

Table I - Characteristics of the included studies

Article	Location	Study Type	Sample Size	Population	Intervention	Comparator	Myokines	Others outcomes
Kettinen et al., 2023	Finland	Randomized Clinical Trial	75	Men (n=44) and Women (n=31) Mean Age: 69 Healthy	Aerobic Exercise	Exercise type pre vs. post-activity	BDNF, CTSC	Lower cognitive functions (attention and processing speed) and task-switching ability
Rodziewicz-Flis et al., 2023	Germany	Clinical Trial	32	Men (n=5) and Women (n=27) Mean Age: 68.7 Healthy	Aerobic Exercise	Pre vs. post-activity	BDNF, Irisin	Body Composition, Cognitive Function, and Physical Performance
Zhang et al., 2023	China	Clinical Trial	23	Men (n=15) and Women (n=08) Mean Age: 68.08 Parkinson's Disease	Multimodal Exercise Training	Pre vs. post-activity	Irisin	Balance and Quality of life
De Poli et al., 2021	Brazil	Clinical Trial	14	Women Mean Age: 24 Healthy	Aerobic exercise	Pre vs. post-activity in luteal and follicular phase	BDNF	Cognitive function, Mood states, Physical activity level
Gaitán et al., 2021	United States of America	Clinical Trial	23	Men (n=11) and Women (n=12) Mean Age: 65 Parental history of Alzheimer's Disease	Aerobic Exercise	Pre vs. post-activity	BDNF, CTSC, Klotho	Cognition, Executive function, and Metabolites
Tsai et al., 2021	China	Clinical Trial	21	Men (n=10) and Women (n=11) Mean Age: 60.62 Healthy	Aerobic Exercise	Different exercise protocols	BDNF, Irisin	Neurocognitive performance
Hirsch et al., 2020	Israel	Clinical Trial	22	Men (n=14) and Women (n=8) Age: 23-36 Prader-Willi Syndrome and Healthy Subjects	Resistance Exercises	Prader-Willi Syndrome patients vs. Control group	IL-6, BDNF, Irisin, Osteonectin, Myostatin, FGF-21	Creatine Kinase, Glucose, Lactate

Nicolini et al., 2020	Canada	Clinical Trial	40	Men Healthy	Aerobic Exercise	Exercise vs. Control	BDNF, Irisin	Corticospinal excitability, intracortical facilitation, and short-interval intracortical inhibition
Reycraft et al., 2020	Canada	Clinical Trial	8	Men Mean Age: 23 Healthy	Aerobic Exercise	Exercise intensity	BDNF, Irisin	Neuroprotection and Synaptic plasticity
Gmiat et al., 2018	Poland	Clinical Trial	35	Women Mean Age: 68 Healthy	Aerobic Exercise	Untrained vs. trained	Irisin, CRP, BDNF	Cognitive Functions
Tsai et al., 2017	China	Randomized Clinical Trial	66	Men (n=28) and Women (n=38) Mean Age: 66 Amnesic Mild Cognitive Impairment	Aerobic Exercise and Resistance Exercise	Aerobic exercise vs. Resistance exercise vs. Control	BDNF, IGF-1, VEGF, FGF-21	Cognitive function

BDNF = Brain-derived neurotrophic factor; CRP = C-reactive protein; CTSB = Cathepsin B; FGF-21 = Fibroblast growth factor-21; IL-6 = Interleukine-6; IGF-1 = Insulin-like growth factor 1, VEGF = Vascular endothelial growth factor