

Authors (Study name)	Published	Study population	Study type	N	Countries	Exposure	Main results- (adj OR & 95% CI)	Reference	Authors, title
Riedler et al. (ALEX)	2001	Rural farm & non-farm children 6-12 years	Cross-sectional	812	AU, DE, CH	Milk on farm/farm gate	Consumption of farm milk during first year of life inversely associated with asthma, hay fever, and atopy, independent of other farm exposure	Lancet 2001;358:1129-33.	Waser M, Maisch S, et al. Exposure to farming in early life and development of asthma and allergy: a crosssectional survey.
Waser et al. (PARSIFAL)	2007	Rural farm, non-farm and peri-urban children 5-13 years	Cross-sectional	14893	AU, DE, CH, NL, SE	Milk on farm/farm gate	farm milk consumption ever in life and asthma: OR 0.47 (0.61–0.88), rhinoconjunctivitis: OR 0.56 (0.43–0.73), sensitization to pollen:OR 0.67 (0.47–0.96), and food mix:OR 0.42 (0.19–0.92). Association observed in all subgroups, independent of farm-related co-exposures	Clin Exp Allergy 2007;37:661-70.	Waser M, Michels KB, Bieli C, Floistrup H, Pershagen G, von Mutius E, et al. Inverse association of farm milk consumption with asthma and allergy in rural and suburban populations across Europe.
Perkin & Strachan	2006	rural farm and non-farm children	Cross-sectional	4767	UK	Unpasteurized milk	raw milk - less eczema OR 0.59 (0.40-0.87), less atopy OR 0.42 (0.10 - 0.53), higher stimulated production IFN- γ , effect independent of farming status. No effect on asthma	J Allergy Clin Immunol 2006;117:1374-81.	"Which aspects of the farming lifestyle explain the inverse association with childhood allergy."
Barnes et al.	2001	rural farm and non-farm and urban children (11-19 years)	Cross-sectional	929	GR	Unpasteurized milk products	Atopy and unpasteurized milk with & without farm animal contact 0.32 (0.13–0.78) and 0.58 (0.34–0.98), respectively	Clin. Exp. Allergy. 2001;31:1822–1828.	Crete: Does farming explain urban and rural differences in atopy?.
Radon et al.	2004	rural farm and non-farm adults (18-44 years)	Cross-sectional	321	DE	raw, unboiled milk	Raw milk and atopy OR 0.65 (0.36–1.18), for those with early farm animal contact 0.35 (0.17–0.74)	Clin. Exp Allergy 2004;34:1178–83.	Radon K, Windstetter D, Eckart J, Dressel H, Leitritz L, Reichert J, et al. Farming exposure in childhood, exposure to markers of infections and the development of atopy in rural subjects. Clin
Wickens et al.	2002	farm and small town children (7-10 years)	Cross-sectional	293	NZ	unpasteurized milk (ever), yogurt weekly	Early yogurt consumption and hay fever OR 0.30 (0.1–0.7); any unpasteurized milk and atopic eczema: OR 0.2 (0.1–0.8). No association between unpasteurized milk consumption and asthma or atopy	Allergy 57(12):1171-1179.	
Remens et al.	2003	rural farm and non-farm children (6-15 years)	Cross-sectional	710	FI	farm milk in infancy	No significant association with atopy	Clin. Exp. Allergy. 2003;33:427-34.	Which factors explain the lower prevalence of atopy amongst farmers children?
Ege et al. (PASTURE)	2008	farm and non-farm children followed since pregnancy	Cohort	922	FI, FR, AU, DE, CH	maternal consumption of raw and boiled farm milk during pregnancy	Boiled farm milk associated with with specific IgE to cow's milk: adj. OR and (95% CI): 1.78 (1.08–2.93)	Eu Respir J. 2008 ;31:1241–1248.	
Pfefferle et al. (PASTURE)	2010	farm and non-farm children followed since pregnancy	Cohort	922	FI, FR, AU, DE, CH	Skimmed and unskimmed farm milk, farm produced butter and yogurt during pregnancy	Maternal consumption of farm produced butter during pregnancy associated with increased IFN- γ and TNF- α production in cord blood, farm produced yogurt inversely associated with these cytokines	J Allergy Clin Immunol. 2010;125:108.	
Loss et al. (GABRIELA)	2011	school-aged children	Cross-sectional	8334	DE, AU, CH	raw milk consumption and milk constituents	raw milk & asthma OR 0.59 (0.46-0.74), atopy OR, 0.74 (0.61-0.90), and hay fever OR 0.51 (0.37-0.69) independent of other farm, The findings suggest that the protective effect of raw milk consumption on asthma might be associated with the whey protein fraction of milk. exposures.	J Allergy Clin Immunol 2011;128:766-73.)	C., Genuneit, J., Pekkanen, J., Roponen, M., Hirvonen, M.R., Dalphin, J.C., Dalphin, M.L., Riedler, J., von, M.E., Weber, J., Kabesch, M., Michel, S., Braun-Fahrlander, C., Lauener, R., 2012. Prenatal and early-life exposures alter expression of innate immunity genes: the PASTURE cohort study. J Allergy Clin Immunol 130, 523-530.
Bieli et. Al. (ALEX & PARSIFAL)	2007	ALEX and PARSIFAL subset with DNA samples	Cross-sectional	2054	SE, NL, AU, DE, CH	Milk on farm/farm gate	genotypes of CD14/-1721. Adj. OR (95%CI) AA: 0.81 (0.07–0.47); AG: 0.47 (0.26–0.86); and GG: 0.98(0.46–2.08). Similar patterns for symptoms of hay fever and pollen sensitization.	Allergy Clin Immunol 2007;120:1308-15.	W, Waser M, et al. A polymorphism in CD14 modifies the effect of farm milk consumption on allergic diseases and CD14 gene expression. J Allergy Clin Immunol 2007;120:1308-15.
Alfven et al. (PARSIFAL)	2006	Rural farm, non-farm and peri-urban children 5-13 years	Cross-sectional	14893	AU, DE, CH, NL, SE	farm lifestyle	Growing up on a farm was found to have a protective effect against all outcomes studied, both self-reported, such as rhinoconjunctivitis, wheezing, atopic eczema and asthma and sensitization (allergen specific IgE \geq 0.35 kU/l). The adjusted odds ratio (OR) for current rhinoconjunctivitis symptoms was 0.50 (95% confidence interval (CI) 0.38–0.65) and for atopic sensitization 0.53 (95% CI 0.42–0.67) for the farm children compared to their references. The prevalence of allergic symptoms and sensitization was also lower among Steiner school children compared to reference children, but the	Allergy 2006; 61, 414-421.	Alfven, T., Braun-Fahrlander, C., Brunekreef, B., von, M.E., Riedler, J., Scheynius, A., van, H.M., Wickman, M., Benz, M.R., Budde, J., Michels, K.B., Schram, D., Ublagger, E., Waser, M., Pershagen, G., 2006. Allergic diseases and atopic sensitization in children related to farming and anthroposophic lifestyle--the PARSIFAL study.

Perkin MR.	2007						commentary on Wasset et al. 2007	Clin Exp Allergy 2007;37: 627-30	Perkin MR. Unpasteurized milk: health or hazard? Clin Exp Allergy 2007;37: 627-30
Loss, G et al. (PASTURE)	2015	farm and non-farm children followed since pregnancy	Cohort	922	FI, FR, AU, DE, CH	raw milk, UHT milk, pasteurized milk	When contrasted with ultra-heat treated milk, raw milk consumption was inversely associated with occurrence of rhinitis (adjusted odds ratio from longitudinal models [95% CI]: 0.71 [0.54-0.94]), respiratory tract infections (0.77 [0.59-0.99]), otitis (0.14 [0.05-0.42]), and fever (0.69 [0.47-1.01]). Boiled farm milk showed similar but weaker associations. Industrially processed pasteurized milk was inversely associated with fever. Raw farm milk consumption was inversely associated with C-reactive protein levels at 12 months (geometric means ratio [95% CI]: 0.66 [0.45-0.98]).	J Allergy Clin Immunol 2015: 135, p 56–62	Consumption of unprocessed cow's milk protects infants from common respiratory infections.
Loss, G et al.	2012							J Allergy Clin Immunol 2012: 130, 523-530.	Loss, G., Bitter, S., Wohlgensinger, J., Frei, R., Roduit, C., Genuneit, J., Pekkanen, J., Roponen, M., Hirvonen, M.R., Dalphin, J.C., Dalphin, M.L., Riedler, J., von, M.E., Weber, J., Kabesch, M., Michel, S., Braun-Fahrlander, C., Lauener, R., Prenatal and early-life exposures alter expression of innate immunity genes: the PASTURE cohort study. J Allergy Clin Immunol 130, 523-530.
Tremonte et al.	2014								Raw milk from vending machines: Effects of boiling, microwave treatment, and refrigeration on microbiological quality
Abbring et al.	2017	laboratory mice	clinical trial		na	raw milk, pasteurized milk		Frontiers Immunol 2017: Vol 8, Art 1045	Raw milk ws not able to induce sensitization in contract to processed milk. Acute allergic skin response, body temperature and anaphylactic shock symptoms were missing in mise fed raw milk, but present in mice fed pasteurized and processed milk
Braun-Fahrländer C, von Mutius	2011							Clin Exp Allergy. 2011 Jan;41(1):29-35. doi: 10.1111/j.1365-2222.2010.03281.x	Can farm milk consumption prevent allergic diseases? Braun-Fahrländer C, von Mutius E.