

Supplementary Information

Association of Seasonal Climate Variability and Age-Specific Mortality in Northern Sweden before the Onset of Industrialization

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This supplementary materials support the main text by providing sex and age-specific results. Table S1 shows total, sex- and age-stratified relative risks by annual climate variability. In table S2, total and sex-stratified relative risks by seasonal climate variability are shown.

Table S1. Annual climate variability and annual mortality: Total, sex- and age-stratified associations, Skellefteå 1749–1859.

	Age Groups (Years), Men + Women									
	All	MEN	WOMEN	<1	1–2	3–9	10–14	15–24	25–49	≥50
	RR (CI)	RR (CI)	RR (CI)	RR (CI)	RR (CI)	RR (CI)	RR (CI)	RR (CI)	RR (CI)	RR (CI)
Annual	<i>0.94</i>	<i>0.94</i>	0.95	1.00	0.99	0.86	0.76	0.89	<i>0.92</i>	0.91
temperature	<i>(0.88–1.01)</i>	<i>(0.87–1.01)</i>	(0.88–1.02)	(0.93–1.07)	(0.88–1.12)	(0.69–1.08)	(0.61–0.94)	(0.77–1.02)	<i>(0.83–1.01)</i>	(0.85–0.97)
Annual	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.01	<i>1.01</i>	1.01
precipitation	<i>(0.99–1.01)</i>	<i>(1.00–1.01)</i>	(0.99–1.01)	(0.99–1.00)	(0.99–1.01)	(0.98–1.02)	(0.97–1.02)	(0.99–1.02)	<i>(1.00–1.02)</i>	(1.00–1.02)

Adjusted model: Annual temperature and precipitation adjusted for each other; RR, relative risk; CI, 95% confidence interval; RR indicate mortality risk by 1 °C increase in temperature resp. 1 cm increase in precipitation; Numbers in **bold**: significant (p -value < 0.05); numbers in *italics*: borderline significant (p -value < 0.10); Temperature: Mean temperature in °C; Precipitation: Cumulative precipitation in cm.

Table S2. Seasonal climate variability and annual mortality: Total and sex-stratified associations, Skellefteå 1749–1859.

	Total Mortality		Mortality (Men)		Mortality (Women)	
	Simple season-wise model *	Fully adjusted model **	Fully adjusted model **	Fully adjusted model **	Fully adjusted model **	Fully adjusted model **
	RR (CI)	p -value	RR (CI)	p -value	RR (CI)	p -value
Winter temperature	0.97 (0.95–0.99)	0.007	<i>0.98</i> <i>(0.95–1.00)</i>	<i>0.057</i>	0.97 (0.95–1.00)	0.033
Winter precipitation	1.00 (0.97–1.03)	0.783	0.99 (0.95–1.02)	0.343	0.99 (0.96–1.02)	0.567
Spring temperature	0.95 (0.91–0.98)	0.005	0.96 (0.91–1.01)	0.103	0.97 (0.92–1.02)	0.248
Spring precipitation	0.99 (0.97–1.01)	0.200	<i>0.98</i> <i>(0.97–1.00)</i>	<i>0.085</i>	0.99 (0.97–1.01)	0.142

Table S2. Cont.

	Total Mortality				Mortality (men)		Mortality (women)	
	Simple season-wise model *		Fully adjusted model **		Fully adjusted model **		Fully adjusted model **	
	RR (CI)	<i>p</i> -value	RR (CI)	<i>p</i> -value	RR (CI)	<i>p</i> -value	RR (CI)	<i>p</i> -value
Summer temperature	1.01 (0.95–1.08)	0.692	1.04 (0.97–1.10)	0.300	1.02 (0.95–1.10)	0.541	1.05 (0.98–1.12)	0.173
Summer precipitation	<i>1.01</i> <i>(1.00–1.03)</i>	<i>0.050</i>	1.01 (0.99–1.02)	0.294	1.01 (0.99–1.02)	0.431	1.01 (1.00–1.02)	0.226
Autumn temperature	0.99 (0.94–1.04)	0.674	1.00 (0.94–1.05)	0.898	1.00 (0.94–1.05)	0.861	1.00 (0.94–1.06)	0.941
Autumn precipitation	1.01 (1.00–1.02)	0.120	1.02 (1.00–1.03)	0.036	1.02 (1.00–1.03)	0.033	<i>1.02</i> <i>(1.00–1.03)</i>	<i>0.063</i>

* Simple model: Seasonal temperature and precipitation adjusted for each other; each season separately; ** Fully adjusted model: Seasonal temperature and precipitation adjusted for each other; all seasons simultaneously included. RR, relative risk; CI, 95% confidence interval. RR indicate mortality risk by 1 °C increase in temperature resp. 1 cm increase in precipitation. Numbers in **bold**: significant (*p*-value <0.05); numbers in *italics*: borderline significant (*p*-value <0.10). Temperature: Mean temperature in °C. Precipitation: Cumulative precipitation in cm.