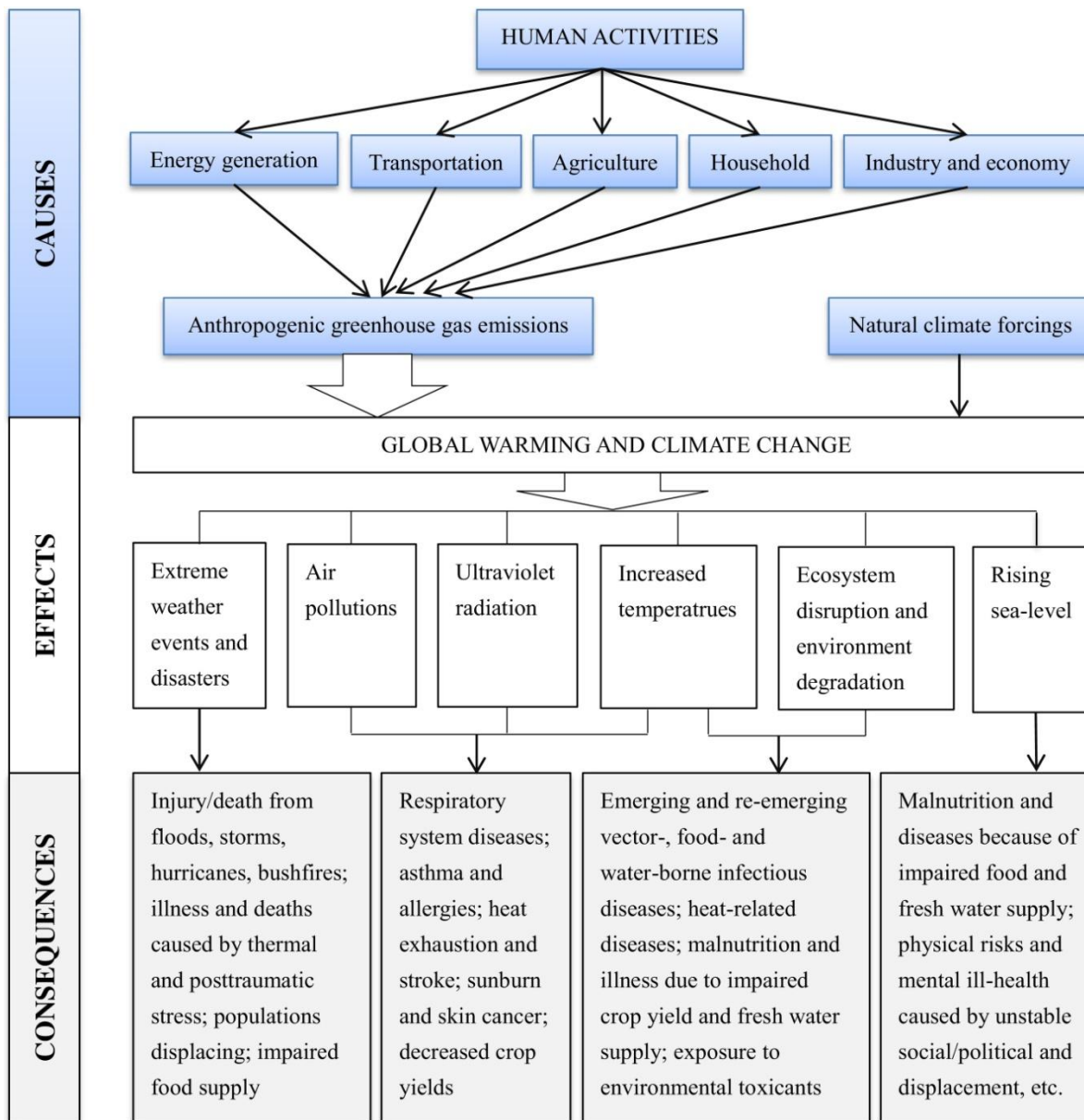


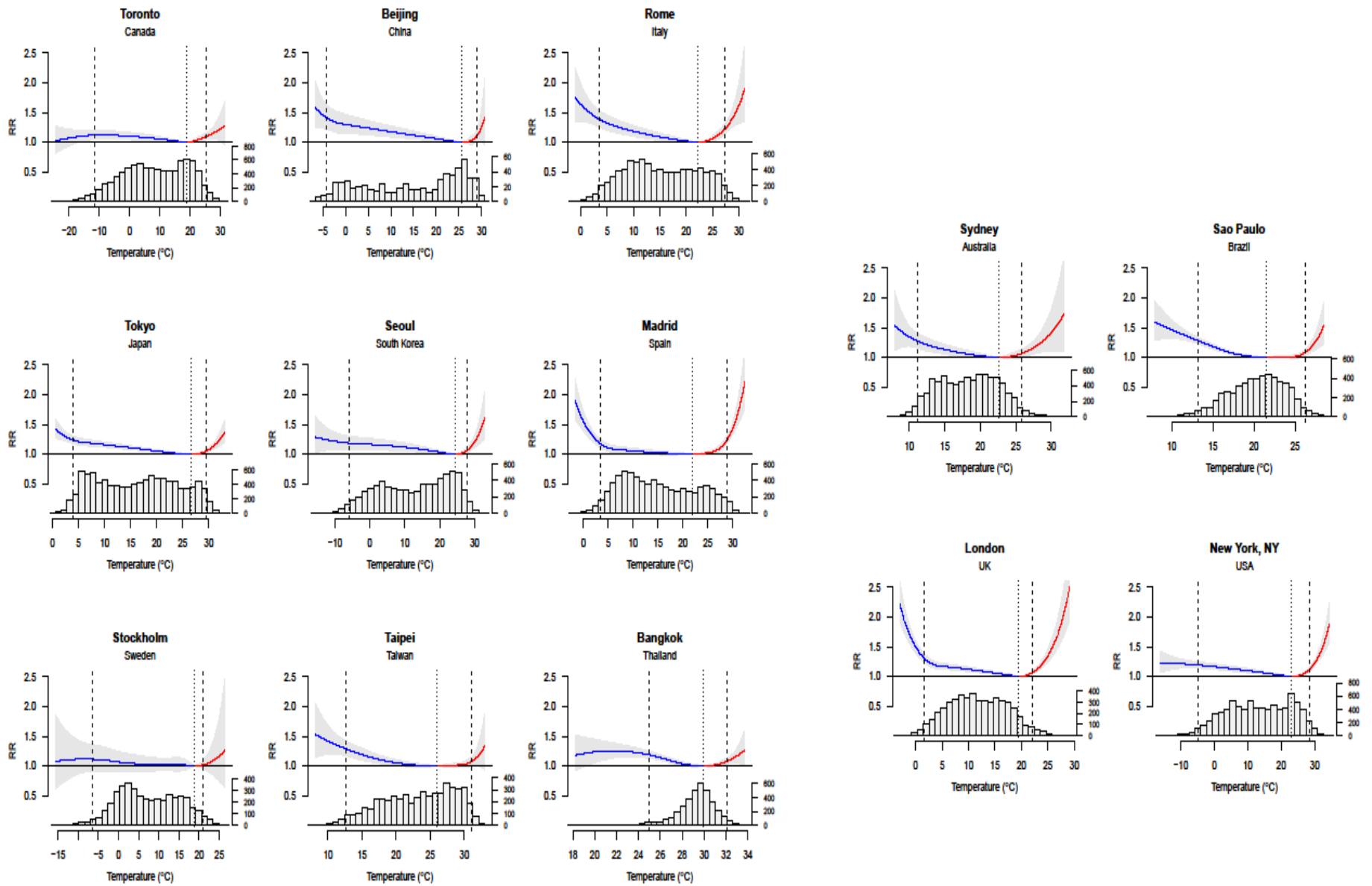
# Reducing air pollution and GHGE, saving lives and making money

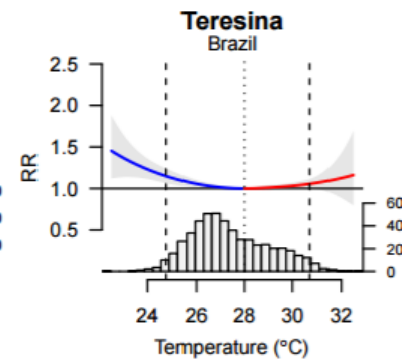
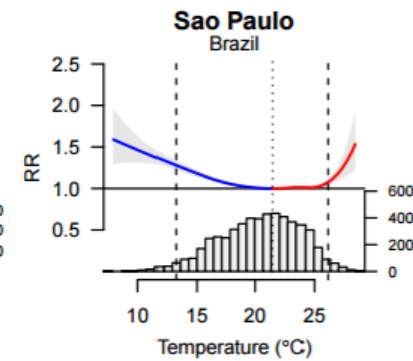
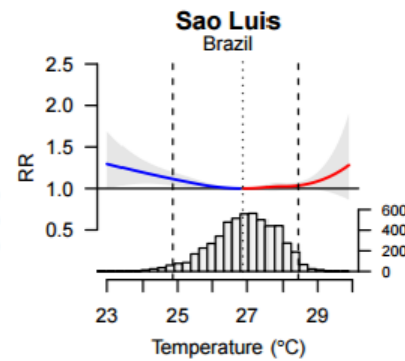
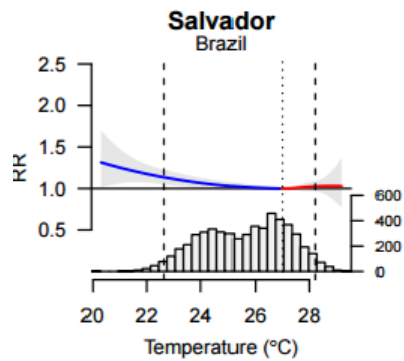
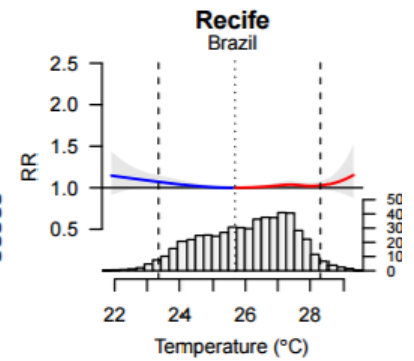
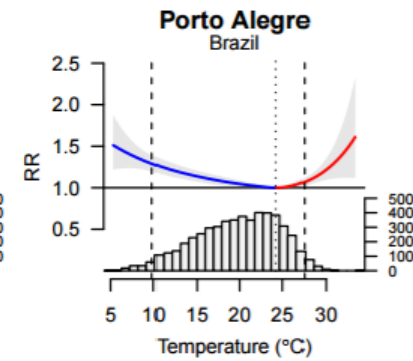
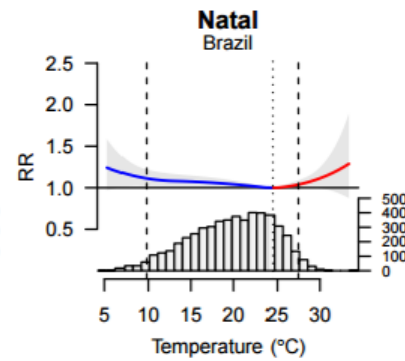
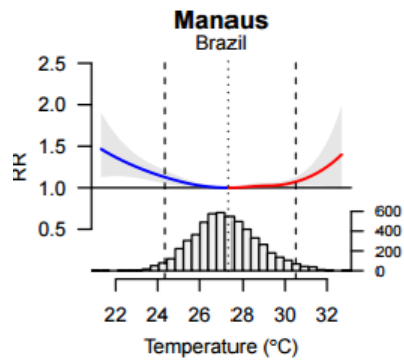
Paulo Saldiva

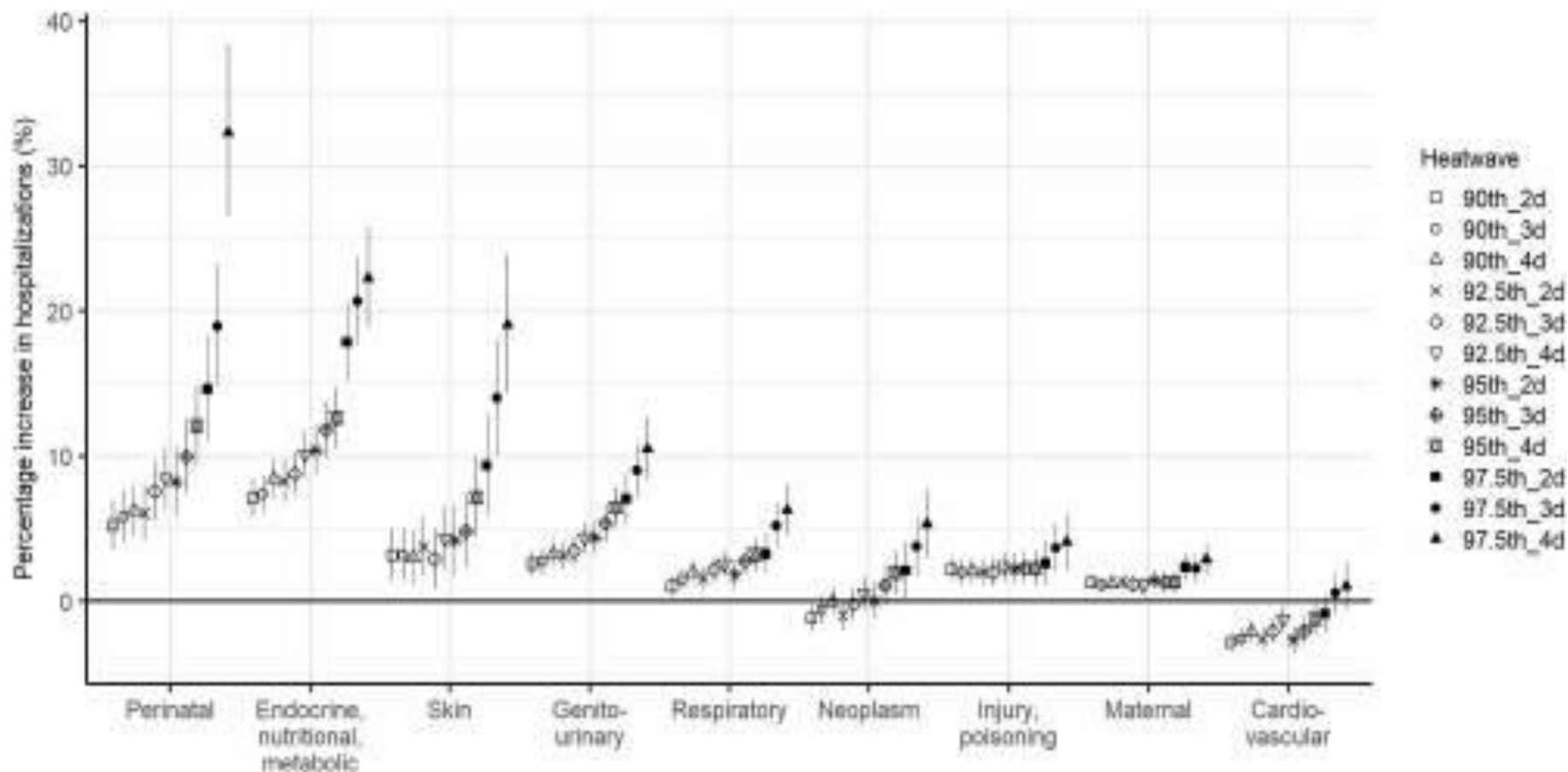
Institute of Advanced Studies

[pepino@usp.br](mailto:pepino@usp.br)

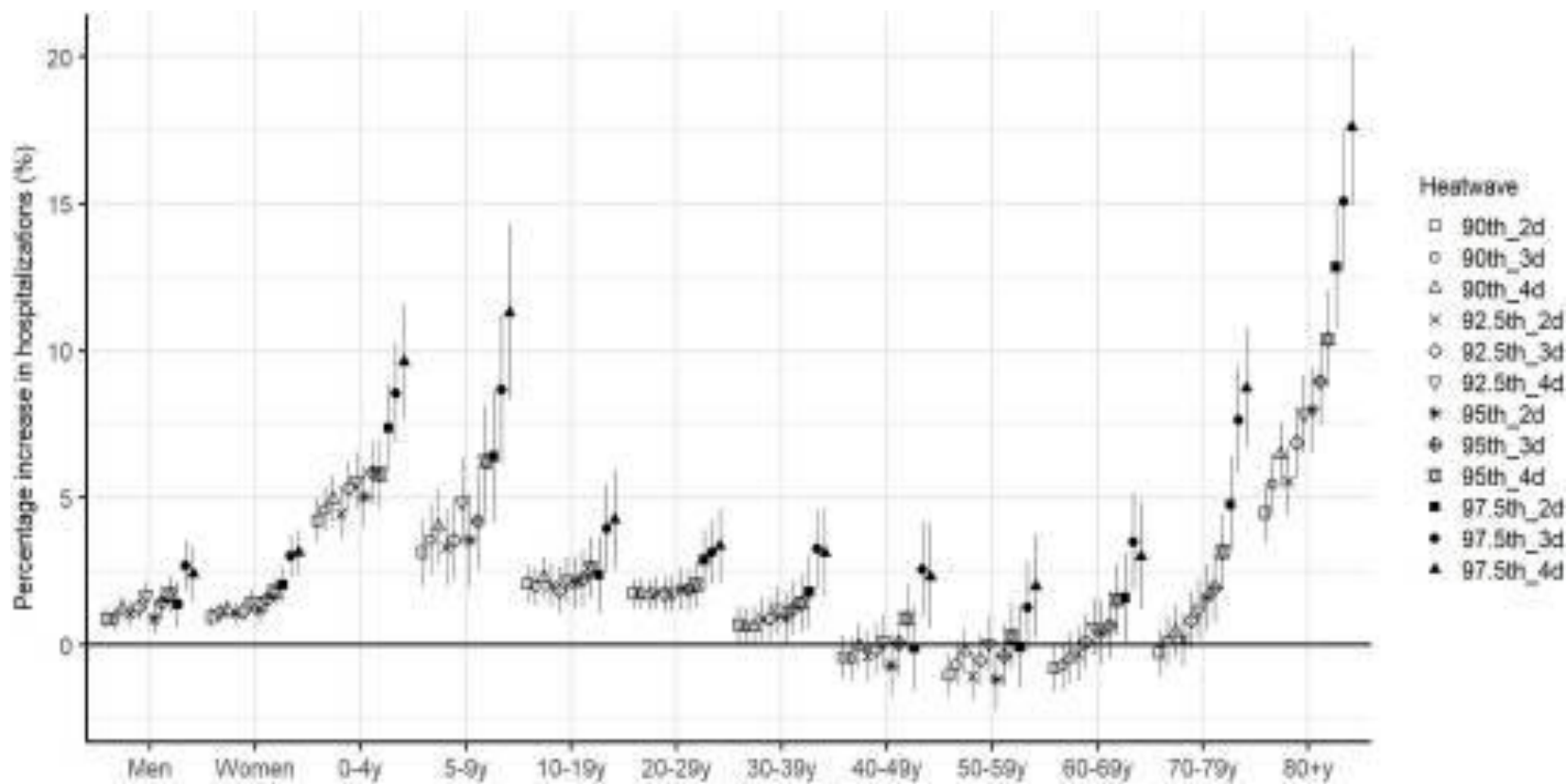




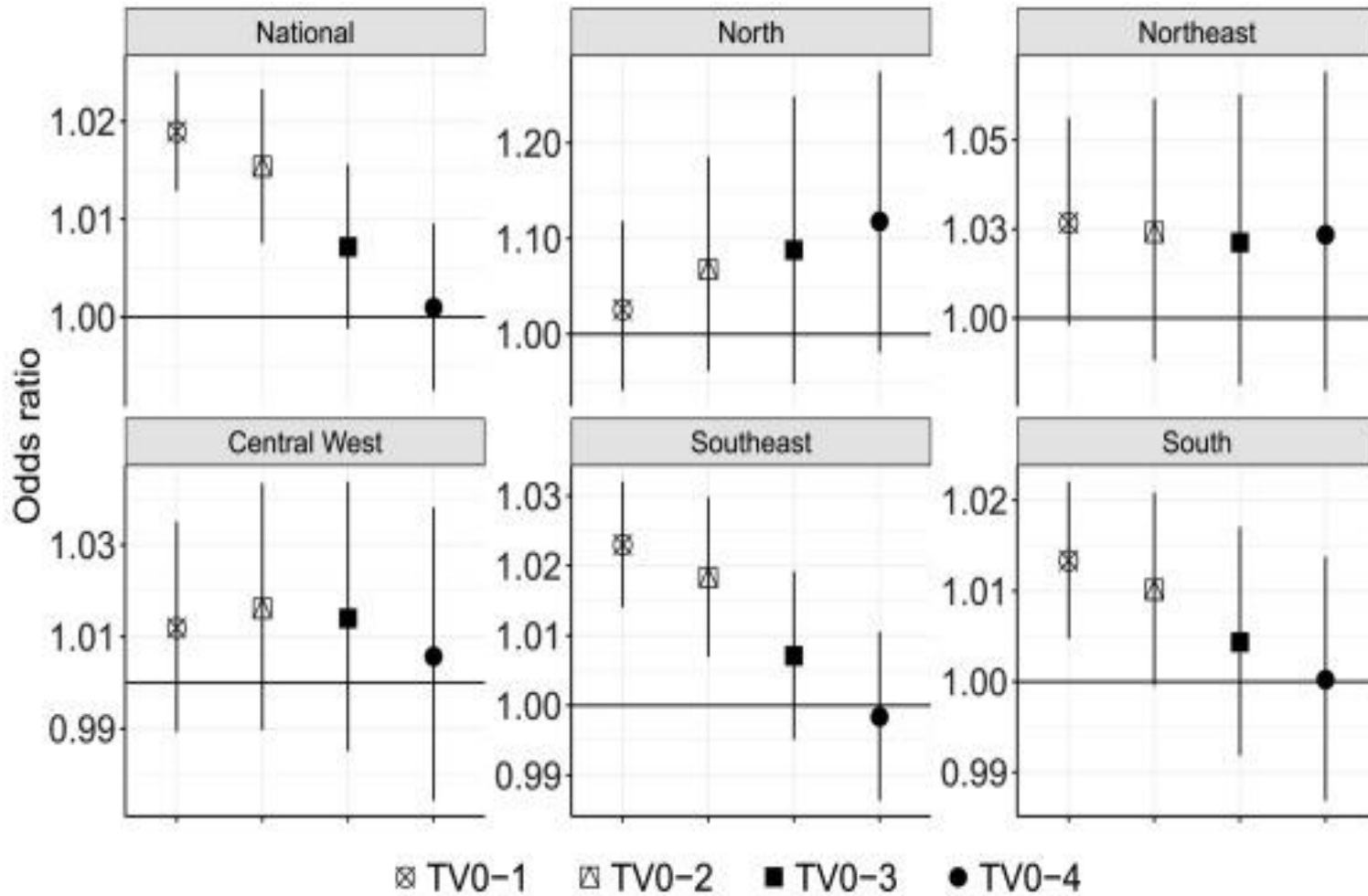




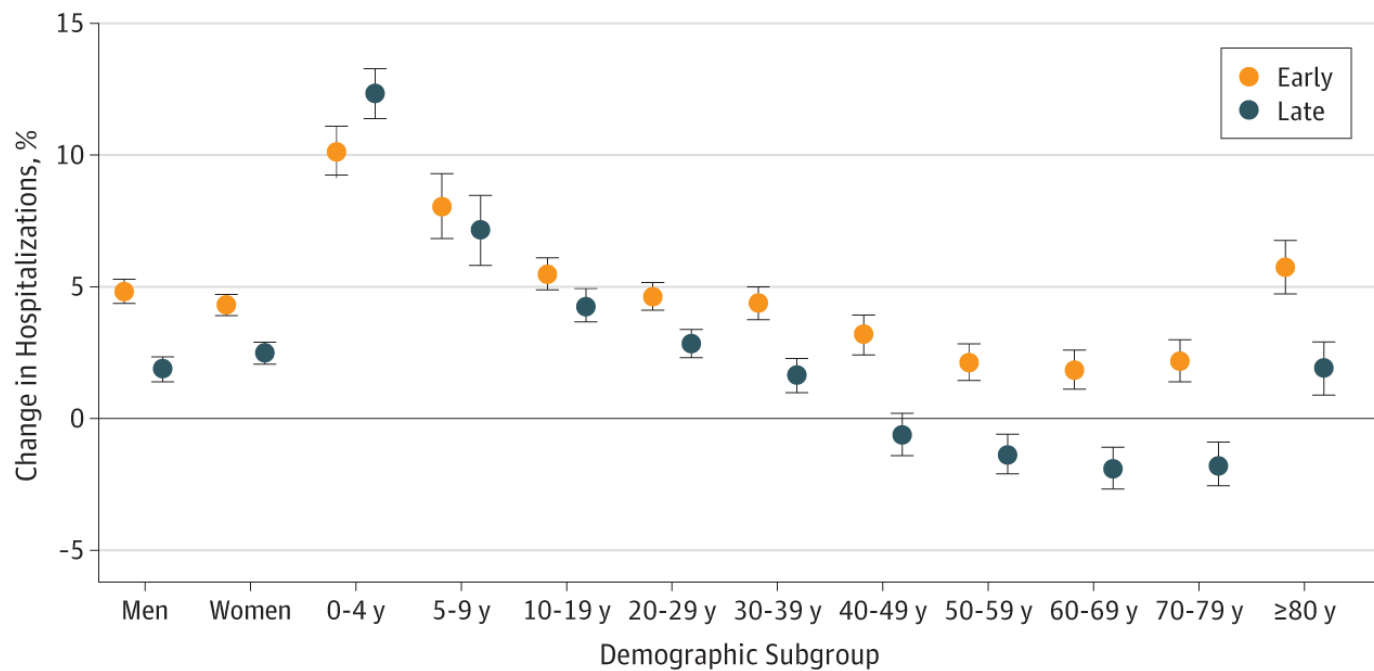
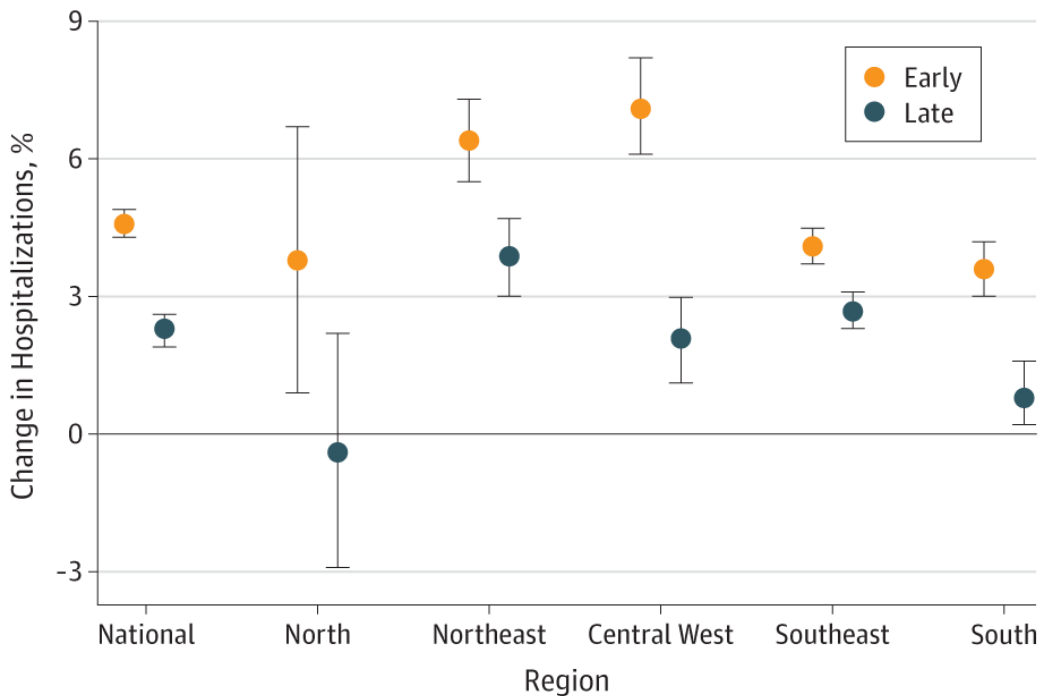
[PLoS Med.](https://doi.org/10.1371/journal.pmed.1002753) 2019 Feb; 16(2): e1002753



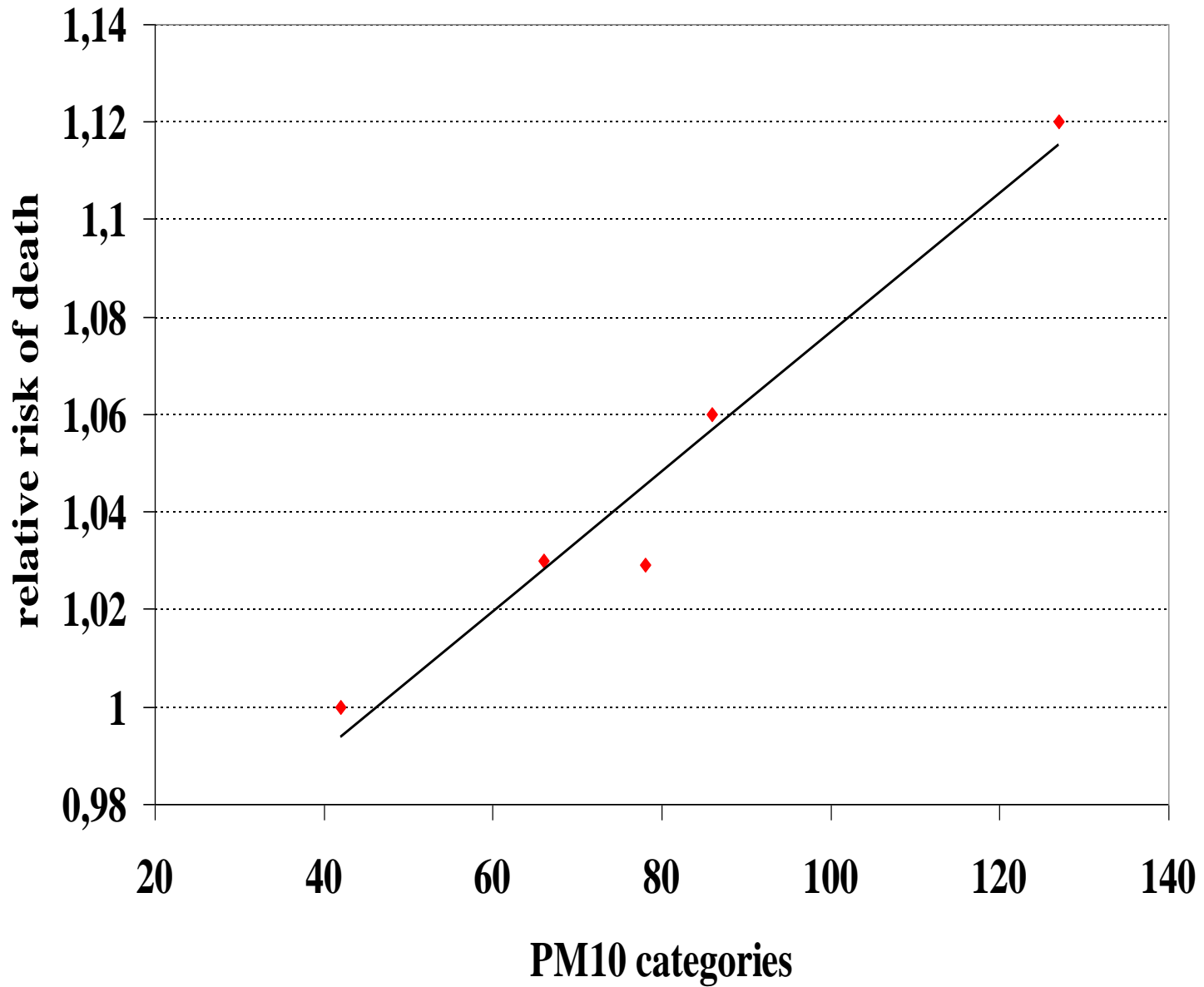
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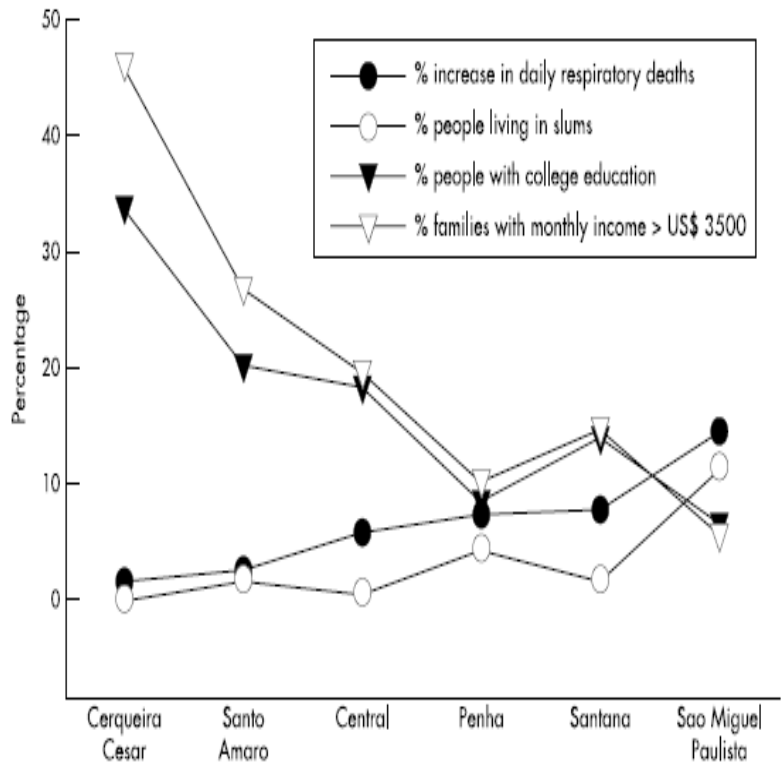


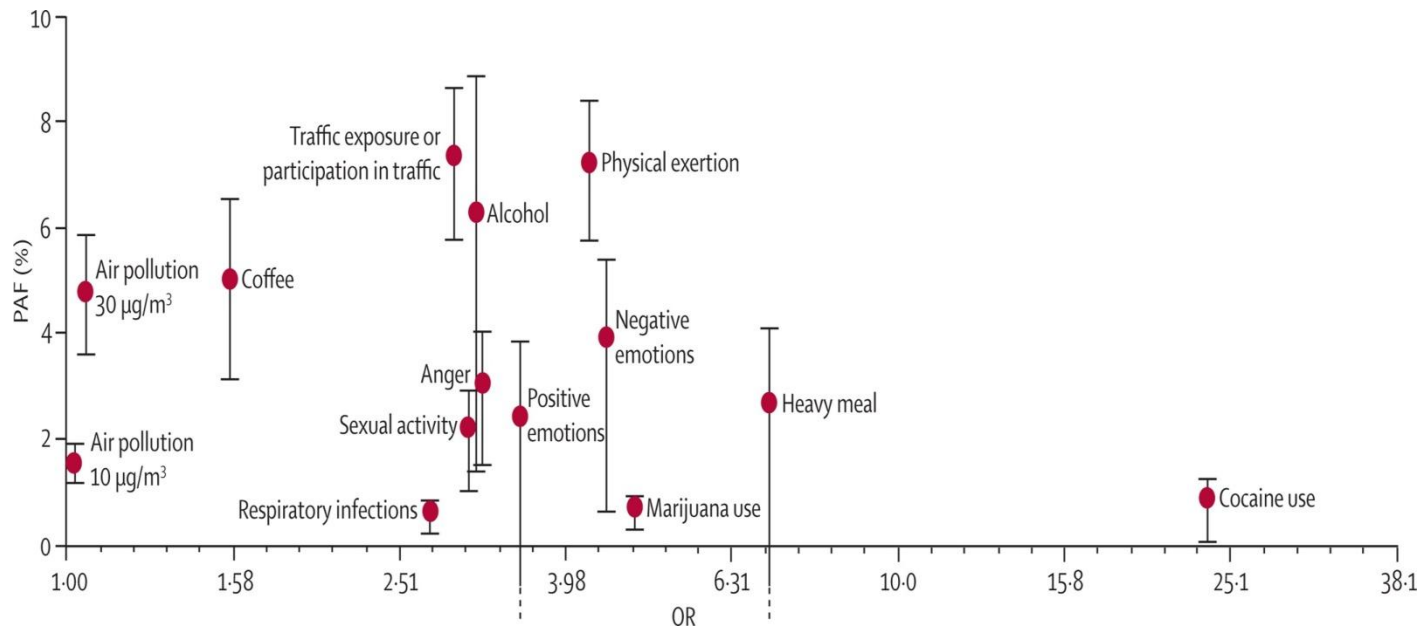
JAMA Network Open. 2019;2(2):e187901.  
doi:10.1001/jamanetworkopen.2018.7901





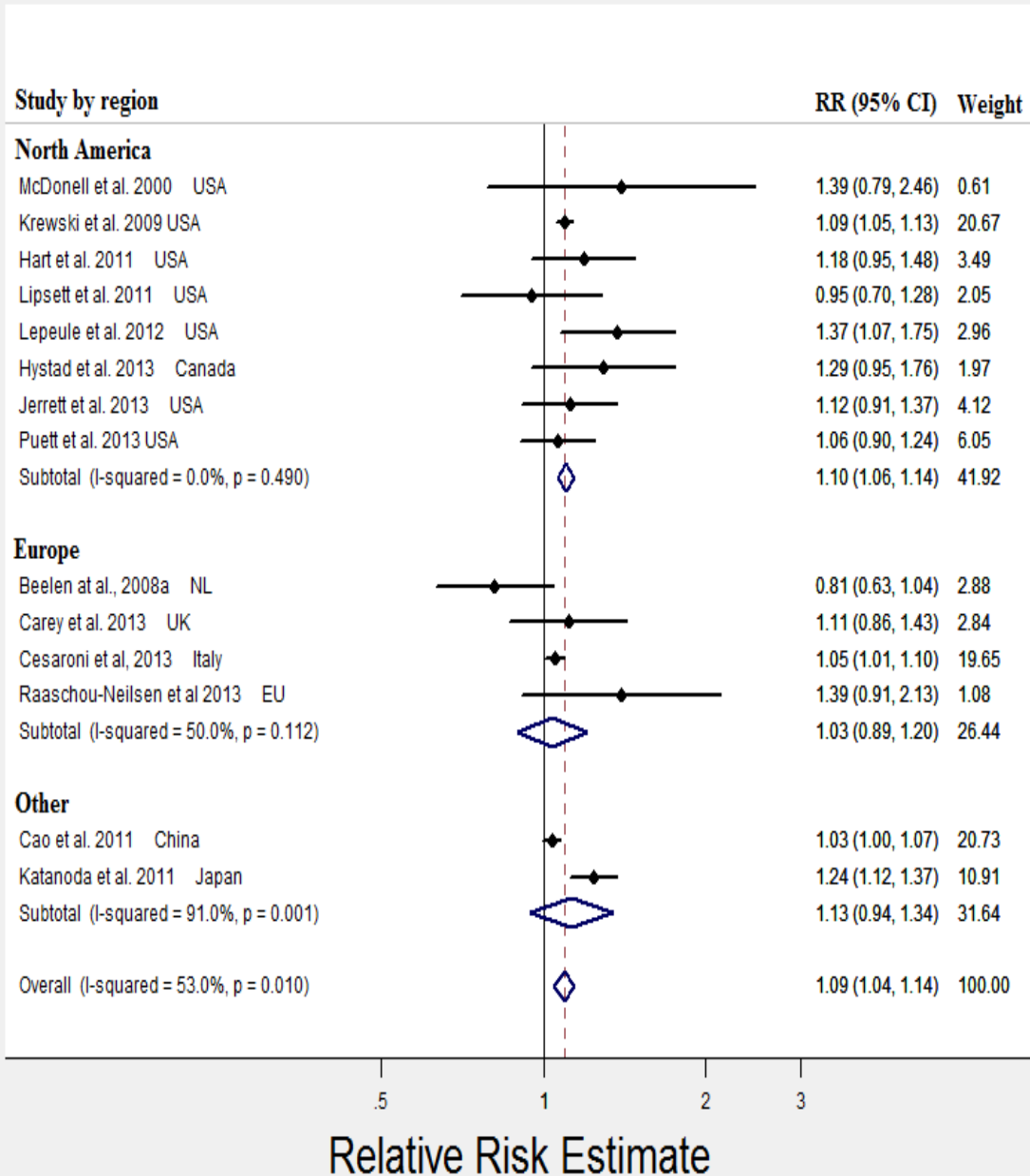




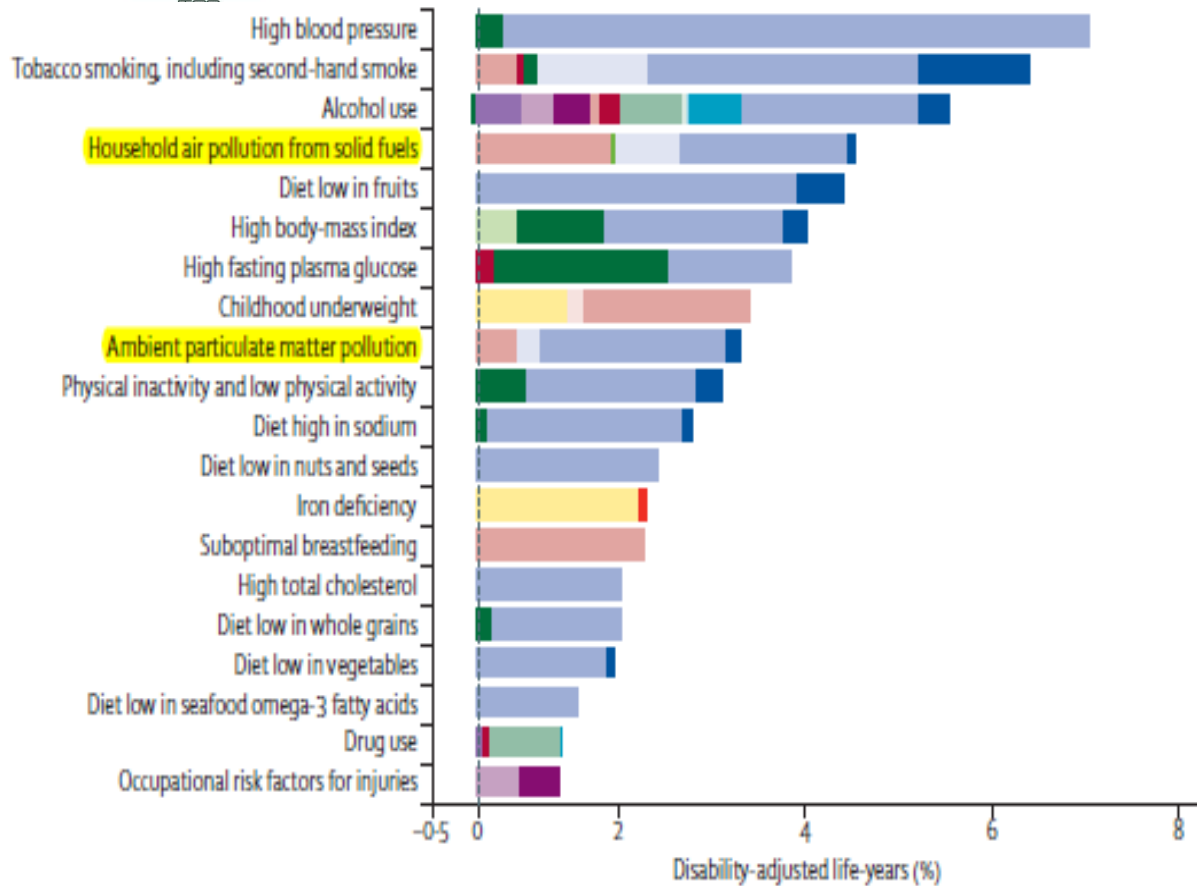


Lancet. 2011 Feb 26;377(9767):732-40

# Lung Cancer and PM2.5 Meta-Analysis

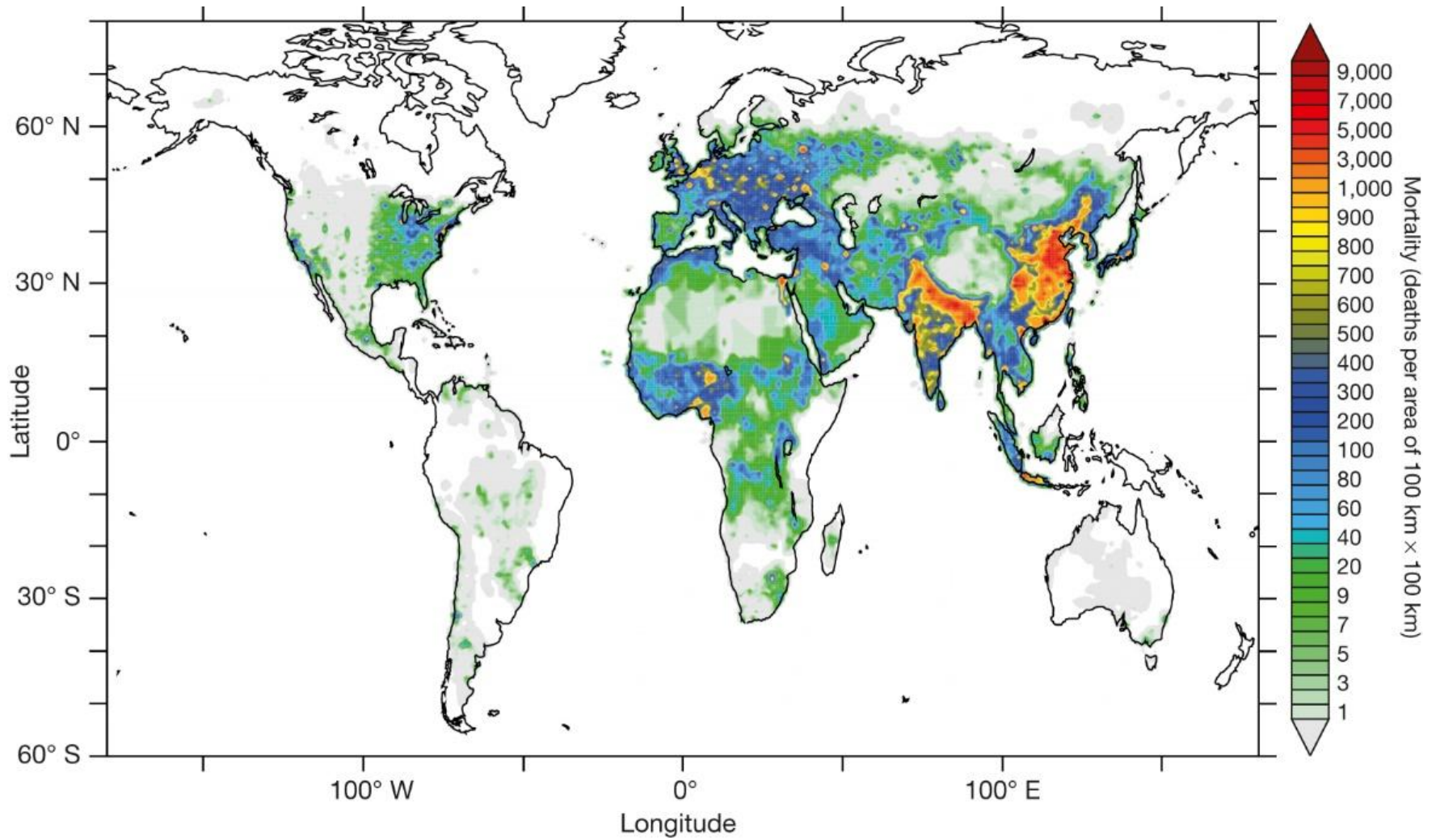


# Background

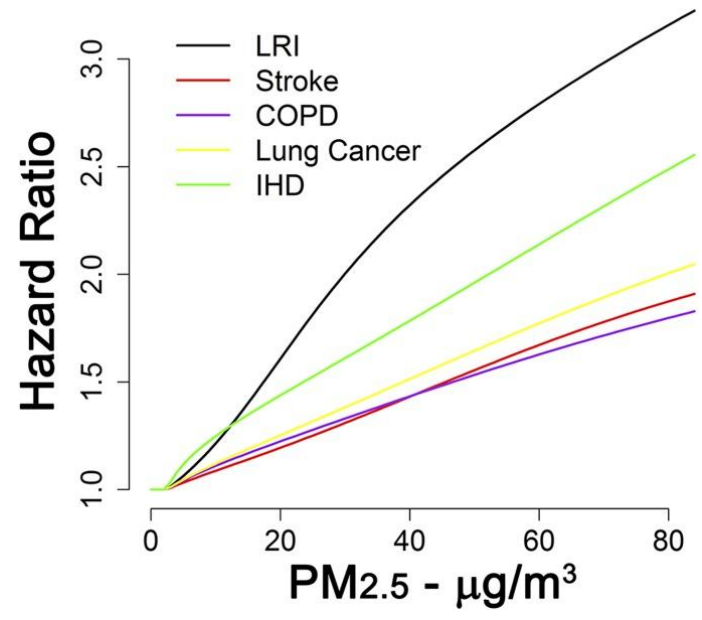
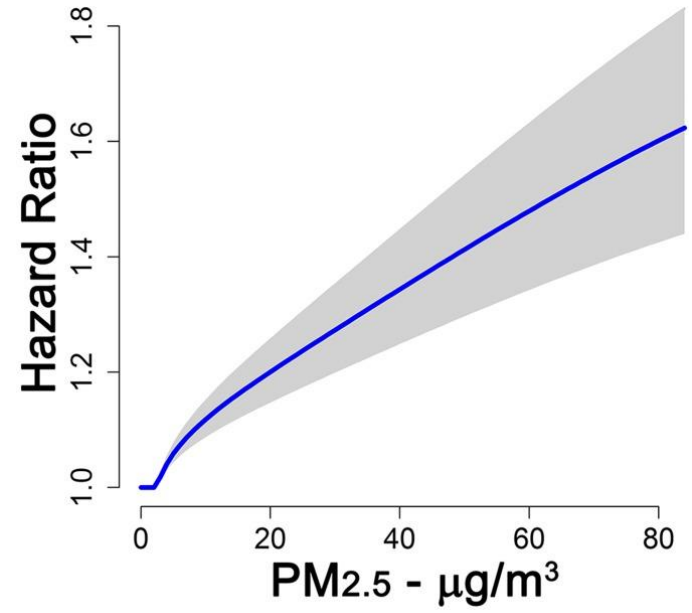


**Burden of disease attributable to 20 leading risk factors in 2010, both sex**

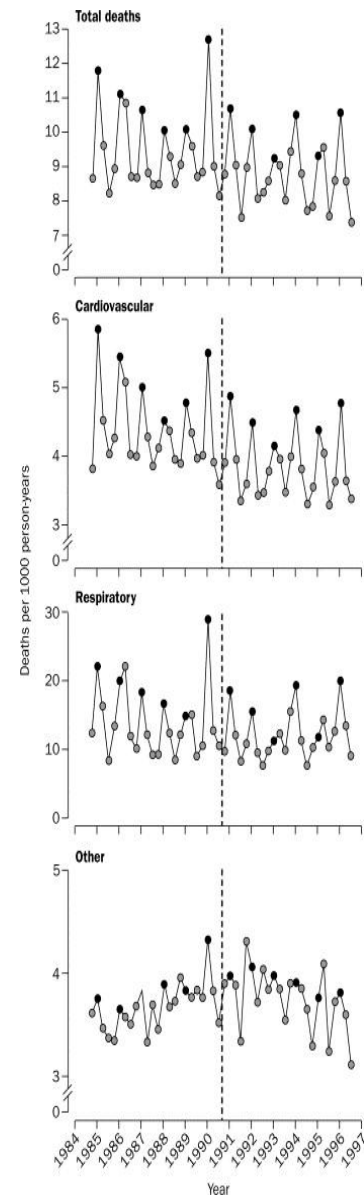
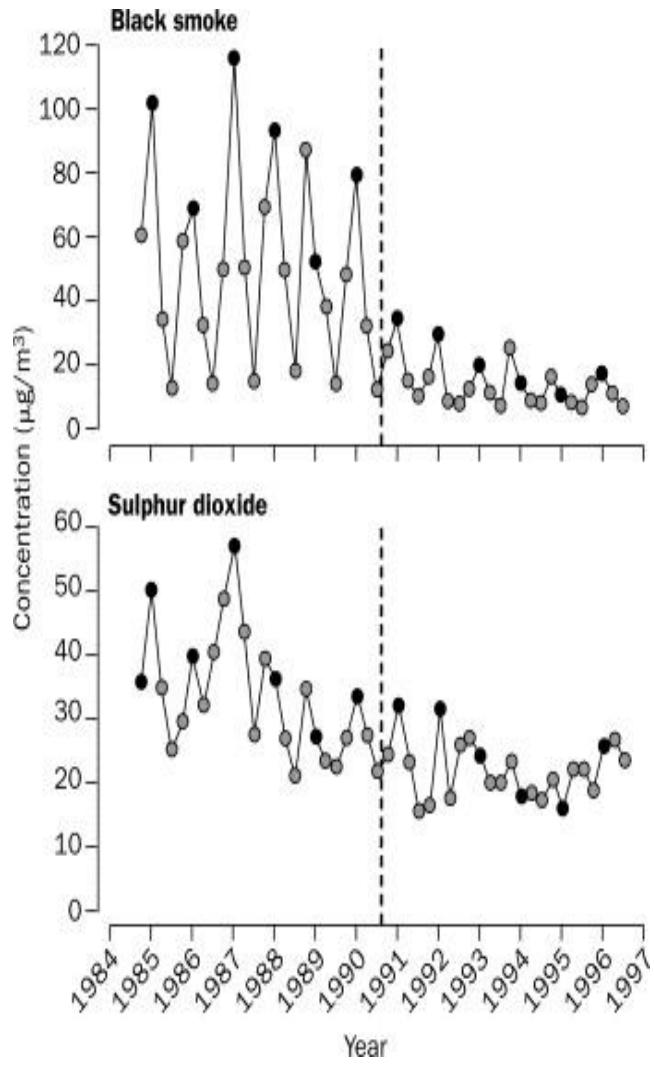
Lin SS et al. Lancet 2012;  
380: 2224–60



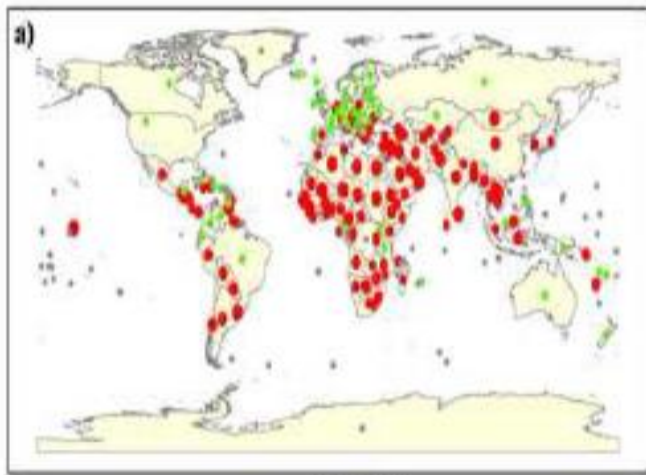
**Lelieveld et al *Nature* volume525, pages367–371 (17 September 2015)**





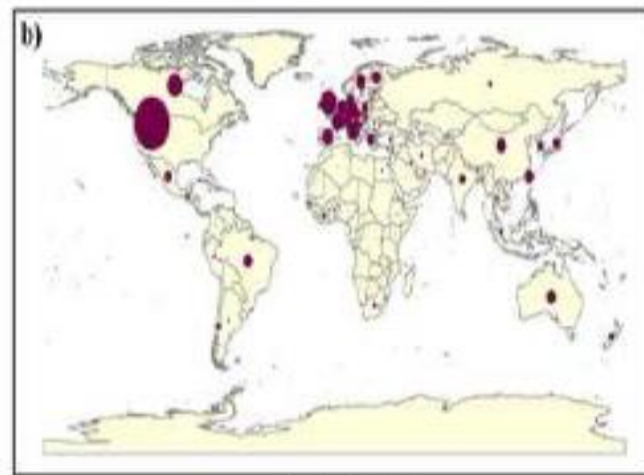






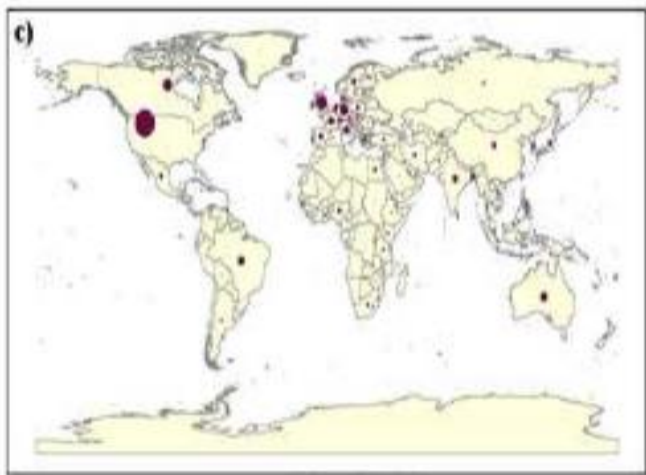
PM10 ( $\mu\text{g}/\text{m}^3$ )

- 0 - 5
- 6 - 20
- 21 - 30
- 31 - 50
- 51 - 70
- 71 - 142



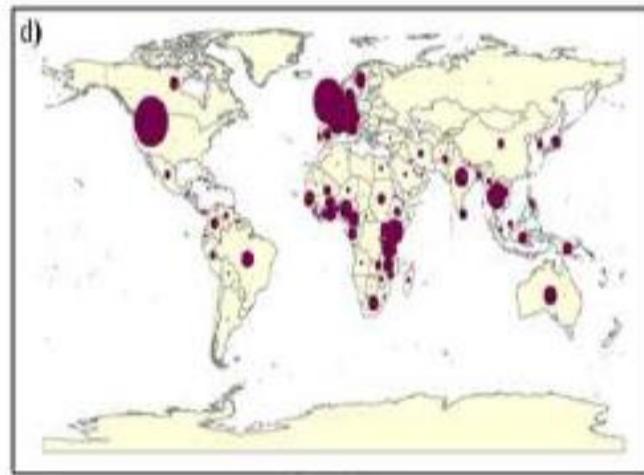
Air pollution articles

- 1
- 10
- 1,000



Water quality articles

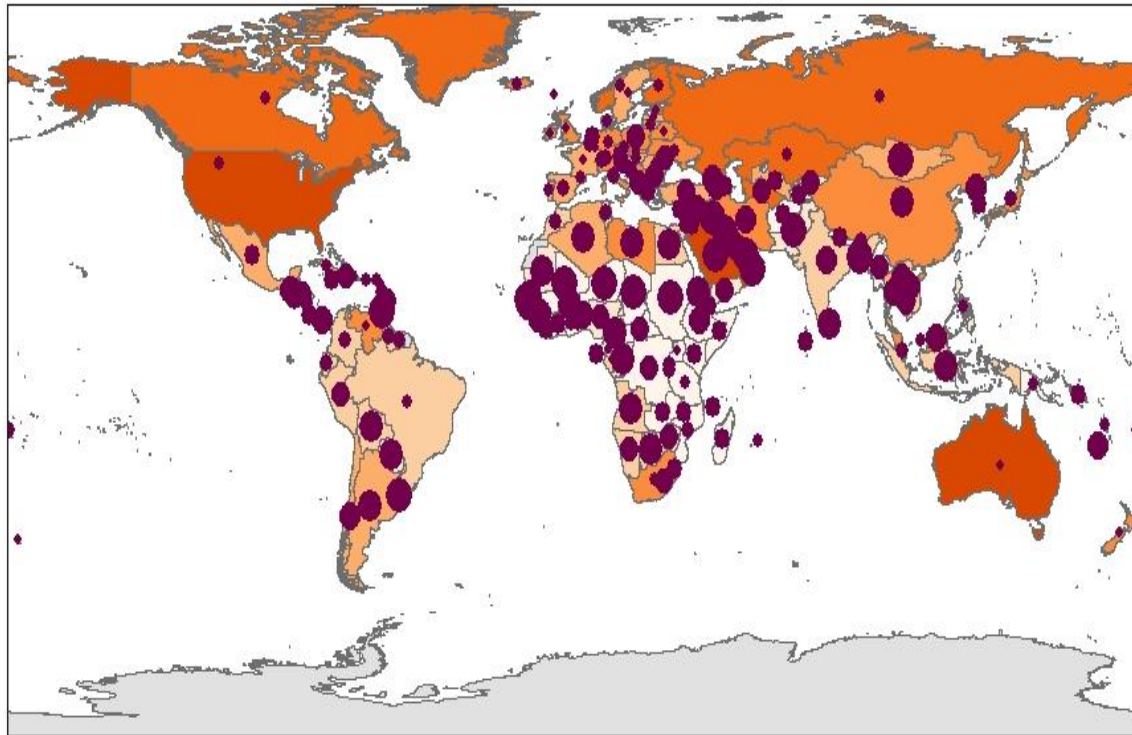
- 1
- 10



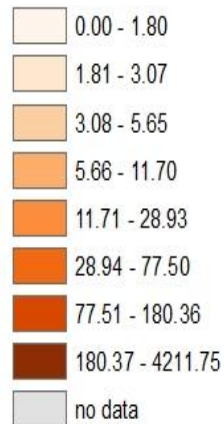
Malaria articles

- 1
- 10
- 1,000

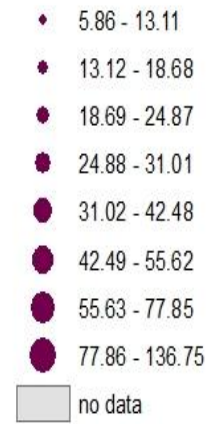
Fajersztajn L, Veras M, Barrozo LV, Saldiva P.  
 Nat Rev Cancer. 2013 Sep;13(9):674-8.

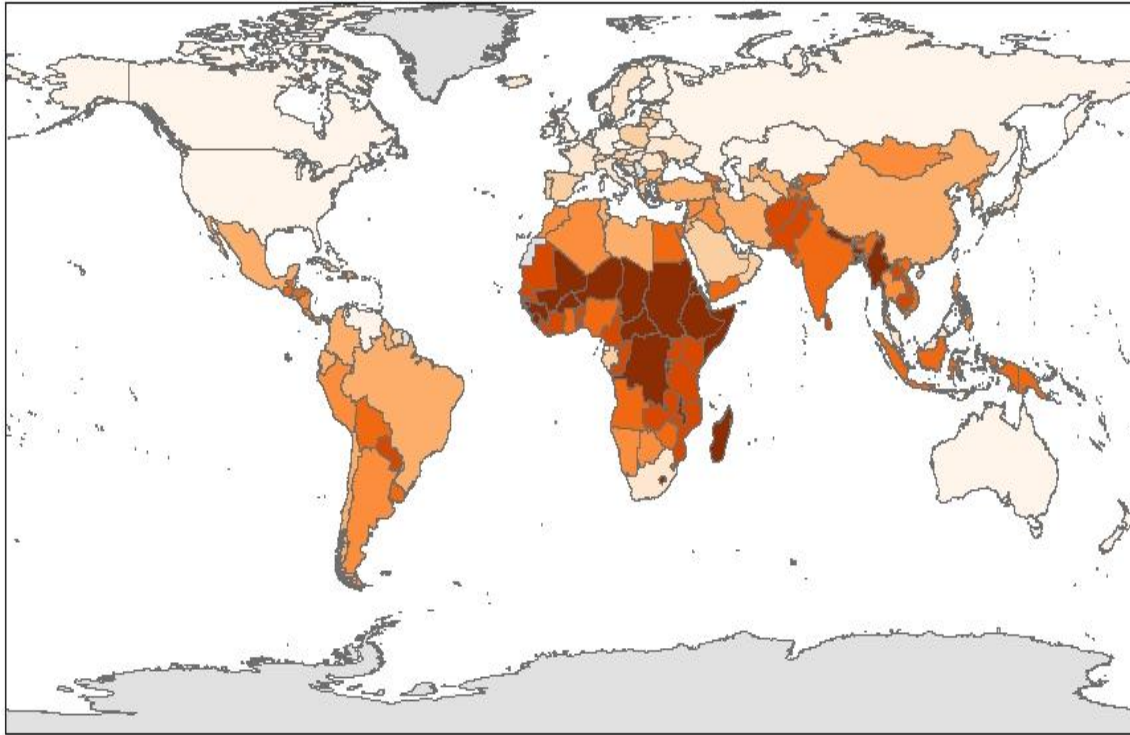


**CO2 emissions**  
(metric tons per capita)

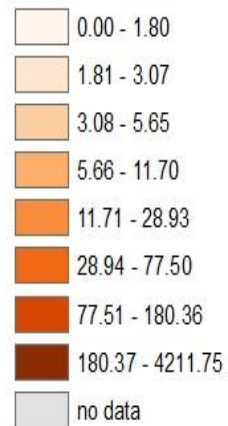


**PM10**  
(micrograms per cubic meter)



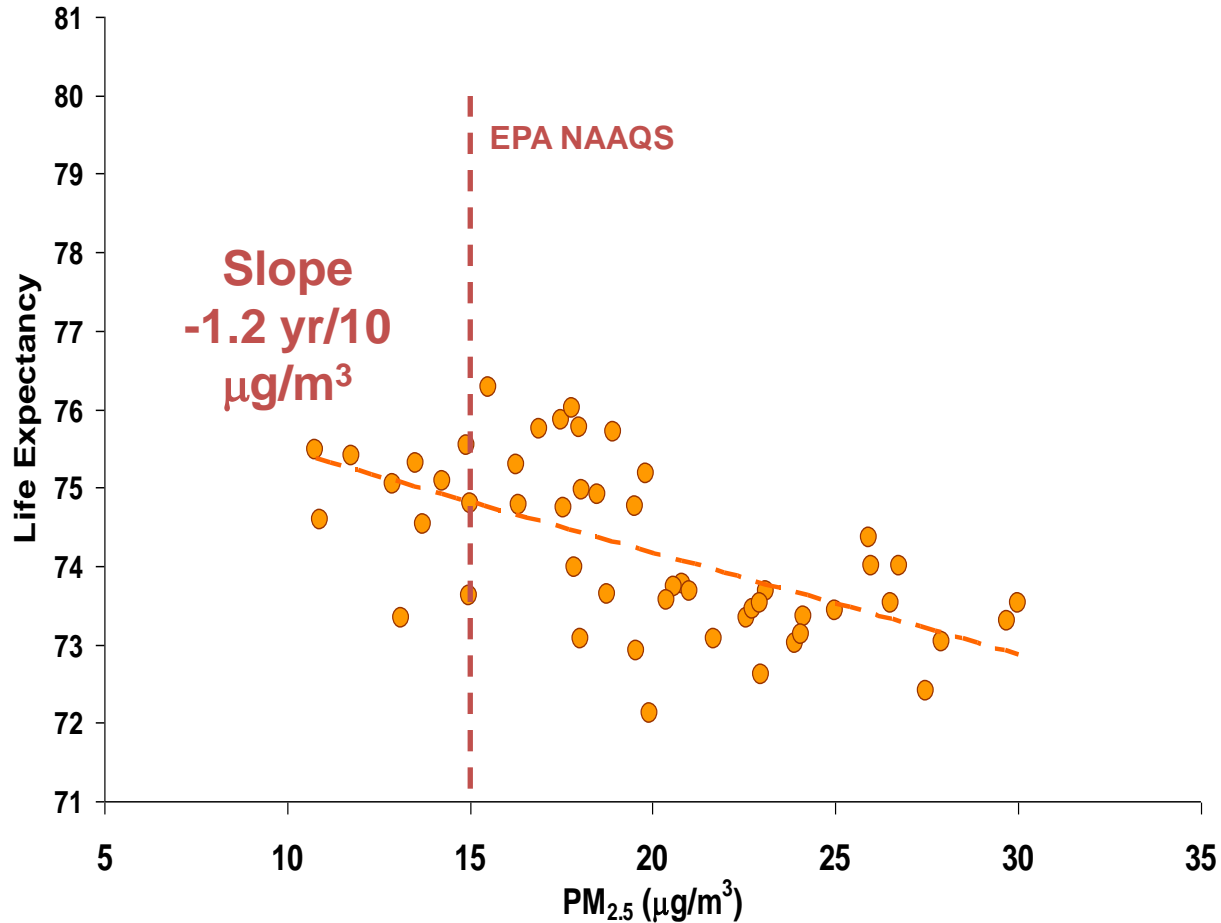


**Energetic Inefficiency Index  
(PM10/CO2)**



2010 data , source: the World Bank

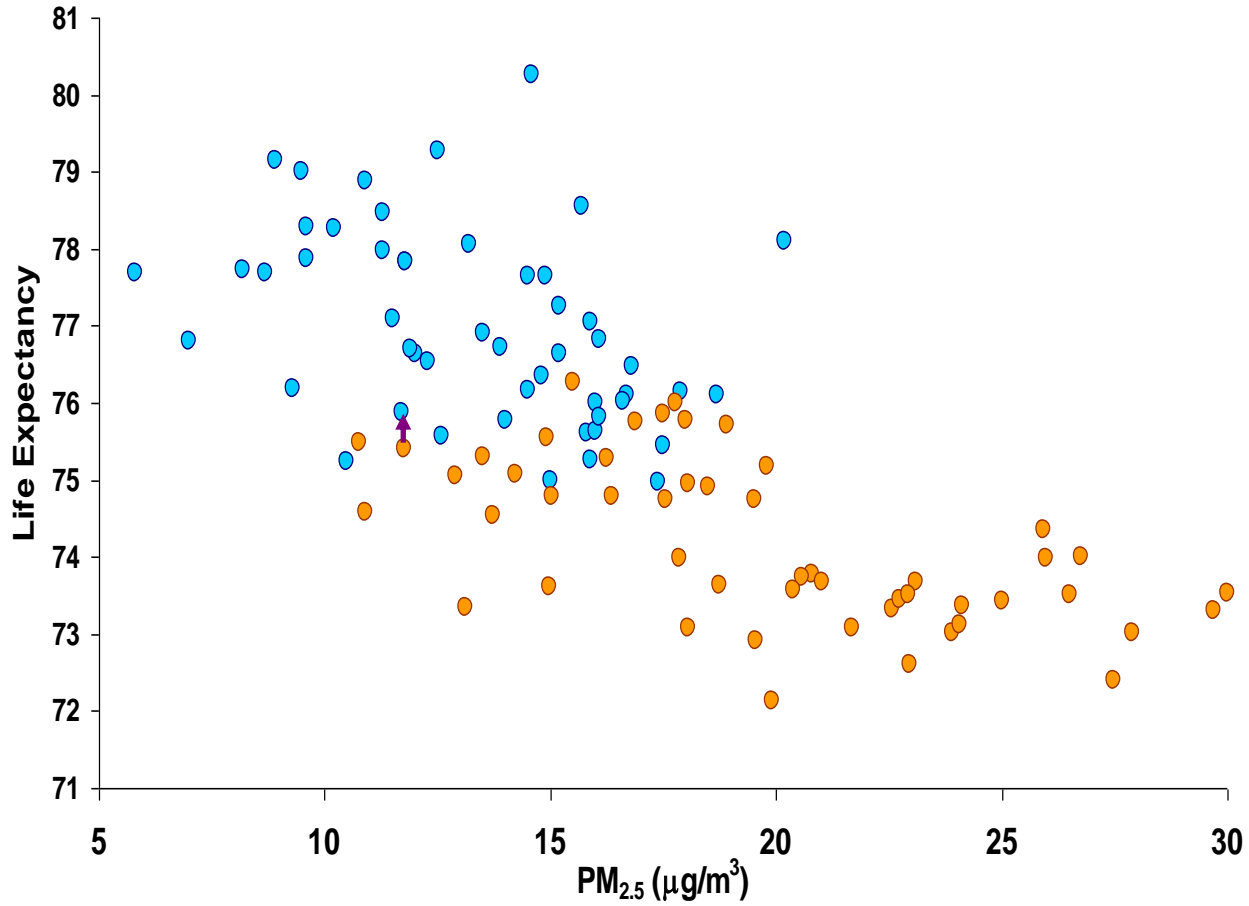
# Life Expectancy vs PM<sub>2.5</sub> 1978-82



*Pope, Ezzati, Dockery (NEJM 2009)*

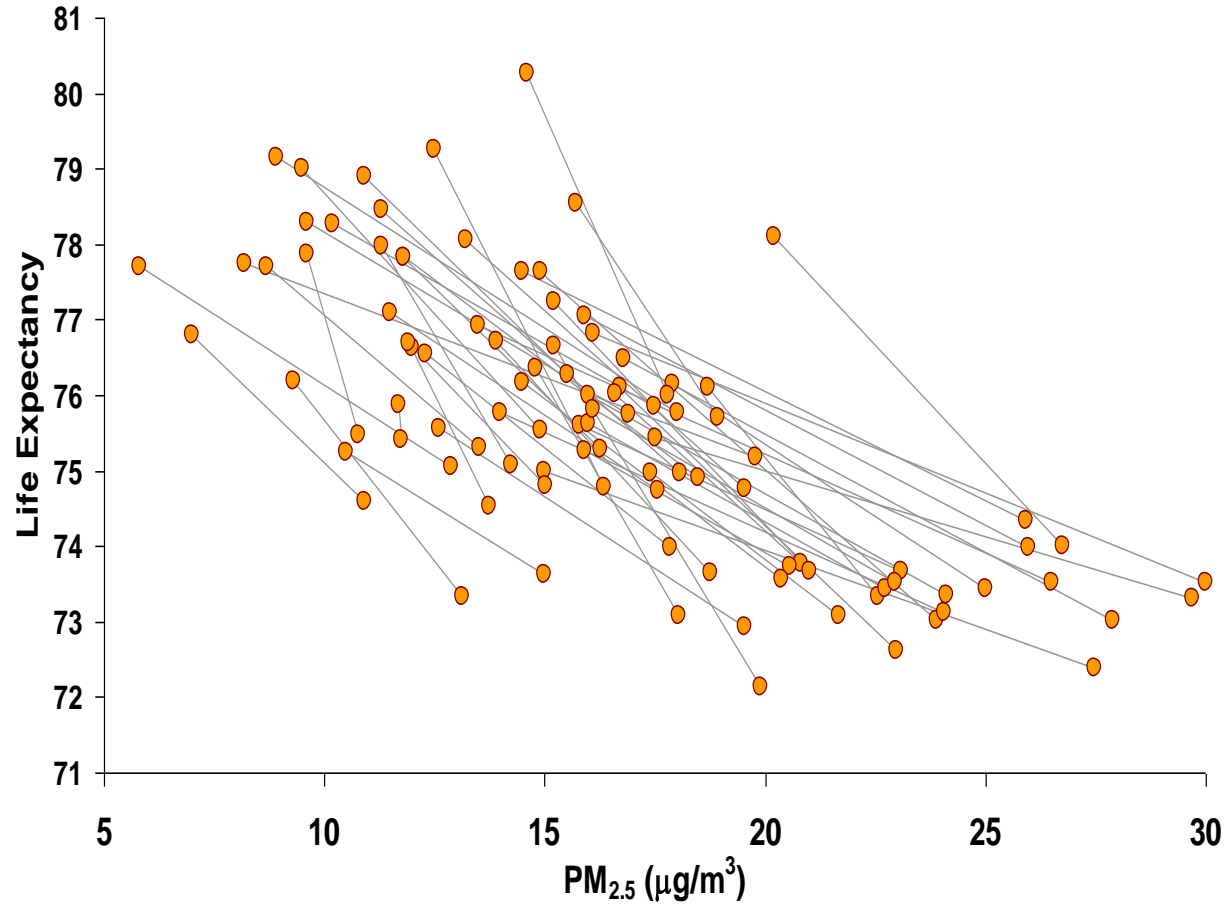


# Life Expectancy vs PM<sub>2.5</sub> 1980-2000



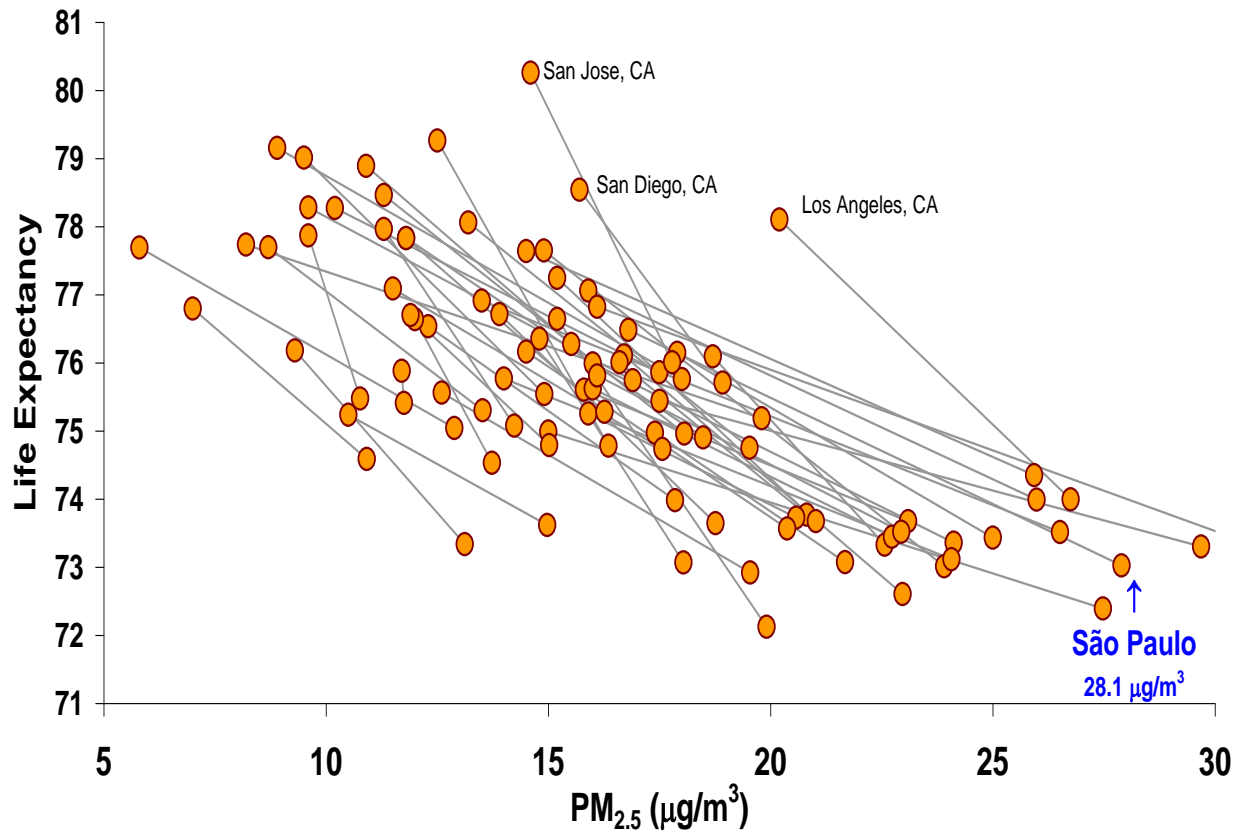
*Pope, Ezzati, Dockery (NEJM 2009)*

# Life Expectancy vs PM<sub>2.5</sub> 1980-2000

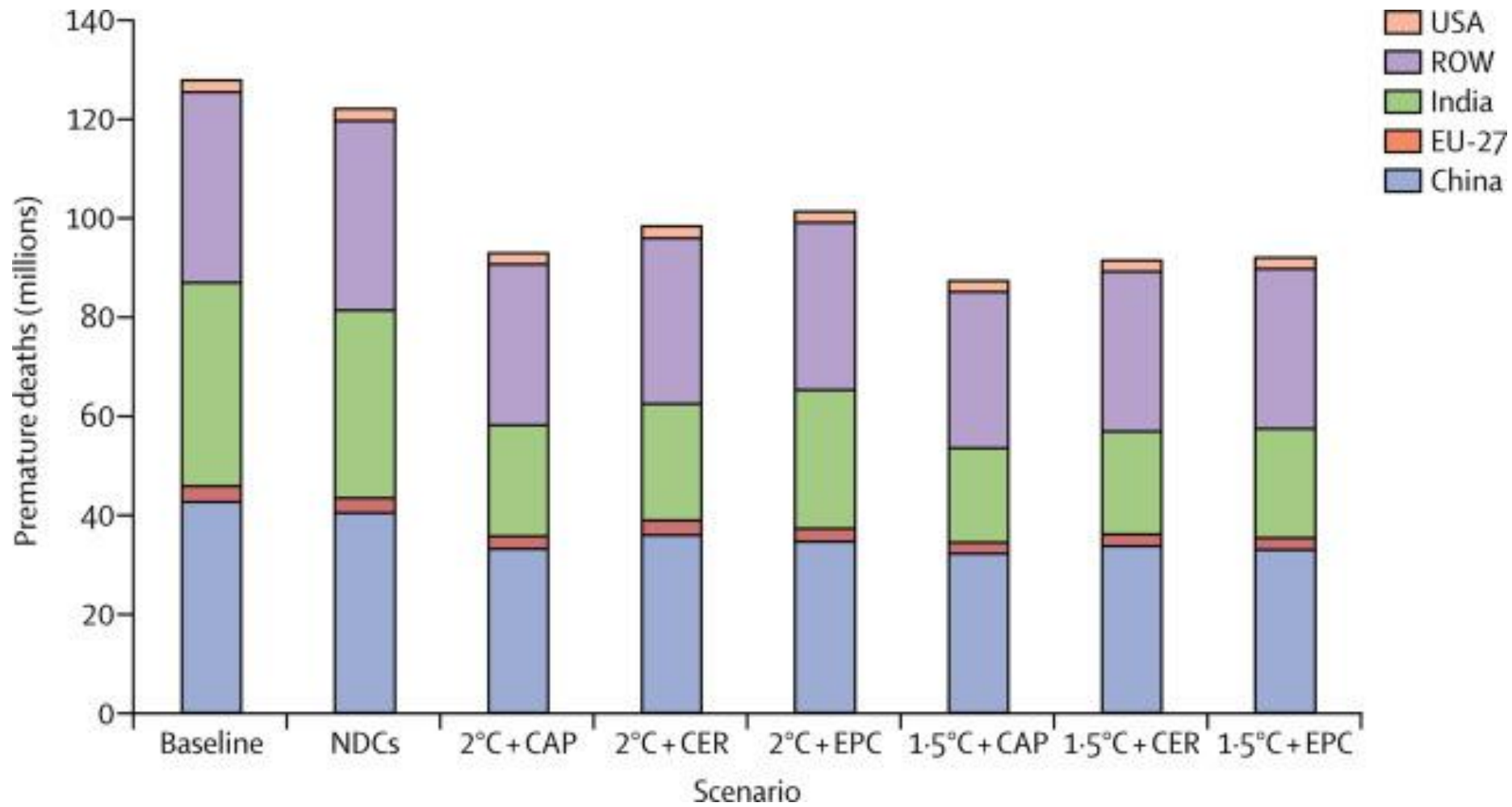


*Pope, Ezzati, Dockery (NEJM 2009)*

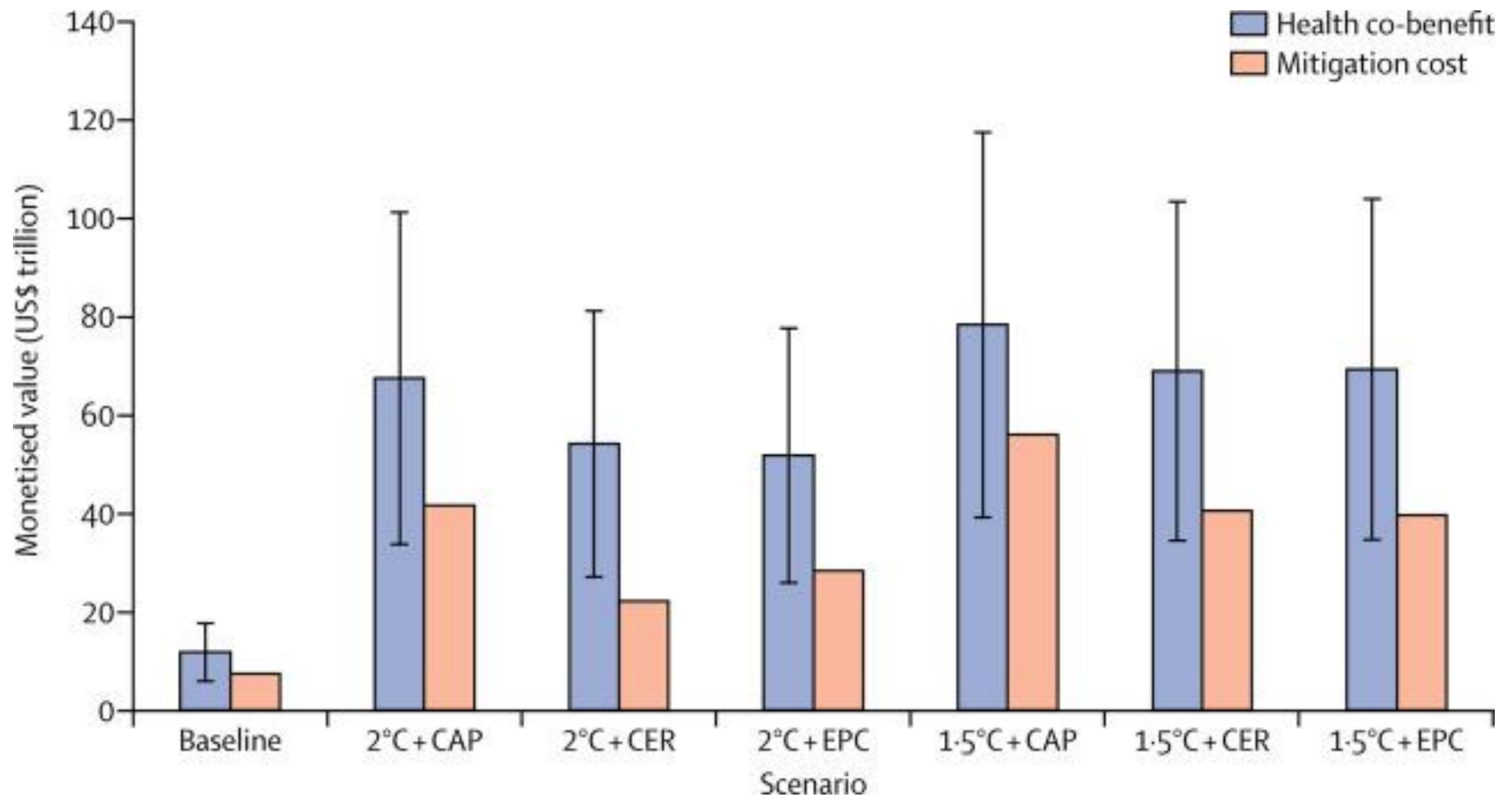
# Life Expectancy vs PM<sub>2.5</sub> 1980-2000







Markandya et al. [Lancet Planet Health](#). 2018 Mar;2(3):e126-e133



Markandya et al. [Lancet Planet Health](#). 2018 Mar;2(3):e126-e133