

評価対象論文リスト(要因:社会経済状況(SES)、アウトカム:循環器病)

評価判定日:2025/4/25

①既存の系統的レビュー・メタ解析・統合解析

1	Kim Y, Twardzik E, Judd SE, Colabianchi N. Neighborhood socioeconomic status and stroke incidence: a systematic review. <i>Neurology</i> . 2021;96(19):897-907. doi:10.1212/WNL.00000000000011892
2	Wang T, Li Y, Zheng X. Association of socioeconomic status with cardiovascular disease and cardiovascular risk factors: a systematic review and meta-analysis. <i>J Public Health (Berl)</i> . 2024;32(3):385-399. doi:10.1007/s10389-023-01825-4
3	Baruwa OJ, Alberti F, Onagbiye S, et al. Are socio-economic inequalities related to cardiovascular disease risk? A systematic review and meta-analysis of prospective studies. <i>BMC Cardiovasc Disord</i> . 2024;24(1):685. doi:10.1186/s12872-024-04248-5
4	Anand VV, Zhe ELC, Chin YH, et al. Socioeconomic deprivation and prognostic outcomes in acute coronary syndrome: A meta-analysis using multidimensional socioeconomic status indices. <i>International Journal of Cardiology</i> . 2023;383:140-150. doi:10.1016/j.ijcard.2023.04.042
5	Backholer K, Peters SAE, Bots SH, Peeters A, Huxley RR, Woodward M. Sex differences in the relationship between socioeconomic status and cardiovascular disease: a systematic review and meta-analysis. <i>J Epidemiol Community Health</i> . 2017;71(6):550-557. doi:10.1136/jech-2016-
6	Kerr GD, Slavin H, Clark D, Coupar F, Langhorne P, Stott DJ. Do vascular risk factors explain the association between socioeconomic status and stroke incidence: a meta-analysis. <i>Cerebrovasc Dis</i> . 2011;31(1):57-63. doi:10.1159/000320855
7	Woodward M, Peters SAE, Batty GD, et al. Socioeconomic status in relation to cardiovascular disease and cause-specific mortality: a comparison of Asian and Australasian populations in a pooled analysis. <i>BMJ Open</i> . 2015;5(3):e006408. doi:10.1136/bmjopen-2014-006408

②日本人集団の個別疫学研究

8	Honjo K, Iso H, Inoue M, Sawada N, Tsugane S. Socioeconomic status inconsistency and risk of stroke among Japanese middle-aged women. <i>Stroke</i> . 2014;45(9):2592-2598. doi:10.1161/STROKEAHA.114.005238
9	The Jichi Medical School Cohort Study Group, Honjo K, Tsutsumi A, Kayaba K. Socioeconomic indicators and cardiovascular disease incidence among Japanese community residents: the Jichi Medical School Cohort Study. <i>Int J Behav Med</i> . 2010;17(1):58-66. doi:10.1007/s12529-
10	Ito S, Takachi R, Inoue M, et al. Education in relation to incidence of and mortality from cancer and cardiovascular disease in Japan. <i>The European Journal of Public Health</i> . 2008;18(5):466-472. doi:10.1093/eurpub/ckn052

■メタ解析、系統的レビュー

Reference			Include study					Design	Category	Relative risk (95% CI or p)	covariates	Magnitude of association		
Author	Title	Year	Ref No.	First author	Year	Study period	Study location						Event (*Definition)	
Kim Y, Twardzik E, Judd SE, Colabianchi N.	Neighborhood Socioeconomic Status and Stroke Incidence: A Systematic Review.	2021	12	Brown AF	2011		US (Cardiovascular Health Study:CHS)	Incident ischemic stroke	Cohort studies	Neighborhood socioeconomic index (nSES);ref:the most advantaged, quartile	HR 1.32 (95% CI: 1.01-1.72)	age, sex, race,median household income,education	weak ↑ ,	
										Race:White (least)			HR 0.6 (95% CI: 0.33-1.07)	NS
										Race:Black (least)				
			13	Carlsson AC	2017		Sweden (Nationwide Swedish Registers)	Incident ischemic stroke	Cohort studies	Neighborhood -level socioeconomic status:high (advantaged),middle, low, ref:middle		age, sex, marital status, education level, immingrant status, region of residence, neighborhood goods and services	weak ↑	
										SES: High	HR0.87 (0.78-0.96)		weak ↓	
										SES: Low	HR 1.16 (1.06-1.27)		weak ↑	
										Men, High (ref:middle)	HR (0.87:0.76-0.99)		weak ↓	
										Men, Low (ref:middle)	HR1.05 (0.93-1.20)		NS	
										Women High (ref:middle)	HR 0.87 (0.74-1.01)		NS	
										Women Low (ref:middle)	HR 1.30 (1.13-1.49)		weak ↑	
			31	Clark CJ	2011		US (Chicago Health and Aging Project)	Incident stroke (predicting mortality)	Cohort studies	Neighborhood socioeconomic status:quartile (higher:advantaged)	HR 0.97 (0.75-1.26)	age ,sex, race , sBP,physical activity, smoking, DM, chronic conditions, stroke history, neighborhood behavior	NS	
33	Forsberg P-O	2018		Sweden (Nationwide Swedish Registers)	Incidence of coronary heart		nSES (ref;high) (95%CI was only shown in a bar graph)							
							Men:age 40s	HR1.07		weak ↑				
							Men:50s	HR 1.05		weak ↑				
							Men:60s	HR1.04		weak ↑				

						Women: 40s	HR 1.11		weak ↑
						Women:50s	HR 1.1		weak ↑
						Women:60s	HR1.08	age,sex, marital status	weak ↑
				Incident ischemic stroke	Cohort studies	Men:40s	HR 1.04		weak ↑
						Men:50s	HR 1.03		weak ↑
						Men:60s	HR1.02		weak ↑
						Women: 40s	HR1.07		weak ↑
						Women:50s	HR1.04		weak ↑
						Women:60s	HR1.04		weak ↑
32	Freedman VA	2011 2years	US (health and retirement study)			nSES (high ref, 6items),quartile			
				Heart problems		Economic disadvantage: Male	OR 0.98 (0.79-1.22)		NS
						Economic disadvantage: Female	OR 1.20 (1.00-1.43)	age,sex, race, marital status, region,smoking,childhood healthbirth	NS
						Economic advantage:Male	OR 0.94 (0.80-1.12)	,region,immigrant, segregation, connectivity, airpollution, density	NS
						Economic advantage:Female	OR 0.95 (0.81-1.11)		NS
				Incident stroke		Economic disadvantage: Male	OR 0.81 (0.57-1.14)		NS
						Economic disadvantage: Female	OR 0.78 (0.60-1.02)		NS
						Economic advantage:Male	OR 0.92 (0.70-1.21)		NS
						Economic advantage:Female	OR 0.85 (0.66-1.08)		NS
16	Honjo K	2015	Japan (JPHC)	Stroke incidence		ADI (0-4, ref least deprived:0)			
						1	HR 1.16 (1.04-1.29)	age,sex, PHC, occupation, population density	weak ↑
						2	HR 1.12 (1.00-1.26)		weak ↑
						3	HR 1.18 (1.02-1.35)		weak ↑
						4	HR1.19 (95%CI:1.0-1.41)		weak ↑
17	Howard VJ	2016	US (Reasons for Geographic and Racial Differences in	Incident stroke		nSES (ref most advantaged;0),			
						White 3	HR 1.18 (0.94-1.48)	age,sex, race,region	NS
						White 2	1.18 (0.93-1.52)		NS
						White 1	1.26 (0.94-1.70)		NS
						Black 3	1.08 (0.69-1.69)		NS
						Black 2	1.12 (0.72-1.72)		NS
						Black 1	1.17 (0.76-1.80)		NS
18	Yan T	2013	US (CHS)	Incident ischemic stroke		nSES(ref 1; most advantaged)			
						White 2	HR 1.25 (0.98-1.60)	age,sex,race, marital status	NS
						White 3	1.27 (0.97-1.66)		NS
						White 4	1.32 (1.01-1.73)		weak ↑
						African-American 2	0.66 (0.39-1.11)		NS
						African-American 3	0.68 (0.41-1.13)		NS

African-American 4 0.60 (0.35-1.05) NS

Reference		Include study						Design	Category	Relative risk (95% CI or p)	Weight	Magnitude of association	
Author	Title	Year	Ref No.	First author	Year	Study period	Study location						Event (*Definition)
Wang T et al.,	Association of socioeconomic status with cardiovascular disease and cardiovascular risk factors: a systematic review and meta-analysis.	2023					Global (without Japan)	CVD incidence	Cohort studies	Income	HR (95%CI)		
			over all (ref; High)	1.17 (95%CI:1.14-1.20) p<0.001	weak ↑								
			Low (ref;High)	1.22 (1.17-1.28)	weak ↑								
			Middle (ref: High)	1.12 (1.09-1.16)	weak ↑								
			Education										
			over all (ref; High)	1.31 (1.22-1.40), p<0.001	weak ↑								
			Low (ref;High)	1.44 (1.28-1.63)	weak ↑								
			Middle (ref: High)	1.20 (1.11-1.30)	weak ↑								
			nSES										
			over all (ref; High)	1.15 (1.06-1.25), p<0.049	weak ↑								
			Low (ref;High)	1.28 (1.16-1.41)	weak ↑								
			Middle (ref: High)	1.07 (1.03-1.11)	weak ↑								
			Income (ref; High)										
			Low	1.16 (1.13-1.18)	7.08 weak ↑								
			Middle	1.10 (1.08-1.12)	7.17 weak ↑								
			Low	1.24 (1.12-1.36)	3.89 weak ↑								
			Middle	1.10 (1.06-1.15)	6.38 weak ↑								
			Low	1.34 (1.11-1.56)	1.96 weak ↑								
			Middle	1.06 (0.85-1.28)	1.47 NS								
			Low	1.35 (1.18-1.52)	2.92 weak ↑								
			Middle	1.19 (1.13-1.26)	5.76 weak ↑								
			Low	1.17 (0.86-1.49)	0.9 NS								
			Middle	1.22 (1.06-1.38)	2.77 weak ↑								
			Low	1.22(1.15-1.30)	5.44 weak ↑								
			Middle	1.21 (1.12-1.30)	4.83 weak ↑								
			Low	1.13 (1.04-1.22)	4.59 weak ↑								
			Middle	1.02 (0.81-1.23)	1.43 NS								
			Low	1.18 (1.10-1.25)	5.31 weak ↑								
Middle	1.07 (1.01-1.13)	5.68 weak ↑											
Low	1.18 (0.81-1.70)	0.52 NS											
Middle	1.05 (0.65-1.68)	0.33 NS											
Low	1.39 (1.17-1.60)	2.21 weak ↑											
Middle	1.00 (0.85-1.16)	2.23 NS											
Low	1.59 (1.22-1.96)	1.16 moderate ↑ ↑											
Middle	1.21 (1.11-1.30)	4.63 weak ↑											
Low	1.09 (1.01-1.17)	4.87 weak ↑											
Middle	1.04 (0.97-1.12)	4.94 NS											
Low	1.32 (1.24-1.40)	5.47 weak ↑											
Middle	1.16 (1.11-1.22)	6.09 weak ↑											
Education (ref;High)													
Low	1.22 (1.12-1.33)	8.97 weak ↑											
Middle	1.11 (1.00-1.23)	8.46 weak ↑											
Low	1.45 (1.09-1.80)	4.48 weak ↑											
Middle	1.22 (0.91-1.54)	4.24 NS											
Low	0.99 (0.52-1.88)	1.08 NS											
Middle	1.14 (0.54-2.39)	0.83 NS											
Low	1.69 (1.34-2.05)	5.33 moderate ↑ ↑											
Middle	1.45 (1.14-1.77)	5.15 weak ↑											
Low	1.48 (1.18-1.75)	5.72 weak ↑											
				Cho Y	2019		Korea						
				Quan H	2013		Canada						
				Machado S	2021		US						
				Tezlaff J	2021		German						
				Geyer S	2019		German						
				Hassen HY	2020		Belgium, France						
				Rosengren A	2019		US, China, Tanzania, and other 17countries						
				An J	2020		US						
				Masoudkabir F	2012		Iran						
				Kilpi F	2017		Finland						
				Kriegbaum M	2019		Denmark						
				Kilpi F	2016		Finland						
				Koopman	2012		Holland						
				Hassen HY	2020		Belgium, France						
				Rosengren A	2019		US, China, Tanzania, and other 17countries						
				Masoudkabir F	2012		Iran						
				Kilpi F	2017		Finland						
				Kriegbaum M	2019		Denmark						

Author	Title	Year	Ref No.	First author	Year	Study period	Study location	Event (*Definition)	Design	Category	Relative risk (95%CI or p)	Weight	covariates	Magnitude of association
Kerr GD	Do vascular risk factors explain the association between socioeconomic status and stroke incidence: a meta-analysis.	2011					Global (without Japan)	Stroke	Cohort studies	Lowest SES (ref: Highest)	HR 1.31 (1.16-1.48)		age, gender, vascular risk factors	weak ↑
			24	Avendano	2006	US	Low SES			1.45 (0.70-3.01)	2.5	weak ↑		
			6	M and Glymour	2008	US	Low SES			1.60 (1.20-2.13)	10.1	moderate ↑ ↑		
			15	Gillm RF	2003	US	Low SES Men			0.97 (0.68-1.39)	7.7	NS		
			15	Mussolino	2003	US	Low SES Women			1.39 (0.97-1.99)	7.7	NS		
			1	Hart CL	2000	UK (Scotland)	Low SES			1.07 (0.87-1.32)	13.9	NS		
			16	Hart CL	2000	UK (Scotland)	Low SES Men			1.31 (0.76-2.26)	4.1	NS		
			16	Hart CL	2000	UK (Scotland)	Low SES Women			1.24 (0.68-2.25)	3.5	NS		
			2	Kuper H	2007	Sweden (Women)	Low SES Women			1.50 (1.00-2.25)	6.4	moderate ↑ ↑		
			22	Laaksonen M	2008	Finland	Low SES			1.37 (0.71-2.64)	3.00	NS		
			3	McCarron	2001	UK (Bristol)	Low SES			1.43 (1.08-1.89)	10.4	weak ↑		
			25	Metcalfe C	2005	Scotland	Low SES			0.88 (0.64-1.21)	9.0	NS		
			4	Power C	2005	UK	Low SES			1.48 (0.97-2.26)	6.1	weak ↑		
			7	van Rossum	1999	Netherlands	Low SES			1.69 (1.05-2.72)	5.1	moderate ↑ ↑		
5	Xu F	2008	China	Low SES	1.64 (1.25-2.15)	10.7	moderate ↑ ↑							

■コホート研究(コホートのプール解析含む)

Reference			Study subjects						Category	Number among cases	Relative risk (95%CI or p)	P for trend	Confounding variables considered	Magnitude of association
Author	Title	Year	Study period	Number of subjects	Source of subjects	Event followed	Number of incident cases or deaths	Participant's race						
Honjo K et al.,	Socioeconomic status inconsistency and risk of stroke among Japanese middle-aged women.	2014	1999-2010	14742 women, 40 to 59 years old	Japan Public Health Center-Based Prospective Study (JPHC Study)	stroke (ie, subarachnoid hemorrhage, intraparenchymal hemorrhage, or ischemic stroke)	597 cases of stroke incidence	Japanese	HR			age, marital status, area, education level, occupation, cardiovascular risk (BMI, smoking, alcohol, physical activity, psychological stress, medical history of hypertension, history of diabetes, medical history of hypercholesterolemia)	NS	moderate ↑ ↑
									Education					
									Junior high school	403	1.00 (ref)			
									High school	146	0.73 (0.59-0.89)			
									Junior college, vocational school, or college	48	0.97 (0.69-1.36)			
									Occupation					
									Professional/manager	22	1.00 (ref)			
Office work	49	1.63 (0.96-2.78)												
Service/sales	184	1.78 (1.10-2.88)												
Manual job	342	1.60 (0.99-2.60)												

■コホート研究(コホートのプール解析含む)

Reference			Study subjects						Category	Number among cases	Relative risk (95%CI or p)	P for trend	Confounding variables considered	Magnitude of association
Author	Title	Year	Study period	Number of subjects	Source of subjects	Event followed	Number of incident cases or deaths	Participant's race						

	Primary	421	0.91 (0.69-1.19)		0.472	NS NS
	Secondary	288	0.94 (0.72-1.22)			
	Tertiary	91	1.1 (ref)			
Women						
	Primary	315	1.18 (0.79-1.78)		0.001	NS NS
	Secondary	103	0.79 (0.51-1.20)			
	Tertiary	33	1.1 (ref)			

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Reference		Study subjects						Category	Number among cases	Relative risk (95%CI or p)	P for trend	Confounding variables considered	Magnitude of association
Author	Title	Year	Study perio	Number of subjects	Source of subjects	Event followed	Number of incident cases or deaths	Participant's race					
Woodward M	Socioeconomic status in relation to cardiovascular disease and cause-specific mortality: a comparison of Asian and Australasian populations in a pooled analysis.	2015		303036	24 APCSC studies	CVD	Australasia 2323/ Asia 2106	Asian (Japan, China, Taiwan, Hong Kong, Singapore), and Australian, Neazealand people	Education attainment				
									All cardiovascular disease (fatal and non-fatal)	HR (95%CI)	P for linearity	age,sex, systolic blood pressure, total cholesterol, BMI, smoking, alcohol drinking	
									Australia				
									Tertiary	1 (ref)			NS
									Secondary	1.04 (0.92-1.18)			NS
									Primary or none	1.11 (0.99-1.25)			NS
									Asia		<0.001		
									Tertiary	1 (ref)			NS
									Secondary	1.08 (0.88-1.33)			NS
									Primary or none	1.61 (1.32-1.96)			more ↑ ↑
									All coronary disease				
									Australia		<0.001		
									Tertiary	1 (ref)			NS
									Secondary	1.05 (0.89-1.23)			NS
									Primary or none	1.15 (0.98-1.35)			NS
									Asia		0.08		
									Tertiary	1 (ref)			NS
									Secondary	1.01 (0.71-1.44)			NS
									Primary or none	1.18 (0.83-1.67)			NS
									All stroke				
									Australia		0.52		
									Tertiary	1 (ref)			NS
									Secondary	1.06 (0.84-1.33)			NS
									Primary or none	1.08 (0.86-1.36)			NS
									Asia		<0.001		
									Tertiary	1 (ref)			NS
									Secondary	1.01 (0.75-1.36)			NS
									Primary or none	1.54 (1.17-2.04)			more ↑ ↑