

Pubmed

((((((((probiotics[Text Word]) OR (prebiotics[Text Word])) OR (synbiotics[Text Word])) OR (bifidobacteria[Text Word])) OR (streptococci[Text Word])) OR (lactobacillus[Text Word])) AND (((((((((((((((((((Dementia[MeSH Terms]) OR (Dementias[Text Word])) OR (Alzheimer disease[MeSH Terms])) OR (Alzheimer's disease[Text Word])) OR (Alzheimer dementia[Text Word])) OR (Alzheimer sclerosis[Text Word])) OR (Alzheimer syndrome[Text Word])) OR (Parkinson disease[MeSH Terms])) OR (Parkinson's disease[Text Word])) OR (Paralysis Agitans[Text Word])) OR (Amyotrophic lateral sclerosis[MeSH Terms])) OR (Gehrig disease[Text Word])) OR (Guam disease[Text Word])) OR (Multiple sclerosis[MeSH Terms])) OR (Disseminated sclerosis[Text Word])) OR (Cognitive dysfunction[MeSH Terms])) OR (mild cognitive impairment[Text Word])) OR (Cognitive disorder[Text Word])) OR (Cognitive decline[Text Word])))) AND (((randomized controlled trial[Publication Type]) OR (clinical trial[Publication Type])) OR (clinical study[Publication Type]))

Embase

#1 probiotics:ti,ab,kw OR prebiotics:ti,ab,kw OR synbiotics:ti,ab,kw
OR bifidobacteria:ti,ab,kw OR streptococci:ti,ab,kw OR lactobacillus:ti,ab,kw
#2 dementia:ti,ab,kw OR dementias:ti,ab,kw OR 'alzheimer disease':ti,ab,kw
OR 'alzheimers disease':ti,ab,kw OR 'alzheimer dementia':ti,ab,kw OR 'alzheimer
sclerosis':ti,ab,kw OR 'alzheimer syndrome':ti,ab,kw
#3 'parkinson disease':ti,ab,kw OR 'parkinsons disease':ti,ab,kw OR 'paralysis
agitans':ti,ab,kw
#4 'amyotrophic lateral sclerosis':ti,ab,kw OR 'gehrig disease':ti,ab,kw OR 'guam
disease':ti,ab,kw
#5 'multiple sclerosis':ti,ab,kw OR 'disseminated sclerosis':ti,ab,kw
#6 'cognitive dysfunction':ti,ab,kw OR 'mild cognitive impairment':ti,ab,kw
OR 'cognitive disorder':ti,ab,kw OR 'cognitive decline':ti,ab,kw
#7 #2 OR #3 OR #4 OR #5 OR #6

#8 'randomized controlled trial':ti,ab,kw OR 'clinical trial':ti,ab,kw OR 'clinical study':ti,ab,kw

#9 #1 AND #7 AND #8

Cochrane library

#1 (probiotics):ti,ab,kw OR (prebiotics):ti,ab,kw OR (Synbiotics):ti,ab,kw OR (Bifidobacteria):ti,ab,kw OR (streptococci):ti,ab,kw OR (Lactobacillus):ti,ab,kw

#2 (Dementia):ti,ab,kw OR (Dementias):ti,ab,kw OR (Alzheimer disease):ti,ab,kw OR (Alzheimer's diseaseus):ti,ab,kw OR (Alzheimer dementia):ti,ab,kw OR (Alzheimer sclerosis):ti,ab,kw OR (Alzheimer syndrome):ti,ab,kw

#3 (Parkinson disease):ti,ab,kw OR (Parkinson's disease):ti,ab,kw OR (Paralysis Agitans):ti,ab,kw

#4 (Multiple sclerosis):ti,ab,kw OR (Disseminated sclerosis):ti,ab,kw

#5 (Amyotrophic lateral sclerosis):ti,ab,kw OR (Gehrig disease):ti,ab,kw OR (Guam disease):ti,ab,kw

#6 (Cognitive dysfunction):ti,ab,kw OR (mild cognitive impairment):ti,ab,kw OR (Cognitive disorder):ti,ab,kw OR (Cognitive decline):ti,ab,kw

#7 #2 OR #3 OR #4 OR #5 OR #6

#8 (randomized controlled trial):ti,ab,kw OR (clinical trial):ti,ab,kw OR (clinical study):ti,ab,kw

#9 #1 AND #7 AND #8

Web of science

1:((((ALL=(probiotics)) OR ALL=(prebiotics)) OR ALL=(synbiotics)) OR ALL=(bifidobacteria)) OR ALL=(streptococci)) OR ALL=(lactobacillus)

2:((((((((((((((((ALL=(Dementia)) OR ALL=(Dementias)) OR ALL=(Alzheimer disease)) OR ALL=(Alzheimer's disease)) OR ALL=(Alzheimer dementia)) OR ALL=(Alzheimer sclerosis)) OR ALL=(Alzheimer syndrome)) OR ALL=(Parkinson disease)) OR ALL=(Parkinson's disease)) OR ALL=(2.Paralysis Agitans)) OR ALL=(Amyotrophic lateral sclerosis)) OR ALL=(Gehrig disease)) OR ALL=(Guam

disease)) OR ALL=(Multiple sclerosis)) OR ALL=(Disseminated sclerosis)) OR ALL=(Cognitive dysfunction)) OR ALL=(mild cognitive impairment)) OR ALL=(Cognitive disorder)) OR ALL=(Cognitive decline)

3:((ALL=(randomized controlled trial)) OR ALL=(clinical trial)) OR ALL=(clinical study)

4:#1 AND #2 AND #3 AND #4

Reference	Reason
Aljumaah MR, Bhatia U, Roach J, Gunstad J, Azcarate Peril MA. The gut microbiome, mild cognitive impairment, and probiotics: A randomized clinical trial in middle-aged and older adults. Clin Nutr. 2022 Nov;41(11):2565-2576. doi: 10.1016/j.clnu.2022.09.012.	Participants do not meet the inclusion criteria
Kobayashi Y, Kuhara T, Oki M, Xiao JZ. Effects of Bifidobacterium breve A1 on the cognitive function of older adults with memory complaints: a randomised, double-blind, placebo-controlled trial. Benef Microbes. 2019 May 28;10(5):511-520. doi: 10.3920/BM2018.0170.	The diagnostic criteria are unclear
Hsu YC, Huang YY, Tsai SY, Kuo YW, Lin JH, Ho HH, Chen JF, Hsia KC, Sun Y. Efficacy of Probiotic Supplements on Brain-Derived Neurotrophic Factor, Inflammatory Biomarkers, Oxidative Stress and Cognitive Function in Patients with Alzheimer's Dementia: A 12-Week Randomized, Double-Blind Active-Controlled Study. Nutrients. 2023 Dec 20;16(1):16. doi: 10.3390/nu16010016.	Controls do not meet the criteria
Becker A, Schmartz GP, Gröger L, Grammes N, Galata V, Philippeit H, Weiland J, Ludwig N, Meese E, Tierling S, Walter J, Schwiertz A, Spiegel J, Wagenpfeil G, Faßbender K, Keller A, Unger MM. Effects of Resistant Starch on Symptoms, Fecal Markers, and Gut Microbiota in Parkinson's Disease - The RESISTA-PD Trial. Genomics Proteomics Bioinformatics. 2022 Apr;20(2):274-287. doi: 10.1016/j.gpb.2021.08.009.	Cohort study
Sakurai K, Toshimitsu T, Okada E, Anzai S, Shiraishi I, Inamura N, Kobayashi S, Sashihara T, Hisatsune T. Effects of Lactiplantibacillus plantarum OLL2712 on Memory Function in Older Adults with Declining Memory: A Randomized Placebo-Controlled Trial. Nutrients. 2022 Oct 14;14(20):4300. doi: 10.3390/nu14204300.	The diagnostic criteria are unclear
Azuma N, Mawatari T, Saito Y, Tsukamoto M, Sampei M, Iwama Y. Effect of Continuous Ingestion of Bifidobacteria and Dietary Fiber on Improvement in Cognitive Function: A Randomized, Double-Blind, Placebo-Controlled Trial. Nutrients. 2023 Sep 27;15(19):4175. doi: 10.3390/nu15194175.	Participants do not meet the inclusion criteria
Sanborn V, Azcarate-Peril MA, Updegraff J, Manderino LM, Gunstad J. A randomized clinical trial examining the impact of LGG probiotic supplementation on psychological status in middle-aged and older adults. Contemp Clin Trials Commun. 2018 Nov 14;12:192-197. doi: 10.1016/j.conctc.2018.11.006. PMID: 30511028	Participants do not meet the inclusion criteria

Tamtaji OR, Kouchaki E, Salami M, Aghadavod E, Akbari E, Tajabadi-Ebrahimi M, Asemi Z. The Effects of Probiotic Supplementation on Gene Expression Related to Inflammation, Insulin, and Lipids in Patients With Multiple Sclerosis: A Randomized, Double-Blind, Placebo-Controlled Trial. J Am Coll Nutr. 2017 Nov-Dec;36(8):660-665. doi: 10.1080/07315724.2017.1347074. Epub 2017 Sep 18. Update in: J Am Nutr Assoc. 2022 Jan;41(1):125. doi: 10.1080/07315724.2020.1842691. Retraction in: J Am Nutr Assoc. 2024 Jul 9:1. doi: 10.1080/2769706	Retracted article
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