評価対象論文リスト(要因:食塩、アウトカム:循環器病)

評価判定日:2025/1/20

①既存の系統的レビュー・メタ解析・統合解析

1	Poggio R, Gutierrez L, Matta MG, Elorriaga N, Irazola V, Rubinstein A. Daily sodium consumption and CVD mortality in the general population: systematic review and meta-analysis of prospective studies. Public Health Nutr. 2015;18(4):695-704. doi:10.1017/S1368980014000949
2	Strazzullo P, D'Elia L, Kandala NB, Cappuccio FP. Salt intake, stroke, and cardiovascular disease: meta-analysis of prospective studies. BMJ. 2009;339:b4567. Published 2009 Nov 24. doi:10.1136/bmj.b4567
3	Overwyk KJ, Quader ZS, Maalouf J, et al. Dietary Sodium Intake and Health Indicators: A Systematic Review of Published Literature between January 2015 and December 2019. Adv Nutr. 2020;11(5):1174-1200. doi:10.1093/advances/nmaa049

②日本人集団の個別疫学研究

4	Takachi R, Inoue M, Shimazu T, et al. Consumption of sodium and salted foods in relation to cancer and cardiovascular disease: the Japan Public Health Center-based Prospective Study. Am J Clin Nutr. 2010;91(2):456-464. doi:10.3945/ajcn.2009.28587
5	Umesawa M, Iso H, Date C, et al. Relations between dietary sodium and potassium intakes and mortality from cardiovascular disease: the Japan Collaborative Cohort Study for Evaluation of Cancer Risks. Am J Clin Nutr. 2008;88(1):195-202. doi:10.1093/ajcn/88.1.195
6	Nagata C, Takatsuka N, Shimizu N, Shimizu H. Sodium intake and risk of death from stroke in Japanese men and women. Stroke. 2004;35(7):1543-1547. doi:10.1161/01.STR.0000130425.50441.b0

■メタ解析、系統的レビュー

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)					
Poggio R et al	Daily sodium consumption and CVD mortality in the general population: systematic review and meta-analysis of prospective studies	2015	11	Tunstall-Pedoe (男性)	1997			CVD mortality	prospective studies	sodium intake: higher compared with lower	0.98 (0.86, 1.12)	18.86	
			11	Tunstall-Pedoe (女性)	1997						1.14 (0.87, 1.49)	4.4	
			18	He (肥満群)	1999						1.63 (1.16, 2.29)	2.78	
			18	He (非肥満群)	1999						1.18 (0.92, 1.51)	5.19	
			21	Tuomilehto (男性)	2001						1.38 (1.05, 1.81)	4.31	
			21	Tuomilehto (女性)	2001						1.43 (0.74, 2.76)	0.74	
			28	Nagata (男性)	2004						2.33 (1.23, 4.41)	0.79	
			28	Nagata (女性)	2004						1.70 (0.96, 3.01)	0.99	
			12	Cohen	2006						0.76 (0.53, 1.09)	2.48	
			20	Geleijnse	2007						0.83 (0.47, 1.47)	0.99	
			27	Umesawa	2008						1.42 (1.19, 1.69)	10.3	
			15	Nakamura	2009						1.25 (1.03, 1.52)	8.58	
			13	Yang	2011						0.83 (0.31, 2.22)	0.33	
			19	Stolarz-Skrzypek	2011						0.95 (0.66, 1.37)	2.42	
			14	Ikehara (男性)	2012						1.05 (0.92, 1.20)	18.42	
			14	Ikehara (女性)	2012						1.05 (0.92, 1.20)	18.42	-

P Strazzullo et al	Salt intake, stroke, and cardiovascular disease: meta-analysis of prospective studies	2009	10	Kagan	1985		US	Incident stroke	prospective studies	higher compared with lower salt intake	0.92 (0.60 to 1.42)		
			11	Hu	1992		Taiwan				1.79 (1.18 to 2.70)		
			6	Alderman (Men)	1995		US				0.59 (0.10 to 3.43)		
			6	Alderman (Women)	1995		US				2.10 (1.01 to 4.33)		
			9	He (Normal weight)	1999		US				0.99 (0.81 to 1.20)		
			9	He (Over weight)	1999		US				1.39 (1.10 to 1.76)		
			13	Tuomilheto (Men)	2001		Finland				1.00 (0.68 to 1.48)		
			13	Tuomilheto (Women)	2001		Finland				1.34 (0.87 to 2.06)		
			14	Nagata (Men)	2004		Japan				2.34 (1.23 to 4.47)		
			14	Nagata (Women)	2004		Japan				1.70 (0.96 to 3.00)		
			15	Cohen	2006		NHANES Ⅱ				0.56 (0.28 to 1.11)		
			16	Geleijnse	2007		Netherlands				1.08 (0.81 to 1.45)		
			18	Larsson	2008		Finland				1.04 (0.93 to 1.17)		
			19	Umesawa	2008		Japan				1.55 (1.20 to 2.00)		
											1.23 (1.06 to 1.43)		↑
			6	Alderman (Men)	1995		US	Incident cardiovascular disease	prospective studies	higher compared with lower salt intake	0.37 (0.18 to 0.75)		
			6	Alderman (Women)	1995		US				2.29 (0.44 to 11.9)		
			12	Tunstall-Pedoe (Men)	1997		Scotland				1.05 (0.97 to 1.14)		
			12	Tunstall-Pedoe (Women)	1997		Scotland				1.16 (1.01 to 1.33)		
			9	He (Men)	1999		US				1.67 (1.27 to 2.19)		
			9	He (Women)	1999		US				1.54 (1.12 to 2.10)		
			13	Tuomilheto (Men)	2001		Finland				1.38 (1.05 to 1.81)		
			13	Tuomilheto (Women)	2001		Finland				1.43 (0.74 to 2.79)		
			15	Cohen	2006		NHANES Ⅱ				0.88 (0.74 to 1.05)		
			16	Geleijnse	2007		Netherlands				0.77 (0.60 to 0.99)		
			17	Cook (Ⅰ)	2007		USA				2.53 (1.30 to 4.94)		
			17	Cook (Ⅱ)	2007		USA				1.12 (0.78 to 1.59)		
			19	Umesawa	2008		Japan				1.42 (1.19 to 1.69)		
			20	Cohen	2008		NHANES Ⅲ				0.88 (0.77 to 1.01)		
											1.14 (0.99 to 1.31)		-

■コホート研究（コホートのプール解析含む）

Author	Title	Year	Study subjects: Study period	Number of subjects	Source of subjects	Event followed	Number of incident cases or deaths	Participant's race	Category	Number among cases	Relative risk (95%CI or p)	P for trend	Confounding variables considered	**Magnitude of association**
Takachi R et al	Consumption of sodium and salted foods in relation to cancer and cardiovascular disease: the Japan Public Health Center-based Prospective Study	2010	cohort Ⅰ: 1995-2004, cohort Ⅱ: 1998-2004	77,500	Japan Public Health Center–based Prospective Study	CVD incidence	2,066	Japanese	**Quintile of sodium intake**					
									Q1	416	1.00 (reference)			
									Q2	428	1.11 (0.96, 1.29)			
									Q3	386	1.02 (0.87, 1.19)	0.06		
									Q4	403	1.10 (0.94, 1.29)			
									Q5	433	1.19 (1.01, 1.40)			↑
									Pickled vegetables					
									Q1	458	1.00 (reference)			
									Q2	373	0.88 (0.76, 1.01)			
									Q3	424	0.98 (0.85, 1.13)	0.48		
									Q4	397	0.88 (0.76, 1.02)			
									Q5	414	0.92 (0.79, 1.07)		sex, age, BMI, smoking status, alcohol consumption, physical activity in metabolic equivalent task-hours/d, quintiles of energy, potassium, calcium	-
									Dried and salted fish					
									Q1	499	1.00 (reference)			
									Q2	433	0.97 (0.85, 1.12)			
									Q3	366	0.84 (0.72, 0.97)	0.04		
									Q4	380	0.88 (0.76, 1.02)			
									Q5	388	0.86 (0.74, 0.99)			↓
									Salted fish roe					
									Q1	420	1.00 (reference)			
									Q2	424	1.02 (0.86, 1.21)			
									Q3	421	1.00 (0.86, 1.17)	0.27		
									Q4	378	1.00 (0.85, 1.17)			
									Q5	423	1.08 (0.93, 1.25)			-
									Miso soup					
									Q1	380	1.00 (reference)			
									Q2	374	0.99 (0.85, 1.16)			
									Q3	403	0.97 (0.83, 1.13)	0.35		
									Q4	390	0.90 (0.77, 1.04)			
									Q5	519	1.09 (0.95, 1.26)			-
									Cooking and table salt					
									Q1	437	1.00 (reference)			
									Q2	430	1.05 (0.91, 1.21)			
									Q3	409	1.06 (0.92, 1.23)	0.05		
									Q4	370	0.98 (0.84, 1.15)			
									Q5	420	1.21 (1.03, 1.42)			↑

Umesawa M et al	Relations between dietary sodium and potassium intakes and mortality from cardiovascular disease: the Japan Collaborative Cohort Study for Evaluation of Cancer Risks	2008	1988-2003	58,730	Japan Collaborative Cohort Study for Evaluation of Cancer (JACC)	mortality from cardiovascular disease	deaths from stroke; 986 deaths from coronary heart disease; 424	Japanese	**Total stroke**						
									Q1	154	1.00 (reference)				
									Q2	144	0.96 (0.76, 1.22)				
									Q3	193	1.26 (1.00, 1.59)	<0.001			
									Q4	230	1.42 (1.12, 1.80)				
									Q5	265	1.55 (1.21, 2.00)				↑ ↑
									Intraparenchymal hemorrhage						
									Q1	48	1.00 (reference)				
									Q2	32	0.73 (0.46, 1.17)				
									Q3	46	1.08 (0.69, 1.68)	0.079			
									Q4	44	1.04 (0.65, 1.66)				
									Q5	57	1.40 (0.86, 2.23)		BMI, smoking status, ethanol intake, history of hypertension, history of diabetes, menopause, hormone replacement therapy, time spent of sports activity, walking time, educational status, perceived mental stress, calcium intake, potassium intake		-
									Subarachnoid hemorrhage						
									Q1	28	1.00 (reference)				
									Q2	24	0.74 (0.42, 1.32)				
									Q3	27	0.79 (0.45, 1.41)	0.53			
									Q4	39	1.09 (0.62, 1.92)				
									Q5	35	1.01 (0.54, 1.86)				-
									Ischemic stroke						
									Q1	61	1.00 (reference)				
									Q2	73	1.25 (0.88, 1.77)				
									Q3	106	1.76 (1.25, 2.49)	<0.001			
									Q4	125	1.97 (1.39, 2.80)				
									Q5	145	2.04 (1.41, 2.94)				↑ ↑ ↑
									Coronary heart disease						
									Q1	83	1.00 (reference)				
									Q2	72	0.92 (0.66, 1.28)				
									Q3	82	1.05 (0.75, 1.46)	0.23			
									Q4	88	1.09 (0.77, 1.54)				
									Q5	99	1.19 (0.82, 1.73)				–
									Total cardiovascular disease						
									Q1	338	1.00 (reference)				
									Q2	344	1.04 (0.89, 1.22)				
									Q3	402	1.19 (1.01, 1.39)	<0.001			
									Q4	463	1.29 (1.10, 1.52)				
									Q5	540	1.42 (1.20, 1.69)				↑

Nagata C	Sodium intake and risk of death from stroke in Japanese men and women	2004	1992.9.1-1999.12.31	men; 13355 women; 15724	Takayama study	death from stroke	269 stroke deaths (137 men and 132 women)	Japanese	**Tertile of Sodium Intake**						
									Men						
									Total stroke						
									Low	23	1.00 (reference)				
									Middle	40	1.60 (0.92–2.80)	0.009			
									High	74	2.33 (1.23–4.45)			↑ ↑ ↑	
									Hemorrhagic stroke						
									Low	13	1.00 (reference)				
									Middle	19	1.76 (0.79–3.91)	0.11			
									High	23	2.27 (0.85–6.02)			↑ ↑	
									Subarachnoid hemorrhage						
									Low	5	1.00 (reference)				
									Middle	6	1.01 (0.27–3.82)	0.76			
									High	6	0.77 (0.14–4.27)			-	
									Intracerebral hemorrhage						
									Low	8	1.00 (reference)				
									Middle	13	2.41 (0.89–6.56)	0.03			
									High	17	3.85 (1.16–12.7)			↑ ↑ ↑	
									Ischemic stroke						
									Low	8	1.00 (reference)				
									Middle	19	2.07 (0.86–5.00)	0.02			
									High	43	3.22 (1.22–8.53)			↑ ↑ ↑	
									Women						
									Total stroke						
									Low	40	1.00 (reference)				
									Middle	39	1.33 (0.80–2.21)	0.07			
									High	53	1.70 (0.96–3.02)			↑	
									Hemorrhagic stroke						
									Low	16	1.00 (reference)				
									Middle	15	1.25 (0.56–2.82)	0.62			
									High	16	1.28 (0.49–3.37)			–	
									Subarachnoid hemorrhage						
									Low	9	1.00 (reference)				
									Middle	8	1.39 (0.47–4.13)	0.4			
									High	9	1.73 (0.48–6.27)			↑	
									Intracerebral hemorrhage						
									Low	7	1.00 (reference)				
									Middle	7	1.21 (0.36–4.05)	0.89			
									High	7	0.92 (0.22–3.89)			–	
									Ischemic stroke						
									Low	21	1.00 (reference)				
									Middle	15	1.09 (0.51–2.32)	0.05			
									High	31	2.10 (0.96–4.62)			↑ ↑	