評価対象論文リスト（要因：肉・赤肉・加工肉、アウトカム：糖尿病）
評価判定日：2024/4/24

①既存の系統的レビュー・メタ解析・統合解析

1	Aune D, Ursin G, Veierød MB. Meat consumption and the risk of type 2 diabetes: a systematic review and meta-analysis of cohort studies. *Diabetologia* . 2009;52(11):2277-2287. doi:10.1007/s00125-009-1481-x
2	Micha R, Wallace SK, Mozaffarian D. Red and processed meat consumption and risk of incident coronary heart disease, stroke, and diabetes mellitus: a systematic review and meta-analysis. *Circulation* . 2010;121(21):2271-2283. doi:10.1161/CIRCULATIONAHA.109.924977
3	Schwingshackl L, Hoffmann G, Lampousi AM, et al. Food groups and risk of type 2 diabetes mellitus: a systematic review and meta-analysis of prospective studies. *Eur J Epidemiol* . 2017;32(5):363-375. doi:10.1007/s10654-017-0246-y
4	Tian S, Xu Q, Jiang R, Han T, Sun C, Na L. Dietary Protein Consumption and the Risk of Type 2 Diabetes: A Systematic Review and Meta-Analysis of Cohort Studies. *Nutrients* . 2017;9(9):982. Published 2017 Sep 6. doi:10.3390/nu9090982
5	Neuenschwander M, Ballon A, Weber KS, et al. Role of diet in type 2 diabetes incidence: umbrella review of meta-analyses of prospective observational studies. *BMJ* . 2019;366:l2368. Published 2019 Jul 3. doi:10.1136/bmj.l2368
6	Fan M, Li Y, Wang C, et al. Dietary Protein Consumption and the Risk of Type 2 Diabetes: ADose-Response Meta-Analysis of Prospective Studies. *Nutrients* . 2019;11(11):2783. Published 2019 Nov 15. doi:10.3390/nu11112783
7	Yang X, Li Y, Wang C, et al. Meat and fish intake and type 2 diabetes: Dose-response meta-analysis of prospective cohort studies. *Diabetes Metab* . 2020;46(5):345-352. doi:10.1016/j.diabet.2020.03.004
8	Zhang R, Fu J, Moore JB, Stoner L, Li R. Processed and Unprocessed Red Meat Consumption and Risk for Type 2 Diabetes Mellitus: An Updated Meta-Analysis of Cohort Studies. *Int J Environ Res Public Health* . 2021;18(20):10788. Published 2021 Oct 14. doi:10.3390/ijerph182010788

②日本人集団の個別疫学研究

9	Kurotani K, Nanri A, Goto A, et al. Red meat consumption is associated with the risk of type 2 diabetes in men but not in women: a Japan Public Health Center-based Prospective Study. *Br J Nutr* . 2013;110(10):1910-1918. doi:10.1017/S0007114513001128

■系統的レビュー・メタ解析・統合解析

No	Author	Title	Year	Category	Relative risk (95% CI)	Magnitude of association	Studies included from
1	Aune, D., et al	Meat consumption and the risk of type 2 diabetes: a systematic review and meta-analysis of cohort studies.	2009	Total meat (highest Vs lowest)	1.17 (0.92, 1.48)	-	Japan, USA, Finland, China, Australia, Germany, UK
				Total meat (120 g/day)	1.26 (0.84, 1.88)	-	
				Red meat (highest vs lowest)	1.21 (1.07, 1.38)	↑	
				Red meat (120 g/day)	1.20 (1.04, 1.38)	↑	
				Processed meat (highest vs lowest)	1.41 (1.25, 1.60)	↑	
				Processed meat (50 g/day)	1.57 (1.28, 1.93	↑↑	
2	Micha, R., et al	Red and processed meat consumption and risk of incident coronary heart disease, stroke, and diabetes mellitus: a systematic review and meta-analysis.	2010	Total meat (100 g/day)	1.12 (1.05, 1.19)	↑	Australia, Shanghai, Finland, Germany, UK, Spain
				Processed meat 50g/day)	1.19 (1.11, 1.27)	↑	
				Read meat (100g/day)	1.16 (0.92, 1.46)	-	
3	Schwingshackl, L., et al	Food groups and risk of type 2 diabetes mellitus: a systematic review and meta-analysis of prospective studies.	2017	Red meat intake (high versus low)	1.21 (1.13, 1.30)	↑	Europe, Sweden, USA, Japan, Finland, Spain Netharlands, China
				Red meat intake (100 g/ day)	1.17 (1.08, 1.26)	↑	
				Processed meat (high versus low)	1.27 (1.20, 1.35)	↑	
				Processed meat (50g/day)	1.37 (1.22, 1.55)	↑	
4	Tian, S., et al	Dietary Protein Consumption and the Risk of Type 2 Diabetes: A Systematic Review and Meta-Analysis of Cohort Studies.	2017	Meat intake high vs low	1.22 (1.09, 1.36)	↑	USA, Finland, China, Australia, Germany, UK
				Processed meat intake high vs low	1.39 (1.29, 1.49)	↑	
5	Neuenschwander, M., et al	Role of diet in type 2 diabetes incidence: umbrella review of meta-analyses of prospective observational studies.	2019	Red meat (100 g/day)	1.17 (1.08, 1.26)	↑	
				Unprocessed red meat 100g/day)	1.11 (0.97, 1.28)	-	
				Processed red meat 50g/day)	1.44 (1.18, 1.76)	↑	
				Processed meat 50g/day)	1.37 (1.22, 1.54)	↑	
6	Fan, M., et al	Dietary Protein Consumption and the Risk of Type 2 Diabetes: ADose-Response Meta- Analysis of Prospective Studies.	2019	Each 50 g of red meat intake per day	1.11 (1.06, 1.16)	↑	Netherla nds, Korea, China, USA, Finland, UK, Spain, Jaapan, Sweden, Flance
				Each additional daily consumption of 50 g of processed meat	1.41 (1.24, 1.60)	↑	
7	Yang, X., et al	Meat and fish intake and type 2 diabetes: Dose-response meta-analysis of prospective cohort studies.	2020	Total meat (high vs low)	1.33 (1.16–1.52)	↑	Japan, USA, Finland, China, Germany, Netherlands, Norway, Sweden, Spanish, Singapore, Korea, Iran
				Total meat (100 g/day)	1.36 (1.23–1.49)	↑	
				Red meat (high vs low)	1.22 (1.16–1.28)	↑	
				Red meat (100 g/day)	1.31 (1.19–1.45)	↑	
				Processed meat (high vs low)	1.25 (1.13–1.37)	↑	
				Processed meat (50 g/day)	1.46 (1.26–1.69)	↑	
				Poultry intake (high vs low)	1.00 (0.93–1.07)	-	
				Poultry intake (50 g/day)	1.04 (1.00–1.09)	-	
8	Zhang, R., et al	Processed and Unprocessed Red Meat Consumption and Risk for Type 2 Diabetes Mellitus: An Updated Meta-Analysis of Cohort Studies.	2021	Unprocessed red meat (highest vs lowest)	1.15 (1.08, 1.23)	↑	USA, France, Finland, Sweden, Spain, Korea, China, Singapore,
				Processed red meat (highest vs lowest)	1.27 (1.15, 1.40)	↑	

■日本人集団の個別疫学研究

No	Author	Title	Year	Study period	Number of subjects for analysis	Source of subjects	Event followed	Definitions	Number of incident cases or deaths	Participant's race	Category	Number among cases	Relative risk (95%CI)	P for trend	Confounding variable considered	Magnitude of association
9	Kurotani, K., et al	Red meat consumption is associated with the risk of type 2 diabetes in men but not in women: a Japan Public Health Center-based Prospective Study.	2013	Cohort I: 1990-1995 Cohort II; 1993-1998	27 425 men and 36 424 women	JPHC study	Incident of diabetes	Type 2 diabetes was ascertained using a self-administered questionnaire	1178	Japanese	Men: Total meat Q1	166/6856	Ref.	0.006	age, public health centre area, BMI, smoking status, alcohol consumption, total physical activity, the history of hypertension, coffee consumption, the family history of diabetes, Mg intake, Ca intake, rice intake, fish intake, vegetable intake, soft drink consumption and energy intake.	
											Q2	143/6856	0.88 (0.70–1.11)			–
											Q3	168/6857	1.06 (0.85–1.34)			
											Q4	204/6856	1.36 (1.07–1.73)			↑
											Total red meat Q1	152/6856	Ref.	0.003		
											Q2	161/6856	1.09 (0.87–1.37)			–
											Q3	166/6857	1.15 (0.91–1.46)			–
											Q4	202/6856	1.48 (1.15–1.90)			↑
											Unprosessed red meat Q1	160/6856	Ref.	0.007		
											Q2	157/6856	0.99 (0.79–1.24)			–
											Q3	157/6857	1.01 (0.80–1.27)			
											Q4	207/6856	1.42 (1.12–1.81)			↑
											Prosessed red meat Q1	167/6856	Ref.	0.27		
											Q2	167/6856	1.02 (0.81–1.27)			–
											Q3	155/6857	0.94 (0.75–1.19)			–
											Q4	192/6856	1.19 (0.94–1.50)			–
											Poultry Q1	168/6856	Ref.	0.38		
											Q2	149/6856	0.87 (0.69–1.09)			–
											Q3	178/6857	1.02 (0.82–1.27)			–
											Q4	186/6856	1.07 (0.85–1.34)			–
											Women: Total meat Q1	140/9106	Ref.	0.14		
											Q2	127/9106	0.97 (0.76–1.25)			
											Q3	115/9106	0.89 (0.68–1.15)			–
											Q4	115/9106	0.82 (0.62–1.09)			–
											Total red meat Q1	143/9106	Ref.	0.08		
											Q2	124/9106	0.90 (0.70–1.14)			
											Q3	118/9106	0.86 (0.67–1.10)			–
											Q4	112/910	0.77 (0.60–1.01)			–
											Unprosessed red meat Q1	137/9106	Ref.	0.1		
											Q2	133/9106	1.04 (0.82–1.33)			
											Q3	115/9106	0.91 (0.71–1.18)			–
											Q4	112/9106	0.81 (0.61–1.07)			–
											Prosessed red meat Q1	140/9106	Ref.	0.98		
											Q2	116/9106	0.94 (0.73–1.22)			
											Q3	125/9106	1.05 (0.82–1.36)			–
											Q4	116/9106	0.96 (0.73–1.26)			–
											Poultry Q1	139/9106	Ref.	0.56		
											Q2	109/9106	0.82 (0.63–1.05)			–
											Q3	125/9106	0.94 (0.73–1.21)			–
											Q4	124/9106	0.89 (0.68–1.15)			–