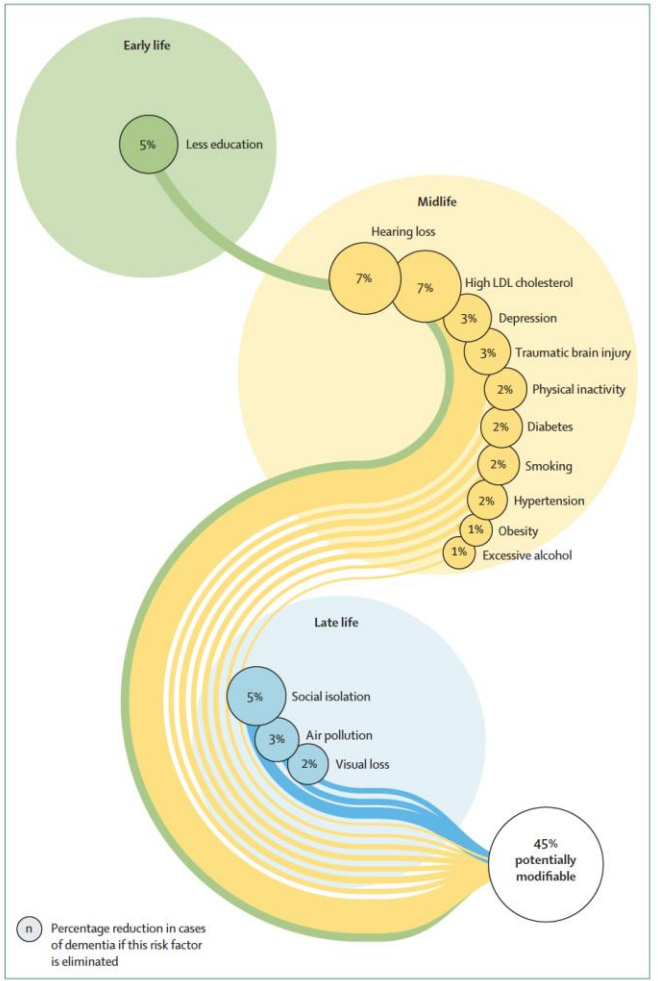

Figure 9: **Population attributable fraction of potentially modifiable risk factors for dementia**

Activité physique

Mastering the Relationship between the Body and the Brain? The Case of a Female Master Athlete

To cite this article: Kathia Saillant, Brittany Intzandt, Béatrice Bérubé, Safa Sanami, Claudine Gauthier & Louis Bherer (2022): Mastering the Relationship between the Body and the Brain? The Case of a Female Master Athlete, Experimental Aging Research, DOI: 10.1080/0361073X.2022.2109340

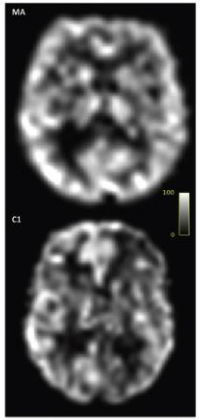

Figure 1. Resting CBF maps. Cerebral blood flow maps at rest in the Master Athlete (MA) and the control participant (C1). The scaling of these resting CBF maps is a perfusion range of 0 to 100 ml/100 g of gray matter tissue/min

Alice Cole; 91yrs, 800m in 3m.42s. Started to run at 70yrs

Oct 16th 2016, the Canadian **Ed Whitlock, 85 yrs.**, ran the Toronto marathon in 3h56'38… pulverized the world record by 30 minutes in the 85-89 category ! Ed Whitlock (March 6, 1931 – March 13, 2017)

Robert Dion, 88ans, La Presse Sept 2025
« Ma dernière réalisation fut le 10 km du Marathon de Montréal… j'ai franchi la ligne d'arrivée en 1 h 07 min 52 s. Fait étonnant : j'étais le seul octogénaire parmi les 6000 coureurs inscrits.

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LABORATOIRE D'ETUDE DE LA SANTE COGNITIVE DES AINES
COGNITIVE HEALTH AND AGING RESEARCH LAB

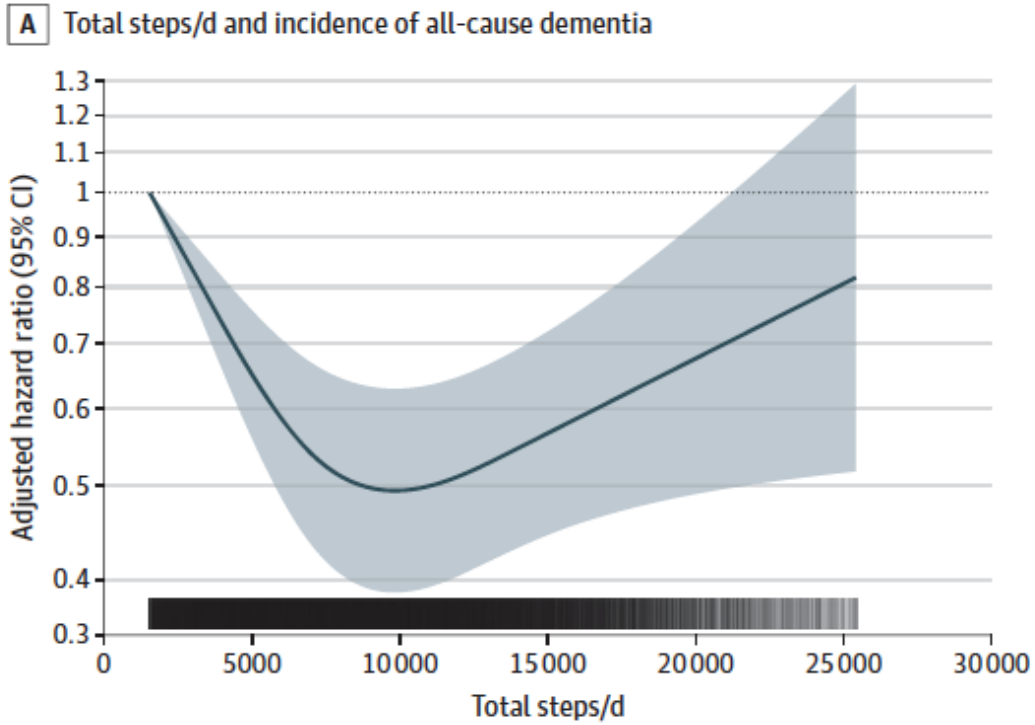
CENTRE ÉPIC
INSTITUT DE CARDIOLOGIE DE MONTRÉAL

JAMA Neurology | Brief Report

Association of Daily Step Count and Intensity With Incident Dementia in 78 430 Adults Living in the UK

JAMA Neurol. doi:10.1001/jamaneurol.2022.2672
Published online September 6, 2022.

Borja del Pozo Cruz, PhD; Matthew Ahmadi, PhD; Sharon L. Naismith, PhD; Emmanuel Stamatakis, PhD

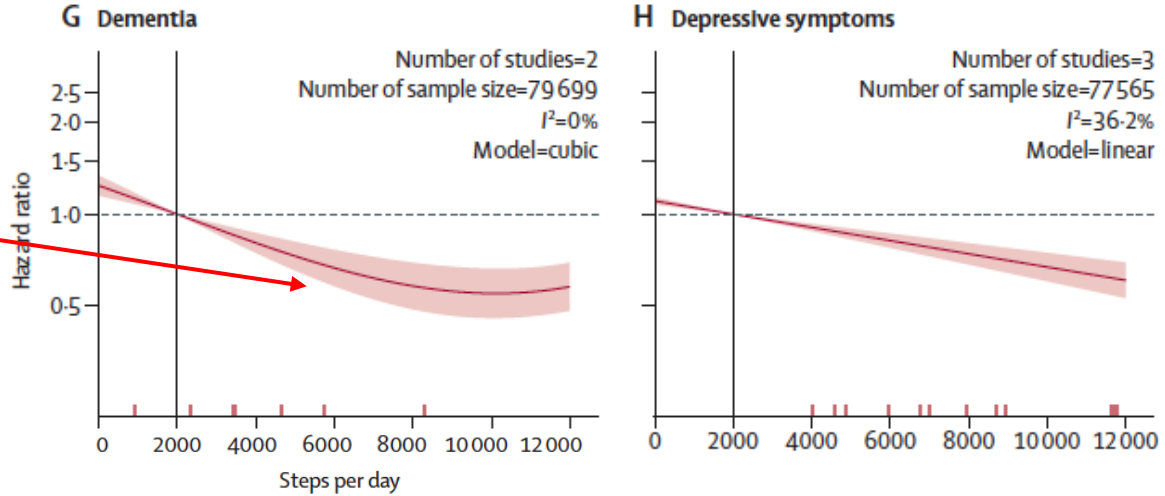


www.thelancet.com/public-health **Published online July 23, 2025** https://doi.org/10.1016/S2468-2667(25)00164-1

Daily steps and health outcomes in adults: a systematic review and dose-response meta-analysis

Ding Ding, Binh Nguyen, Tracy Nau, Mengyun Luo, Borja del Pozo Cruz, Paddy C Dempsey, Zachary Munn, Barbara J Jefferis, Cathie Sherrington, Elizabeth A Calleja, Kar Hau Chong, Rochelle Davis, Monique E Francois, Anne Tiedemann, Stuart J H Biddle, Anthony Okely, Adrian Bauman, Ulf Ekelund, Philip Clare, Katherine Owen**

Moderate evidence for 38% lower risk of dementia at 7000/2000 steps/day



nature aging

Letter

https://doi.org/10.1038/s43587-024-00688-y

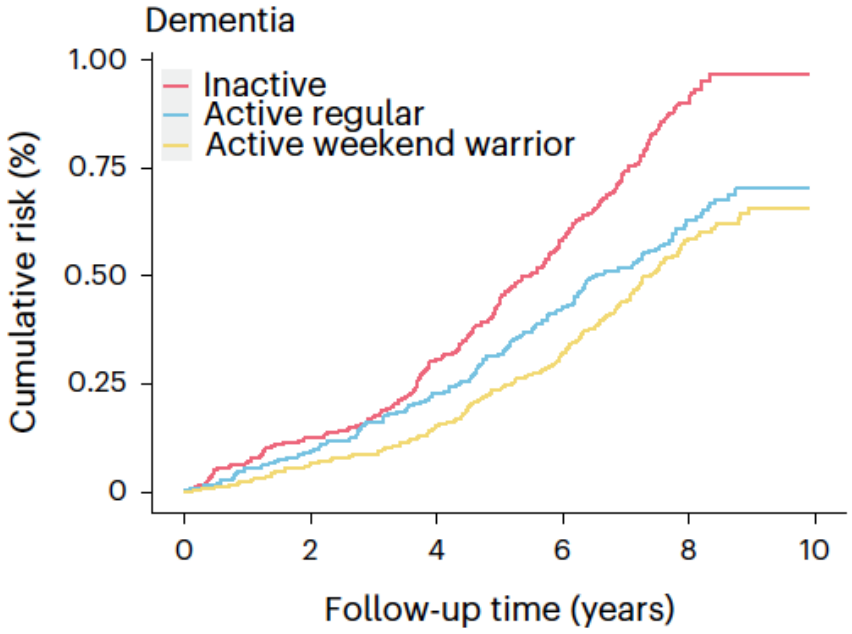
Accelerometer-derived 'weekend warrior' physical activity pattern and brain health

Received: 21 December 2023

Accepted: 16 July 2024

Published online: 21 August 2024

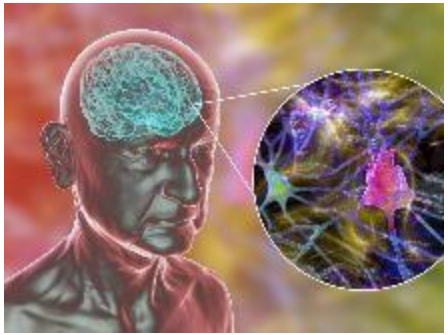
Jiahao Min[1,6], Zhi Cao[2,6], Tingshan Duan[1], Yaogang Wang[3,4,5,7] & Chenjie Xu[1,7]

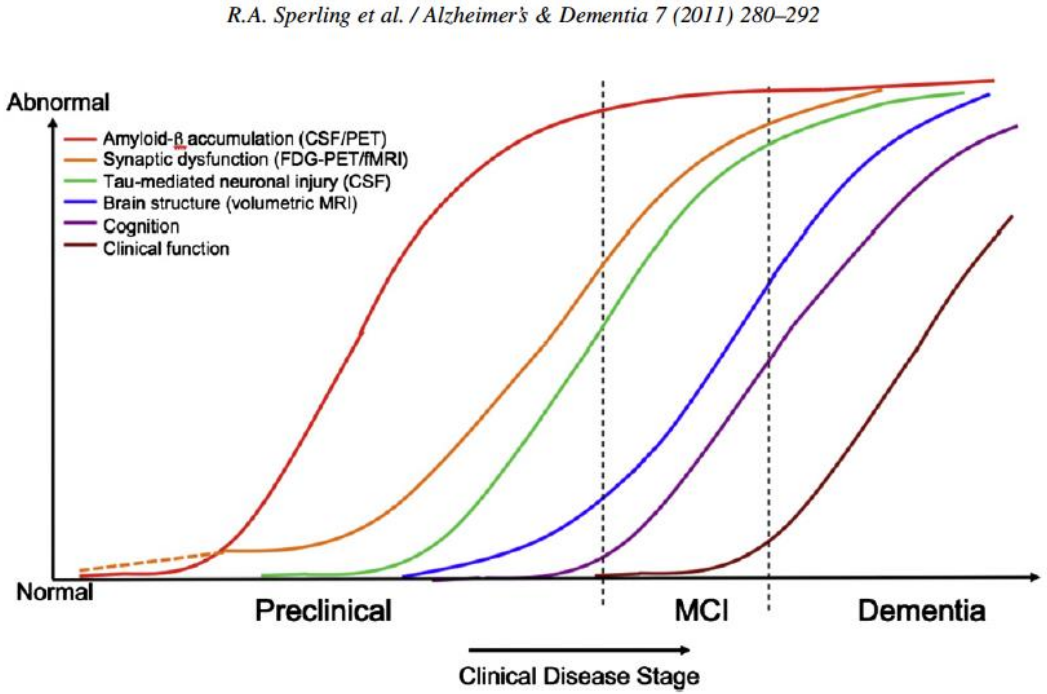


ICM-01-01-2012-08

INSTITUT DE CARDIOLOGIE DE MONTRÉAL
Université de Montréal

Lien avec les biomarqueurs de démence ?



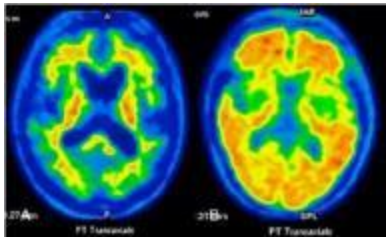


nature medicine

Article

https://doi.org/10.1038/s41591-025-03955-6

Physical activity as a modifiable risk factor in preclinical Alzheimer's disease



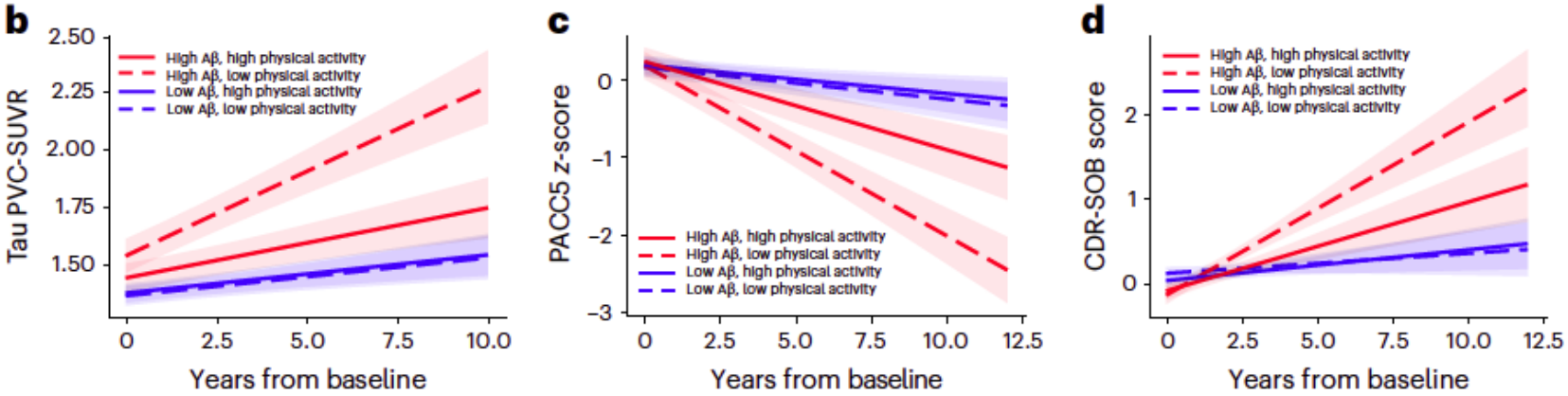
Received: 4 December 2024

Accepted: 12 August 2025

Published online: 03 November 2025

Wai-Ying Wendy Yau[1,2], Dylan R. Kirn[1], Jennifer S. Rabin[3,4,5], Michael J. Properzi[1], Aaron P. Schultz[1,2], Zahra Shirzadi[1,2], Kailee Palmgren[1], Paola Matos[1], Courtney Maa[1], Jeremy J. Pruzin[6], Stephanie A. Schultz[1,2], Rachel F. Buckley[1,2,7], Dorene M. Rentz[1,2], Keith A. Johnson[1,2,8], Reisa A. Sperling[1,2] & Jasmeer P. Chhatwal[1,2]

Dose–response: associations with slower tau accumulation and cognitive decline reached a plateau at a moderate level of PA (5,001–7,500 steps per day),



ICM-01-01-2012-08

nature human behaviour https://doi.org/10.1038/s41562-024-01949-x

Do not underestimate the cognitive benefits of exercise

Olivier Dupuy[1,2,33], Sebastian Ludyga[3,33] ✉, Francisco B. Ortega[4,5,6], Charles H. Hillman[7,8], Kirk I. Erickson[9,10], Fabian Herold[11], Keita Kamijo[12], Chun-Hao Wang[13,14], Timothy P. Morris[8], Belinda Brown[15,16], Irene Esteban-Cornejo[4,5,17], Patricio Solis-Urra[4,18], Laurent Bosquet[1], Markus Gerber[3], Said Mekari[19,20], Nicolas Berryman[21,22,23], Louis Bherer[24], Ben Rattray[25], Teresa Liu-Ambrose[26,27,28], Claudia Voelcker-Rehage[29] & Boris Cheval[30,31,32]

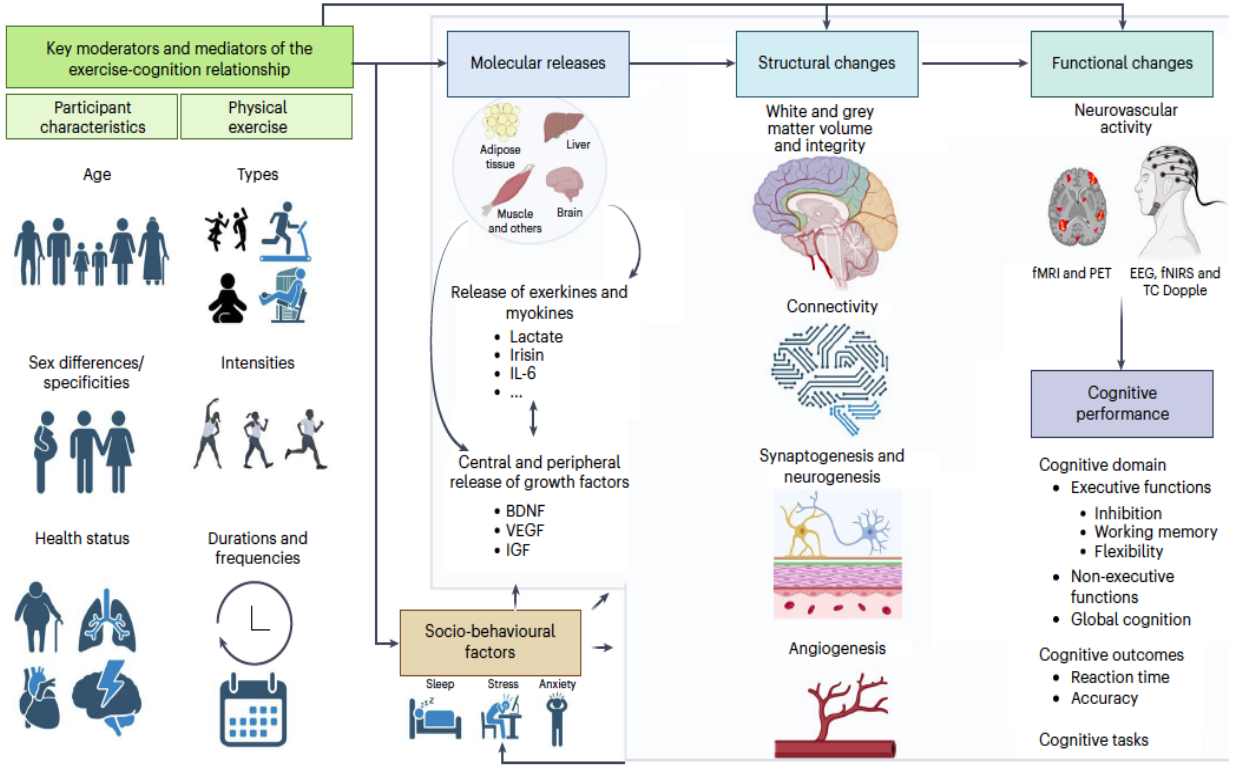


Fig. 1 | Overview of mechanisms underlying the effects of exercise on cognitive function across ages. BDNF, brain-derived neurotrophic factor; EEG, electroencephalography; fMRI, functional magnetic resonance imaging; fNIRS, functional near-infrared spectroscopy; IGF, insulin growth factor; IL-6, interleukin 6; PET, positron emission tomography; TC Doppler, transcranial Doppler ultrasound; VEGF, vascular endothelial growth factor. Created with BioRender.com.

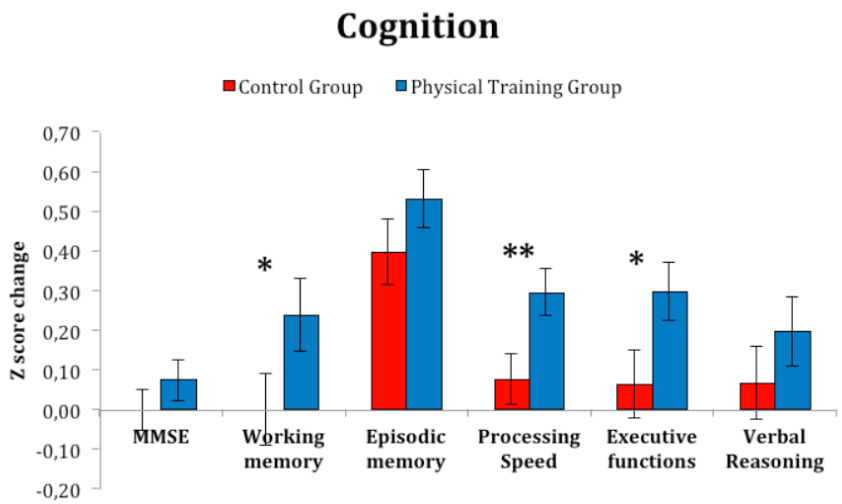
Études interventionnelles

ICM-01-01-2012-08

Journal of Gerontology: Psychological Sciences, 2013

Benefits of Physical Exercise Training on Cognition and Quality of Life in Frail Older Adults

Francis Langlois,[1,2] Thien Tuong Minh Vu,[2,3] Kathleen Chassé,[2] Gilles Dupuis,[1,4] Marie-Jeanne Kergoat,[2] and Louis Bherer[1,2]



Equivalent improvement in frail and non-frail older adults after 3 months

Volume 76, Issue 2
February 2021

Article Contents

EDITOR'S CHOICE

Physical Exercise Training Effect and Mediation Through Cardiorespiratory Fitness on Dual-Task Performances Differ in Younger–Old and Older–Old Adults

FREE

Louis Bherer, PhD ✉, Antoine Langeard, PhD, Navin Kaushal, PhD, Tudor Vrinceanu, Laurence Desjardins-Crépeau, PhD, Francis Langlois, PhD, Arthur F Kramer, PhD

The Journals of Gerontology: Series B, Volume 76, Issue 2, February 2021, Pages 219–228,
https://doi.org/10.1093/geronb/gbz066
Published: 23 May 2019 **Article history** ▾

Table 1. Participants Characteristics

	Younger–old adults			Older–old adults		
Characteristics	Control group	Intervention group	*p* Value	Control group	Intervention group	*p* Value
Sample	19	49		33	42	
Sex (% of men)	11%	18%	.438	21%	33%	.253
Age (years)	64.32 (3.4)	65.27 (2.81)	.243	75.03 (3.65)	76.10 (4.63)	.283
MMSE (/30)	29.06 (1.08)	28.69 (0.99)	.201	28.70 (1.04)	28.61 (1.32)	.758
CRF(mL/kg/min)	23.40 (6.45)	24.95 (7.39)	.466	23.96 (8.01)	19.67 (12.17)	.148
Education (years)	12.93 (2.74)	14.84 (3.50)	.061	13.08(.627)	13.60 (.556)	.537

Note. MMSE = Mini-mental State Examination; CRF = cardiorespiratory fitness.

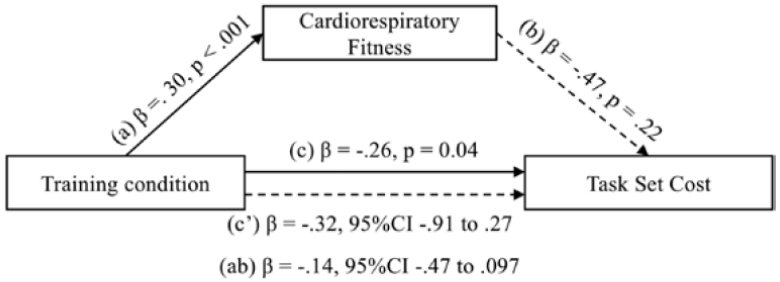


Figure 2. Mediation of training condition effect on task-set cost by cardiorespiratory fitness in younger–old adults.

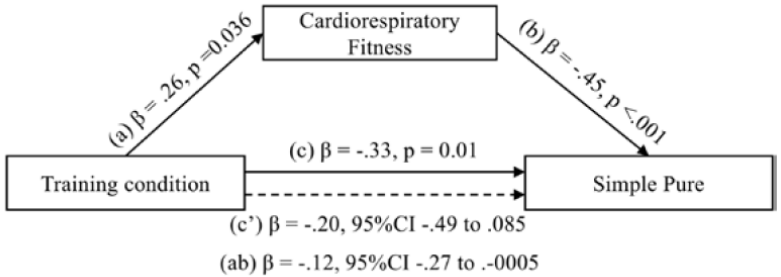


Figure 3. Mediation of training condition effect on pure single-task trials by cardiorespiratory fitness in older–old adults.

Interventions multi-domaines

ICM-01-01-2012-08

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Single-domain and multidomain lifestyle interventions for the prevention of cognitive decline in older adults who are cognitively unimpaired: a systematic review and network meta-analysis

Augusto J Mendes, Federica Ribaldi, Ozge Sayin, Giorgi Khachvani, Roberta Mulargia, Gabriele Volpara, Giulia Remoli, Umberto Nencha, Stefano Gianonni-Luza, Stefano Cappa, Giovanni B Frisoni

Interventions vs no intervention (global cognition)

Treatment	SMD	95% CI
E + C	0·33	(0·16 to 0·49)
Cognitive training	0·27	(0·17 to 0·37)
E + C + H	0·27	(–0·04 to 0·57)
D + E + C + H	0·21	(0·08 to 0·33)
Physical exercise	0·20	(0·11 to 0·30)
D + E	0·16	(–0·04 to 0·37)
Diet	0·16	(0·01 to0·31)
Active control	0·13	(–0·02 to 0·28)
D + E + H	0·10	(–0·13 to 0·33)
Health education	0·07	(–0·03 to 0·17)
Social activity	0·05	(–0·19 to 0·30)

ICM-01-01-2012-08

Interventions multi-domaines combinant exercice physique et entraînement cognitif

THE GERONTOLOGICAL SOCIETY OF AMERICA®

Journals of Gerontology: Psychological Sciences
cite as: *J Gerontol B Psychol Sci Soc Sci*, 2021, Vol. 76, No. 8, 1533–1541
doi:10.1093/geronb/gbaa124
Advance Access publication August 17, 2020

OXFORD

Research Article

Synergistic Effects of Cognitive Training and Physical Exercise on Dual-Task Performance in Older Adults

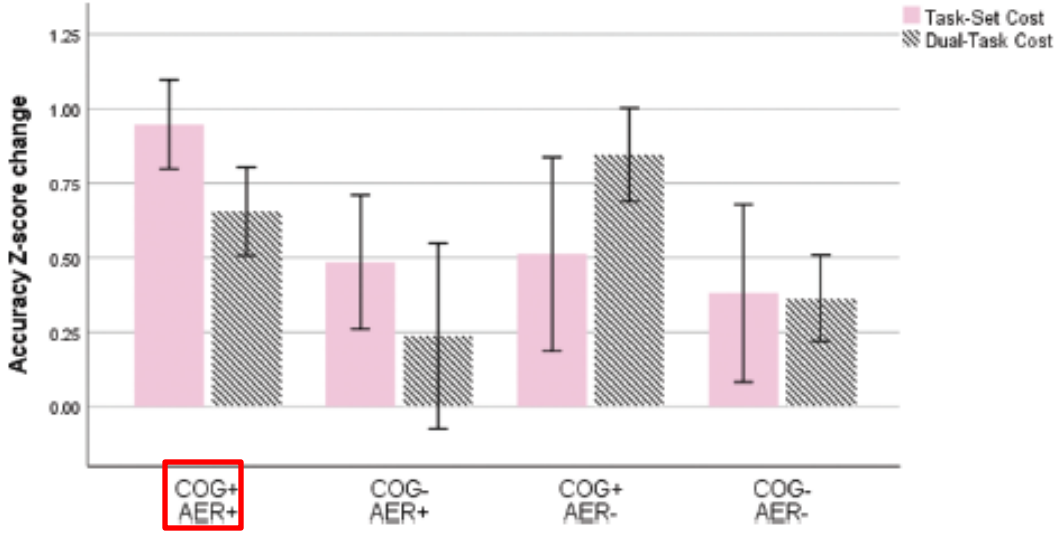
Louis Bherer, PhD,[1–3,*] Christine Gagnon, PhD,[2] Antoine Langeard, PhD,[2,◦] Maxime Lussier, PhD,[3,4] Laurence Desjardins-Crépeau, PhD,[3] Nicolas Berryman, PhD,[3,5] Laurent Bosquet, PhD,[6] Thien Tuong Minh Vu, MD,[1,7] Sarah Fraser, PhD,[8] Karen Z. H. Li, PhD,[9] and Arthur F. Kramer, PhD[10,11]

Dual-Task

+

VS

VS



ICM-01-01-2012-08

Aging Clinical and Experimental Research
https://doi.org/10.1007/s40520-017-0878-5

ORIGINAL ARTICLE

A comparison of the impact of physical exercise, cognitive training and combined intervention on spontaneous walking speed in older adults

Kristell Pothier[1,2] · Christine Gagnon[1,3] · Sarah A. Fraser[4] · Maxime Lussier[1,5] · Laurence Desjardins-Crépeau[1,3] · Nicolas Berryman[1,6] · Marie-Jeanne Kergoat[1,7] · T. T. Minh Vu[7,8] · Karen Z. H. Li[2,9] · Laurent Bosquet[10] · Louis Bherer[1,2,3,7]

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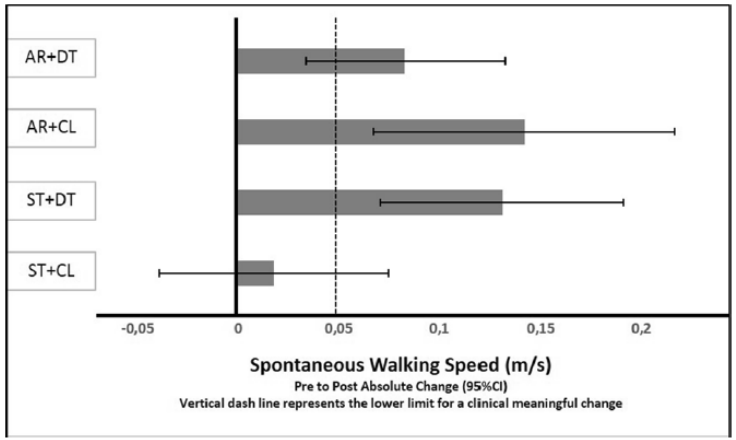


Fig. 1 Pre- to post-training change of spontaneous walking speed per group. *AR* aerobic and resistance, *ST* stretching, *DT* dual task, *CL* computer lessons

Montero-Odasso *et al. BMC Geriatrics* (2018) 18:93
https://doi.org/10.1186/s12877-018-0782-7

BMC Geriatrics

STUDY PROTOCOL Open Access

SYNERGIC TRIAL (SYNchronizing Exercises, Remedies in Gait and Cognition) a multi-Centre randomized controlled double blind trial to improve gait and cognition in mild cognitive impairment

Manuel Montero-Odasso[1,2,3*], Quincy J. Almeida[4], Amer M. Burhan[5], Richard Camicioli[6], Julien Doyon[7], Sarah Fraser[8], Karen Li[9], Teresa Liu-Ambrose[10], Laura Middleton[11], Susan Muir-Hunter[12], William McIlroy[13], José A. Morais[14], Frederico Pieruccini-Faria[1,3], Kevin Shoemaker[15], Mark Speechley[2], Akshya Vasudev[16], G. Y. Zou[2,17], Nicolas Berryman[18,19], Maxime Lussier[18,20], Leanne Vanderhaeghe[21] and Louis Bherer[9,18,20,22]

Équipe 12 – 5 sites au Canada

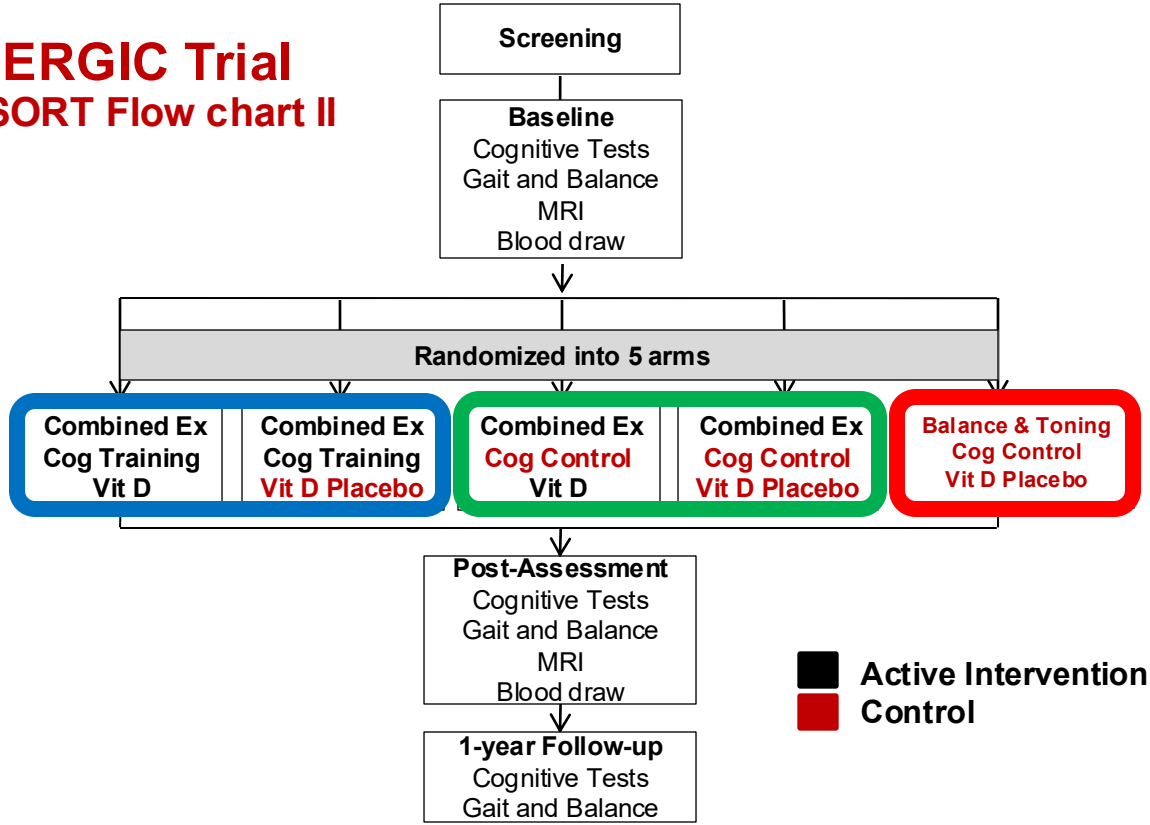
- **Dr Manuel Montero-Odasso (Team Leader)**, St.Joseph Health Care, Parkwood Hospital, London, Ontario.
- **Dr Louis Bherer (Co-Leader)**, Université de Montréal, Montréal, Québec.
- **Dr Teresa Liu-Ambrose**, University of British Columbia, Vancouver, Colombie britannique.
- **Dr Laura Middleton**, University of Waterloo, Walterloo, Ontario
- **Dr Quincy Almeida**, Wilfrid Laurier University, Waterloo, Ontario

Clinicaltrials.org : NCT02808676

CCNA
Canadian Consortium on Neurodegeneration in Aging

CCNV
Consortium canadien en neurodégénérescence associée au vieillissement

SYNERGIC Trial
CONSORT Flow chart II



JAMA Network Open

Original Investigation | Geriatrics

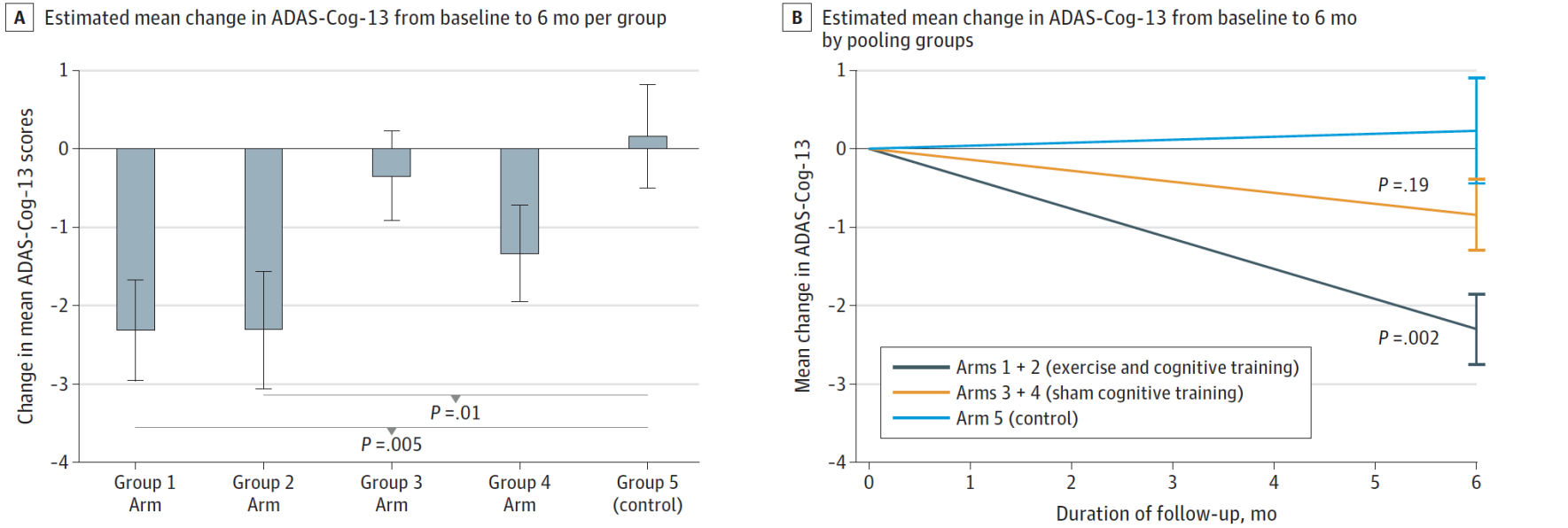
Effects of Exercise Alone or Combined with Cognitive Training and Vitamin D Supplementation to Improve Cognition in Adults with Mild Cognitive Impairment

A Randomized Clinical Trial

Manuel Montero-Odasso, MD, PhD; Guangyong Zou, PhD; Mark Speechley, PhD; Quincy J. Almeida, PhD; Teresa Liu-Ambrose, PhD; Laura E. Middleton, PhD; Richard Camicioli, MD; Nick W. Bray, PhD; Karen Z. H. Li, PhD; Sarah Fraser, PhD; Frederico Pieruccini-Faria, PhD; Nicolas Berryman, PhD; Maxime Lussier, PhD; J. Kevin Shoemaker, PhD; Surim Son, MSc; Louis Bherer, PhD; for the Canadian Gait and Cognition Network

CCNA Canadian Consortium on Neurodegeneration in Aging | CCNV Consortium canadien en neurodégénérescence associée au vieillissement

Figure 2. Change in ADAS-Cog-13 Scores During the 6-Month Intervention



Age and Ageing 2025; **54:** afaf242
https://doi.org/10.1093/ageing/afaf242
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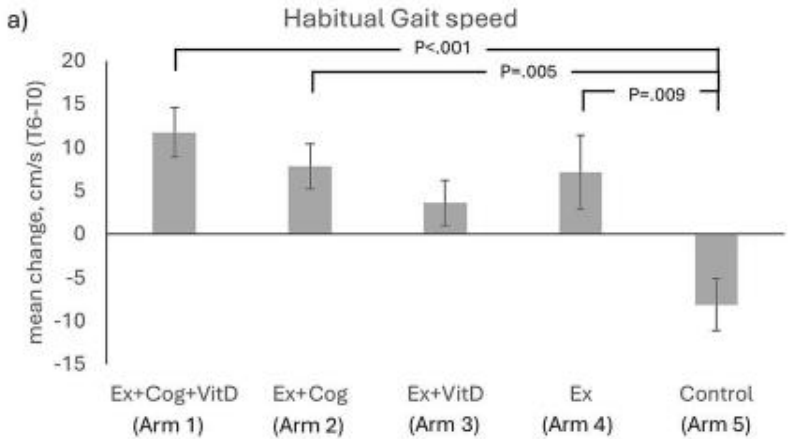
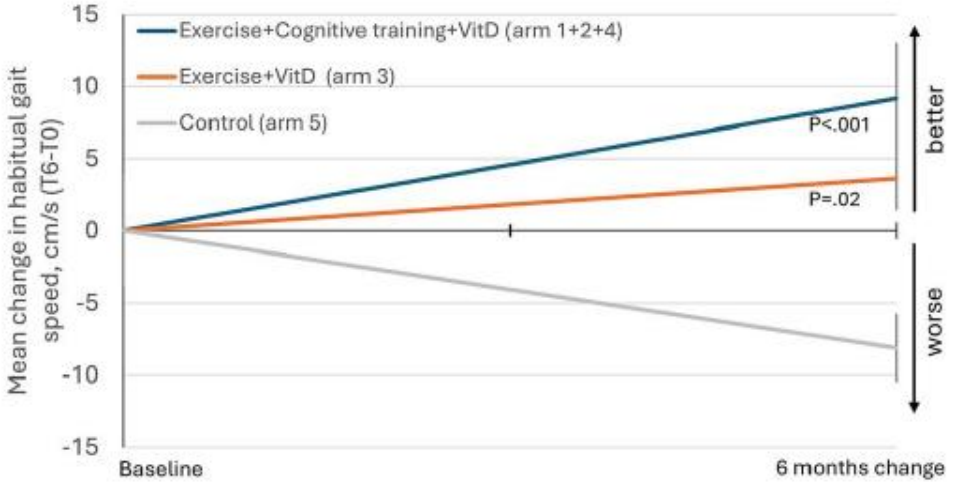
CLINICAL TRIAL

Synergistic effects of exercise, cognitive training and vitamin D on gait performance and falls in mild cognitive impairment—secondary outcomes from the SYNERGIC trial

Frederico Pieruccini-Faria[1,2], Surim Son[2,3], Guangyong Zou[3,4], Quincy J. Almeida[5], Laura E. Middleton[6,7], Nick W. Bray[2,8], Maxime Lussier[9,10], J. Kevin Shoemaker[11], Mark Speechley[12], Teresa Liu-Ambrose[13,14,15], Amer M. Burhan[16,17], Richard Camicioli[18], Karen Z. H. Li[19], Sarah Fraser[20], Nicolas Berryman[21,22,23], Louis Bherer[23,24,25], Manuel Montero-Odasso[1,2,3]

CCNA Canadian Consortium on Neurodegeneration in Aging — CCNV Consortium canadien en neurodégénérescence associée au vieillissement





Institut de cardiologie de Montréal — Affiliée à l'Université de Montréal

Études en cours

CENTRE ÉPIC
INSTITUT DE CARDIOLOGIE
DE MONTRÉAL

ICM-01-01-2012-08

frontiers | Frontiers in Aging Neuroscience

TYPE Study Protocol
PUBLISHED 23 June 2025
DOI 10.3389/fnagi.2025.1605128

CIHR IRSC Canadian Institutes of Health Research / Instituts de recherche en santé du Canada

Investigating the effects of a randomized, double-blinded aerobic, resistance, and cognitive training clinical trial on neurocognitive function in older adults with cardiovascular risk factors: the ACTIONcardioRisk protocol

Louis Bherer[1,2,3]*, Tudor Vrinceanu[1], Emma Gabrielle Dupuy[1,2], Mathieu Gayda[1], Thomas Vincent[1], Pierre-Olivier Magnan[1,2], Hanieh Mohammadi[1], Claudine Gauthier[1,4], Christine Gagnon[1], Simon Duchesne[5], Kirk I. Erickson[6], Daniel Gagnon[1], Frédéric Lesage[1], Sonia Lupien[7], Judes Poirier[8], Marie-Pierre Dubé[1], Éric Thorin[1], Martin Juneau[1], Juliana Breton[1], Sylvie Belleville[3,9], Guylaine Ferland[1,10], Flavie Gaudreau-Majeau[1,9], Caroll-Ann Blanchette[1,2], Paolo Vitali[11] and Anil Nigam[1,2]

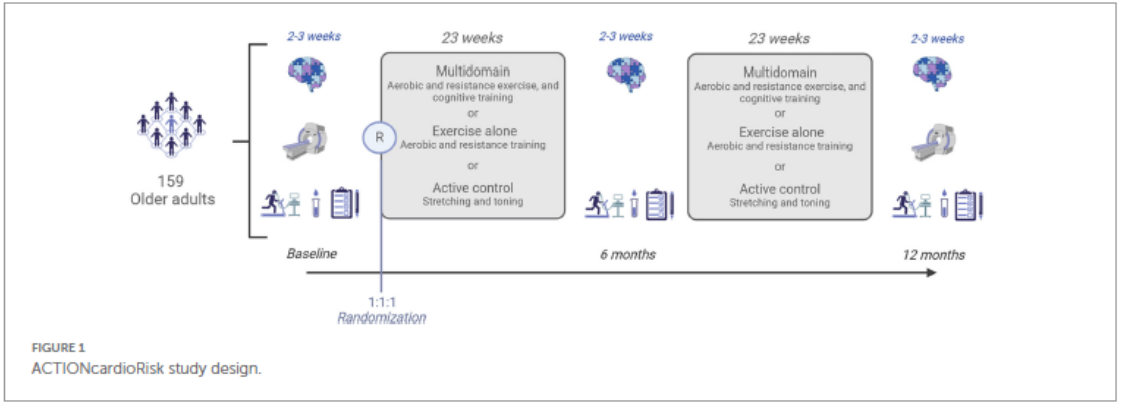


FIGURE 1
ACTIONcardioRisk study design.

TOM-01-01-20012409

INSTITUT DE CARDIOLOGIE DE MONTRÉAL
Université de Montréal

The RECARDIO Study Protocol

CIHR IRSC Canadian Institutes of Health Research / Instituts de recherche en santé du Canada

ClinicalTrials.gov

NCT04970888

OBJECTIVE

To investigate the effects of **cognitive training** and **physical exercise** on cognition and cerebral autoregulation and vasoreactivity **in male and female patients with HF**.

OUTCOMES

Cognition (primary outcome) :
memory, executive functions, processing speed

Cerebral autoregulation :
functional near-infrared spectroscopy (fNIRS)
transcranial Doppler (TCD)

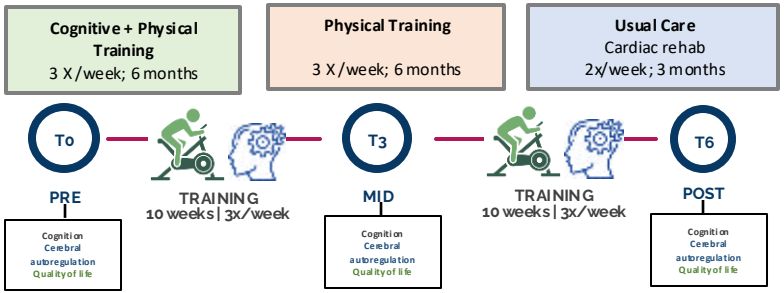
Physical function and quality of life :
cardiorespiratory fitness, functional status

- ✓ 6min walking test
- ✓ Timed Up and Go
- ✓ 10m walking test

Stable HF
>50 yrs
Referred by cardiologist

108 + 108

Randomization
(stratification by sex and LVEF)



Autres composantes d'un style de vie promoteur de santé cardiocérébrale

- Saine alimentation
- Contrôle du stress
- Sommeil
- Interaction sociale

Aliments	Régime MIND	Régime méditerranéen
Huile d'olive	Tous les jours (corps gras principal)	Tous les jours (corps gras principal)
Légumes (général)	≥ 7 portions par semaine	≥ 7 portions par semaine
Légumes verts à feuilles*	≥ 6 portions par semaine	—
Fruits (général)	—	≥ 7 portions par semaine
Petits fruits **	≥ 2 portions par semaine	—
Grains entiers	≥ 3 portions par jour	≥ 1 portion par jour
Noix	≥ 5 portions par semaine	≥ 3 portions par semaine
Légumineuses	≥ 3 portions par semaine	≥ 6 portions par semaine
Poisson	≥ 1 repas par semaine	≥ 3 repas par semaine
Volailles	≥ 2 repas par semaine	≥ 2 repas par semaine
Vin	1 verre par jour	1 verre par jour
Viandes rouges et charcuteries	< 4 repas par semaine	< 4 repas par semaine
Fritures	< 1 fois par semaine	< 1 fois par semaine
Fromage et lait	< 1 portion par semaine	≥ 2 portions par semaine
Beurre/margarine	< 1 c.à.s. par jour	< 1 c.à.s. par jour
Desserts et sucreries	< 5 portions par semaine	< 5 portions par semaine

JAMA Network Open

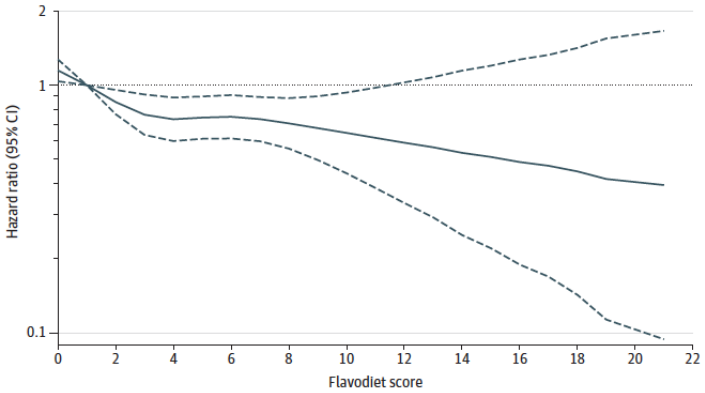
Original Investigation | Nutrition, Obesity, and Exercise

Flavonoid-Rich Foods, Dementia Risk, and Interactions With Genetic Risk, Hypertension, and Depression

Amy Jennings, PhD; Alysha S. Thompson, MSci; Anna Tresserra-Rimbau, PhD; Joshua K. O'Neill, MSci; Claire Hill, PhD; Nicola P. Bondonno, PhD; Tilman Kühn, PhD; Aedín Cassidy, PhD

JAMA Network Open. 2024;7(9):e2434136. doi:10.1001/jamanetworkopen.2024.34136 September 18, 2024

Figure 1. Risk of Dementia by Flavodiet Score in UK Biobank Participants



Values are adjusted based on cubic splines (N = 121 986 [882 with incident dementia]). Flavodiet score calculation and model adjustment are described in the Methods.

STRESS
https://doi.org/10.1080/10253890.2019.1617690

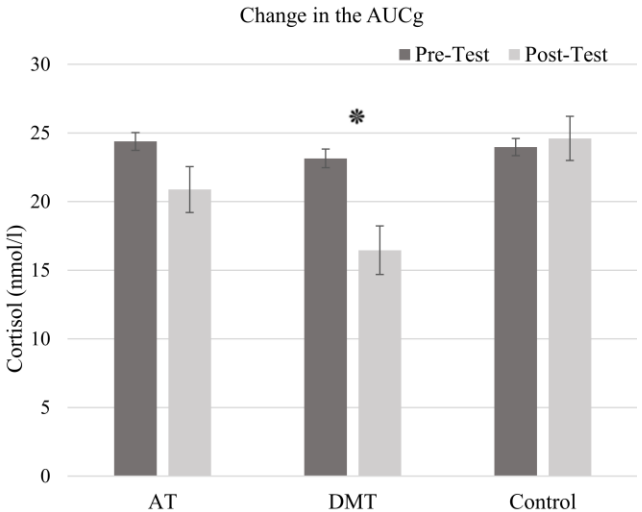
Taylor & Francis
Taylor & Francis Group

ORIGINAL RESEARCH REPORT

Check for updates

Dance your stress away: comparing the effect of dance/movement training to aerobic exercise training on the cortisol awakening response in healthy older adults

Tudor Vrinceanu[a,b,c], Alida Esmail[d,e], Nicolas Berryman[b,f], David Predovan[b,g], Thien Tuong Minh Vu[a,h], Juan Manuel Villalpando[b], Jens C. Pruessner[i,j] and Louis Bherer[a,b,c]



Change in the cortisol awakening response as measured by the area under the curve with respect to ground (mean & SE), after controlling for sex, BMI, and C2. Results show a group X time interaction ($F_{(2,34)} = 5.75$, $p < .01$, $\eta^2_{partial} = .25$), with only a significant decrease in cortisol in the DMT group ($F_{(1,9)} = 10.29$, $p = .01$, $\eta^2_{partial} = .53$).

LES GRANDS BALLETS

CENTRE NATIONAL DE DANSE-THÉRAPIE

Santé et Services sociaux Québec

frontiers | Frontiers in Psychiatry

TYPE Original Research
PUBLISHED 04 March 2024
DOI 10.3389/fpsyt.2024.1263351

Prefrontal engagement predicts the effect of museum visit on psychological well-being: an fNIRS exploration

Emma Gabrielle Dupuy[1,2*], Thomas Vincent[1], Catia Lecchino[1,3], Annabelle Boisvert[1,3], Laurence Trépanier[3,4], Sylvie Nadeau[4,5], Elaine de Guise[3,4] and Louis Bherer[1,2,6*]

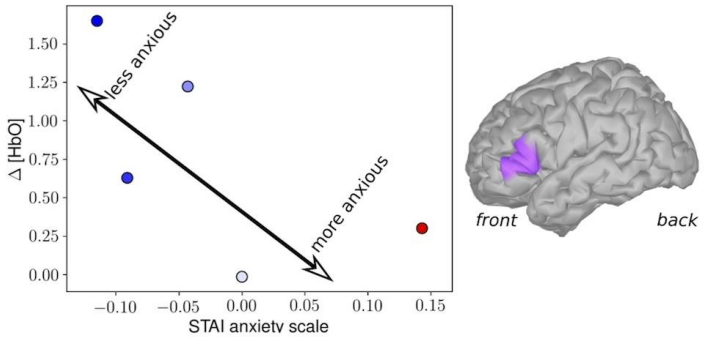
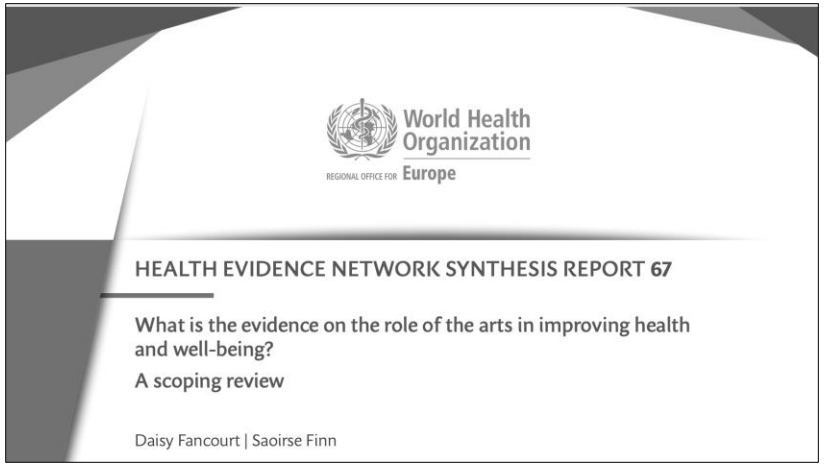


Figure 2: Δ[HbO] effects evoked by the analysis task in the left ventrolateral prefrontal cortex (purple region depicted on the right) versus the variation of the STAI state subscale score induced by the museum visit (also used as dot colors). Note that one participant was excluded based on a too high reported anxiety score independent of the museum visit.



Québec
Bureau du scientifique en chef

Programme AUDACE

MUSÉE DES BEAUX-ARTS MONTRÉAL

Prescription pour un cerveau en santé

Recommandations

Activité physique et limiter temps sédentaire

- 150min/sem mod ou 75-90min/semaine vig + résistance
- Limiter temps passer assis.

Gestion des facteurs de risque cardiovasculaire

- Diabète, cholestérol, hypertension, obésité et réduire consommation alcool

Sommeil

- Dormir 7-9h, traiter apnée du sommeil

Activités cognitivement stimulantes

- **Nouveauté**, défi; p.ex. nouvelle langue, instrument de musique, lecture, etc.

Alimentation

- Méditerranéenne ou MIND (fruits et légumes, poissons, noix, etc)

Audition et vision

- Dépistage auditif et examen de la vue. Appareils auditifs au besoin. Traiter les cataractes.

Interactions sociales

- 2 fois/semaine. Questionner sur isolement après évènements comme deuil, etc.

Programme de Santé Cognitive de la Clinique de Neuropsychologie du Centre ÉPIC

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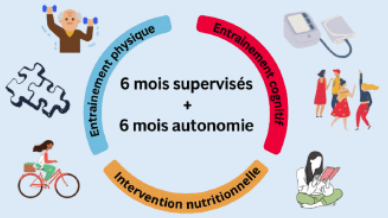
Programme de santé cognitive

Patientèle : personnes à risque de déclin cognitif, plaintes cognitives subjectives, troubles neurocognitifs légers



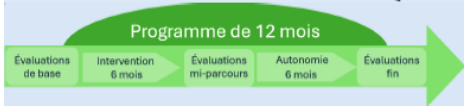
Santé cardiométabolique | Santé cognitive | Santé mentale et Qualité de vie

Équipe multidisciplinaire

- Kinésiologue
- Neuropsychologue
- Cardiologue
- Infirmière praticienne spécialisée
- Nutritionniste
- Travailleuse sociale

Des habitudes de vie optimales peuvent aider à prévenir le déclin cognitif et optimiser la santé cérébrale tout au long de la vie.

sante.cognitive@icm-mhi.org
Tél : 514-374-1480 #4341



INSTITUT DE CARDIOLOGIE DE MONTRÉAL

Université de Montréal

Merci !

louis.bherer@umontreal.ca

Faculté de médecine

Université de Montréal