

## 評価対象論文リスト(要因:能動喫煙、アウトカム:フレイルおよびサルコペニア)

評価判定日:2023/4/27

### ■フレイル

#### ①既存の系統的レビュー・メタ解析・統合解析

1	Mello Ade C, Engstrom EM, Alves LC. Health-related and socio-demographic factors associated with frailty in the elderly: a systematic literature review. <i>Cad Saude Publica</i> . 2014;30(6):1143-1168. doi:10.1590/0102-311x00148213
2	Kojima G, Iliffe S, Walters K. Smoking as a predictor of frailty: a systematic review. <i>BMC Geriatr</i> . 2015;15:131. Published 2015 Oct 22. doi:10.1186/s12877-015-0134-9
3	Lafortune L, Martin S, Kelly S, et al. Behavioural Risk Factors in Mid-Life Associated with Successful Ageing, Disability, Dementia and Frailty in Later Life: A Rapid Systematic Review. <i>PLoS One</i> . 2016;11(2):e0144405. Published 2016 Feb 4. doi:10.1371/journal.pone.0144405
4	Amiri S, Behnezhad S. Systematic review and meta-analysis of the association between smoking and the incidence of frailty. <i>Systematische Übersicht und Metaanalyse des Zusammenhangs zwischen Rauchen und der Inzidenz von Gebrechlichkeit</i> . <i>Neuropsychiatr</i> . 2019;33(4):198-206.
5	Kojima G, Taniguchi Y, Iliffe S, Urano T, Walters K. Factors Associated With Improvement in Frailty Status Defined Using the Frailty Phenotype: A Systematic Review and Meta-analysis. <i>J Am Med Dir Assoc</i> . 2019;20(12):1647-1649.e2. doi:10.1016/j.jamda.2019.05.018
6	Kojima G, Taniguchi Y, Iliffe S, Jivraj S, Walters K. Transitions between frailty states among community-dwelling older people: A systematic review and meta-analysis. <i>Ageing Res Rev</i> . 2019;50:81-88. doi:10.1016/j.arr.2019.01.010
7	Atkins JL, Jylhävä J, Pedersen NL, et al. A genome-wide association study of the frailty index highlights brain pathways in ageing. <i>Aging Cell</i> . 2021;20(9):e13459. doi:10.1111/acel.13459
8	Piotrowicz K, Gryglewska B, Grodzicki T, Gaşowski J. Arterial stiffness and frailty - A systematic review and metaanalysis. <i>Exp Gerontol</i> . 2021;153:111480. doi:10.1016/j.exger.2021.111480

#### ②日本人個別研究(ランダム化比較試験、コホート研究、症例対照研究、横断研究などの個別疫学研究)

9	Nishi M, Shinkai S, Yoshida H, et al. <i>Nihon Ronen Igakkai Zasshi</i> . 2012;49(3):344-354. doi:10.3143/geriatrics.49.344
10	田中 あさひ, 新井 康通, 平田 匠, 阿部 由紀子, 小熊 祐子, 漆原 尚巳, 地域在住高齢者におけるポリファーマシーと抗コリン作動薬及び鎮静作用薬が身体・認知・精神に与える影響の評価: The Kawasaki Wellbeing Project, <i>日本老年医学会雑誌</i> , 2019, 56 巻, 4 号, p. 504-515, 公開日 2019/11/22, Print ISSN 0300-9173, <a href="https://doi.org/10.3143/geriatrics.56.504">https://doi.org/10.3143/geriatrics.56.504</a> ,
11	吉田 司, 渡邊 大輝, 中瀬 崇, 山田 陽介, 黒谷 佳代, 澤田 奈緒美, 田中 健司, 岡林 恵, 島田 秀和, 瀧本 秀美, 西 信雄, 宮地 元彦, 阿部 圭一, 大阪府摂津市および阪南市における働く世代からのフレイル該当割合ならびにその関連要因, <i>日本公衆衛生雑誌</i> , 2021, 68 巻, 8 号, p. 525-537, 公開日 2021/08/11, [早期公開] 公開日 2021/05/14, Online ISSN 2187-8986, Print ISSN 0546-1766, <a href="https://doi.org/10.11236/jph.20-111">https://doi.org/10.11236/jph.20-111</a>

#### ③有力な研究

12	Erlandson KM, Wu K, Koletar SL, et al. Association Between Frailty and Components of the Frailty Phenotype With Modifiable Risk Factors and Antiretroviral Therapy. <i>J Infect Dis</i> . 2017;215(6):933-937. doi:10.1093/infdis/jix063
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13	Brunner EJ, Shipley MJ, Ahmadi-Abhari S, et al. Midlife contributors to socioeconomic differences in frailty during later life: a prospective cohort study. <i>Lancet Public Health</i> . 2018;3(7):e313-e322. doi:10.1016/S2468-2667(18)30079-3
14	Kojima G, Iliffe S, Jivraj S, Liljas A, Walters K. Does current smoking predict future frailty? The English longitudinal study of ageing. <i>Age Ageing</i> . 2018;47(1):126-131. doi:10.1093/ageing/afx136
15	Niederstrasser NG, Rogers NT, Bandelow S. Determinants of frailty development and progression using a multidimensional frailty index: Evidence from the English Longitudinal Study of Ageing. <i>PLoS One</i> . 2019;14(10):e0223799. Published 2019 Oct 30. doi:10.1371/journal.pone.0223799

■サルコペニア

①既存の系統的レビュー・メタ解析・統合解析

16	Steffl M, Bohannon RW, Petr M, Kohlikova E, Holmerova I. Relation between cigarette smoking and sarcopenia: meta-analysis. <i>Physiol Res</i> . 2015;64(3):419-426. doi:10.33549/physiolres.932802
17	Peters R, Ee N, Peters J, Booth A, Mudway I, Anstey KJ. Air Pollution and Dementia: A Systematic Review. <i>J Alzheimers Dis</i> . 2019;70(s1):S145-S163. doi:10.3233/JAD-180631

②日本人個別研究(ランダム化比較試験、コホート研究、症例対照研究、横断研究などの個別疫学研究)

18	下方 浩史, 安藤 富士子, 3. 疫学研究からのサルコペニアとそのリスク—特に栄養との関連, 日本老年医学会雑誌, 2012, 49 巻, 6 号, p. 721-725, 公開日 2013/07/24, Print ISSN 0300-9173, <a href="https://doi.org/10.3143/geriatrics.49.721">https://doi.org/10.3143/geriatrics.49.721</a> ,
19	堀江 秀茂, 尾田 照美, 柴田 洋子, 伊勢 和美, 坂東 直子, 非喫煙かつ非肥満中年女性のパーセント肺活量低下はサルコペニアの予測因子である, 総合健診, 2018, 45 巻, 5 号, p. 614-617, 公開日 2018/12/01, Online ISSN 1884-4103, Print ISSN 1347-0086, <a href="https://doi.org/10.7143/jhep.45.614">https://doi.org/10.7143/jhep.45.614</a> , <a href="https://www.jstage.jst.go.jp/article/jhep/45/5/45_614/article-char/ja">https://www.jstage.jst.go.jp/article/jhep/45/5/45_614/article-char/ja</a>
20	上泉 理, 高橋 友哉, 江端 純治, 荒谷 隆, 千葉 春子. 当院における末梢動脈疾患とサルコペニアの関連性. 日本サルコペニア・フレイル学会雑誌. 2021

③有力な研究

21	da Silva JRD, Freire IV, Ribeiro ÍJS, et al. Improving the comprehension of sarcopenic state determinants: An multivariate approach involving hormonal, nutritional, lifestyle and genetic variables. <i>Mech Ageing Dev</i> . 2018;173:21-28. doi:10.1016/j.mad.2018.05.008
22	Lenchik L, Barnard R, Boutin RD, et al. Automated Muscle Measurement on Chest CT Predicts All-Cause Mortality in Older Adults From the National Lung Screening Trial. <i>J Gerontol A Biol Sci Med Sci</i> . 2021;76(2):277-285. doi:10.1093/gerona/glaa141

■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	RefNo.	First author	Year	Study period	Study location	Event (*Definition)						
Amiri S, Behnezhad S.	Systematic review and meta-analysis of the association between smoking and the incidence of frailty.	2019	39	Etman		2015 2 years	11 European countries		Cohort		1.11(1.02, 1.20)	12.84		
			44	Lee		2014 2 years	Hong Kong		Cohort		1.13(0.79, 1.61)	4.00		
			48	Woods		2005 5.9 years	USA		Cohort		1.31(1.20, 1.43)	12.59		
			36	Brothers		2017 4 years	Italy		Cohort		1.05(1.04, 1.07)	14.56		
			37	Brunner		2018 18 years	UK		Cohort		1.12(0.93, 1.34)	8.61		
			40	García-Esquinas		2015 2 years	Spain		Cohort		1.36(0.84, 2.21)	2.48		
			41	Hoogendijk		2014 13 years	The Netherlands		Cohort		1.54(1.14, 2.07)	5.11		
			42	Iwasaki		2018 5 years	japan		incidence	Cohort	smoking	1.24(0.58, 2.64)	1.12	
			43	Kojima		2018 4 years	UK		Cohort		1.60(1.02, 2.51)	2.79		
			46	Strandberg		2012 26 years	Finland		Cohort		1.36(1.04, 1.78)	5.82		
			47	Thompson		2018 2 years	Australia		Cohort		1.13(0.86, 1.47)	5.84		
			49	Zheng		2016 1 year	China		Cohort		1.23(1.00, 1.50)	7.86		
			45	Myers		2014 10–13 years	Israel		Cohort		1.26(0.93, 1.71)	4.97		
			38	Chamberlain		2016 7 years	USA		Cohort		1.32(1.18, 1.49)	11.38		
											overall	1.22(1.12, 1.33)	100	↑
						39	Etman		2015 2 years			Cohort	current smoking	1.16(1.02, 1.32)
			44	Lee		2014 2 years			Cohort	current smoking	1.74(0.89, 3.40)	3.73		
			48	Woods		2005 5.9 years			Cohort	current smoking	2.90(2.35, 3.57)	7.98		
			37	Brunner		2018 18 years			Cohort	current smoking	1.69(1.27, 2.25)	7.21		
			40	García-Esquinas		2015 2 years			Cohort	current smoking	1.03(0.41, 2.55)	2.47		
			41	Hoogendijk		2014 13 years			Cohort	current smoking	1.54(1.14, 2.55)	7.08		
			42	Iwasaki		2018 5 years		incidence	Cohort	current smoking	1.24(0.58, 2.64)	3.20		
			43	Kojima		2018 4 years			Cohort	current smoking	1.60(1.02, 2.51)	5.52		
			47	Thompson		2018 2 years			Cohort	current smoking	2.70(1.54, 4.75)	4.51		
			45	Myers		2014 10–13 years			Cohort	current smoking	1.26(0.93, 1.71)	7.02		
									subtotal	1.63(1.24, 2.14)	57.37	↑		
			39	Etman		2015 2 years			Cohort	former smoking	1.07(0.96, 1.19)	8.78		
			44	Lee		2014 2 years			Cohort	former smoking	0.95(0.62, 1.45)	5.77		
			48	Woods		2005 5.9 years			Cohort	former smoking	1.12(1.02, 1.23)	8.86		
			37	Brunner		2018 18 years			Cohort	former smoking	0.85(0.67, 1.07)	7.74		
			40	García-Esquinas		2015 2 years			Cohort	former smoking	1.52(0.86, 2.70)	4.44		
			47	Thompson		2018 2 years			Cohort	former smoking	0.88(0.65, 1.19)	7.04		
									subtotal	1.04(0.94, 1.15)	42.63	—		