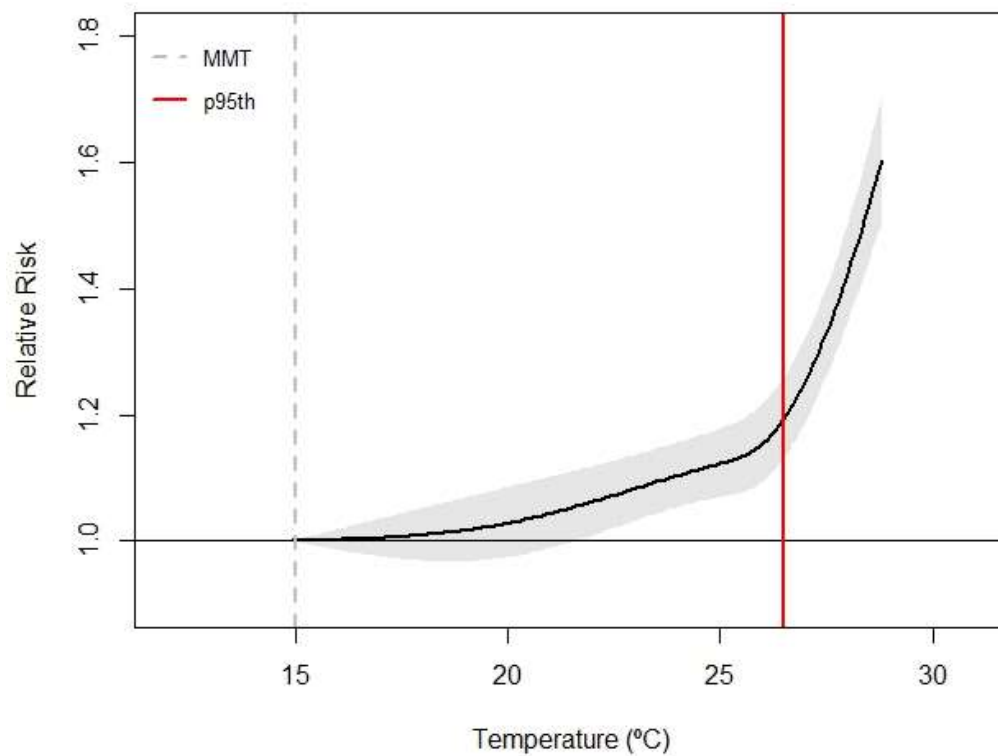


**eAppendix 1.** Overall temperature-mortality association centred on the optimal minimum temperature mortality (MMT) in Spain during the summer months (June to August) between 1999-2018.



MMT: minimum mortality temperature. p95<sup>th</sup> percentile of the temperature distribution during summer months (June to August).

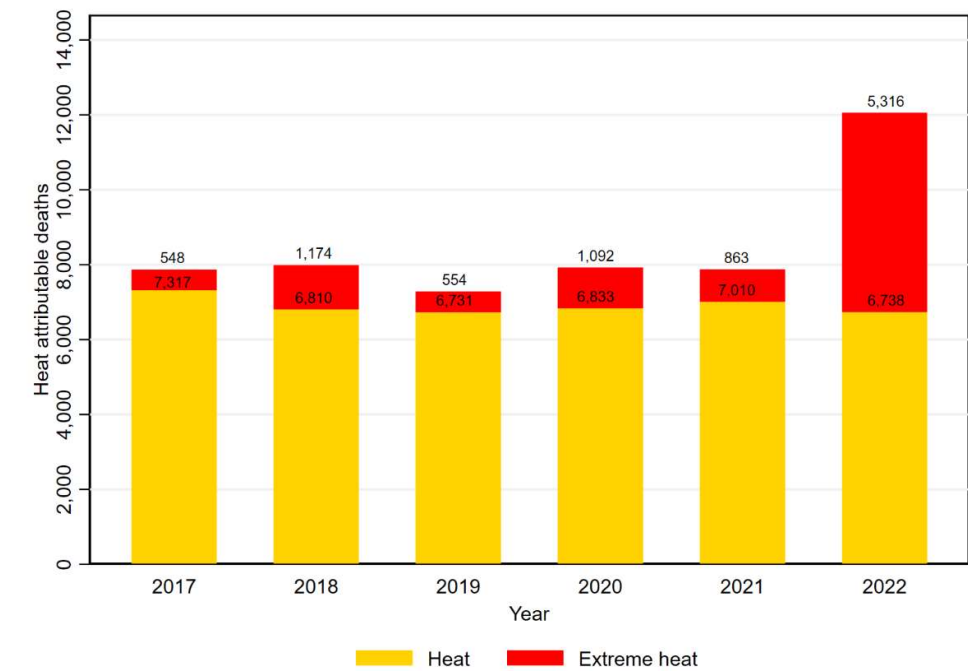
Data was analyzed with a time-stratified case-crossover design using conditional quasi-Poisson regression. Mortality-temperature association modelled using distributed lag-non-linear models. The exposure-response curve was modelled with a natural cubic spline with three internal knots placed at the 10th, 75th and 90th centiles of the temperature distribution and the lag-exposure up to four days with a natural cubic spline with three internal knots placed at equally spaced values in the log scale.

**eAppendix 2.** Sensitivity analysis using the exposure-response function with data from the last decade, 2009-2018 – Number of deaths attributable to moderate and extreme heat in Spain between 1<sup>st</sup> June and 31<sup>st</sup> August 2022.

Month	Temperature (°C)		Moderate heat*			Extreme heat**		
	Mean	(Range)	Days	Deaths	(95% CI)	Days	Deaths	(95% CI)
June	22.9	(19.7; 28,2)	25	1,691	(-249; 3,824)	5	592	(453; 795)
July	26.2	(21.7; 29.0)	19	2,875	(1,478; 4,571)	12	2,755	(2,195; 3,864)
August	25.7	(21.7; 28.1)	22	2,813	(1,508; 4,741)	9	1,108	(927; 1,603)

\*Moderate heat: days between the MMT (15.5 °C) and the extreme heat threshold (26.7 °C). \*\*Extreme heat: days above the extreme heat threshold.

**eAppendix 3.** Number of deaths attributable to moderate and extreme heat in Spain during summer months (June to August) between 2017-2022.



Moderate heat: days between the MMT (15 °C) and the extreme heat threshold (26.5 °C). Extreme heat: days above the extreme heat threshold.