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PALAZZO DEI CONGRESSI

Attività fisica e MCI

Una lettura critica

Alessandra Marengoni

Università degli Studi di Brescia

EPIDEMIOLOGY OF MILD COGNITIVE IMPAIRMENT

- There is a wide range of incidence rates from 5.1 to 168 (1000 person years)
- What about subjective cognitive impairment, functional cognitive impairment?
- A few studies reported estimates of incident aMCI only and these ranged from 10 to 14 (1000 person years)
- The majority of studies reported rates of progression from MCI to dementia from 20–40% (10–15% per year)
- Clinic vs. community-based studies

Roberts and Knopman Clin Ger Med 2013

EPIDEMIOLOGY OF PHYSICAL ACTIVITY

Physical activity any bodily movement produced by skeletal muscles that results in energy expenditure

Exercise a subset of physical activity that is planned, structured, repetitive

Never - Physical Activity

Initiation - Physical Activity

Maintenance - Physical Activity

Withdrawal - Physical Activity

Aerobic or resistance training? Long or late-life? Alone or social?

Mind + Physical Activity?

Future research: objective measures of physical activity?

PATHWAYS

1. Sedentary behaviors increase psychological stress and are associated with greater vascular and metabolic burden due to a disrupted homeostasis in blood pressure and glycemic levels (Panahi and Tremblay, 2018)

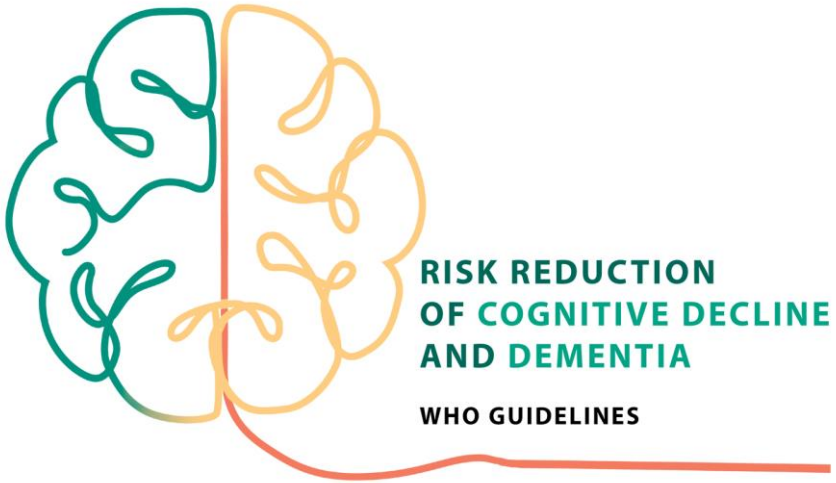
2. Physical activity and reduction in blood inflammatory cytokines and increase in neuroprotective factors (Ma et al. ACER 2022)

3. Physical activity and hippocampal plasticity (Broadhouse et el. NeuroImage: Clinical 2020)

4. Presence of mediators: Depression? Diabetes? Frailty? Social activity?

The **WHO guidelines** on risk reduction for cognitive decline and dementia concluded that physical activity should be recommended to adults with normal cognition to reduce the risk of cognitive decline.

The beneficial effect on cognition is stronger for aerobic versus resistance training and is more convincing for cognitively intact individuals than for people with mild cognitive impairment.



European Geriatric Medicine (2023) 14:925–952
https://doi.org/10.1007/s41999-023-00858-y

SPECIAL ARTICLE

Check for updates

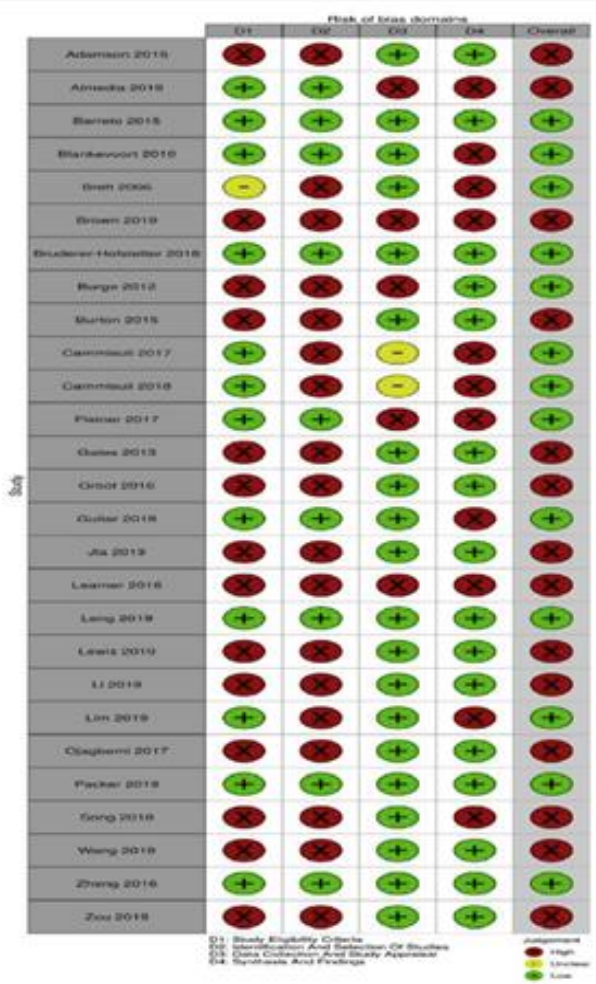
Physical activity and exercise for the prevention and management of mild cognitive impairment and dementia: a collaborative international guideline

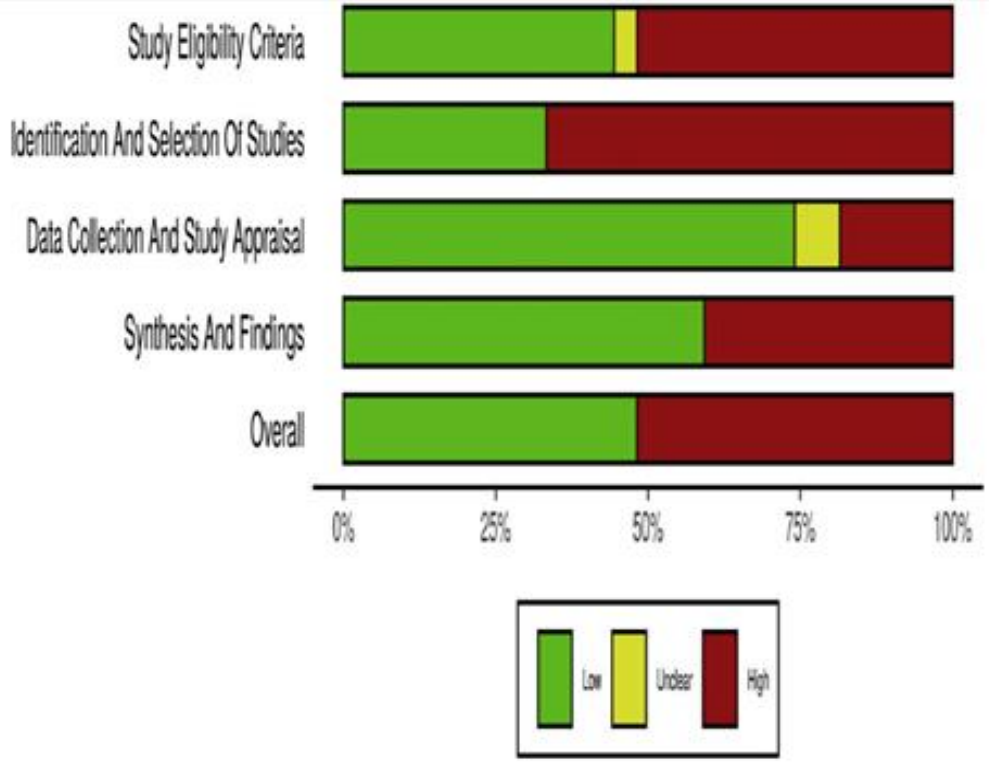
To create a set of **evidence- and expert consensus-based** prevention and management recommendations

Can physical activity and exercise help delay or prevent dementia?

	People with no memory/ cognitive issues	Mild cognitive impairment (MCI)	Dementia
What was the aim of the studies?	Effects on delaying MCI or dementia	Effects on delaying dementia	Effect on the progression of dementia
Systematic literature search and expert consensus			
Physical activity Daily life activities (e.g., gardening, walking, cycling)	May delay the onset of dementia	May delay the onset of dementia	May have positive effects on mood and behaviour
Exercise Planned & structured physical activity (e.g., strength workout)	• Exercise alone may be no better than health education for prevention	• Can be promoted • No type of exercise is better than another • Based on preference & other diseases/ conditions	• May maintain brain's resistance to damage • May maintain mental processes (e.g. learning, reasoning, memory, perception)
Future directions	Need for more research/ trials involving larger groups of participants Integrate physical activity and exercise in broader prevention strategies (e.g. for heart disease, healthy aging) Physical activity and exercise important for public health finances	Need for more research/ trials involving larger groups of participants Research on the effects of physical activity and exercise alone without medications involved Research physical activity & the effect of exercise in mood and behaviour	Need for more research/ trials involving larger groups of participants More studies including severe dementia in physical activity & exercise Include less common forms of dementia

QUALITY OF THE STUDIES: RISK OF BIAS





Demurtas et al. JAMDA 2020

Observational studies vs RCTs: it is not only a problem of age but also of design

RISK FACTORS CLUSTER: how can we disentangle the effect of physical activity and other protective factors?

REVERSE CAUSATION: Findings from relatively short-term longitudinal studies of a lower risk of dementia in physically active persons may be attributable to reverse causation

Data from the Whitehall II study with a mean follow-up of 27 years did not support the neuroprotective effect of physical activity (Sabia et al. 2017)

Attention in studies on conversion from MCI to dementia!

CONCLUSIONI

L'attività e l'esercizio fisico fanno bene alla salute globale della persona.

I meccanismi attraverso cui potrebbero fare bene anche al cervello sono plausibili.

Gli studi che abbiamo a disposizione non sono definitivi perché:
- raggruppiamo cose diverse nelle stesse classi sia come exposures che come outcomes
- bassa qualità e elevato rischio di bias
- difficile distinguere l'effetto dell'attività fisica da quello di altri fattori protettivi

OBS: possibili mediatori multipli

Le società scientifiche sono propense comunque a raccomandare
l'attività fisica per un sano invecchiamento cerebrale,