

Estudios sobre contaminación atmosférica y salud en el ámbito del consorcio MCC:

Resultados para el ozono

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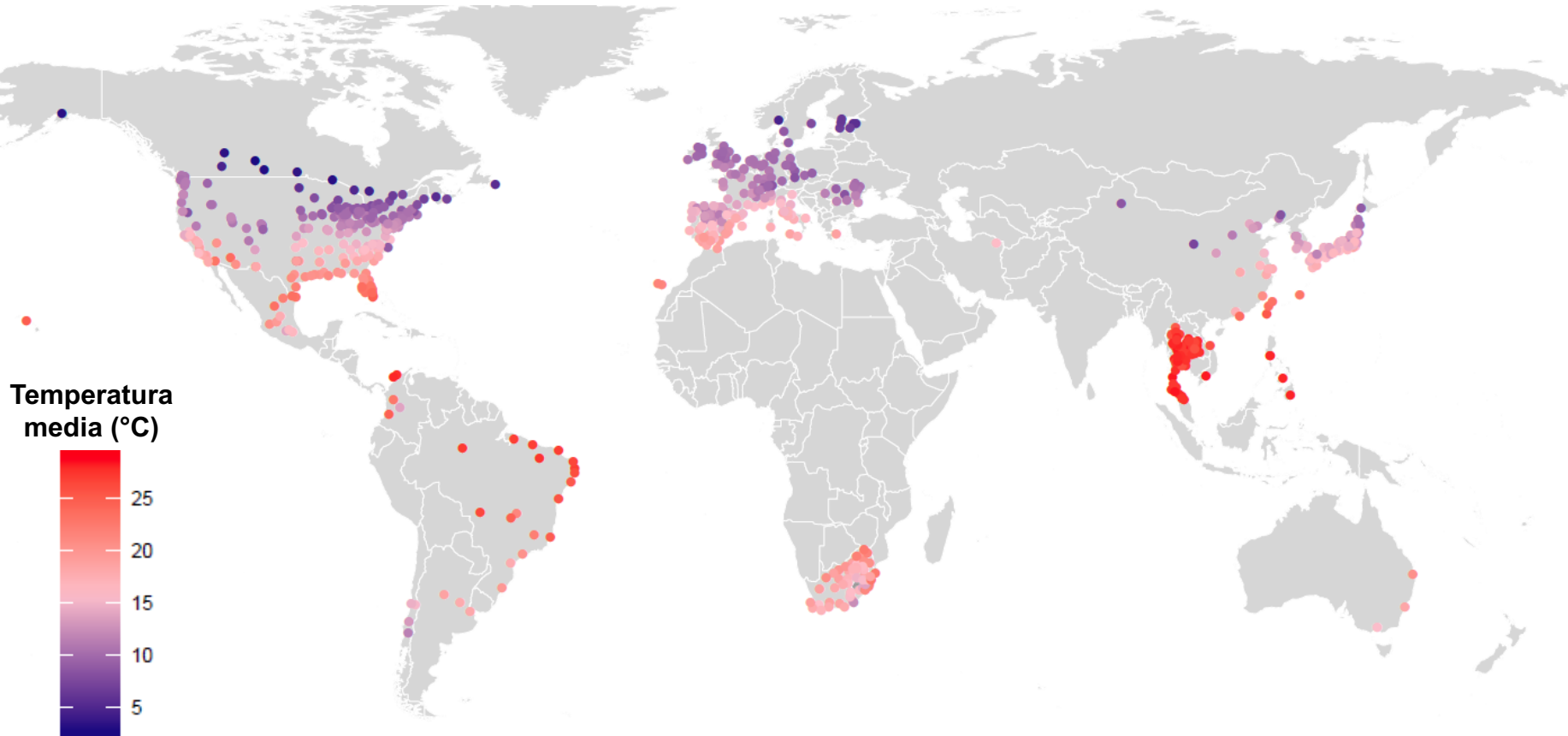
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Esquema de la presentación

1. *Multi-city Multi-country (MCC) collaborative research network* – estudios sobre cambio climático y salud.
2. Nuevas líneas de investigación: contaminación atmosférica.
3. Resultados del estudio sobre mortalidad a corto plazo y ozono.

Multi-Country Multi-City Collaborative Research Network



638 ciudades en 34 países en todo el mundo
~70 investigadores de ~30 instituciones

<http://mccstudy.lshtm.ac.uk/>
 @mccstudy

Multi-Country Multi-City Collaborative Research Network



Variables	Descripción
<i>Mortalidad</i>	Número diario de muertes totales (por todas las causas, causas no externas, cardiovasculares, respiratorias)
<i>Clima</i>	Media, mínima y máxima temperatura diaria, humedad relativa media, dew point
<i>Contaminación atmosférica</i>	NO ₂ , O ₃ , PM10, PM2.5, CO, SO ₂
<i>Características contextuales</i>	Densidad de población, % población ≥65 años, esperanza de vida, PIB, nivel de educación, tasa de desempleo, tipo de región (rural/urbana), area verde, etc.

VENTAJAS → Gran cobertura geográfica, alta potencia estadística.

- Modelos estadísticos complejos.
- Evaluar principales factores de vulnerabilidad.

Pero...

- Algunas regiones no están representadas.
- Heterogeneidad de los datos entre países.

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Lancet 2015; 386: 369-75

Mortality risk attributable to high and low ambient temperature: a multicountry observational study

~ 370 citaciones
(Scopus)

Antonio Gasparini, Yuming Guo, Masahiro Hashizume, Eric Lavigne, Antonella Zanobetti, Joel Schwartz, Aurelio Tobias, Shilu Tong, Joacim Rocklöv, Bertil Forsberg, Michela Leone, Manuela De Sario, Michelle L Bell, Yue-Liang Leon Guo, Chang-fu Wu, Haidong Kan, Seung-Muk Yi, Micheline de Sousa Zanotti Stagliorio Coelho, Paulo Hilario Nascimento Saldiva, Yasushi Honda, Ho Kim, Ben Armstrong

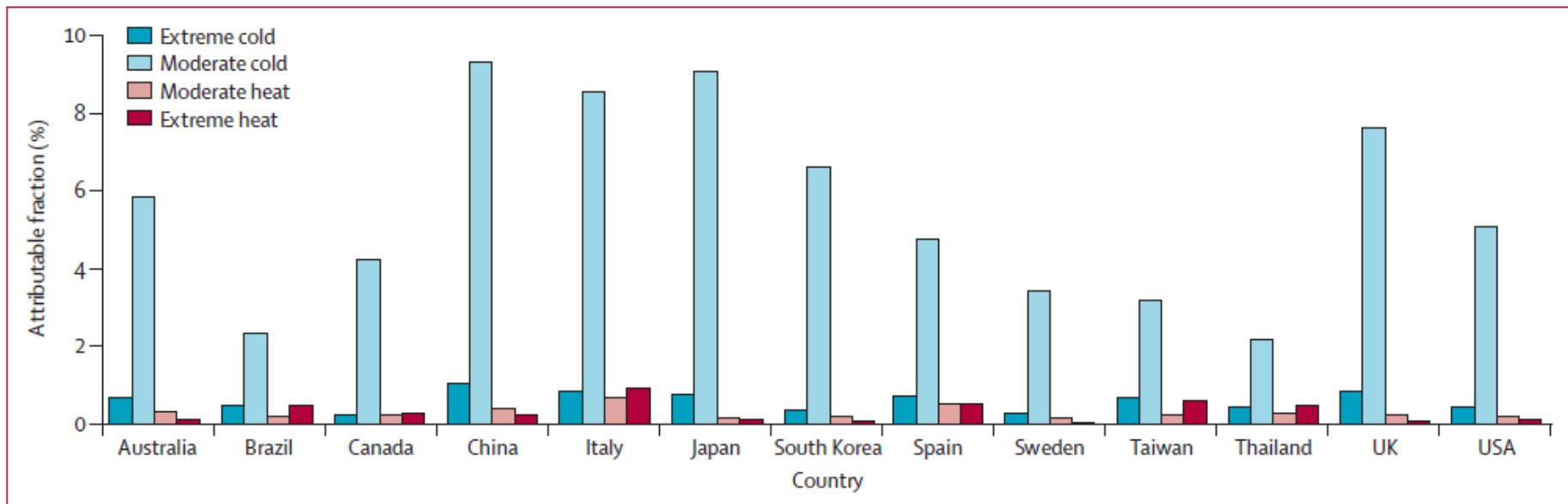


Figure 2: Fraction of all-cause mortality attributable to moderate and extreme hot and cold temperature by country

Extreme and moderate high and low temperatures were defined with the minimum mortality temperature and the 2.5th and 97.5th percentiles of temperature distribution as cutoffs.

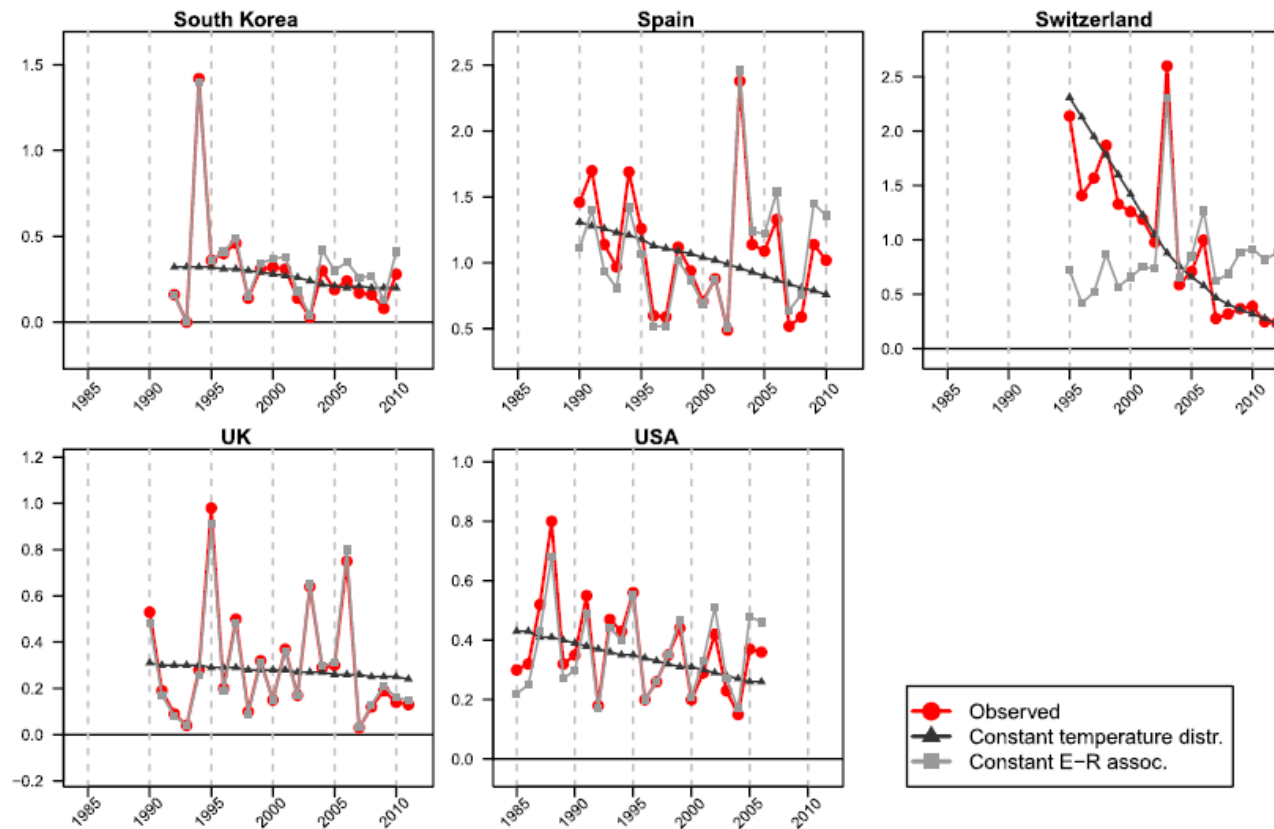
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Environment International 111 (2018) 239–246

A multi-country analysis on potential adaptive mechanisms to cold and heat in a changing climate



Ana M. Vicedo-Cabrera^{a,*}, Francesco Sera^a, Yuming Guo^b, Yeonseung Chung^c, Katherine Arbuthnott^a, Shilu Tong^{d,e,f}, Aurelio Tobias^g, Eric Lavigne^h, Micheline de Sousa Zanotti Stagliorio Coelhoⁱ, Paulo Hilario Nascimento Saldivaⁱ, Patrick G. Goodman^j, Ariana Zeka^k, Masahiro Hashizume^l, Yasushi Honda^m, Ho Kimⁿ, Martina S. Ragetti^{o,p}, Martin Röösli^{o,p}, Antonella Zanobetti^q, Joel Schwartz^q, Ben Armstrong^a, Antonio Gasparrini^a



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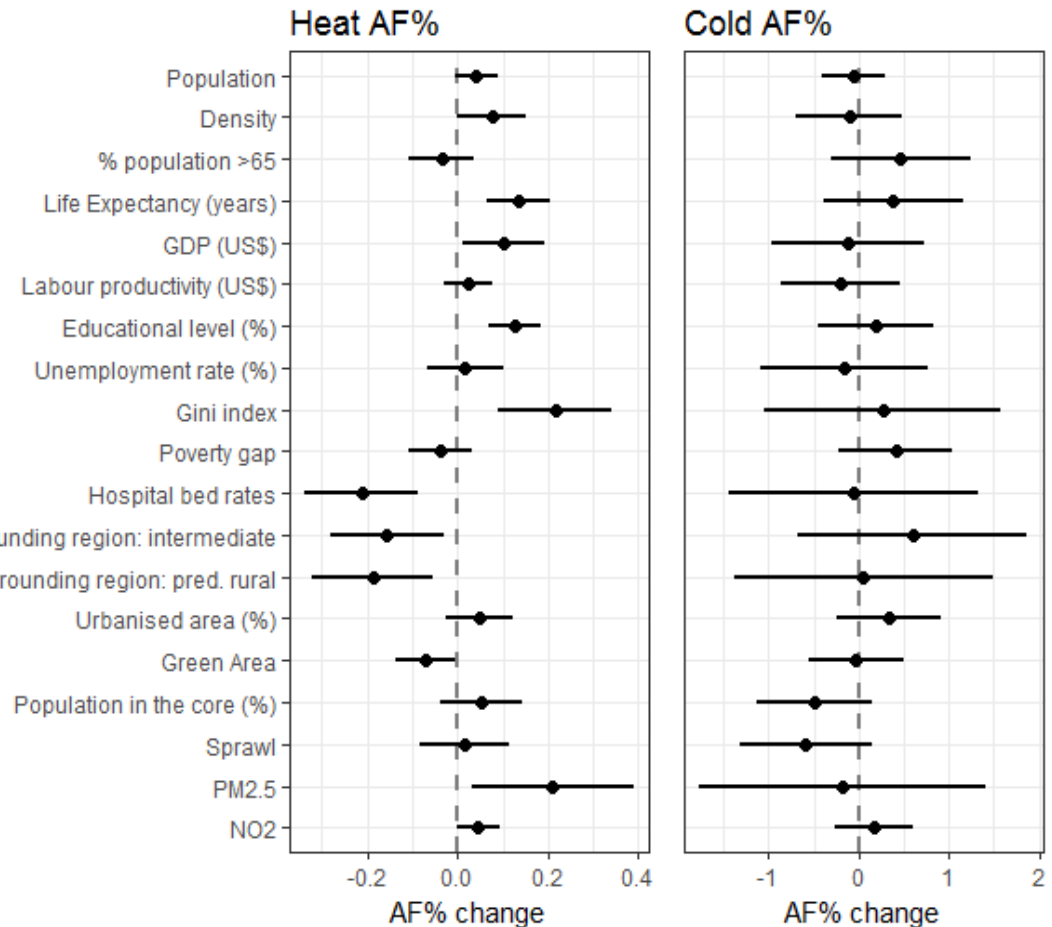
International Journal of Epidemiology, 2019, 1–12
doi: 10.1093/ije/dyz008
Original article

Original article

How urban characteristics affect vulnerability to heat and cold: a multi-country analysis

Francesco Sera,^{1*} Ben Armstrong,¹ Aurelio Tobias,² Ana Maria Vicedo-Cabrera,¹ Christofer Åström,³ Michelle L Bell,⁴ Bing-Yu Chen,⁵ Micheline de Sousa Zanotti Stagliorio Coelho,⁶ Patricia Matus Correa,⁷ Julio Cesar Cruz,⁸ Tran Ngoc Dang,^{9,10} Magali Hurtado-Díaz,⁸ Dung Do Van,⁹ Bertil Forsberg,³ Yue Leon Guo,^{5,11} Yuming Guo,^{12,13} Masahiro Hashizume,¹⁴ Yasushi Honda,¹⁵ Carmen Iniguez,¹⁶ Jouni JK Jaakkola,^{17,18} Haidong Kan,¹⁹ Ho Kim,²⁰ Eric Lavigne,^{21,22} Paola Michelozzi,²³ Nicolas Valdes Ortega,⁷ Samuel Osorio,²⁴ Mathilde Pascal,²⁵ Martina S Ragetti,^{26,27} Niilo Ri Rytö,^{17,18} Paulo Hilario Nascimento Saldiva,⁶ Joel Schwartz,²⁸ Matteo Scortichini,²³ Xerxes Seposo,²⁹ Shilu Tong,^{30,31,32} Antonella Zanobetti²⁸ and Antonio Gasparrini¹

Indica



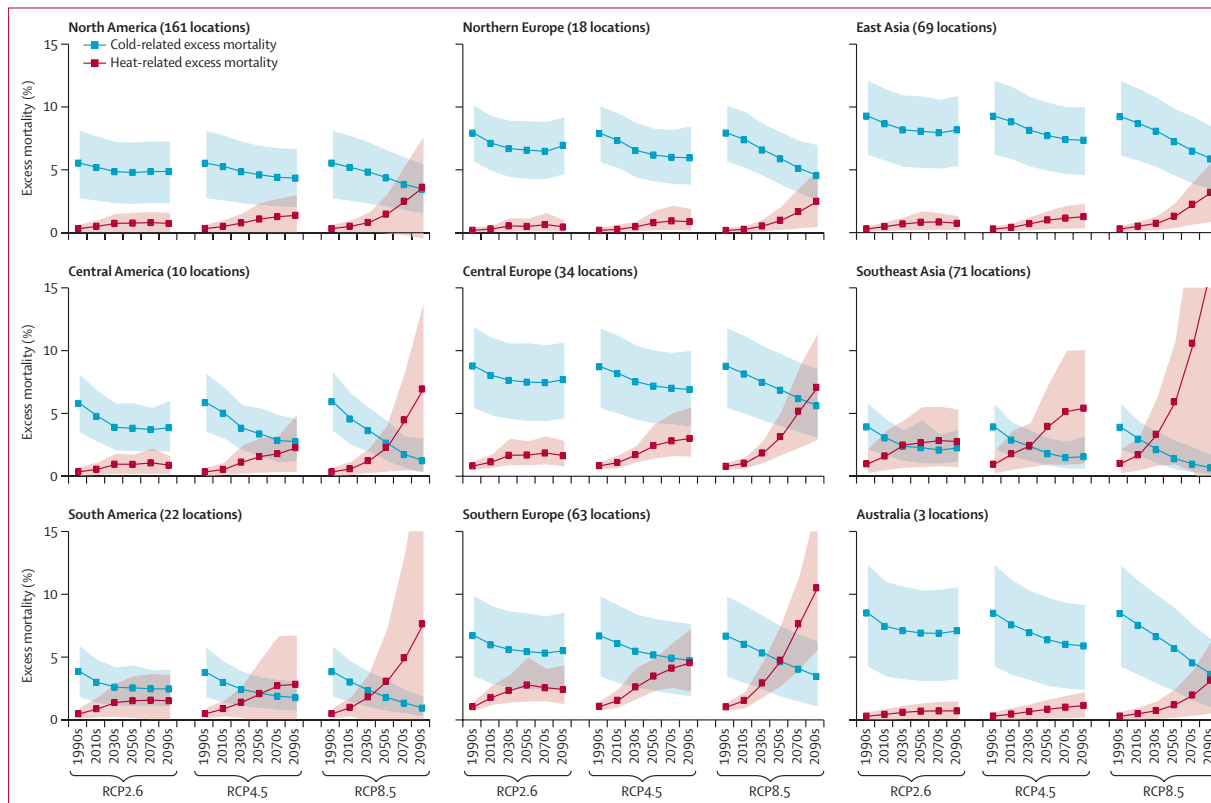
Multi-Country Multi-City Collaborative Research Network

Lancet Planet Health 2017; 1: e360-67

Projections of temperature-related excess mortality under climate change scenarios



Antonio Gasparini, Yuming Guo, Francesco Sera, Ana Maria Vicedo-Cabrera, Veronika Huber, Shilu Tong, Micheline de Sousa Zanotti Stagliorio Coelho, Paulo Hilario Nascimento Saldiva, Eric Lavigne, Patricia Matus Correa, Nicolas Valdes Ortega, Haidong Kan, Samuel Osorio, Jan Kyselý, Aleš Urban, Jouni J Kaakkola, Niilo R I Rytý, Mathilde Pascal, Patrick G Goodman, Ariana Zeka, Paola Michelozzi, Matteo Scortichini, Masahiro Hashizume, Yasushi Honda, Magali Hurtado-Díaz, Julio Cesar Cruz, Xerxes Seposo, Ho Kim, Aurelio Tobias, Carmen Iñiguez, Bertil Forsberg, Daniel Oudin Åström, Martina S Ragetti, Yue Leon Guo, Chang-fu Wu, Antonella Zanobetti, Joel Schwartz, Michelle L Bell, Tran Ngoc Dang, Dung Do Van, Clare Heavyside, Sotiris Vardoulakis, Shakoor Hajat, Andy Haines, Ben Armstrong



Multi-Country Multi-City Collaborative Research Network

Climatic Change
<https://doi.org/10.1007/s10584-018-2274-3>

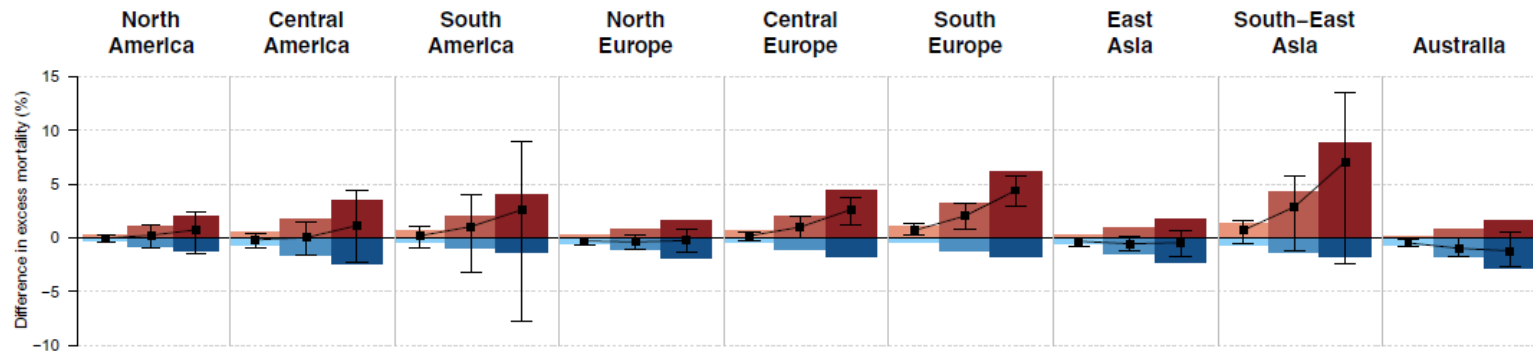
LETTER



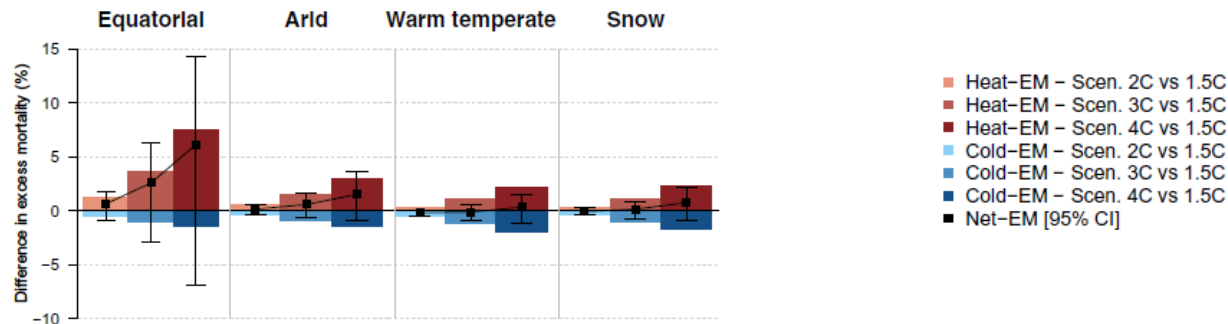
Temperature-related mortality impacts under and beyond Paris Agreement climate change scenarios

Ana Maria Vicedo-Cabrera, et al. *[full author details at the end of the article]*

A – GEOGRAPHIC REGION



B – CLIMATE ZONE



Nueva línea de investigación → evaluar el impacto a corto (plazo) de la contaminación atmosférica sobre la mortalidad

2 estudios en revisión:

- Material particulado & mortalidad (N England J Med)
- Ozono & mortalidad (BMJ)

3 estudios en ejecución:

- Factores de vulnerabilidad
- NO₂ & mortalidad
- Interacción entre temperature & contaminantes atmosféricos

Short-term association between ozone and mortality: a global study in 469 locations. *Ana M. Vicedo-Cabrera, Francesco Sera, Cong Liu, Ben Armstrong, Ai Milojevic, Yuming Guo, Shilu Tong, Eric Lavigne, [...] Antonio Gasparrini. [Under review, BMJ].*

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