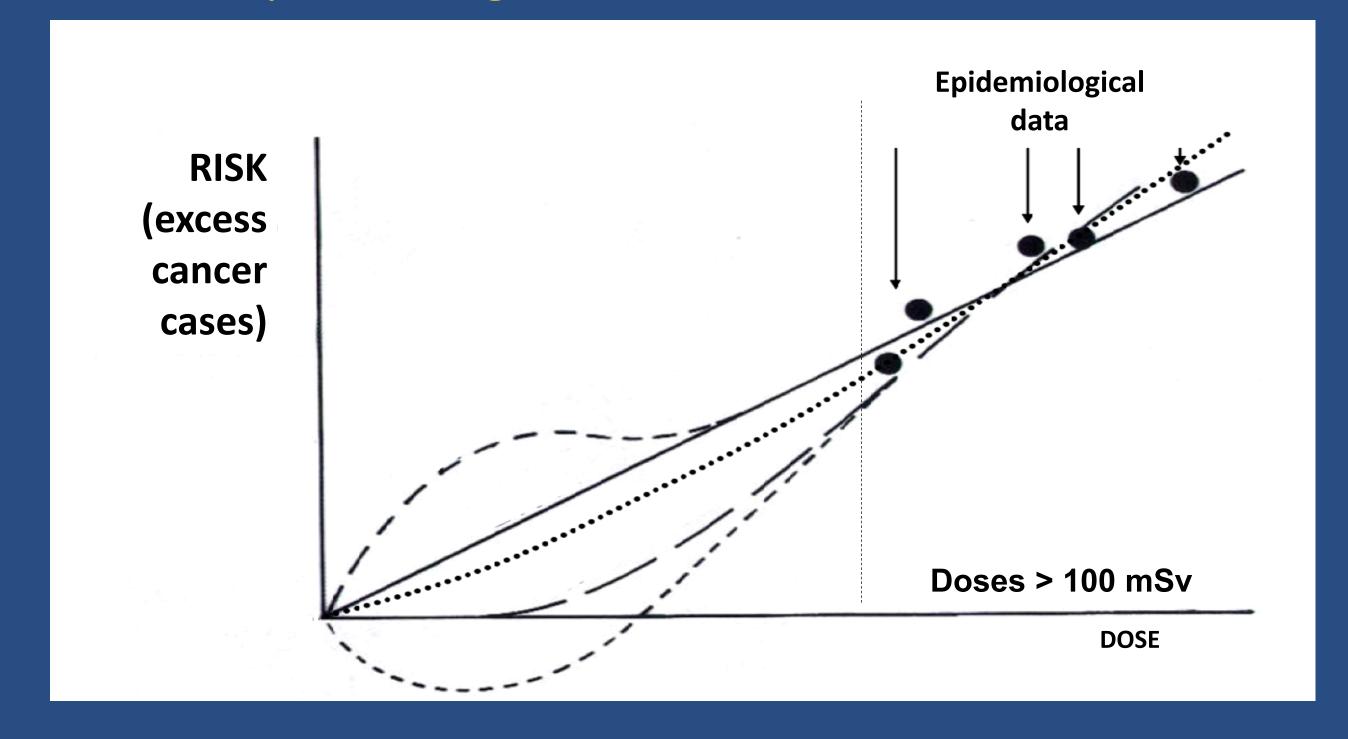
# Epidemiological Studies of Low Dose/Low Dose Rate Exposures

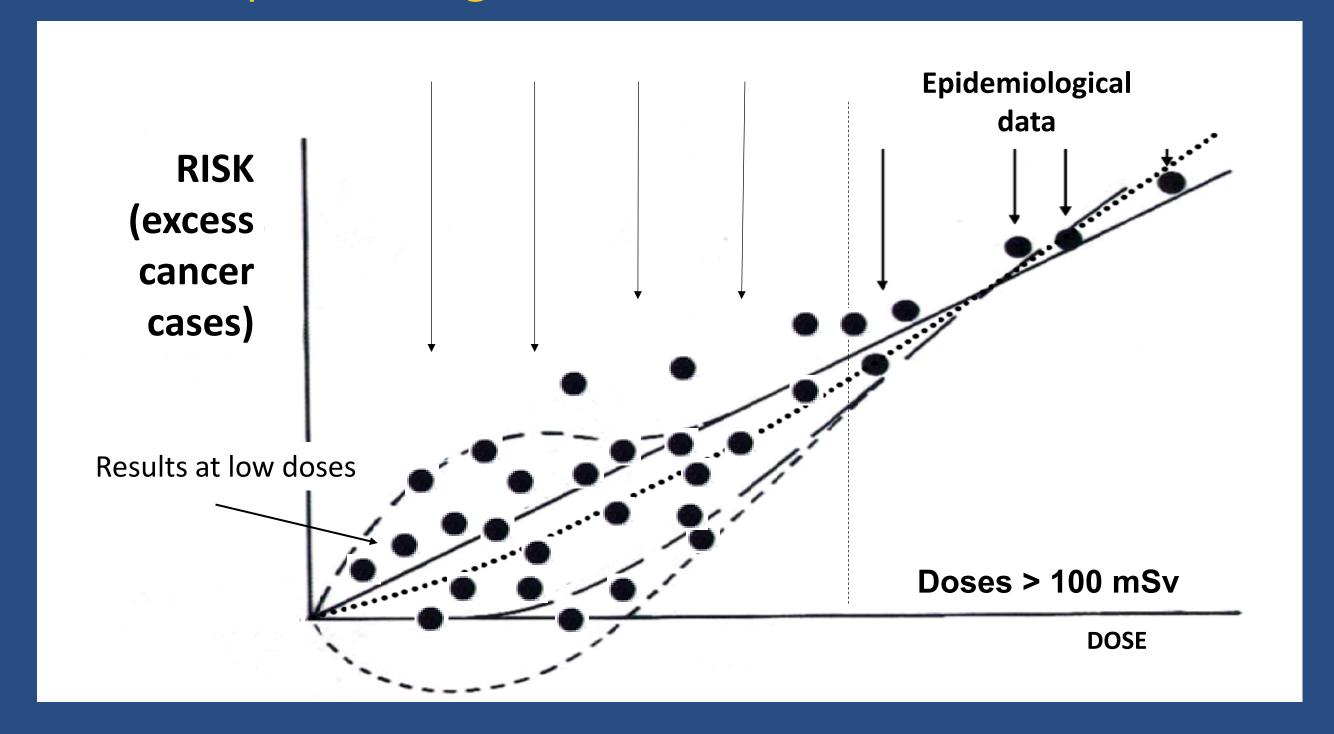
**July 2025** 

David Richardson, University of California, Irvine

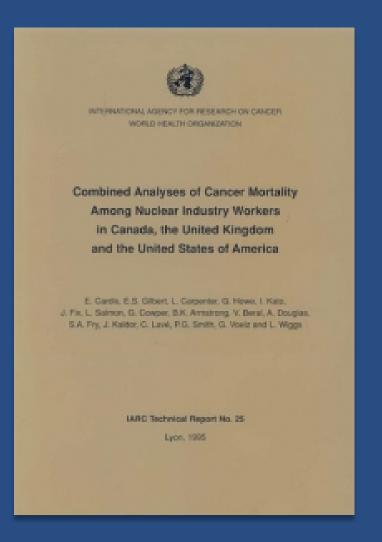
### Extrapolation of epidemiological observations at low doses



#### Interpolation of epidemiological observations at low doses



## International Nuclear Workers Study (INWORKS)





National cohort

n = 60 697



**UK NRRW** 

n = 147 872





**US** combined cohort

n = 101 363

Employed 1+ year and monitored for external exposure to radiation (via dosimeters)

- CEA civil
- Orano
- EDF

- UK Atomic Energy Authority
- British Nuclear Fuels plc
- British Energy Generation and Magnox Electric Ltd
- Atomic Weapons Establishment
- Ministry of Defence

- Hanford Site
- Idaho National Lab
- Oak Ridge National Lab
- Portsmouth Naval Shipyard
- Savannah River Site

309 932 workers

## International Nuclear Workers Study (INWORKS)

Relative rate of solid cancer mortality by categories of cumulative dose, and fitted line. INWORKS, 1944-2016

ERR per Gy = 0.5290%CI [0.27 - 0.77]

