

# **Temperature frequency and mortality: assessing adaptation to local temperature**

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**Table S1. The descriptive statistics of locations included in the study.**

Country	Location	Start year	End year	Total deaths	Maximum annual average frequency of temperature	Most frequent temperature (°C)
Argentina	Buenos Aires	2005	2015	435125	22	22
Argentina	Cordoba	2005	2015	124430	24	21
Argentina	Rosario	2005	2015	126778	23	22
Australia	Adelaide	2010	2017	78091	32	12
Australia	Brisbane	2010	2017	100564	35	24
Australia	Melbourne	2010	2017	200603	33	12
Australia	Perth	2010	2017	84266	32	16
Australia	Sydney	2010	2017	219949	30	20
Brazil	Belo Horizonte	1997	2018	379803	56	23
Brazil	Brasilia	1997	2018	184649	86	22
Brazil	Caratinga	1997	2018	14058	55	24
Brazil	Curitiba	1997	2018	233270	36	20
Brazil	Divinopolis	1997	2018	32110	58	23
Brazil	Londrina	1997	2018	84797	52	24
Brazil	Maceio	1997	2018	149087	131	26
Brazil	Palmas	1997	2018	20660	95	26
Brazil	Porto Alegre	1997	2018	320539	29	22
Brazil	Rio Branco	1997	2018	35765	112	26
Brazil	Salvador	1997	2018	338403	109	26
Brazil	Santa Maria	1997	2018	47520	28	24
Brazil	Sao Luis	2016	2018	24596	200	27
Brazil	Sao Paulo	2010	2018	682147	44	22
Brazil	Sao Paulo	1997	2008	773758	44	22
Brazil	Teresopolis	1997	2018	26044	40	20
Brazil	Vitoria	1997	2013	58554	64	26
Canada	Abbotsford	1996	2015	41313	26	4
Canada	Calgary	1986	2015	159849	15	15
Canada	Edmonton	1986	2015	187584	16	15
Canada	Halifax	1986	2015	83065	17	18
Canada	Hamilton	1986	2015	125351	16	20
Canada	Kingston	1986	2015	53406	15	21
Canada	Kitchener-Waterloo	1986	2015	82089	14	17
Canada	London Ontario	1986	2015	104787	16	20
Canada	Montreal	1986	2015	456338	15	20
Canada	Niagara	1986	2015	116128	16	20
Canada	Oakville	1986	2015	71031	15	20
Canada	Oshawa	1986	2015	87981	15	19
Canada	Ottawa	1986	2015	179791	14	18
Canada	Regina	1986	2015	57373	13	17
Canada	Saint John NB	1986	2015	51071	23	16
Canada	Sarnia	1986	2015	33723	15	21
Canada	Saskatoon	1986	2015	66394	13	17
Canada	Sault Ste. Marie	1986	2015	34140	14	17
Canada	St. John's NFL	1986	2015	64098	19	1
Canada	Sudbury	1986	2015	46839	14	18
Canada	Thunder Bay	1986	2015	41202	13	15
Canada	Toronto	1986	2015	820873	14	20
Canada	Vancouver	1986	2015	383017	26	6
Canada	Victoria	1986	2015	96954	43	8
Canada	Windsor	1986	2015	86402	15	22
Canada	Winnipeg	1986	2015	195611	13	19
Chile	Chillan	2008	2014	8619	29	10
Chile	Santiago	2008	2014	254344	29	20
Chile	Temuco	2004	2013	16709	37	11
Chile	Valparaiso	2004	2013	45790	48	12

China	Anshan	2004	2006	30076	22	24
China	Beijing	2013	2015	87994	17	27
China	Fuzhou	2004	2006	17142	25	28
China	Guangzhou	2013	2015	48758	31	28
China	Hangzhou	2002	2004	21743	17	9
China	Hong Kong	1996	2002	213860	52	27
China	Lanzhou	2004	2008	33877	17	19
China	Shanghai	2001	2004	172940	17	23
China	Shanghai	2013	2015	114788	17	23
China	Shenyang	2005	2008	96588	16	23
China	Suzhu	2005	2008	49633	19	23
China	Taiyuan	2004	2008	43771	16	20
China	Tianjin	2005	2008	15857	21	27
China	Wuhan	2003	2005	62440	17	21
China	Wulumuqi	2006	2007	12281	17	20
China	Xian	2004	2008	47415	19	25
Colombia	Barranquilla	1998	2013	91624	158	27
Colombia	Bogota	1998	2013	426297	129	15
Colombia	Cali	1998	2013	188960	153	22
Colombia	Cartagena	1998	2013	53115	164	27
Colombia	Medellin	1998	2013	196543	157	17
Costa Rica	San José (CR)	2000	2017	31117	155	22
Czech Republic	Brno	1994	2015	89309	16	14
Czech Republic	Ostrava	1994	2015	77195	17	15
Czech Republic	Prague	1994	2015	287518	16	13
Czech Republic	South Bohemia	1994	2015	257888	17	14
Ecuador	Guayaquil	2014	2018	67731	97	26
Ecuador	Quito	2014	2018	44533	129	13
Estonia	Kohtla-Järve linn	1997	2018	17370	18	0
Estonia	Narva linn	1997	2018	17630	18	2
Estonia	Pärnu linn	1997	2018	14011	19	1
Estonia	Tallinn	1997	2018	96929	18	2
Estonia	Tartu linn	1997	2018	21812	18	1
Finland	Helsinki	1994	2014	153308	17	1
France	Bordeaux	2000	2015	78288	22	18
France	Clermont-Ferrand	2000	2015	35508	20	15
France	Dijon	2000	2015	28055	19	17
France	Grenoble	2000	2015	48728	18	13
France	Le Havre	2000	2015	35560	27	16
France	Lens-Douai	2000	2015	53428	24	15
France	Lille	2000	2015	132013	24	15
France	Lyon	2000	2015	112382	19	17
France	Marseille	2000	2015	137354	24	12
France	Montpellier	2000	2015	40341	24	12
France	Nancy	2000	2015	42648	20	17
France	Nantes	2000	2015	64879	24	17
France	Nice	2000	2015	75019	22	8
France	Paris	2000	2015	657707	21	16
France	Rennes	2000	2015	24723	25	10
France	Rouen	2000	2015	61557	24	16
France	Strasbourg	2000	2015	51657	18	15
France	Toulouse	2000	2015	73726	20	10
FranceCaribbean	Fort de France	2000	2015	19986	128	26
FranceCaribbean	Pointe a Pitre	2000	2015	26204	118	26
FranceGuiana	Cayenne	2000	2015	7110	154	26
FranceReunion	St Denis de la Reunion	2000	2015	13874	68	25
Germany	Berlin	1993	2015	811051	17	15
Germany	Bremen	1993	2015	150608	21	14
Germany	Dortmund	1993	2015	155233	20	14

Germany	Dresden	1993	2015	125866	17	15
Germany	Dusseldorf	1993	2015	160069	21	14
Germany	Frankfurt	1993	2015	168417	18	15
Germany	Hamburg	1993	2015	445338	20	14
Germany	Hannover	1993	2015	279125	19	15
Germany	Koeln	1993	2015	229457	20	14
Germany	Leipzig	1993	2015	152861	17	15
Germany	Muenchen	1993	2015	290962	18	13
Germany	Stuttgart	1993	2015	136878	18	16
Greece	Athens	2001	2010	287969	20	13
Guatemala	Guatemala	2009	2016	62715	88	22
Iran	Mashhad	2004	2013	121585	19	24
Iran	Tehran	2002	2015	696328	16	25
Ireland	East of Northern Ireland	1984	2007	216861	28	13
Ireland	NorthEast of the Republic of Ireland	1984	2007	114739	28	13
Ireland	NorthWest of the Republic of Ireland	1984	2007	74864	30	13
Ireland	SouthEast of Republic of Ireland	1984	2007	247197	30	9
Ireland	SouthWest of the Republic of Ireland	1984	2007	274069	31	8
Ireland	West of Northern Ireland	1984	2007	130485	28	13
Israel	Tel Aviv	1985	2020	350579	37	26
Italy	Bari	1996	2007	30526	25	13
Italy	Bologna	2006	2010	23824	15	25
Italy	Bologna	1996	2003	34209	15	25
Italy	Brescia	1993	1999	13561	19	6
Italy	Civitavecchia	1996	2006	3912	31	12
Italy	Frosinone	1995	2006	3537	18	7
Italy	Genoa	1999	2007	71214	21	18
Italy	Latina	1995	2006	7976	22	11
Italy	Palermo	1997	2001	26865	26	11
Italy	Rome	1987	2010	522179	20	12
Italy	Turin	1991	1999	69544	16	4
Italy	Viterbo	1995	2006	6286	19	11
Japan	Aichi	1979	2015	1655700	16	4
Japan	Akita	1979	2015	430855	17	2
Japan	Aomori	1979	2015	479172	15	20
Japan	Chiba	1979	2015	1348460	18	7
Japan	Ehime	1979	2015	510714	17	26
Japan	Fukui	1979	2015	257678	15	4
Japan	Fukuoka	1979	2015	1403500	15	7
Japan	Fukushima	1979	2015	680227	16	0
Japan	Gifu	1979	2015	603075	16	5
Japan	Gunma	1979	2015	591212	16	2
Japan	Hiroshima	1979	2015	847475	16	3
Japan	Hokkaido	1979	2015	1601079	14	17
Japan	Hyogo	1979	2015	1537325	18	6
Japan	Ibaraki	1979	2015	829982	19	19
Japan	Ishikawa	1979	2015	348623	15	19
Japan	Iwate	1979	2015	466431	14	16
Japan	Kagawa	1979	2015	338541	17	27
Japan	Kagoshima	1979	2015	643883	25	28
Japan	Kanagawa	1979	2015	1817803	17	7
Japan	Kochi	1979	2015	308889	23	26
Japan	Kumamoto	1979	2015	597079	18	26
Japan	Kyoto	1979	2015	739649	16	4
Japan	Mie	1979	2015	561911	18	6

Japan	Miyagi	1979	2015	621541	17	1
Japan	Miyazaki	1979	2015	373118	26	27
Japan	Nagano	1979	2015	704789	16	-1
Japan	Nagasaki	1979	2015	506171	24	26
Japan	Nara	1979	2015	380914	17	6
Japan	Niigata	1979	2015	804829	18	5
Japan	Oita	1979	2015	413658	17	26
Japan	Okayama	1979	2015	621150	16	6
Japan	Okinawa	1979	2015	283659	49	28
Japan	Osaka	1979	2015	2234089	18	6
Japan	Saga	1979	2015	291152	16	28
Japan	Saitama	1979	2015	1463802	17	22
Japan	Shiga	1979	2015	341097	16	4
Japan	Shimane	1979	2015	288400	17	21
Japan	Shizuoka	1979	2015	1029396	21	25
Japan	Tochigi	1979	2015	575095	18	4
Japan	Tokushima	1979	2015	291268	19	26
Japan	Tokyo	1979	2015	3004482	17	22
Japan	Tottori	1979	2015	214323	16	6
Japan	Toyama	1979	2015	361928	16	2
Japan	Wakayama	1979	2015	377606	17	27
Japan	Yamagata	1979	2015	435911	17	-1
Japan	Yamaguchi	1979	2015	542889	15	20
Japan	Yamanashi	1979	2015	274171	15	20
Kuwait	Kuwait	2000	2016	73748	26	36
Mexico	Ciudad Juarez	1998	2014	91721	20	27
Mexico	Comarca Lagunera	1998	2014	99640	35	24
Mexico	Guadalajara	1998	2014	351426	67	21
Mexico	Leon	1998	2014	110095	57	21
Mexico	Monterrey	1998	2014	286416	27	28
Mexico	Puebla-Tlaxcala	1998	2014	206429	82	18
Mexico	San Luis Potosi	1998	2014	77816	52	19
Mexico	Tijuana	1998	2014	96965	40	14
Mexico	Toluca de Lerdo	1998	2014	129783	76	14
Mexico	Valley of Mexico	1998	2014	1529795	71	18
Moldova	Anenii Noi	2003	2010	799	15	21
Moldova	Cahul	2003	2010	2812	17	24
Moldova	Chisinau	2001	2010	54832	15	21
Moldova	Falesti	2003	2010	1463	15	19
Netherlands	Amsterdam	1995	2016	132924	24	15
Netherlands	Den Haag	1995	2016	100303	25	15
Netherlands	Eindhoven	1995	2016	42725	22	15
Netherlands	Rotterdam	1995	2016	133448	24	8
Netherlands	Utrecht	1995	2016	43995	23	15
Norway	Oslo	1979	2018	212098	18	14
Panama	Panama	2013	2016	11457	170	27
Paraguay	Asuncion	2004	2019	48037	31	27
Peru	apurimac	2008	2014	9363	121	8
Peru	arequipa	2008	2014	31601	100	13
Peru	ayacucho	2008	2014	12372	101	10
Peru	cajamarca	2008	2014	22541	153	12
Peru	cusco	2008	2014	26141	126	9
Peru	huancavelica	2008	2014	9378	110	5
Peru	huanuco	2008	2014	17312	135	12
Peru	ica	2008	2014	21647	66	20
Peru	junin	2008	2014	34010	110	4
Peru	la libertad	2008	2014	45559	169	11
Peru	lambayeque	2008	2014	34142	65	20
Peru	lima	2008	2014	248765	72	17

Peru	piura	2008	2014	43031	57	21
Peru	puno	2008	2014	41725	89	9
Peru	san martin	2008	2014	11093	127	24
Peru	tacna	2008	2014	7606	72	17
Peru	ucayali	2008	2014	9956	106	26
Philippines	Bacoor	2011	2019	26499	107	28
Philippines	Callocan	2006	2019	113343	104	28
Philippines	Cebu	2013	2019	46141	157	27
Philippines	Davao	2013	2019	70737	160	27
Philippines	Las Pinas	2006	2019	45941	104	28
Philippines	Makati	2006	2019	41484	109	28
Philippines	Manila	2006	2019	172811	109	28
Philippines	Muntinlupa	2006	2019	35016	109	28
Philippines	Pasig	2006	2019	53623	109	28
Philippines	Quezon	2014	2019	98729	105	28
Philippines	Taguig	2006	2019	45745	109	28
Philippines	Valenzuela	2006	2019	46864	104	28
Portugal	Beja	1980	2015	87793	24	12
Portugal	Castelobranco	1980	2018	115521	23	10
Portugal	Coimbra	1980	2018	195472	26	19
Portugal	Faro	1980	2018	174585	40	14
Portugal	Lisboa	1980	2018	802500	36	13
Portugal	Porto	1980	2018	542557	35	19
Puerto Rico	San Juan	2009	2016	26564	86	27
Romania	Brasov	1994	2016	61466	17	17
Romania	Bucharest	1994	2016	504054	16	21
Romania	Cluj-Napoca	1994	2016	65406	17	17
Romania	Constanta	1994	2016	73990	19	23
Romania	Craiova	1994	2016	57867	15	23
Romania	Galati	1994	2016	58052	16	22
Romania	Iasi	1994	2016	60301	16	21
Romania	Timisoara	1994	2016	70010	16	21
South Africa	Alfred Nzo	1997	2013	114467	30	17
South Africa	Amajuba	1997	2013	95209	34	21
South Africa	Amathole	1997	2013	235000	30	15
South Africa	Bojanala	1997	2013	215910	34	23
South Africa	Buffalo City	1997	2013	183536	37	18
South Africa	Cacadu	1997	2013	76341	26	17
South Africa	Cape Winelands	1997	2013	101671	25	10
South Africa	Capricorn	1997	2013	205787	38	20
South Africa	Central Karoo	1997	2013	13873	23	23
South Africa	Chris Hani	1997	2013	141243	28	19
South Africa	City of Cape Town	1997	2013	447086	50	14
South Africa	City of Johannesburg	1997	2013	553340	41	20
South Africa	City of Tshwane	1997	2013	370121	35	22
South Africa	Dr Kenneth Kaunda	1997	2013	156481	35	22
South Africa	Dr Ruth Segomotsi Mompati	1997	2013	84956	32	22
South Africa	Eden	1997	2013	82205	27	19
South Africa	Ehlanzeni	1997	2013	258712	36	23
South Africa	Ekurhuleni	1997	2013	449732	40	20
South Africa	eThekwini	1997	2013	582400	37	22
South Africa	Fezile Dabi	1997	2013	106758	34	20
South Africa	Frances Baard	1997	2013	80748	24	23
South Africa	Gert Sibande	1997	2013	201085	42	18
South Africa	Greater Sekhukhune	1997	2013	154245	37	21
South Africa	iLembe	1997	2013	96687	43	19
South Africa	Joe Gqabi	1997	2013	70534	27	19
South Africa	John Taolo Gaetsewe	1997	2013	38604	26	23
South Africa	Lejweleputswa	1997	2013	172065	27	21

South Africa	Mangaung	1997	2013	186482	27	22
South Africa	Mopani	1997	2013	154962	34	24
South Africa	Namakwa	1997	2013	16347	20	21
South Africa	Nelson Mandela Bay	1997	2013	215125	33	20
South Africa	Ngaka Modiri Molema	1997	2013	158209	37	22
South Africa	Nkangala	1997	2013	195810	44	19
South Africa	O.R.Tambo	1997	2013	194455	29	16
South Africa	Overberg	1997	2013	30406	35	20
South Africa	Pixley ka Seme	1997	2013	42781	20	24
South Africa	Sedibeng	1997	2013	174249	39	20
South Africa	Sisonke	1997	2013	92073	30	17
South Africa	Siyanda	1997	2013	47034	24	26
South Africa	Thabo Mofutsanyane	1997	2013	196340	36	19
South Africa	Ugu	1997	2013	169571	34	20
South Africa	uMgungundlovu	1997	2013	227558	29	19
South Africa	uMkhanyakude	1997	2013	92434	38	24
South Africa	uMzinyathi	1997	2013	106810	30	21
South Africa	uThukela	1997	2013	140953	33	21
South Africa	uThungulu	1997	2013	182682	33	21
South Africa	Vhembe	1997	2013	134651	35	23
South Africa	Waterberg	1997	2013	74795	39	22
South Africa	West Coast	1997	2013	58114	56	14
South Africa	West Rand	1997	2013	160416	39	20
South Africa	Xhariep	1997	2013	50127	25	22
South Africa	Zululand	1997	2013	117950	34	21
South Korea	Andong	1997	2018	32872	16	23
South Korea	Boryeong	1997	2018	20317	17	24
South Korea	Busan	1997	2018	428378	18	21
South Korea	Cheonan	1997	2018	48679	17	25
South Korea	Chuncheon	1997	2018	34928	17	22
South Korea	Chungju	1997	2018	32513	17	22
South Korea	Daegu	1997	2018	264755	17	23
South Korea	Daejeon	1997	2018	136269	17	24
South Korea	Donghae	1997	2018	14320	16	20
South Korea	Gangneung	1997	2018	32996	18	19
South Korea	Geojae	1997	2018	21434	17	24
South Korea	Gumi	1997	2018	31550	17	23
South Korea	Gwangju	1997	2018	140527	17	23
South Korea	Icheon	1997	2018	22857	17	25
South Korea	Incheon	1997	2018	262393	18	23
South Korea	Jecheon	1997	2018	22122	17	21
South Korea	Jeju	1997	2018	38878	17	24
South Korea	Jeongeup	1997	2018	26863	17	24
South Korea	Jinju	1997	2018	42417	16	23
South Korea	Milyang	1997	2018	24563	17	22
South Korea	Mokpo	1997	2018	28919	16	22
South Korea	Mungyeong	1997	2018	18123	16	23
South Korea	Namwon	1997	2018	19099	18	22
South Korea	Pohang	1997	2018	60731	17	20
South Korea	Seogyupo	1997	2018	17808	17	24
South Korea	Seosan	1997	2018	21986	18	23
South Korea	Seoul	1997	2018	881716	18	24
South Korea	Sokcho	1997	2018	11953	16	21
South Korea	Suwon	1997	2018	83174	17	23
South Korea	Taebaek	1997	2018	8509	15	19
South Korea	Tongyeong	1997	2018	20451	17	24
South Korea	Ulsan	1997	2018	95097	18	21
South Korea	Wonju	1997	2018	36846	17	22
South Korea	Yeongju	1997	2018	22331	16	23

South Korea	Yeosu	1997	2018	40767	18	21
South Korea	Yoengcheon	1997	2018	23216	16	21
Spain	A Coruna	1990	2014	54375	33	12
Spain	Albacete	1990	2014	25183	20	10
Spain	Alicante	1990	2014	57825	29	14
Spain	Almeria	1990	2014	31718	37	15
Spain	Avila	1990	2014	10456	20	5
Spain	Badajoz	1990	2014	24373	22	11
Spain	Barcelona	1990	2014	393885	25	12
Spain	Bilbao	1990	2014	85143	27	10
Spain	Burgos	1990	2014	34905	20	7
Spain	Caceres	1990	2014	15075	21	10
Spain	Cadiz	1990	2014	30384	31	15
Spain	Castellon	1990	2014	29637	26	12
Spain	Ceuta	1990	2014	11914	53	15
Spain	Ciudad Real	1990	2014	13156	19	10
Spain	Cordoba	1990	2014	59896	20	11
Spain	Cuenca	1990	2014	11197	20	5
Spain	Girona	1990	2014	15083	20	11
Spain	Granada	1990	2014	51709	21	8
Spain	Guadalajara	1990	2014	12284	20	7
Spain	Huelva	1990	2014	27290	24	14
Spain	Huesca	1990	2014	11444	19	6
Spain	Jaen	1990	2014	20458	20	9
Spain	Leon	1990	2014	31433	22	6
Spain	Lleida	1990	2014	25335	18	10
Spain	Logrono	1990	2014	26511	22	9
Spain	Lugo	1990	2014	20716	26	10
Spain	Madrid	1990	2014	635447	19	8
Spain	Malaga	1990	2014	105276	27	12
Spain	Melilla	1990	2014	10134	31	15
Spain	Murcia	1990	2014	65346	25	27
Spain	Ourense	1990	2014	24237	25	10
Spain	Oviedo	1990	2014	48946	24	8
Spain	Palencia	1990	2014	18591	20	8
Spain	Palma Mallorca	1990	2014	68971	29	14
Spain	Palmas G. Canaria	1990	2014	66933	58	17
Spain	Pamplona	1990	2014	38222	22	9
Spain	Pontevedra	1990	2014	15005	34	12
Spain	Salamanca	1990	2014	35218	20	9
Spain	San Sebastian	1990	2014	41490	28	10
Spain	Santander	1990	2014	43721	31	11
Spain	Segovia	1990	2014	11901	20	5
Spain	Sevilla	1990	2014	141794	22	12
Spain	Soria	1990	2014	7682	21	5
Spain	Tarragona	1990	2014	21942	29	13
Spain	Tenerife	1990	2014	39113	57	17
Spain	Teruel	1990	2014	7674	20	5
Spain	Toledo	1990	2014	12742	19	8
Spain	Valencia	1990	2014	172452	23	26
Spain	Valladolid	1990	2014	62127	20	8
Spain	Vitoria	1990	2014	38531	23	9
Spain	Zamora	1990	2014	14658	20	10
Spain	Zaragoza	1990	2014	137572	18	9
Sweden	Gothenburg	1990	2016	183779	20	15
Sweden	Malmo	1990	2016	141442	21	5
Sweden	Stockholm	1990	2016	392073	19	2
Switzerland	Basel	1995	2013	37607	18	16
Switzerland	Bern	1995	2013	28193	17	16



Switzerland	Geneve	1995	2013	26306	18	15
Switzerland	Lausanne	1995	2013	20810	20	6
Switzerland	Lugano	1995	2013	28567	18	4
Switzerland	Luzern	1995	2013	15073	18	14
Switzerland	St. Gallen	1995	2013	13543	18	15
Switzerland	Zürich	1995	2013	73539	18	16
Taiwan	Kaohsiung	1994	2014	332220	50	28
Taiwan	Taichung	1994	2014	256565	46	26
Taiwan	Taipei	1994	2014	620788	33	27
Thailand	Amnat Charoen	1999	2008	10191	79	28
Thailand	Ayutthaya	1999	2008	24630	101	29
Thailand	Bangkok	1999	2008	242841	99	29
Thailand	Buri Ram	1999	2008	31550	75	28
Thailand	Chachoengsao	1999	2008	19972	104	29
Thailand	Chaiyaphum	1999	2008	28116	79	28
Thailand	Chanthaburi	1999	2008	21381	145	28
Thailand	Chiang Mai	1999	2008	76294	59	27
Thailand	Chiang Rai	1999	2008	52925	73	26
Thailand	Chon Buri	1999	2008	46481	113	29
Thailand	Chumphon	1999	2008	11974	157	27
Thailand	Kalasin	1999	2008	30249	76	28
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Thailand	Lop Buri	1999	2008	29371	100	29
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Thailand	Nan	1999	2008	19042	82	27
Thailand	Narathiwat	1999	2008	15506	112	26
Thailand	Nong Bua Lam Phu	1999	2008	12259	66	28
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Thailand	Pathum Thani	1999	2008	22274	98	29
Thailand	Pattani	1999	2008	12344	118	27
Thailand	Phayao	1999	2008	23941	69	27
Thailand	Phetchabun	1999	2008	26200	106	27
Thailand	Phetchaburi	1999	2008	14351	107	28
Thailand	Phichit	1999	2008	15039	92	29
Thailand	Phitsanulok	1999	2008	31576	88	29
Thailand	Phrae	1999	2008	22432	81	27
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Thailand	Samut Sakhon	1999	2008	15214	110	29
Thailand	Samutprakan	1999	2008	29796	110	29
Thailand	Saraburi	1999	2008	22361	107	28
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Thailand	Yala	1999	2008	10887	97	26
Thailand	Yasothon	1999	2008	15133	84	28
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UK	Basildon	1990	2016	20303	24	15
UK	Basingstoke	1990	2016	13816	24	10
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UK	Brighton and Hove	1990	2016	112749	34	9
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UK	Norwich	1990	2016	37123	26	7
UK	Nottingham	1990	2016	136290	25	14
UK	Oxford	1990	2016	19289	24	9

UK	Paignton/Torquay	1990	2016	31006	33	9
UK	Peterborough	1990	2016	27262	24	15
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UK	York	1990	2016	25755	25	14
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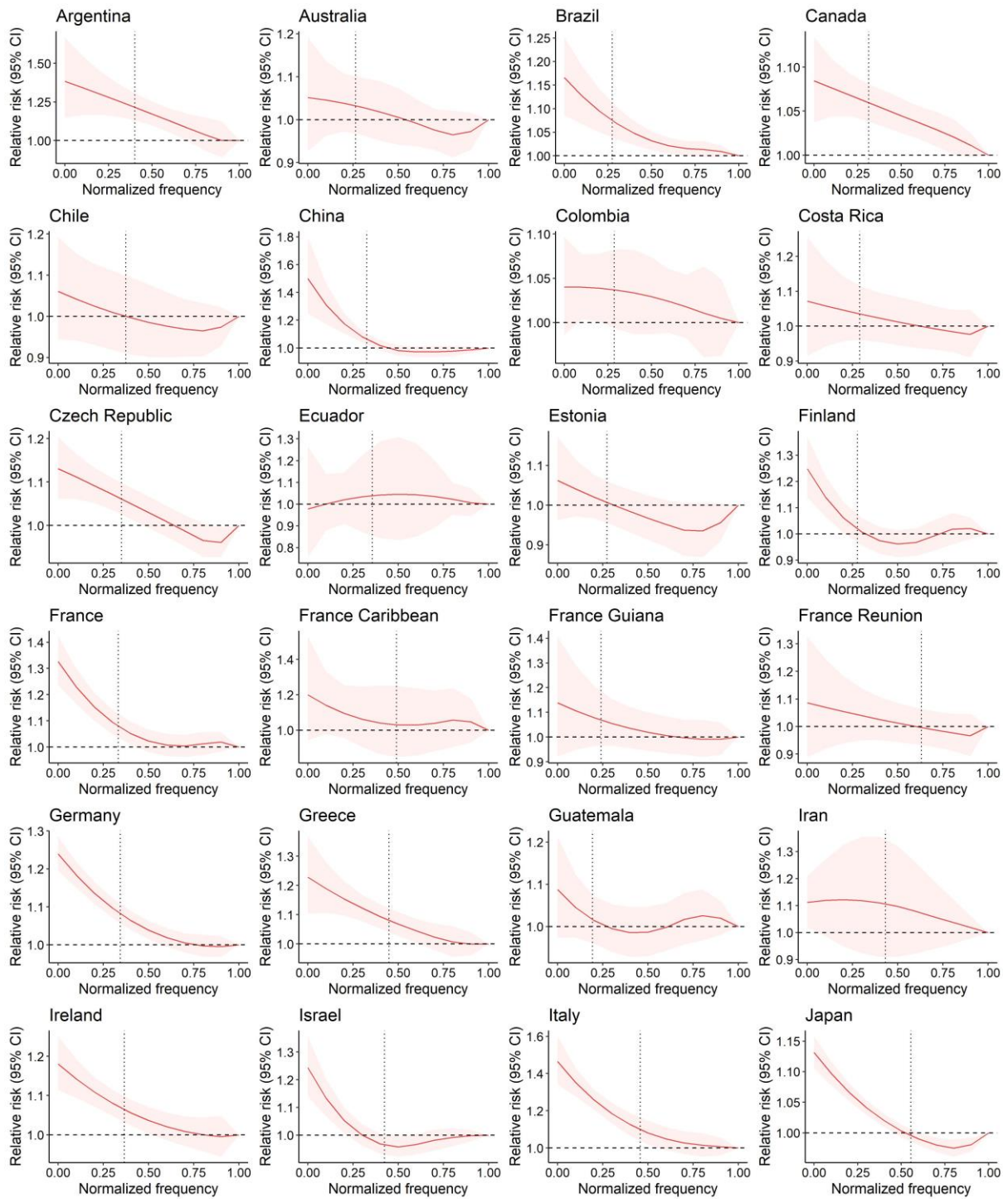
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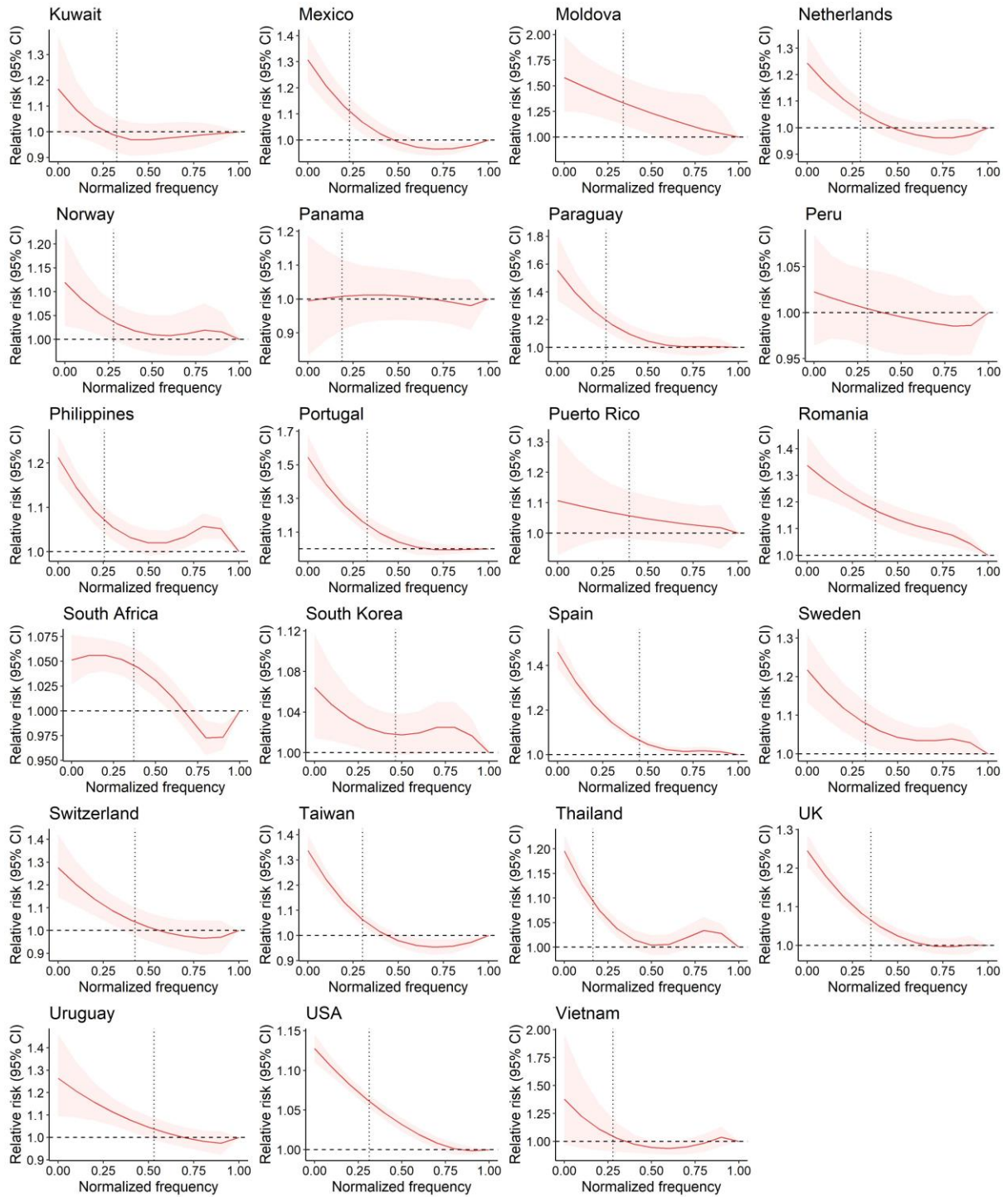
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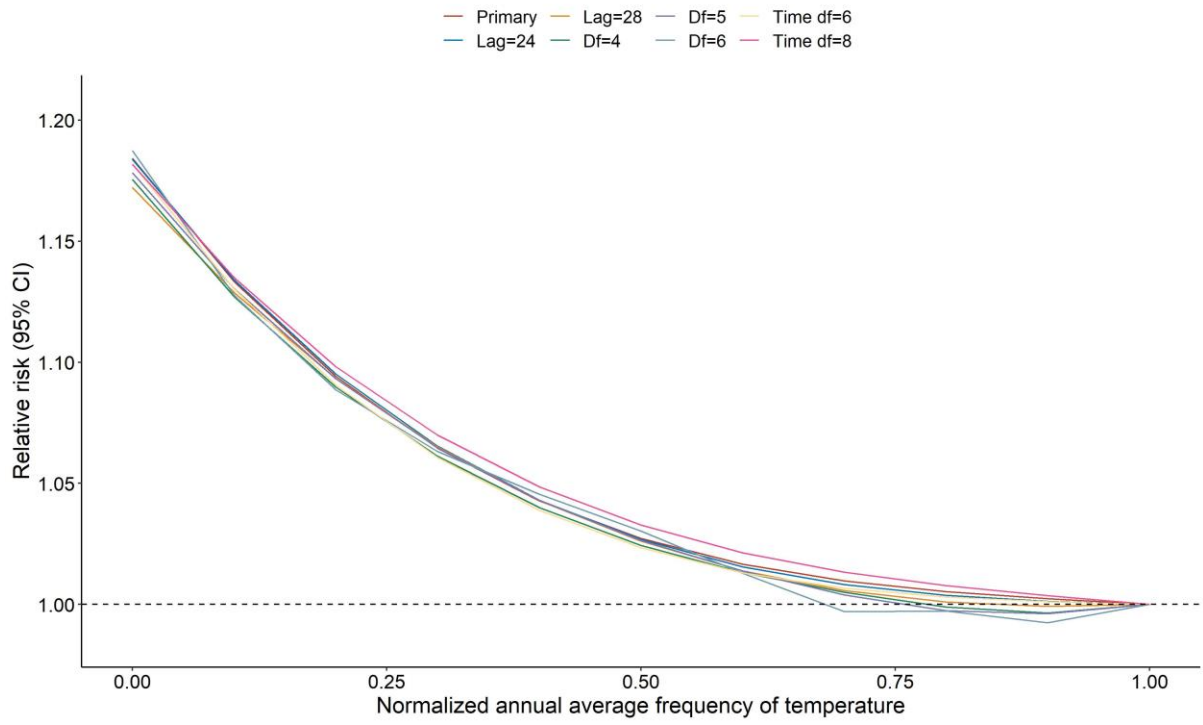




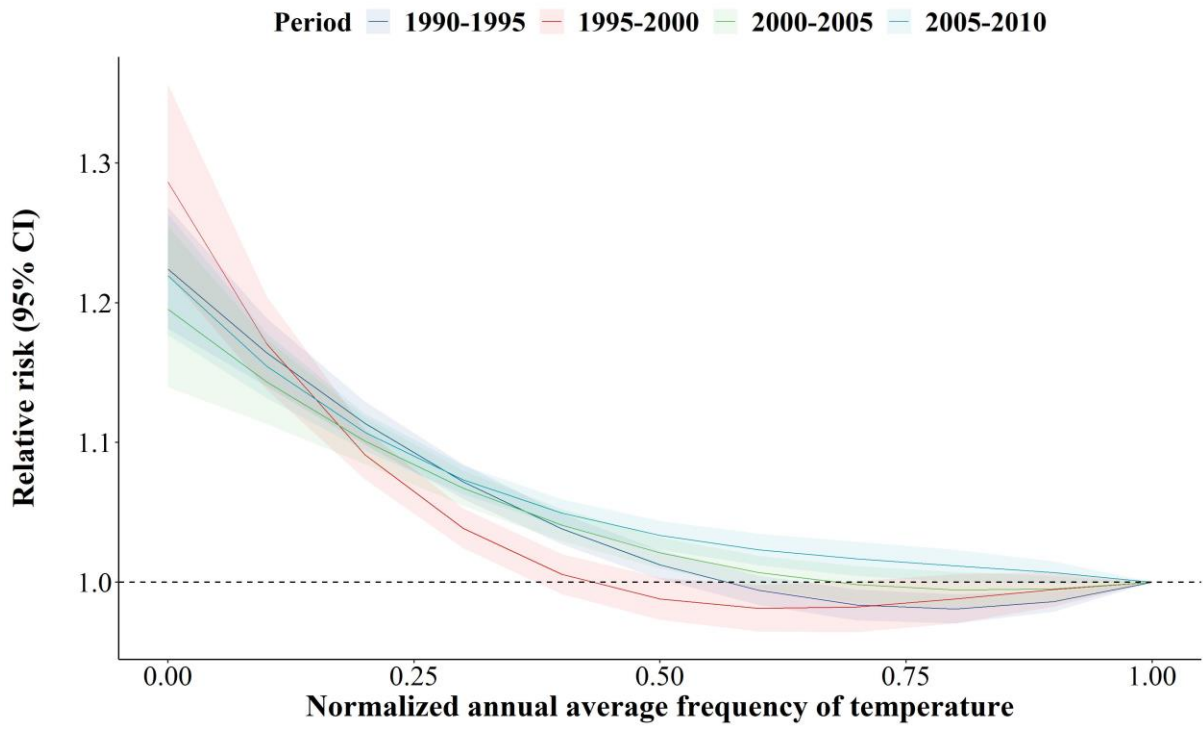
**Figure S1. Cumulative associations between temperature frequency and all-cause mortality by country.** The reference normalized frequency = 1 was used to calculate relative risks. Vertical lines represent the 10th percentile of normalized frequency of temperature.

**Table S2. Percentage change of mortality comparing the 10<sup>th</sup> percentile to the 100<sup>th</sup> percentile of normalized frequency of temperature by climate zones.**

Climate zones	Percentage change (95% CI) (10 <sup>th</sup> vs 100 <sup>th</sup> )
Tropical rainforest climate (Af)	10.22 (6.01, 14.60)
Tropical monsoon climate (Am)	10.24 (6.17, 14.47)
Tropical savanna climate, a dry summer (As)	9.40 (0.15, 19.50)
Tropical savanna climate, a dry winter (Aw)	12.48 (10.50, 14.49)
Hot semi-arid climate (BSh)	11.90 (5.49, 18.70)
Cold semi-arid climate (BSk)	13.21 (8.40, 18.24)
Hot desert climate (BWh)	8.08 (2.31, 14.18)
Cold desert climate (BWk)	8.99 (0.48, 18.22)
Humid subtropical climate (Cfa)	12.67 (11.02, 14.34)
Temperate oceanic climate or subtropical highland climate (Cfb)	17.11 (15.20, 19.04)
Hot-summer Mediterranean climate (Csa)	28.93 (23.11, 35.03)
Warm-summer Mediterranean climate (Csb)	14.18 (10.06, 18.47)
Monsoon-influenced humid subtropical climate (Cwa)	7.72 (3.82, 11.76)
Subtropical highland climate or Monsoon-influenced temperate oceanic climate (Cwb)	8.32 (5.14, 11.60)
Hot-summer humid continental climate (Dfa)	12.81 (10.10, 15.58)
Warm-summer humid continental climate (Dfb)	7.64 (5.62, 9.69)
Subarctic climate (Dfc)	6.40 (-3.92, 17.82)
Monsoon-influenced hot-summer humid continental climate (Dwa)	11.49 (4.63, 18.81)
Monsoon-influenced warm-summer humid continental climate (Dwb)	12.15 (-3.03, 29.69)
Tundra climate (ET)	-0.45 (-11.91, 12.50)



**Figure S2. Sensitivity analyses by using alternative maximum lags and degree of freedoms of frequency (df) and long-term time trends (Time df).**



**Figure S3. Sensitivity analyses of pooled cumulative associations between temperature frequency and all-cause mortality for different periods.**