

評価対象論文リスト(要因:授乳、アウトカム:乳がん)

評価判定日:2025/4/17

①既存の系統的レビュー・メタ解析・統合解析

1	Bernier MO, Plu-Bureau G, Bossard N, Ayzac L, Thalabard JC. Breastfeeding and risk of breast cancer: a metaanalysis of published studies. Hum Reprod Update. 2000;6(4):374-386. doi:10.1093/humupd/6.4.374
2	Ma H, Bernstein L, Pike MC, Ursin G. Reproductive factors and breast cancer risk according to joint estrogen and progesterone receptor status: a meta-analysis of epidemiological studies. Breast Cancer Res. 2006;8(4):R43. doi:10.1186/bcr1525
3	Yang L, Jacobsen KH. A systematic review of the association between breastfeeding and breast cancer. J Womens Health (Larchmt). 2008;17(10):1635-1645. doi:10.1089/jwh.2008.0917
4	Nagata C, Mizoue T, Tanaka K, et al. Breastfeeding and breast cancer risk: an evaluation based on a systematic review of epidemiologic evidence among the Japanese population. Jpn J Clin Oncol. 2012;42(2):124-130. doi:10.1093/jjco/hyr182
5	not clear No.27
6	Pan H, He Z, Ling L, et al. Reproductive factors and breast cancer risk among BRCA1 or BRCA2 mutation carriers: results from ten studies. Cancer Epidemiol. 2014;38(1):1-8. doi:10.1016/j.canep.2013.11.004
7	Zhou Y, Chen J, Li Q, Huang W, Lan H, Jiang H. Association between breastfeeding and breast cancer risk: evidence from a meta-analysis [published correction appears in Breastfeed Med. 2015 Jun;10(5):288. doi: 10.1089/bfm.2015.29001.]. Breastfeed Med. 2015;10(3):175-182. doi:10.1089/bfm.2014.0141
8	Chowdhury R, Sinha B, Sankar MJ, et al. Breastfeeding and maternal health outcomes: a systematic review and meta-analysis. Acta Paediatr. 2015;104(467):96-113. doi:10.1111/apa.13102
9	Islami F, Liu Y, Jemal A, et al. Breastfeeding and breast cancer risk by receptor status--a systematic review and meta-analysis. Ann Oncol. 2015;26(12):2398-2407. doi:10.1093/annonc/mdv379
10	Lambertini M, Santoro L, Del Mastro L, et al. Reproductive behaviors and risk of developing breast cancer according to tumor subtype: A systematic review and meta-analysis of epidemiological studies. Cancer Treat Rev. 2016;49:65-76. doi:10.1016/j.ctrv.2016.07.006
11	Li H, Sun X, Miller E, et al. BMI, reproductive factors, and breast cancer molecular subtypes: A case-control study and meta-analysis. J Epidemiol. 2017;27(4):143-151. doi:10.1016/j.je.2016.05.002
12	Unar-Munguía M, Torres-Mejía G, Colchero MA, González de Cosío T. Breastfeeding Mode and Risk of Breast Cancer: A Dose-Response Meta-Analysis. J Hum Lact. 2017;33(2):422-434. doi:10.1177/0890334416683676
13	Takeuchi T, Kitamura Y, Sobue T, et al. Impact of reproductive factors on breast cancer incidence: Pooled analysis of nine cohort studies in Japan. Cancer Med. 2021;10(6):2153-2163. doi:10.1002/cam4.3752
14	Fan D, Xia Q, Lin D, et al. Role of breastfeeding on maternal and childhood cancers: An umbrella review of meta-analyses. J Glob Health. 2023;13:04067. Published 2023 Jun 23. doi:10.7189/jogh.13.04067

②日本人集団の個別疫学研究

15	Yoo KY, Tajima K, Kuroishi T, et al. Independent protective effect of lactation against breast cancer: a case-control study in Japan. <i>Am J Epidemiol.</i> 1992;135(7):726-733. doi:10.1093/oxfordjournals.aje.a116359
16	Land CE, Hayakawa N, Machado SG, et al. A case-control interview study of breast cancer among Japanese A-bomb survivors. I. Main effects. <i>Cancer Causes Control.</i> 1994;5(2):157-165. doi:10.1007/BF01830262
17	not clear
18	Minami Y, Ohuchi N, Fukao A, Hisamichi S. Risk factors for breast cancer: a case-control study of screen-detected breast cancer in Miyagi Prefecture, Japan. <i>Breast Cancer Res Treat.</i> 1997;44(3):225-233. doi:10.1023/a:1005883221114
19	Hu YH, Nagata C, Shimizu H, Kaneda N, Kashiki Y. Association of body mass index, physical activity, and reproductive histories with breast cancer: a case-control study in Gifu, Japan. <i>Breast Cancer Res Treat.</i> 1997;43(1):65-72. doi:10.1023/a:1005745824388
20	Goodman MT, Cologne JB, Moriwaki H, Vaeth M, Mabuchi K. Risk factors for primary breast cancer in Japan: 8-year follow-up of atomic bomb survivors. <i>Prev Med.</i> 1997;26(1):144-153. doi:10.1006/pmed.1996.9979
21	Minami Y, Ohuchi N, Fukao A, Hisamichi S. Determinants of infant feeding method in relation to risk factors for breast cancer. <i>Prev Med.</i> 2000;30(5):363-370. doi:10.1006/pmed.2000.0655
22	Iwasaki M, Otani T, Inoue M, Sasazuki S, Tsugane S; Japan Public Health Center-based Prospective Study Group. Role and impact of menstrual and reproductive factors on breast cancer risk in Japan. <i>Eur J Cancer Prev.</i> 2007;16(2):116-123. doi:10.1097/01.cej.0000228410.14095.2d
23	Saeki T, Sano M, Komoike Y, et al. No increase of breast cancer incidence in Japanese women who received hormone replacement therapy: overview of a case-control study of breast cancer risk in Japan [published correction appears in <i>Int J Clin Oncol.</i> 2008 Jun;13(3):279. Miyoshi, Yoshio [corrected to Miyoshi, Yasuo]]. <i>Int J Clin Oncol.</i> 2008;13(1):8-11. doi:10.1007/s10147-007-0728-0
24	Kawai M, Minami Y, Kuriyama S, et al. Reproductive factors, exogenous female hormone use and breast cancer risk in Japanese: the Miyagi Cohort Study. <i>Cancer Causes Control.</i> 2010;21(1):135-145. doi:10.1007/s10552-009-9443-7
25	Minami Y, Nishino Y, Kawai M, Kakugawa Y. Being breastfed in infancy and adult breast cancer risk among Japanese women. <i>Cancer Causes Control.</i> 2012;23(2):389-398. doi:10.1007/s10552-011-9888-3
26	Kawai M, Kakugawa Y, Nishino Y, Hamanaka Y, Ohuchi N, Minami Y. Reproductive factors and breast cancer risk in relation to hormone receptor and menopausal status in Japanese women. <i>Cancer Sci.</i> 2012;103(10):1861-1870. doi:10.1111/j.1349-7006.2012.02379.x
27	Sugawara Y, Kakizaki M, Nagai M, et al. Lactation pattern and the risk for hormone-related female cancer in Japan: the Ohsaki Cohort Study. <i>Eur J Cancer Prev.</i> 2013;22(2):187-192. doi:10.1097/CEJ.0b013e3283564610

■ 統合解析

Reference			Study subjects						Category	Number among cases	Relative risk (95%CI or p)	P for trend	Confounding variables considered	<u>Magnitude of association</u>
Author	Title	Year	Study period	Number of subjects	Source of subjects	Event followed	Number of incident cases or deaths	Participant's race						
Takeuchi T et al.	Impact of reproductive factors on breast cancer incidence: Pooled analysis of nine cohort studies in Japan	2021	JPHC- I : 1990-2010 JPHC- II : 1993-2010 JACC : 1988-2001 MIYAGI- I : 1990-2007 MIYAGI- II : 1984-1992 AICHI : 1985-2000 TAKAYAMA : 1992-2008 OHSAKI : 1994-2005 LSS : 1991-2003	Pre-menopausal; 61,113 Post-menopausal; 126,886	Japan cohort consortium: nine cohort study participated	Brest cancer incidence	Pre-menopausal; 873 Post-menopausal; 1456	Japanese	Premenopausal women; Breastfeeding history Never Ever  Postmenopausal women; Breastfeeding history Never Ever	75 534  91 700	1.00 (Reference) 0.94 (0.71-1.24)  1.00 (Reference) 0.88 (0.66, 1.17)	0.65   0.39	age, area, history of smoking, BMI, history of drinking, enviromental tobacco smoke exposure during childhood, enviromental tobacco smoke exposure at home and/or at work, mutually adjusted age at menarche, number of births, use of female hormones	—   —

■ 系統的レビューとメタ解析

Reference			Include study					Design	Category	Relative risk (95% CI or p)	Weight	<u>Magnitude of association</u>			
Author	Title	Year	Ref No.	First author	Year	Study period	Study location	Event (*Definiton)							
Zhou Y, Chen	Association between breastfeeding and breast cancer risk: evidence from a meta-analysis	2015	7	Turkoz	2012		Turkey	Breast cancer incidence	Cross-sectional		0.74 (0.53, 1.04)	4.50			
J, Li Q, Huang			8	Morales	2013		Puerto Rico		HCC		0.64 (0.40, 1.00)	4.11			
W, Lan H,			9	Liu	2011		China		PCC		0.72 (0.38, 1.35)	3.51			
Jiang H.			10	Ritte 1	2013		Europe		Cohort	Ever vs never	0.99 (0.89, 1.09)	5.00			
			10	Ritte 2	2013		Europe		Cohort		0.98 (0.81, 1.17)	4.88			
			15	Ozmen	2009		Turkey		HCC		0.17 (0.11, 0.27)	4.14			
			16	Lodha	2011		India		PCC		0.28 (0.10, 0.82)	2.28			
			17	Kotsopoulos	2012		Mixed		PCC		0.66 (0.49, 0.89)	4.61			
										Subtotal	0.61 (0.44, 0.85)	33.04			
					18	Silva	2010		Sri Lanka		HCC		0.40 (0.22, 0.73)	3.63	
					19	Hadjisavvas	2010		Cyprus		PCC		0.68 (0.51, 0.91)	4.63	
					24	Ghiasvand	2012		Iran		HCC		0.92 (0.45, 1.88)	3.24	
					20	Matalqah	2011		Malaysia		HCC		0.50 (0.28, 0.90)	3.68	
					12	Butt	2014		Sweden		Cohort		1.08 (0.81, 1.45)	4.63	
					21	Redondo	2012		Spain		HCC		0.25 (0.08, 0.68)	2.24	
					13	Das	2012		India		HCC		0.69 (0.19, 2.38)	1.84	
					22	Huo	2008		Africa		PCC		0.54 (0.34, 0.85)	4.11	
			23	Bhadoria	2013		India		HCC	Longest vs shortest	0.17 (0.06, 0.50)	2.27			
			14	Gajalakshmi 1	2009		India		HCC		0.37 (0.24, 0.58)	4.17			
			14	Gajalakshmi 2	2009		India		HCC		0.68 (0.40, 1.15)	3.87			
			24	Ghiasvand	2010		Iran		HCC		0.61 (0.44, 0.84)	4.54			
			25	Kruk 1	2007		Poland		PCC		0.30 (0.20, 0.45)	4.29			
			25	Kruk 2	2007		Poland		PCC		0.23 (0.17, 0.32)	4.56			
			26	Balasubramaniam	2013		India		HCC		0.45 (0.21, 0.90)	3.20			
			27	Parkseresht	2009		India		India		0.52 (0.32, 0.85)	4.01			
			28	Awatef	2010		Tunisia		HCC		0.46 (0.28, 0.76)	3.97			
			29	Hajian-Tilaki	2011		Iran		HCC		0.09 (0.01, 0.70)	0.85			
			30	Msolly	2013		Tunisia		HCC		0.42 (0.20, 0.84)	3.23			
									Subtotal		0.47 (0.37, 0.60)	66.96			
											0.51 (0.41, 0.63)	100.00	↓↓		

Reference			Ever BF vs neber BF	No. of studies (obs)	SRR [95% CI]	<u>Magnitude of association</u>
Author	Title	Year				
Unar-Munguía M, Torres-Mejía G, Colchero MA, González de Cosío T.	Breastfeeding Mode and Risk of Breast Cancer: A Dose-Response Meta-Analysis	2017	Parous and nulliparous			
			All studies	11 (17)	0.69 (0.40, 1.18)	-
			Pre-menopausal status	2 (4)	0.87 (0.43, 1.78)	-
			Postmenopausal status	2 (4)	0.81 (0.31, 2.10)	-
			Paraous			
			All studies	22 (77)	0.87 (0.67, 1.12)	-

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Premenopausal status	8 (18)	0.86 (0.80, 0.93)	↓
Postmenopausal status	8 (18)	0.89 (0.83, 0.95)	↓

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\* 同論文で評価しているコホート研究

Reference			References			Study subjects					Category	Number among cases	Relative risk (95%CI or p)	P for trend	Confounding variables considered	<b>Magnitude of association</b>												
Author	Title	Year	Author	Year	Study design	Study period	Number of subjects	Source of subjects	Event followed	Number of incident cases or							Participant's race											
Nagata C, Mizoue T, Tanaka K, Tsuji I, Tamakoshi A, Wakai K, Matsuo K, Ito H, Sasazuki S, Inoue M, Tsugane S; Research Group for the Development and Evaluation of Cancer Prevention Strategies in Japan.	Breastfeeding and breast cancer risk: an evaluation based on a systematic review of epidemiologic evidence among the Japanese population	2012	Goodman et al.	1997		1979-87	22200	Atomic bomb survivors	Breast cancer incidence	161	Japanese	Never	3	1.00	0.74	city, age, age at the time of the bombings, and radiation dose to the breast, parous women only	—											
												Ever	56	1.31 (0.41-4.20)														
												Missing	75	1.20 (0.38-3.81)														
												Duration of breastfeeding																
												<12	18	1.00														
												12-23	22	0.80 (0.43-1.49)														
												24+	16	0.83 (0.42-1.64)														
												Iwasaki et al.	2007	Cohort study				1990-2002	55537	General population (JPHC Study)	Breast cancer incidence	Japanese	Never	61	1.00	0.86 (0.65-1.15)	age, area, history of mastopathy, BMI, height, miso soup consumption, menopausal status at baseline, age at menarche, number of births and age at first birth	—
																							Ever	312				
												Kawai et al.	2010					1990-2003	24064	General population (Miyagi Cohort Study)	Breast cancer incidence	Japanese	Never	49	1.00	1.00 (0.72-1.39)	age, smoking, alcohol drinking, walking, educational level, BMI, age at menarche, family history of breast cancer, parous women only	—
Ever	186																											

\* 同論文で評価している症例対照研究

Reference			References			Study subjects					Category	Number among cases	Relative risk (95%CI or p)	P for trend	Confounding variables considered	<b>Magnitude of association</b>	
Author	Title	Year	Author	Year	Study design	Study period	Type and source	Definition	Number of cases	Number of controls							
Nagata C, Mizoue T, Tanaka K, Tsuji I, Tamakoshi A, Wakai K, Matsuo K, Ito H, Sasazuki S, Inoue M, Tsugane S; Research Group for the Development and Evaluation of Cancer Prevention Strategies in Japan.	Breastfeeding and breast cancer risk: an evaluation based on a systematic review of epidemiologic evidence among the Japanese population	2012	Yoo et al.	1992		1988-89	Hospital-based (Aichi Cancer Registry)	Cases: histologically confirmed cases; Controls: hospital control	521	521	Never	1.00 (Reference)	—	age, family history among first-degree relatives, age at menarche, menstrual regularity, menopausal status, age at menopause, number of full-term pregnancies and age at first full-term pregnancy	—		
											Ever					0.62 (0.37-1.04)	
											No. of breastfed children						
											0					1.00 (Reference)	
											1					0.55 (0.30-1.00)	
											2					0.66 (0.38-1.16)	
											3					0.71 (0.34-1.51)	
											≥4					0.93 (0.12-6.96)	
											Average months of breastfeeding						
											0					1.00 (Reference)	
											1-3					0.71 (0.40-1.26)	
											4-6					0.75 (0.41-1.38)	
											7-9					0.47 (0.24-0.92)	
10-12	0.59 (0.34-1.02)																

							≥13	0.53 (0.26 –1.05)		—	
Wakai et al.	1994		1990-91	Hospital-based (Cancer Institute Tokyo)	Cases: histologically confirmed cases; Controls: patients without breast cancer	300	900	Never Ever	1.00 (Reference) 1.08 (0.65 –1.80)	menopausal status, weight, height, lactation, no.of births	—
Hu et al.	1997	Case control study	1989-93	Hospital-based (Gihoku General Hospital)	Cases: histologically confirmed Controls: participants in breast cancer screening	157	369	Duration of breastfeeding (months) 0 1-12	1.00 (Reference) 1.20 (0.69-2.09)	Matched for age and residential area  Adjusted for BMI, age at menarche, age at first birth and no. of births	—
Minami et al.	1997		1987-91	Breast cancer screening	Cases: histologically confirmed Ccontrol: participants without breast cancer	204	810	Breastfeeding for the last child Never Ever  Duration of breastfeeding for the last child (months) 0 ≤6 7-12 ≥13	1.00 (Reference) 0.61 (0.39 –0.94)  1.00 (Reference) 0.51 (0.30 –0.85) 0.67 (0.39 –1.16) 0.71 (0.42 –1.19)	Matched for age and screening area and year, parous women only  Adjusted for age at menarche, age at first birth, no. of parity, history of benign breast disease and family history of breast cancer	↓ ↓  —
Saeki et al.	2008		2005	Hospital-based	Cases: histologically confirmed  Controls: participants in screening for lung, gastrointestinal and gynecologic cancer	3434	2427	Never Ever	1.00 (Reference) 0.79 (0.65 –0.96)	Matched for age	↓