

Supplementary Material:

Table S1. Contribution of anthropogenic warming to heat-related mortality during the 2022 summer with uncertainty from the epidemiological model and the anthropogenic warming estimation

The table provides estimates of confidence intervals for different uncertainty ranges. The second and third columns display the heat-related mortality (deaths) in the factual and counterfactual scenarios, respectively. The fourth column depicts their difference, which corresponds to the heat-related mortality attributed to human-induced climate change. The fifth column contains the same quantity but expressed as a percentage of the factual mortality (%). Values in parentheses correspond to the 95% confidence interval.

	Factual Heat-Related Mortality	Counterfactual Heat-Related Mortality	Climate change attributable Heat-related Mortality	Climate change-attributable Heat-related Mortality [%]
Estimate	68,593	30,439	38,154	56
Uncertainty from both the Epidemiological Model and Anthropogenic Warming Estimation		9,641 – 57,383	21,722 – 58,571	39 – 77
Uncertainty from the Epidemiological Model	42,229 – 95,891	14,231 – 46,756	27,487 – 49,675	51 – 66
Uncertainty from the Anthropogenic Warming Estimation		23,803 – 38,635	29,958 – 44,790	44 – 65

Table S2. Contribution of anthropogenic warming to heat-related mortality during the 2022 summer in the 35 European countries.

The second and third columns display the heat-related mortality (deaths) in the factual and counterfactual scenarios, respectively. The fourth column depicts their difference, corresponds to the heat-related mortality attributed to human-induced climate change. The fifth column contains the same quantity but expressed as a percentage of the factual mortality (%). Values in parentheses correspond to the 95% confidence interval from Monte-Carlo Simulations.

Country	Factual Heat-Related Mortality	Counterfactual Heat-Related Mortality	Climate change-attributable Heat-related Mortality	Climate change-attributable Heat-related Mortality [%]
Albania	371 (103 – 617)	160 (2 – 310)	211 (90 – 313)	57 (47 – 89)
Austria	600 (142 – 1,104)	222 (-12 – 471)	378 (143 – 630)	63 (55 – 101)
Belgium	679 (-22 – 1,430)	315 (-81 – 735)	364 (49 – 705)	54 (19 – 122)
Bulgaria	1,417 (632 – 2,285)	643 (154 – 1,171)	774 (454 – 1,106)	55 (48 – 75)
Switzerland	452 (15 – 897)	157 (-71 – 390)	295 (96 – 509)	65 (52 – 156)
Cyprus	108 (24 – 180)	57 (-2 – 109)	51 (23 – 76)	47 (38 – 93)
Czechia	557 (-55 – 1,189)	163 (-106 – 444)	394 (57 – 762)	71 (6 – 163)
Germany	96,75 (6,579 – 12,625)	3,929 (1,861 – 5,989)	5,746 (4,756 – 6,775)	59 (52 – 73)
Denmark	373 (42 – 712)	193 (-57 – 445)	180 (87 – 278)	48 (34 – 129)
Estonia	185 (37 – 323)	117 (14 – 215)	68 (23 – 108)	37 (33 – 56)
Greece	3,227 (2,349 – 4,058)	1,460 (887 – 2,012)	1,767 (1,438 – 2,078)	55 (50 – 62)
Spain	11,797 (8,028 – 15,935)	4,215 (2,384 – 6,183)	7,582 (5,526 – 9,749)	64 (60 – 71)
Finland	361 (-67 – 795)	268 (-79 – 610)	93 (12 – 174)	26 (6 – 55)
France	5,771 (2,085 – 9,727)	2,661 (497 – 5,025)	3,110 (1,543 – 4,728)	54 (48 – 78)
Croatia	789 (374 – 1,155)	306 (85 – 511)	483 (288 – 654)	61 (55 – 78)
Hungary	805 (9 – 1,631)	425 (-106 – 977)	380 (115 – 665)	47 (37 – 101)
Ireland	92 (-608 – 704)	68 (-456 – 527)	24 (-152 – 177)	26 (17 – 31)
Iceland	0 (0 – 0)	0 (0 – 0)	0 (0 – 0)	NA
Italy	18,758 (14,314 – 23,391)	5,440 (3,419 – 7,478)	13,318 (10,822 – 16,032)	71 (67 – 76)
Liechtenstein	1 (-3 – 5)	0 (-1 – 2)	1 (-2 – 4)	100 (0 – 100)
Lithuania	437 (194 – 683)	264 (106 – 425)	173 (87 – 258)	40 (38 – 45)
Luxembourg	49 (-5 – 99)	21 (-14 – 55)	28 (6 – 48)	57 (18 – 233)
Latvia	170 (-9 – 339)	118 (-18 – 248)	52 (9 – 92)	31 (11 – 61)
Montenegro	62 (-14 – 129)	28 (-19 – 71)	34 (3 – 59)	55 (16 – 200)
Malta	79 (-5 – 148)	34 (-12 – 75)	45 (7 – 75)	57 (12 – 118)
Netherlands	848 (2 – 1765)	361 (-96 – 847)	487 (102 – 908)	57 (49 – 142)
Norway	109 (-160 – 349)	32 (-103 – 155)	77 (-63 – 196)	71 (0 – 189)
Poland	1,808 (-686 – 4,411)	590 (-569 – 1,808)	1,218 (-101 – 2,610)	67 (39 – 160)
Portugal	2,322 (1,825 – 2,795)	1,137 (842 – 1,418)	1,185 (978 – 1,385)	51 (49 – 54)
Romania	2,823 (1,374 – 4,390)	1,211 (309 – 2,153)	1,612 (1,011 – 2,260)	57 (50 – 77)
Serbia	770 (442 – 1,096)	355 (125 – 586)	415 (308 – 519)	54 (46 – 72)
Sweden	176 (-330 – 718)	41 (-131 – 225)	135 (-201 – 488)	77 (9 – 148)
Slovenia	190 (-30 – 377)	80 (-52 – 199)	110 (20 – 185)	58 (32 – 162)
Slovakia	468 (60 – 897)	220 (-42 – 497)	248 (95 – 413)	53 (43 – 115)
United Kingdom	4,692 (1,194 – 8,307)	3,005 (673 – 5,424)	1,687 (493 – 2,900)	36 (32 – 44)

