

Peut-on prévenir les chutes et les fractures chez le patient souffrant de la maladie d'Alzheimer ?



Pr Jacques Boddaert
Département de Gériatrie
GH Pitié-Salpêtrière
APHP.Sorbonne Université
Paris

Liens d'intérêt

Aucun sur le sujet

Mécénat AXA
Astra Zeneca

Troubles cognitifs et activité physique

Liens ou pistes intéressant(e)s

Améliorer les fonctions cognitives ?

Améliorer la qualité de vie ?

Améliorer l'autonomie = prévenir la dépendance ?

Ralentir le déclin cognitif ?

Prévenir les chutes ?

Prévenir les fractures ?

Pourquoi se poser la question ?

Parce que les TNC x2 le risque de chutes

Tinetti, 1988

Parce qu'elle est évidente, avec des difficultés :

Pour comprendre les consignes

Pour retenir les consignes

Pour appliquer les consignes

Liées à des troubles psychocomportementaux



Faut-il renoncer ?



Dementia-related disability in the population aged 90 years and over: differences over time and the role of comorbidity in the vitality 90+ study

BMC Geriatrics

Open Access

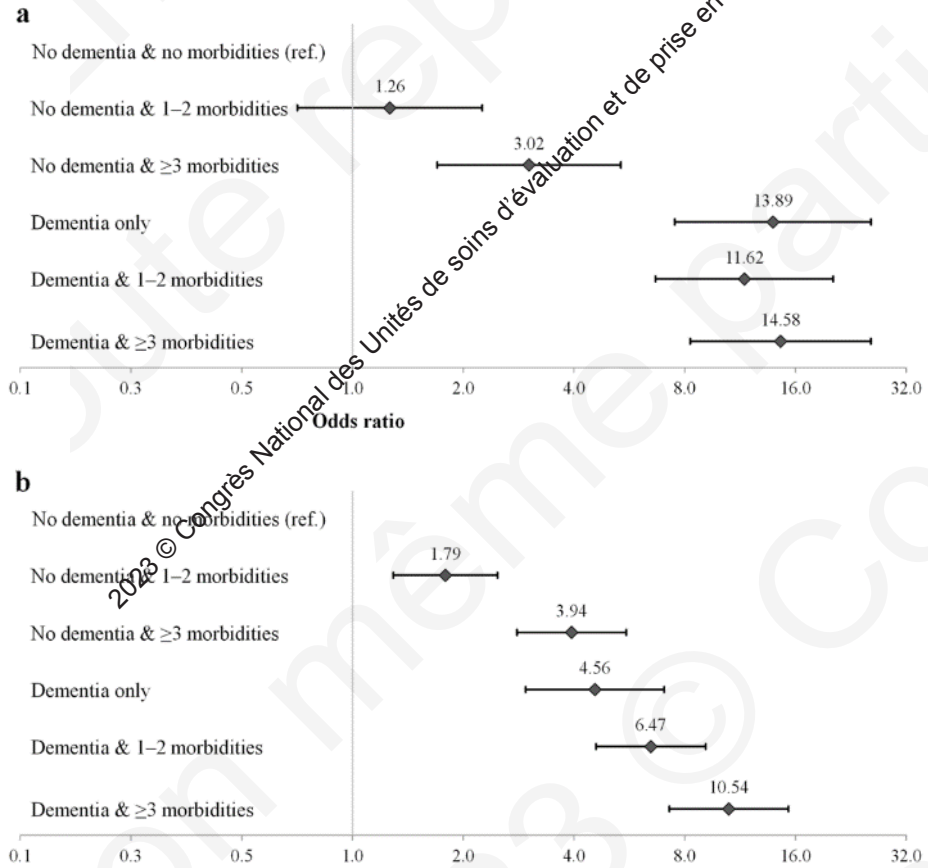


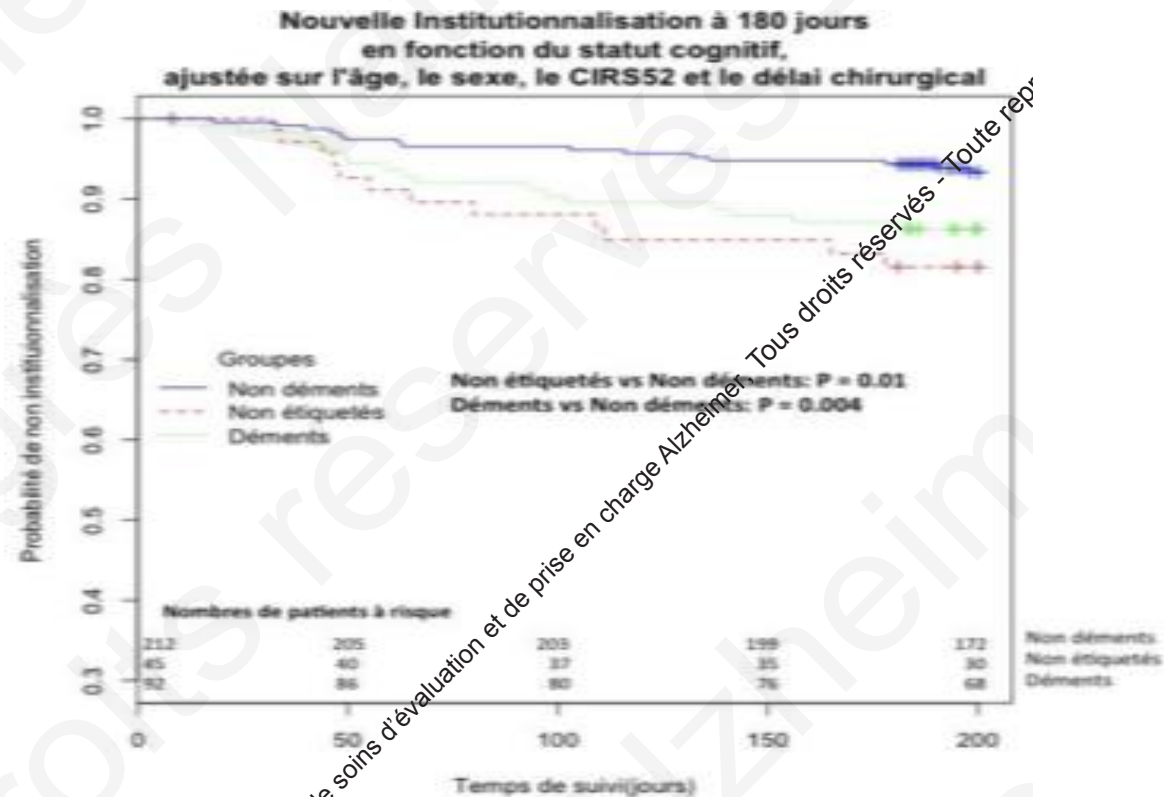
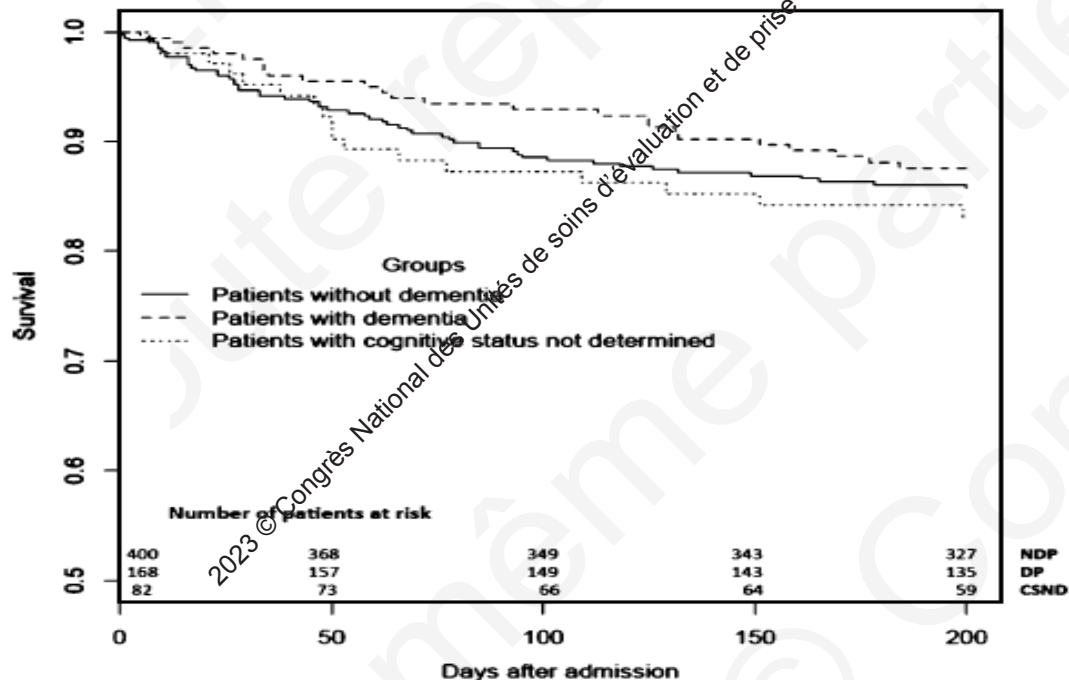
Fig. 1 Association of dementia and comorbidity with (a) ADL disability and (b) mobility disability among the oldest old in 2001, 2010 and 2018 combined

Impossible de prendre en charge les TNC sans prendre en compte les comorbidités

Approche globale+++++

Expertise gériatrique

Démence et prise en charge de la FESF en UPOG



Mortalité 6 mois

→ **l'expertise UPOG réduit le poids de la démence**



Evaluation récupération
Domicile **connecté**

10



Post-habilitation

9

Filière UGA et UPOG
Parcours HOSPISENIOR

4



Patients SAU
Patients hors-filières

5

Voilà ce qu'il faut construire ensemble
Et au milieu de tout cela, il faut trouver
le bon protocole au bon moment
Et les moyens nécessaires

Evaluation
Prévention
Dépistage
Domicile connecté

1

Prévention
dépendance
iatrogène

6

Stimulation cognitive
Stimulation physique
Education thérapeutique
Université 4^{ème} âge/patients-aidants

2

Pré-habilitation
Empowerment

3

Organiser sortie et
lien hôpital-ville

8

Conciliation Médicamenteuse
Education thérapeutique

7

2023 © Congrès National des Unités de soins d'évaluation et de prise en charge Alzheimer, Tous droits réservés - Toute repr

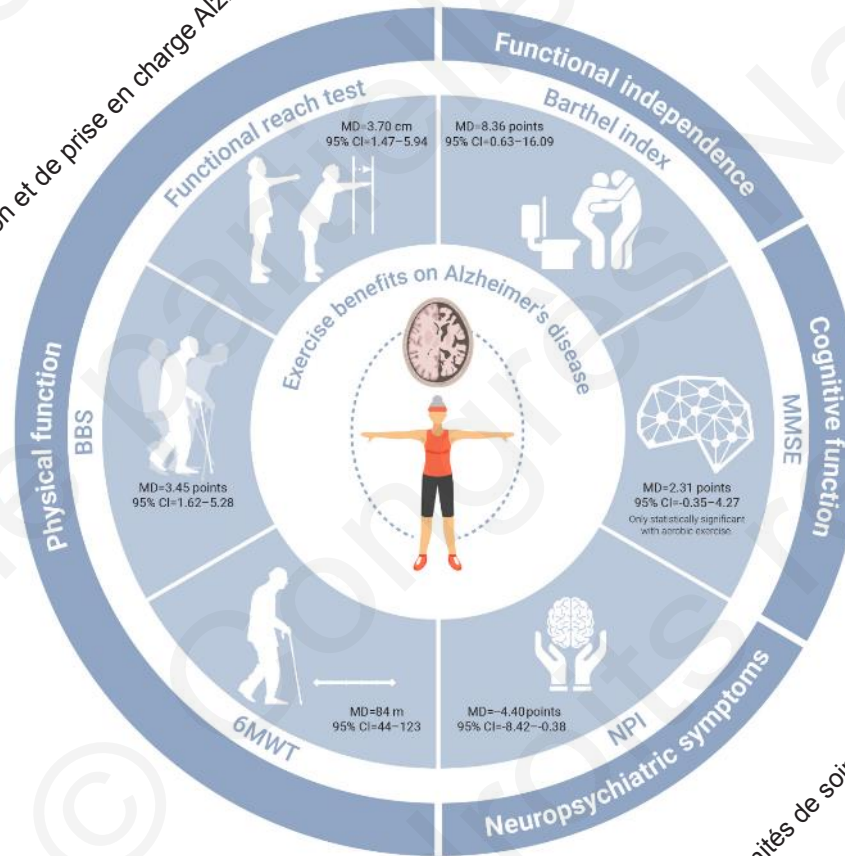
2023 © Congrès National des Unités de soins d'évaluation et de prise en charge Alzheimer, Tous droits réservés - Toute repr

Exercise interventions in Alzheimer's disease: A systematic review and meta-analysis of randomized controlled trials

28 studies
1337 patients

Outcomes

Cognitive function (MMSE)
Physical function (6MWT)
Functional (Barthel)
Neuropsychy (NPI)



Conclusions: exercise interventions appear to exert multi-domain benefits in patients with AD

Fig. 2. Graphical abstract of main results. Abbreviations: 6MWD, 6-minute walking distance; 95%CI, 95% confidence interval; BBS, Berg balance scale; MD, mean difference; MMSE, mini-mental state examination; NPI, Neuropsychiatric Inventory.



Effects of physical exercise on physical function in older adults in residential care: a systematic review and network meta-analysis of randomised controlled trials

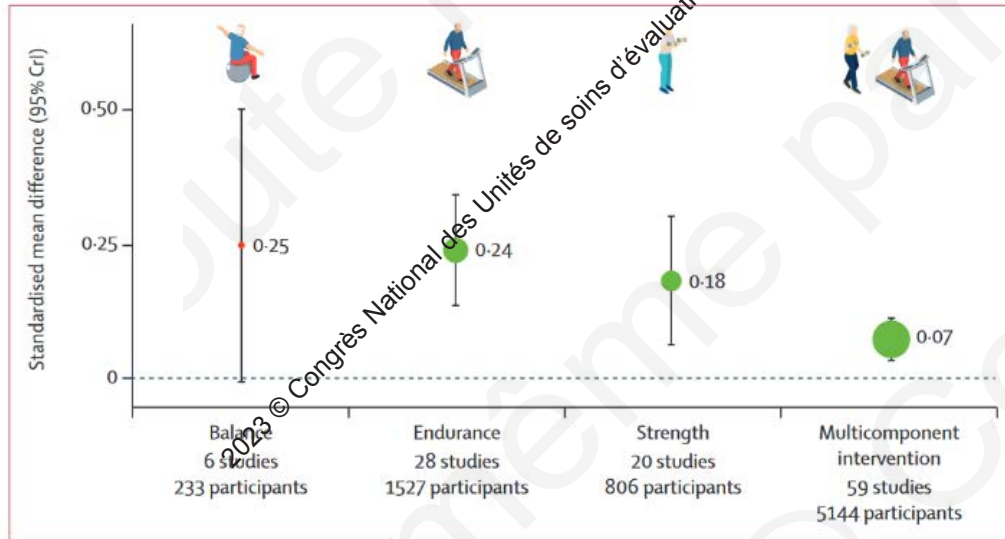


Figure 2: Effects of different exercise interventions on physical function
Data are shown as standardised mean differences (vs usual care) with 95% CrIs. Circle sizes are proportional to the number of studies and participants included. CrI=credible interval.

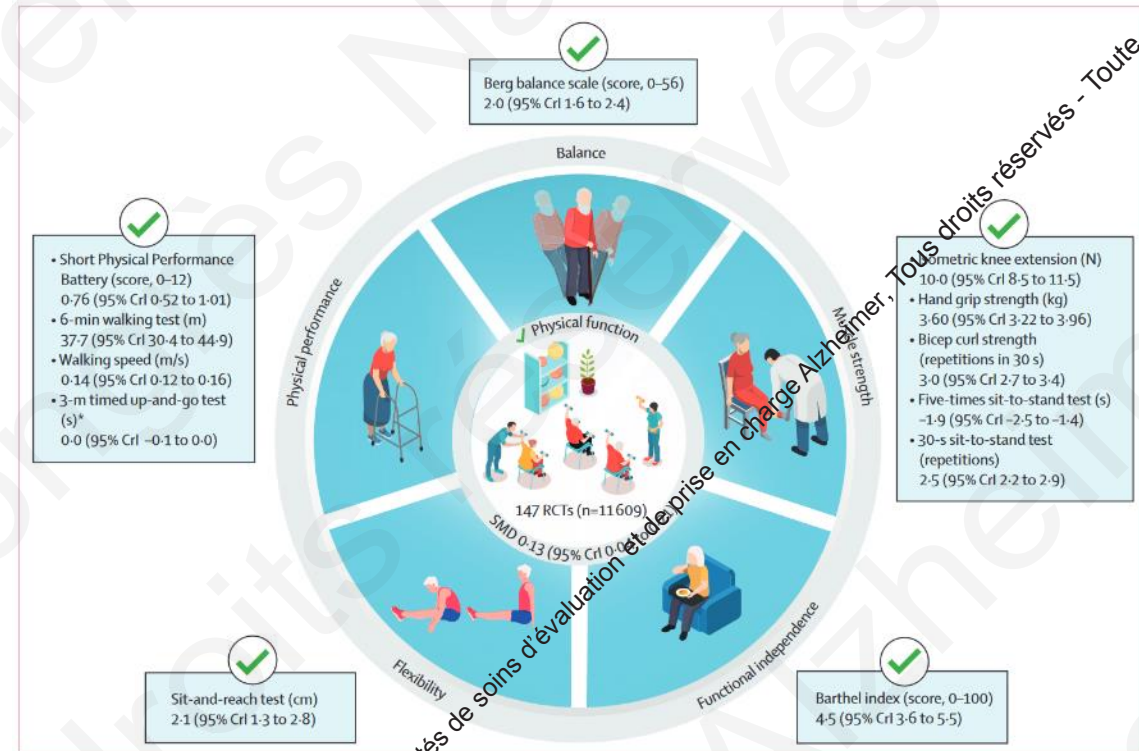


Figure 4: Summary of study findings
Data are presented as SMDs or absolute mean differences, with 95% CrIs. CrI=credible interval. RCT=randomised controlled trial. SMD=standardised mean difference. *Results for the 3-m timed up-and-go test did not reach statistical significance.



Donc ce devrait être assez simple.....

Pourtant.....



Les données de la littérature sur maladie d'Alzheimer et app, prévention chutes et fractures....

The Effect of Multidomain Lifestyle Intervention on Daily Functioning in Older People

JAGS 67:1138–1144, 2019
© 2019 The American Geriatrics Society

OBJECTIVE: To investigate the effect of a 2-year multidomain lifestyle intervention on daily functioning of older people.

DESIGN: A 2-year randomized controlled trial (ClinicalTrials.gov, NCT01041989).

SETTING: Finnish Geriatric Intervention Study to Prevent Cognitive Impairment and Disability.

PARTICIPANTS: A total of 1260 older adults, with a mean age of 69 years at the baseline, who were at risk of cognitive decline.

INTERVENTION: A multidomain intervention, including simultaneous physical activity intervention, nutritional counseling, vascular risk monitoring and management, and cognitive training and social activity.

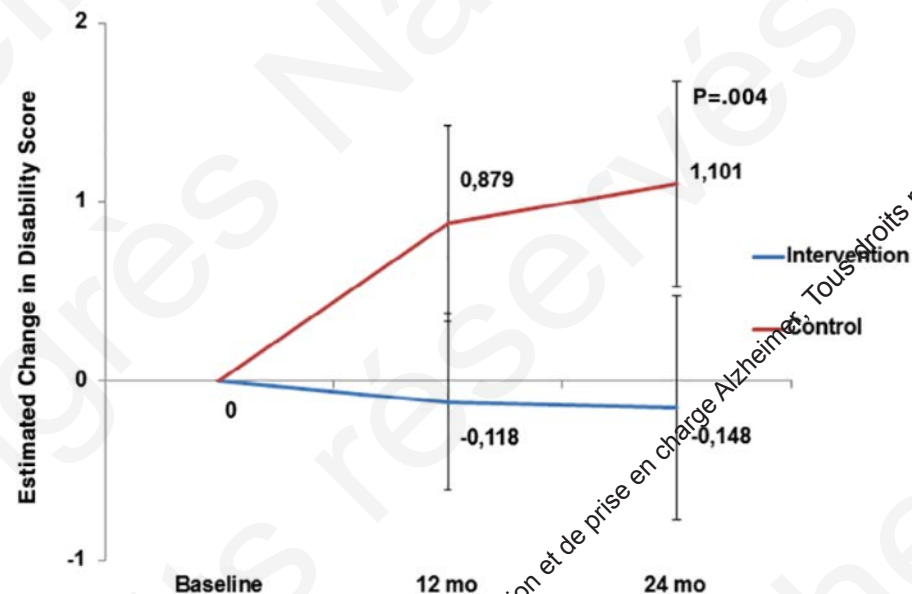


Figure 2. Change in the activity of daily living (ADL) score dur-



Bénéfice et relevance cliniques incertains



Kulmala, 2019

The Effects of Exercise on Falls in Older People With Dementia Living in Nursing Homes: A Randomized Controlled Trial

Intervention: Participants were randomized to the high-intensity functional exercise program or a seated attention control activity; each conducted 2-3 times per week for 4 months.
Measures: Falls and fall-related injuries were followed for 12 months (after intervention completion) by blinded review of medical records. Injuries were classified according to severity.

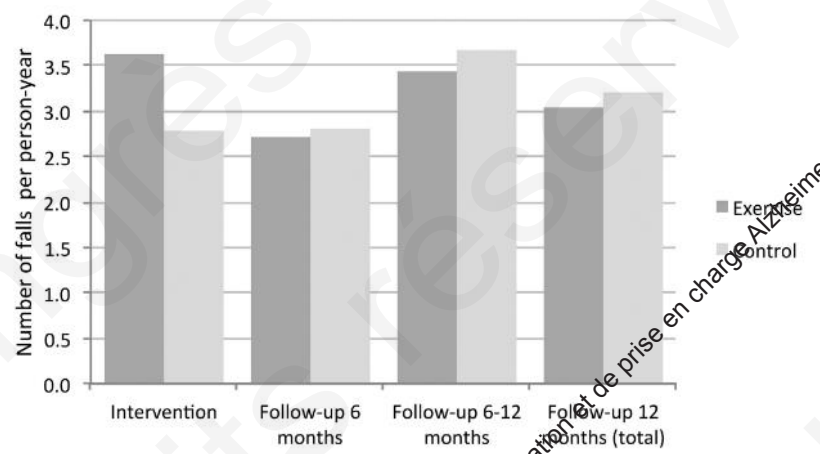
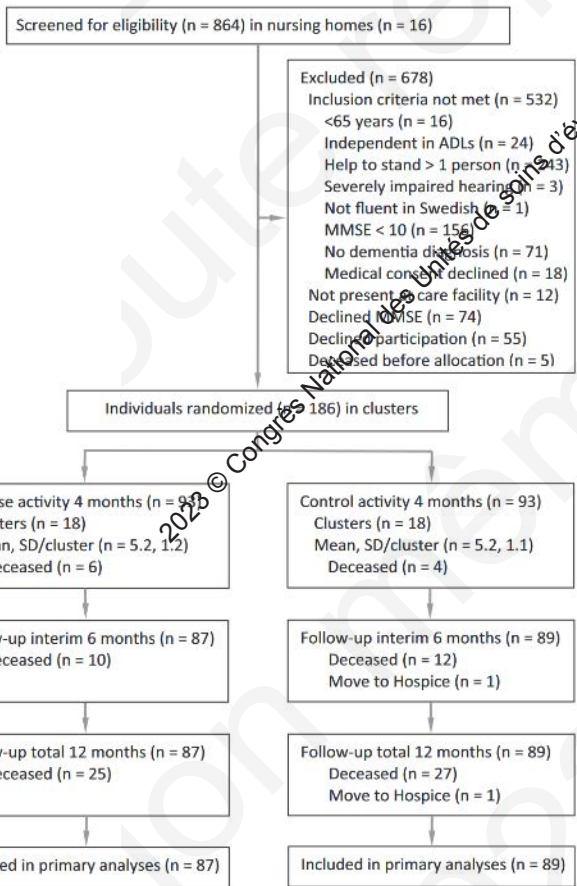


Fig. 2. Fall rate per person-year throughout intervention and follow-up according to activity group.

Group	Follow-Up 6 Mo					Follow-Up 12 Mo				
	≥1 Fall n (%) [*]	Total Falls (Obs d)	IR	IRR (95% CI) [†]	P	≥1 Fall n (%)	Total Falls (Obs d)	IR	IRR (95% CI) [†]	P
Exercise, n = 87	45 (52)	111 (14 967)	2.7	0.9 (0.5, 1.7)	.838	57 (66)	232 (27 830)	3.0	0.9 (0.5, 1.6)	.782
Control, n = 89	42 (47)	113 (14 746)	2.8	1 (reference)		61 (69)	241 (27 479)	3.2	1 (reference)	

Obs d, observation days.
^{*}Number of participants (proportion) who fell at least once.
[†]From negative binomial regression analyses with observation days as exposure term and adjusted for age, sex, antidepressants and cluster.

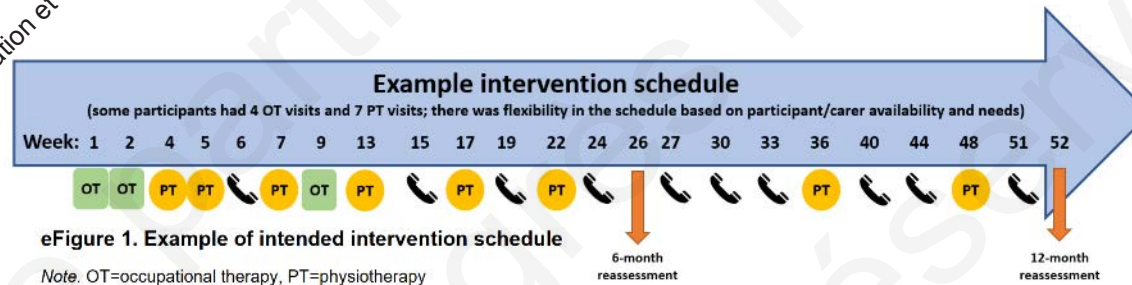


Toots, 2019

2023 © Congrès National des Unites de soins de longue durée Alzheimer, Tous droits réservés - Toute repr

Tailored Exercise and Home Hazard Reduction Program for Fall Prevention in Older People With Cognitive Impairment: The i-FOCIS Randomized Controlled Trial

Method: RCT involving 309 community-dwelling older people with CI. The intervention group ($n = 153$) received an individually prescribed home hazard reduction and home-based exercise program during the 12-month study period. The control group ($n = 156$) received usual care. The primary outcome was rate of falls. Secondary outcomes included faller/multiple faller status, physical function, and quality of life.



Fall Outcomes, Rate and 95% CI or n (%)	Intervention ($n = 153$)		Control ($n = 156$)		Coefficient (95% CI)		p -Value
Primary outcome: rate of falls^a							
Incidence rate (95% CI) per 365 person-days ^b	2.32	2.09–2.58	2.26	2.03–2.52	1.05	0.73–1.51	.782
Incidence rate (95% CI) per 365 person-days ^{b,c}	1.68	1.48–1.90	1.94	1.73–2.18	0.88	0.65–1.21	.437
IRR (95% CI) per 365 person-days ^c (adjusting for baseline differences)					0.88	0.57–1.07	.129
Secondary outcomes^d							
Faller, n (%) ^b	94 (61.4)		87 (55.8)		1.05	0.87–1.26	.600
Faller, n (%) ^e	94 (62.3)		87 (60.8)		1.01	0.84–1.22	.892
Faller (adjusting for baseline differences) ^f					0.99	0.82–1.19	.910
Multiple faller, n (%) ^b	49 (32.0)		58 (37.2)		0.82	0.61–1.11	.206
Multiple faller, n (%) ^g	49 (32.5)		58 (41.1)		0.79	0.58–1.06	.118
Multiple faller (adjusting for baseline differences) ^h					0.73	0.54–0.99	.045
Fall-related fracture ^b	10 (6.5)		16 (10.3)		1.08	0.45–2.58	.862
Fall-related hospitalization ^b	24 (15.7)		26 (16.7)		1.46	0.81–2.64	.212

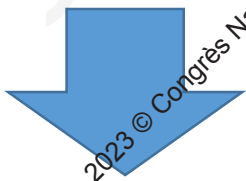


Interventions for preventing falls in older people in care facilities and hospitals (Review)

95 studies
138 164 patients

71 care facilities (40 374 patients)

24 hospitals (97 790 patients)



Very low

Care facilities

Exercise vs usual care (n=17)
Falls rate: 0.93, 95% CI [0,64 – 1,20]

Multifactorial interventions (n=13)
Falls rate: 0.88, 95% CI [0,66 – 1,18]

Hospitals

Additional physiotherapy (n=3)
Falls rate: 0.59, 95% CI [0,64 – 1,20]

Multifactorial interventions (n=5)
Falls rate: 0.88, 95% CI [0,64 – 1,01]



**Low to very low
Uncertain evidence**

Medication review ?

Vitamin D supplementation
Probably \searrow falls rate

**Uncertain
Uncertain**

Uncertain

Uncertain

Uncertain

Uncertain

Uncertain



Multifactorial falls prevention programme compared with usual care in UK care homes for older people: multicentre cluster randomised controlled trial with economic evaluation

The multi-domain GtACH programme includes one hour of training for all care home staff (including gardeners, caretakers, cooks, cleaners, managers) in small groups, delivered by a falls specialist. After training, a manual summarising the GtACH programme and including resources such as a falls incident chart (to detect patterns) and a drug falls risk chart is left in the care home. Once trained, staff are expected to use the GtACH risk assessment and checklist for all residents. For example, the assessment

MAIN OUTCOME MEASURES

Primary outcome measure was fall rate at 91-180 days after randomisation.

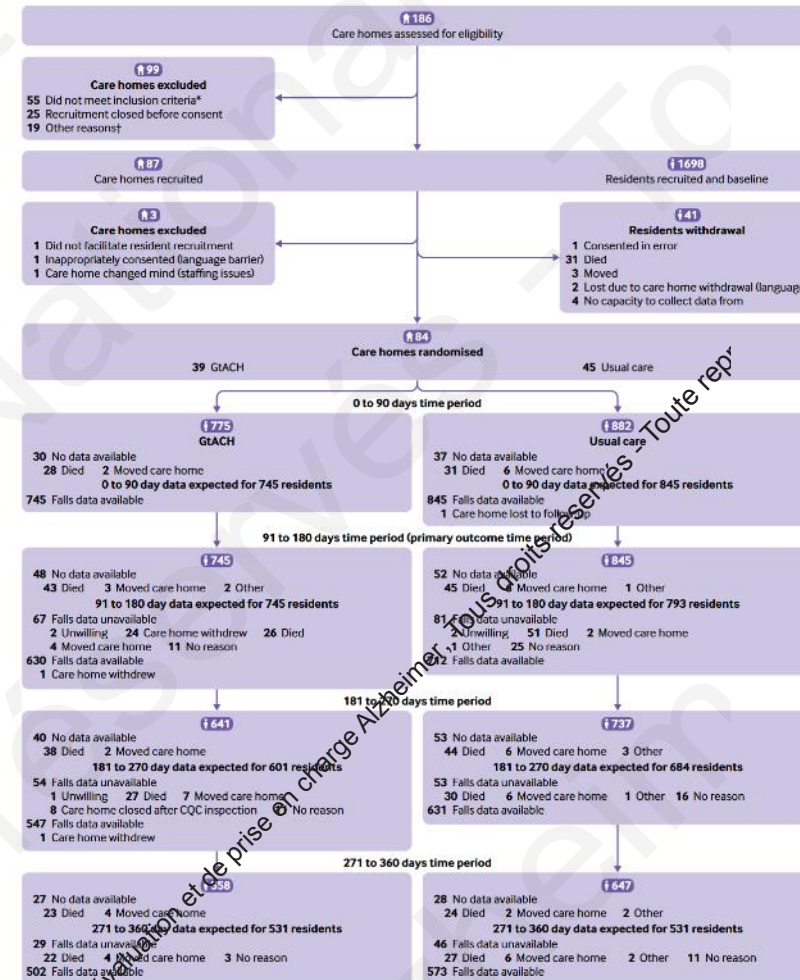


Table 2 | Primary and secondary fall rate outcomes in care home residents assigned to Guide to Action for Care Homes (GtACH) or to usual care

Fall rate outcome	GtACH group			Usual care group			Minimally adjusted incidence rate ratio (95% CI)	P value	Fully adjusted† incidence rate ratio (95% CI)	P value
	No at risk	Mean (SD) falls per participant	Mean (SD) fall rate per 1000 resident days	No at risk	Mean (SD) falls per participant	Mean (SD) fall rate per 1000 resident days				
Primary outcome										
91-180 days	630	0.49 (1.13)	6.04 (14.02)	712	0.89 (2.60)	10.38 (29.52)	0.57 (0.45 to 0.71)	<0.001	0.63 (0.52 to 0.78)	<0.001
Secondary outcomes										
1-90 days	708	0.55 (1.36)	6.93 (20.56)	826	0.88 (2.37)	10.24 (27.26)	0.86 (0.69 to 0.73)	<0.001	0.74 (0.60 to 0.92)	0.006
181-270 days	547	0.60 (1.29)	7.28 (16.67)	633	0.73 (1.85)	9.21 (28.77)	0.85 (0.69 to 1.05)	0.13	0.91 (0.74 to 1.12)	0.37
271-360 days	502	0.55 (1.14)	6.22 (12.88)	573	0.79 (2.37)	9.22 (27.26)	0.79 (0.60, to 1.03)	0.08	0.93 (0.71 to 1.22)	0.61

*Adjusted for design factors only: care home type and site as fixed effects and care home as random effect.

†Adjusted for care home type, site, and baseline falls rate as fixed effects and care home as random effect.

pared to allocate a falls champion (n=24), existing falls programme (n=13), der review (n=1), no reason given (n=10), †Did not have time (n=1), stopped (n=3). Care homes considered lost to follow-up did not respond to multiple care homes programme; CQC=Care Quality Commission



Exercise for prevention of falls and fall-related injuries in neurodegenerative diseases and aging-related risk conditions: a meta-analysis

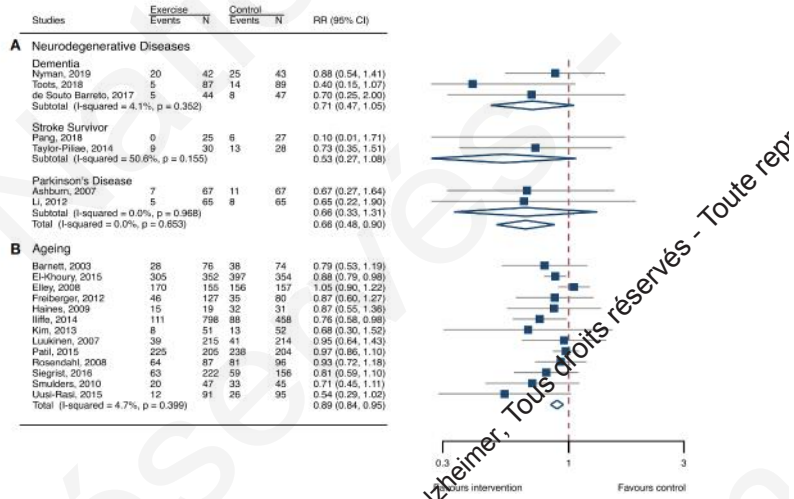
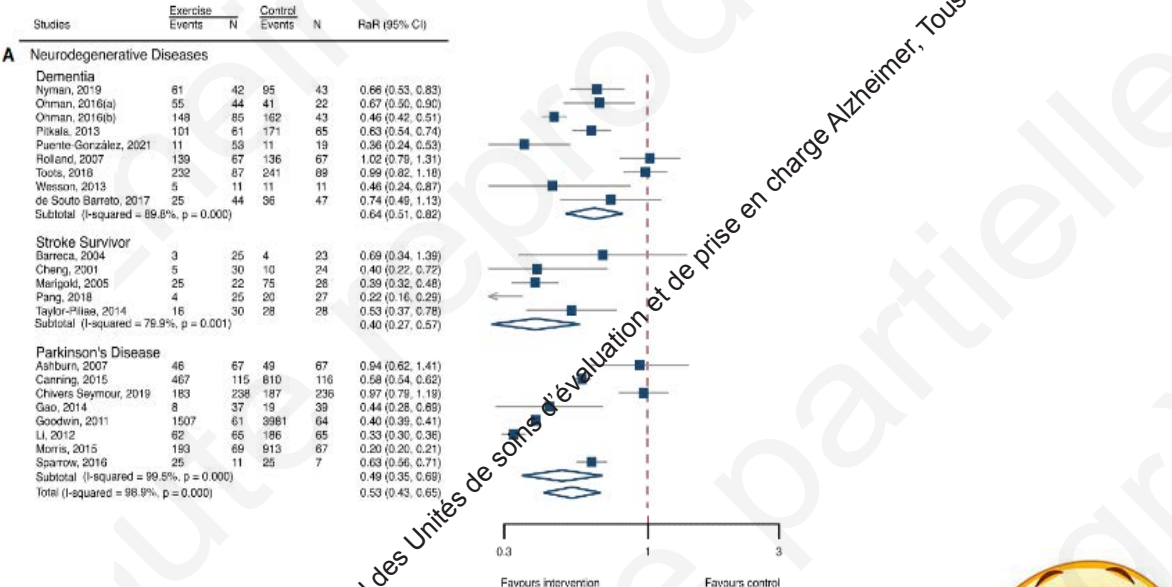


FIGURE 2 Effects of exercise on the risk of fall-related injuries. (A) Participants with neurodegenerative diseases; (B) frail aging people. RR, risk ratio; CI, confidence interval; N, number.

Summary estimates of exercise for prevention of falls in participants with neurodegenerative diseases and frail aging people. (A) Participants with neurodegenerative diseases; (B) frail aging people. RaR, risk ratio; CI, confidence interval; N, number.

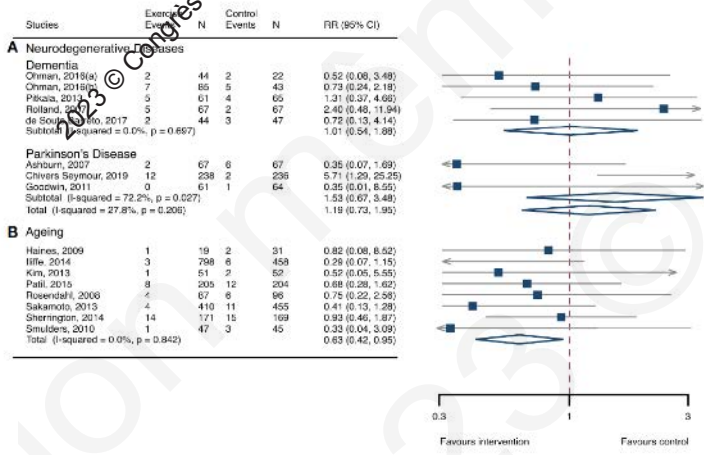
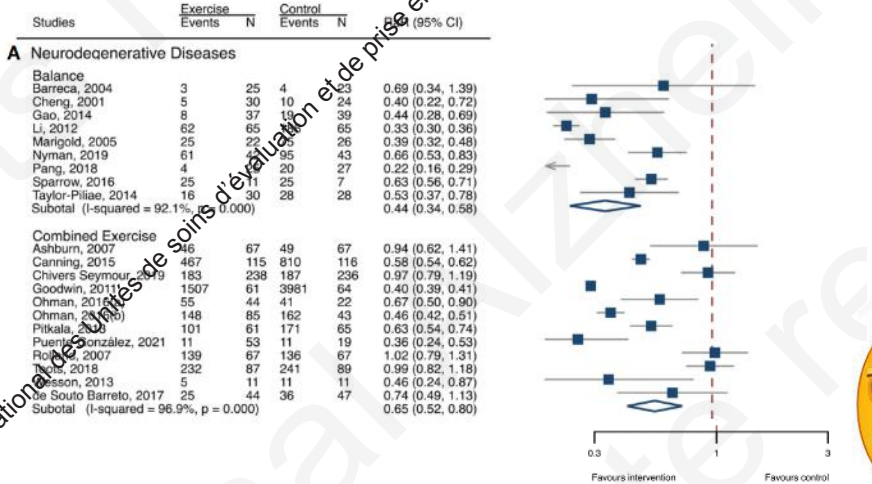


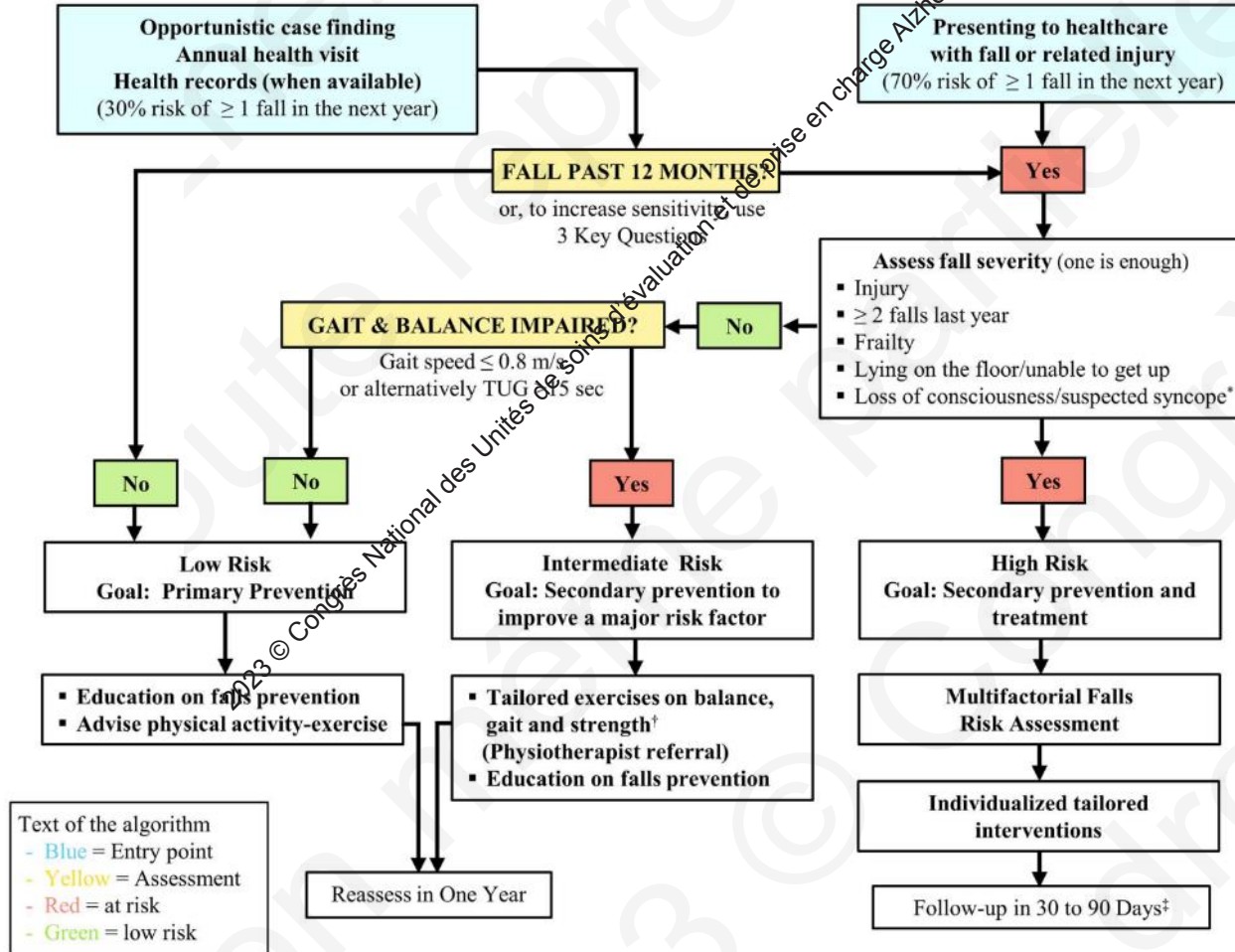
FIGURE 3 Effects of exercise on the risk of fractures. (A) Participants with neurodegenerative diseases; (B) frail aging people. RR, risk ratio; CI, confidence interval; N, number.



2023 © Congrès National des Unités de soins d'évaluation et de prise en charge Alzheimer, Tous droits réservés - Toute repr

World guidelines for falls prevention and management for older adults: a global initiative

Age and Ageing 2022; 51: 1–36
<https://doi.org/10.1093/ageing/afac205>



WG 4	Exercise Intervention	Text	Grade
Exercise	Intervention	We recommend exercise programmes for fall prevention for community-dwelling older adults which include balance challenging and functional exercises (e.g. sit-to-stand, step-up), with sessions three times or more weekly which are individualised, progressed in intensity over at least 12 weeks and continued longer for greater effect.	1A
Exercise	Intervention	We recommend inclusion, when feasible, of Tai Chi and/or additional individualised progressive resistance strength training.	1B
Exercise	Intervention	We recommend individualised supervised exercise as a fall prevention strategy for adults living in long-term care settings.	1B
Exercise	Intervention	We recommend that adults with PD at an early to mid-stage and with mild or no cognitive impairment are offered individualised exercise programmes including balance and resistant training exercise	1A
Exercise	Intervention	We conditionally recommend that adults after a stroke participate in individualised exercise aimed at improving balance/strength/walking to prevent falls	2C
Exercise	Intervention	We recommend that adults after sustaining a hip fracture participate in individualised and progressive exercise aimed at improving mobility (i.e. standing up, balance, walking, climbing stairs) as a fall prevention strategy.	1B
Exercise	Intervention	We conditionally recommend that such programmes after a hip fracture be commenced as in-patients and be continued in the community.	2C (In-patients) & 1B (community)
Exercise	Intervention	We recommend that community-dwelling adults with cognitive impairment (mild cognitive impairment and mild to moderate dementia) participate in exercise to prevent falls, if willing and able to do so.	1B

World guidelines for falls prevention and management for older adults: a global initiative

WG/domains	Area or Domain	Recommendation	Grade
	Care Homes Management and Intervention	We recommend a multifaceted approach to falls reduction for care home residents including care home staff training, systematic use of a multidomain decision support tool and implementation of falls prevention actions	1B
	Care homes management and interventions	We recommend against the use of physical restraints as a measure for falls prevention in care homes.	1B
	Care homes management and interventions	We recommend nutritional optimisation including food rich in calcium and protein, as well as vitamin D supplementation as part of a multidomain intervention for falls prevention in care home residents.	1B
	Care homes management and interventions	We recommend including the promotion of physical activity (when feasible and safe) as part of a multidomain falls prevention intervention in care homes.	1C
WG 6 Cognition and Falls	Cognition Assessment	We recommend that routine assessment of cognition should be included as part of multifactorial falls risk assessment in older adults.	1B
	Cognition Assessment	We recommend including both the older adult's and caregiver's perspectives, when creating the individual falls prevention care plans for adults with cognitive impairment since this strategy has shown better adherence to interventions and outcomes.	1C

Rêvons un peu.....

Des salles de sport pour personnes âgées



T'as moins de 75 ans,
tu rentres pas....

Salles de sport pour patients avec TNC



T'as plus de 20 de MMS,
tu rentres pas....
T'as moins de 15, carré VIP

Prévention de la dépendance iatrogène liée à l'hospitalisation: projet Take Care: étude multicentrique

MECENAT AXA



Tapis de marche

- Portables, connectés
- Facilitant mobilisation
- Sécurisés
- ± Réalité virtuelle



Monitoring vésical

- Précision besoins
- Optimisation



Environnement

- Détection mouvement
- **Prévention chutes**
- Réassurance



Nutrition

- Soutien
- CNO
- Textures

synapse^{MED}

Médicament

- Analyse ordonnances
- Start/stop
- Conciliation

Confusion

- Diagnostic
- Prévention
- Approche structurée

Take home messages ?

- Bénéfice de l'activité physique chez les patients avec MAA
- Programmes de prévention de la chute efficaces
- Patients avec MAA à haut risque de chutes
-même si des datas manquent chez les patients avec MAA
- S'organiser avec ses propres ressources pour construire des programmes d'intervention, et les évaluer