

Supplementary file S1: Detailed search formula in various databases

Authors	Outcome				Comparability	selection			Total
	Representativeness of the exposed cohort	Selection of the non-exposed cohort	Ascertainment of exposure	Demonstration that outcome of interest was not present at start of study		Comparability of cohorts on the basis of the design or analysis	Assessment of outcome	Was follow-up long enough for outcomes to occur	
Choi et al. [1]	*	*	0	*	*	0	*	*	6/9
Demmer et al. [2]	*	0	*	*	**	*	*	0	7/9
Chen et al. [3]	*	*	*	*	**	*	*	*	9/9
Stewart et al. [4]	*	*	*	*	**	*	0	0	7/9
Tzeng et al. [5]	*	*	*	*	**	*	*	*	9/9
Sparks Stein et al.[6]	0	*	*	*	**	*	*	*	8/9

PubMed search strategy:

Search	Query	No. of hits
#1	Search: (((((((oral pathogens) OR (oral bacteria)) OR (oral disease)) OR (oral health)) OR (mouth disease)) OR (gum disease)) OR (gum bacteria)) OR (periodontitis)) OR (gingivitis)) OR (periodontal gingivalis)	722027
#2	Search: (((((((dementia) OR (peripheral neuroinflammation)) OR (central neuroinflammation)) OR (neurodegeneration)) OR (cognitive decline)) OR (memory loss)) OR (Alzheimer's disease)) OR (Parkinson)) OR (ALS)) OR (Vascular dementia)	616268

#3	Search: (((((((((oral pathogens) OR (oral bacteria)) OR (oral disease)) OR (oral health)) OR (mouth disease)) OR (gum disease)) OR (gum bacteria)) OR (periodontitis)) OR (gingivitis)) OR (periodontal gingivalis)) AND (((((((((dementia) OR (peripheral neuroinflammation)) OR (central neuroinflammation)) OR (neurodegeneration)) OR (cognitive decline)) OR (memory loss)) OR (Alzheimer's disease)) OR (Parkinson)) OR (ALS)) OR (Vascular dementia))	11768
#4	Search: (((((((((oral pathogens) OR (oral bacteria)) OR (oral disease)) OR (oral health)) OR (mouth disease)) OR (gum disease)) OR (gum bacteria)) OR (periodontitis)) OR (gingivitis)) OR (periodontal gingivalis)) AND (((((((((dementia) OR (peripheral neuroinflammation)) OR (central neuroinflammation)) OR (neurodegeneration)) OR (cognitive decline)) OR (memory loss)) OR (Alzheimer's disease)) OR (Parkinson)) OR (ALS)) OR (Vascular dementia)) Filters: Observational Study, Humans, English, Adult: 19+ years	112

Web of Science search strategy:

Search History:

Set	Results		Save History / Create Alert	Open Saved History	Edit Sets	Combine Sets		Delete Sets	
						<input type="radio"/> AND <input type="radio"/> OR	Combine	Select All	<input type="checkbox"/> Delete
# 24	5,724	#23 AND #11 <i>Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years</i>			Edit	<input type="checkbox"/>	<input type="checkbox"/>		
# 23	337,581	#22 OR #21 OR #20 OR #19 OR #18 OR #17 OR #16 OR #15 OR #14 OR #13 OR #12 <i>Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years</i>			Edit	<input type="checkbox"/>	<input type="checkbox"/>		
# 22	35,808	(TS=(Amyotrophic Lateral Sclerosis OR ALS)) AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article) <i>Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years</i>			Edit	<input type="checkbox"/>	<input type="checkbox"/>		
# 21	67,351	(TS=(Parkinson's disease)) AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article) <i>Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years</i>			Edit	<input type="checkbox"/>	<input type="checkbox"/>		
# 20	12,593	(TS=(vascular dementia)) AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article) <i>Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years</i>			Edit	<input type="checkbox"/>	<input type="checkbox"/>		
# 19	122,453	(TS=(dementia)) AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article) <i>Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years</i>			Edit	<input type="checkbox"/>	<input type="checkbox"/>		
# 18	103,995	(TS=(Alzheimer's disease)) AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article) <i>Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years</i>			Edit	<input type="checkbox"/>	<input type="checkbox"/>		
# 17	25,911	(TS=(memory loss)) AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article) <i>Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years</i>			Edit	<input type="checkbox"/>	<input type="checkbox"/>		
# 16	43,318	(TS=(cognitive decline)) AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article) <i>Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years</i>			Edit	<input type="checkbox"/>	<input type="checkbox"/>		
# 15	43,049	(TS=(neurodegeneration)) AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article) <i>Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years</i>			Edit	<input type="checkbox"/>	<input type="checkbox"/>		
# 14	4,860	(TS=(central neuroinflammation)) AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article) <i>Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years</i>			Edit	<input type="checkbox"/>	<input type="checkbox"/>		
# 13	2,413	(TS=(peripheral neuroinflammation)) AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article) <i>Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years</i>			Edit	<input type="checkbox"/>	<input type="checkbox"/>		
# 12	122,453	(TS=(dementia)) AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article) <i>Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years</i>			Edit	<input type="checkbox"/>	<input type="checkbox"/>		
# 11	213,996	#10 OR #9 OR #8 OR #7 OR #6 OR #5 OR #4 OR #3 OR #2 OR #1 <i>Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years</i>			Edit	<input type="checkbox"/>	<input type="checkbox"/>		
# 10	6,411	(TS=(periodontal gingivitis)) AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article) <i>Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years</i>			Edit	<input type="checkbox"/>	<input type="checkbox"/>		

CINAHL search strategy:



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#	Query	Limiters/Expanders	Last Run Via	Results
S5	(dementia OR peripheral neuroinflammation OR central neuroinflammation OR neurodegeneration OR cognitive decline OR memory loss OR alzheimer's disease OR vascular dementia OR parkinson's disease OR (amyotrophic lateral sclerosis or als)) AND (S1 AND S4)	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	14
S4	dementia OR peripheral neuroinflammation OR central neuroinflammation OR neurodegeneration OR cognitive decline OR memory loss OR alzheimer's disease OR vascular dementia OR parkinson's disease OR (amyotrophic lateral sclerosis or als)	Limiters - Full Text; English Language; Research Article; Exclude MEDLINE records; Human; Age Groups: All Adult; Language: English Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	2,660
S3	(oral pathogen OR oral bacteria OR oral disease OR oral health OR mouth diseases OR gum disease OR periodontal disease OR periodontitis OR gingivitis OR periodontal gingivitis) AND (S1)	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	560
S2	oral pathogen OR oral bacteria OR oral disease OR oral health OR mouth diseases OR gum disease OR periodontal disease OR periodontitis OR gingivitis OR periodontal gingivitis	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	45,574
S1	oral pathogen OR oral bacteria OR oral disease OR oral health OR mouth diseases OR gum disease OR periodontal disease OR periodontitis OR gingivitis OR periodontal gingivitis	Limiters - Full Text; English Language; Research Article; Exclude MEDLINE records; Human; Age Groups: All Adult Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	560

Supplementary file S2: Risk of bias assessment of included studies

S2A. Risk of bias in cohort studies

S2B. Risk of bias in case-control studies:

Authors	Selection				Compara bility	Outcome			Total
	Is the case definition adequate?	Representat iveness of the cases	Selection of Controls	Definition of Controls	Compara bility of cases and controls on the basis of the design or analysis	Ascertain ment of exposure	Same method of ascertai nment for cases and controls	Non- Respo nse rate	
Montoya et al. [7]	*	*	*	*	**	*	*	0	8/9
Shin et al. [8]	*	*	*	0	*	*	*	0	6/9

S2C. Risk of bias in cross-sectional studies:

Authors	selection			comparability	outcome	total
	Representativeness of the sample	Selection of non- exposed participants	Ascertainment of exposure		Ascertainment of outcome	
Hategan et al. [9]	0	*	*	*	*	4/6
Kamer et al. [10]	*	*	*	*	*	5/6
Noble et al. [11]	*	*	*	**	0	5/6

In order to assess the quality of studies we used the Newcastle Ottawa Scale(NOS). NOS is a star rating system where that allocates a maximum of nine stars for case-control and cohort studies across three categories: participant selection (four stars), comparability (two stars) and outcome (three stars); and maximum of six stars for cross-sectional studies across the same three categories: participant selection (three stars), comparability (two stars) and outcome (one star). Case-control and cohort studies of six or more stars and cross-sectional studies of four or more stars are considered 'high-quality' studies [12].(*) symbol means 'high' quality choices

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