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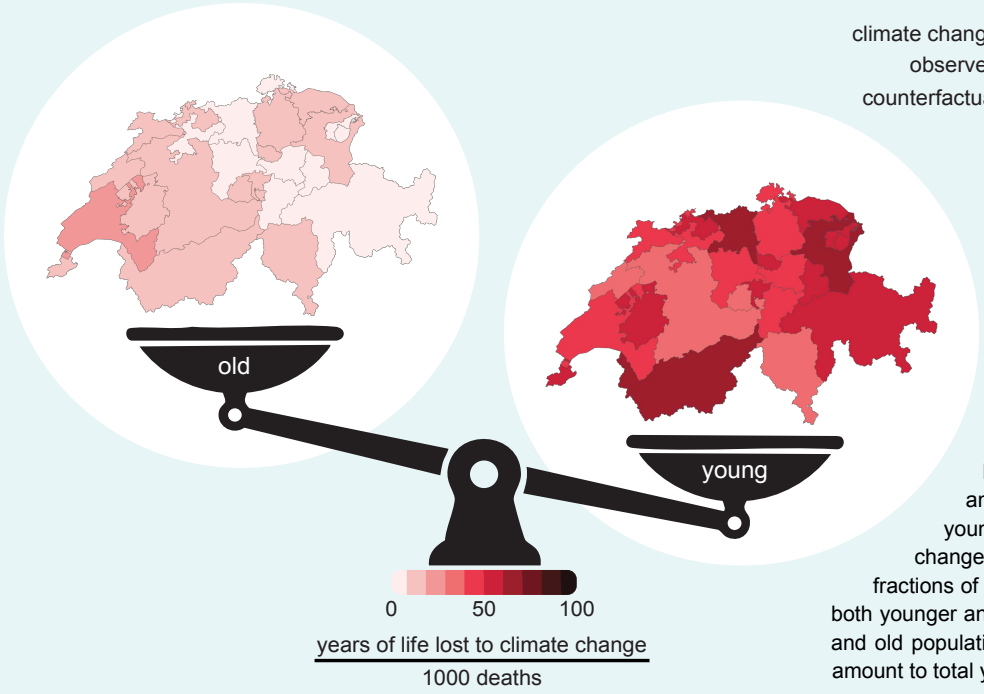
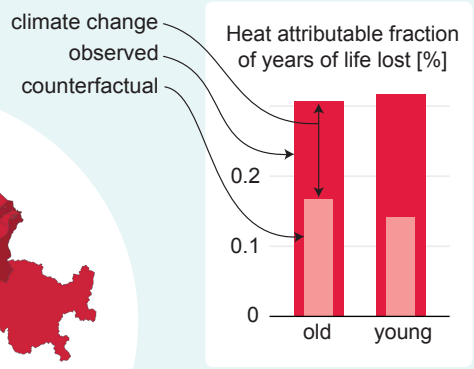
Do young people lose more lifetime to climate change?

Results





The climate change attributable loss of lifetime is distributed among far less individuals in the younger population. However, climate change and heat represent similar fractions of the overall lifetime loss burden in both younger and older populations. Both young and old populations contribute roughly the same amount to total years of life lost.

Few young individuals lose disproportionate amounts of lifetime to climate change.

Research Questions & Background

1) Does heat exposure attributable to climate change lead to a loss of lifetime?
2) Are younger subpopulations more vulnerable?

Climate change amplifies heat-related mortality and morbidity. These Impacts are modified by demographic and socio-economic factors, such as population ageing and life expectancy. To better evaluate the societal burden of heat and climate change, attribution of impacts beyond mortality counts and risks is needed, including metrics that capture both the quality and length of life.

Methods

- Individual-level mortality data (2000–2024) matched with remaining life expectancies from life tables to form years of life lost as an outcome
- Temperature exposure from ERA5Land and counterfactuals from atmospheric nudging and linear regression of global on local warming
- Two-stage time-series analysis using distributed lagged non-linear models
- Stratified analysis by remaining life expectancy of 20 years into young and old (e.g., age threshold of 67 years in 2024)