

Aerobic Exercise for the Aging Brain: Dosage, Mechanisms, and Modifiers

Aerobic exercise training initiated in young adulthood and continued through middle and old age may reduce age-related cognitive decline and the risk of dementia.

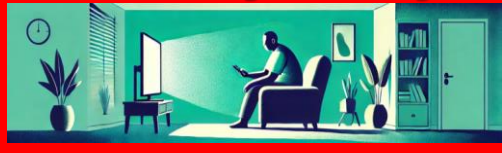
Cognitive function

HIGH

Aerobic Exercise



Sedentary Lifestyle



LOW

Alzheimer's Disease and Related Dementias

YOUNG

MIDDLE AGE

OLD

Mediated by change in:

- Gray matter volume
- White matter integrity
- Brain perfusion and vascular function

Modified by:

- Type of sport
- Environment
- Social interaction
- Health status
- Biological factors (e.g., age, sex, genetics)

Tabuchi, Ayaka^{1,2}; Poole, David C.³; Kano, Yutaka^{2,4}. Intracellular Ca²⁺ After Eccentric Muscle Contractions: Key Role for Ryanodine Receptors. *Exercise and Sport Sciences Reviews* 53(1):p 23-30, January 2025. | DOI: 10.1249/JES.0000000000000348

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