



Swiss TPH

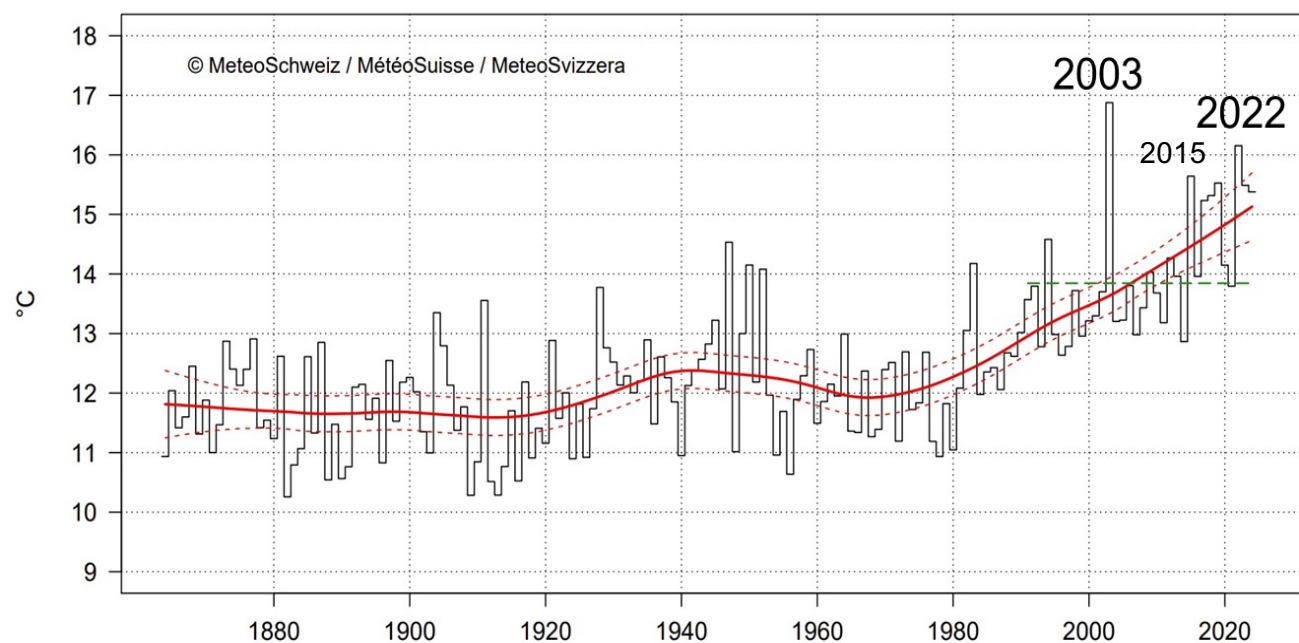


Hitzewellen und heisse Tage –  
werden wir uns daran gewöhnen?

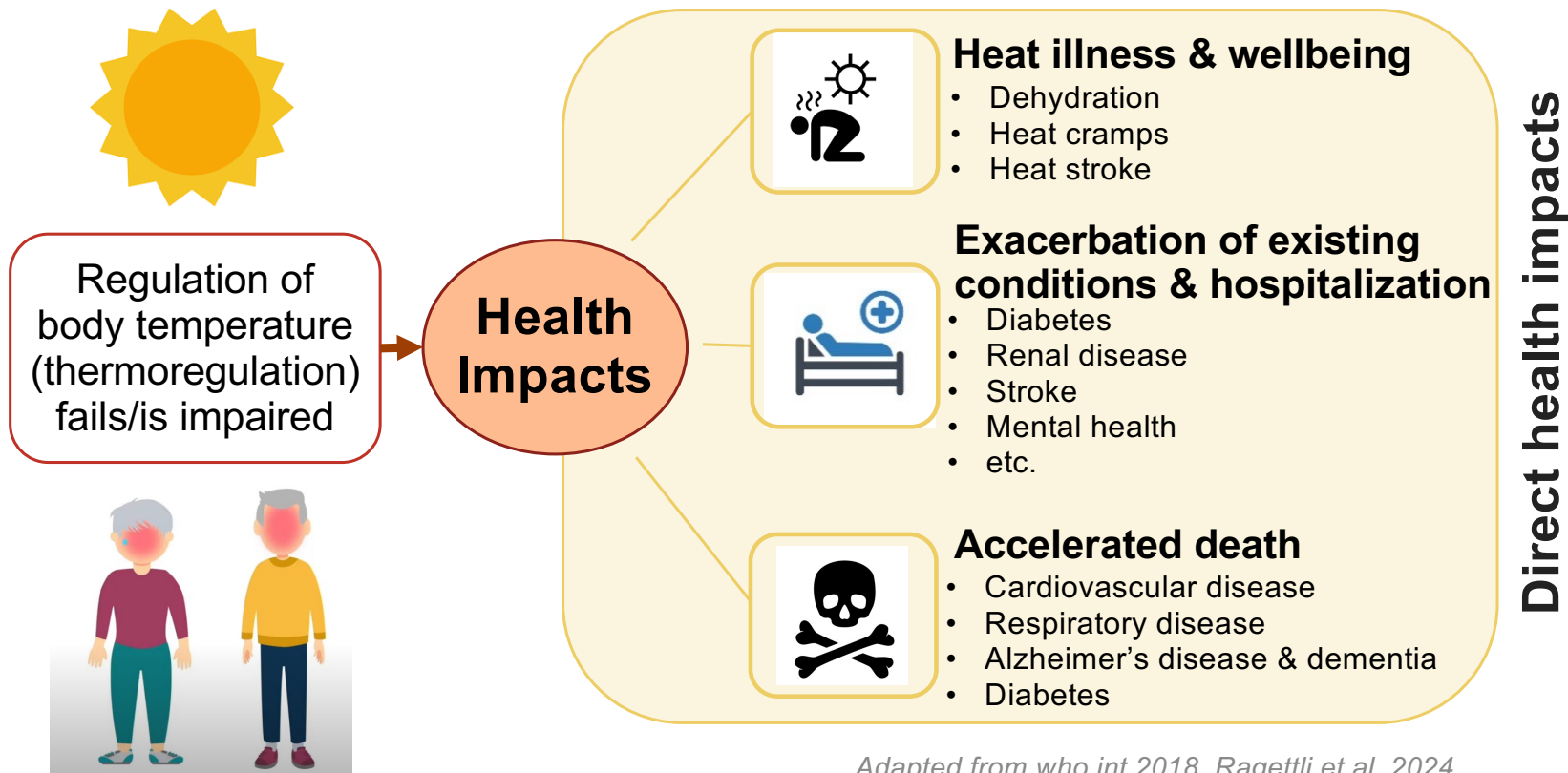
Martina Ragettli, PhD  
Aefu-Tagung 15. Mai 2025, Solothurn

# The increasing heat stress is one of Switzerland's priority climate-related risks

## Average summer temperature in Switzerland since 1864

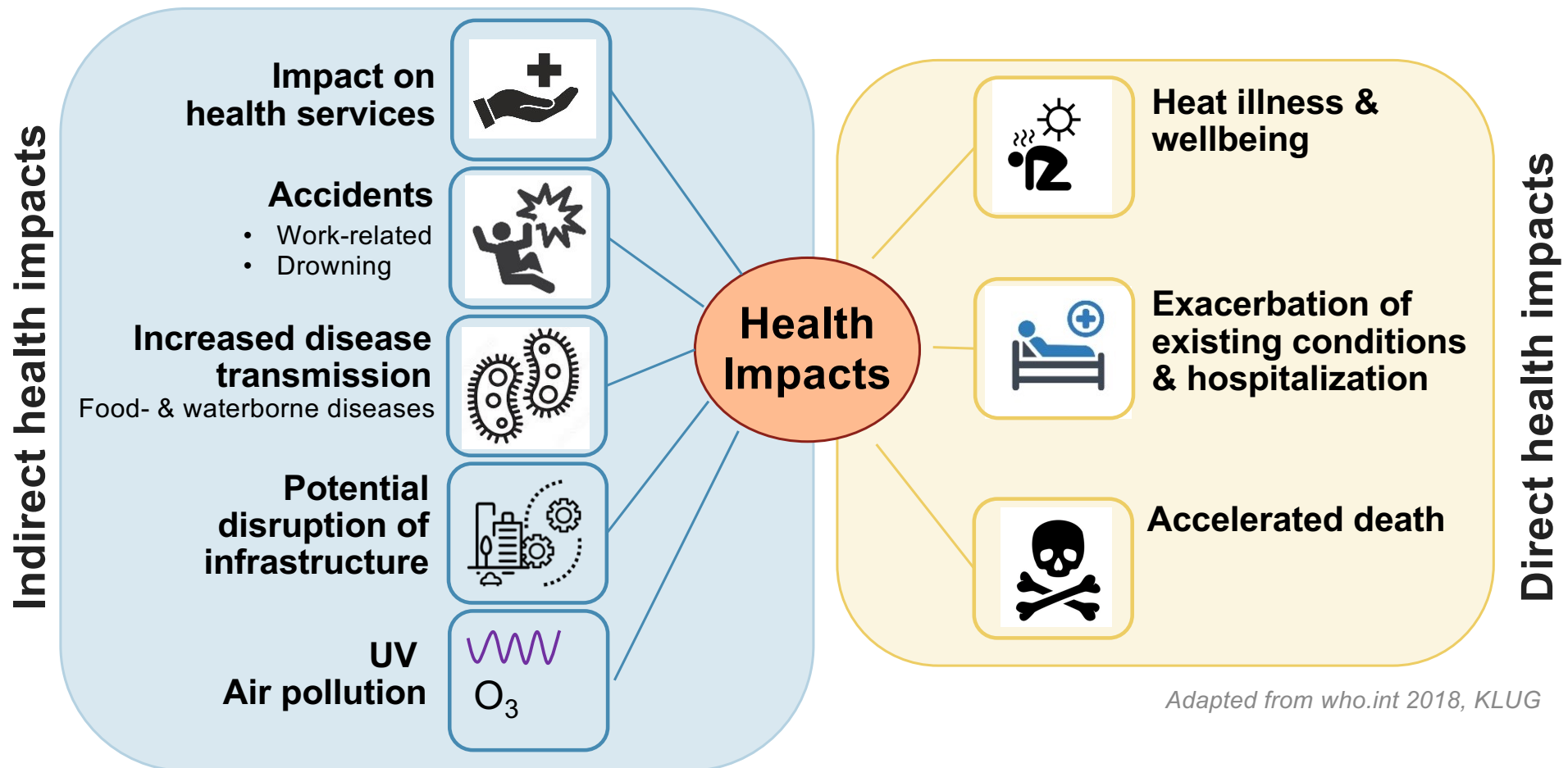


# Health impacts of heat



*Adapted from who.int 2018, Ragettli et al. 2024*

# Health impacts of heat



*Adapted from who.int 2018, KLUG*

# Multiple vulnerabilities increase the risk of health impacts

## Population at risk



Older adults



People with chronic diseases



Small children



Pregnant women



Outside workers

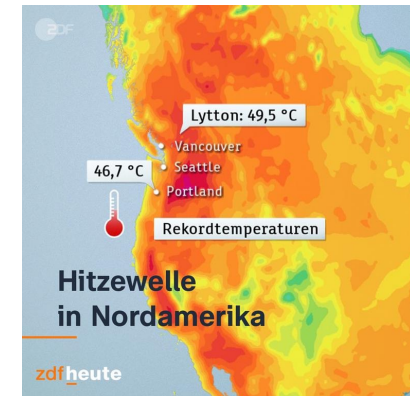
## Other risk factors (individual & environmental)

- Social isolation / living alone
- Low socio-economic level
- Gender
- Built & natural environment:
  - Urban heat islands, poor housing, density of blue and green space, (...)

# Increased heat-related mortality risk in less privileged neighborhoods and with low greenness

## 2021 heat dome in British Columbia:

Significant protective effect of neighborhood greenness within 100m  
(Henderson et al. 2022)

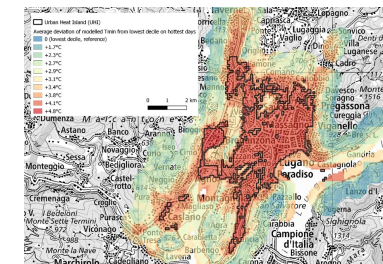


## European cities, summer 2015:

30% city tree coverage could have prevented 2644 deaths (~2% of all summer deaths) (Iungman et al. 2023)

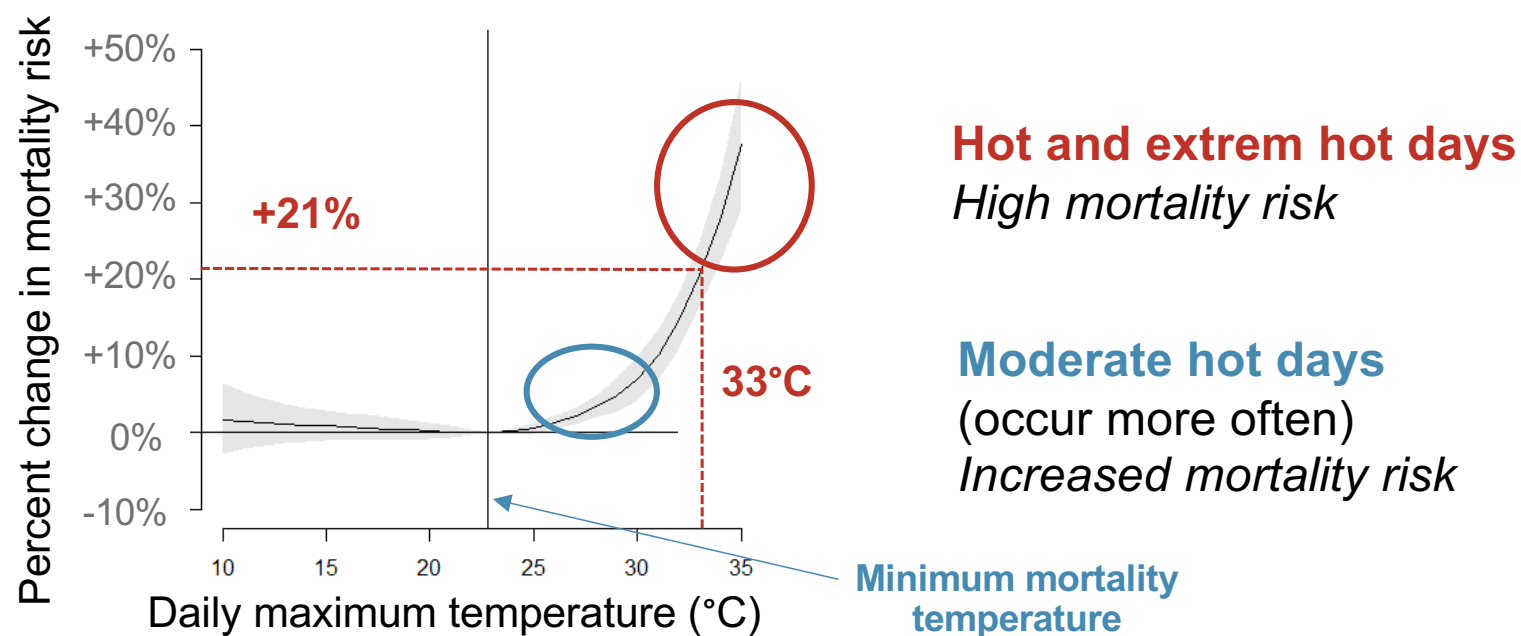
## Swiss cities (2003-2016)

- 26% higher heat-related mortality risk in urban heat islands
- Living in a neighborhood with low socioeconomic position increased the risk among young men <75 years (Wicki et al, 2024)



# At what temperatures do we observe health impacts in Switzerland?

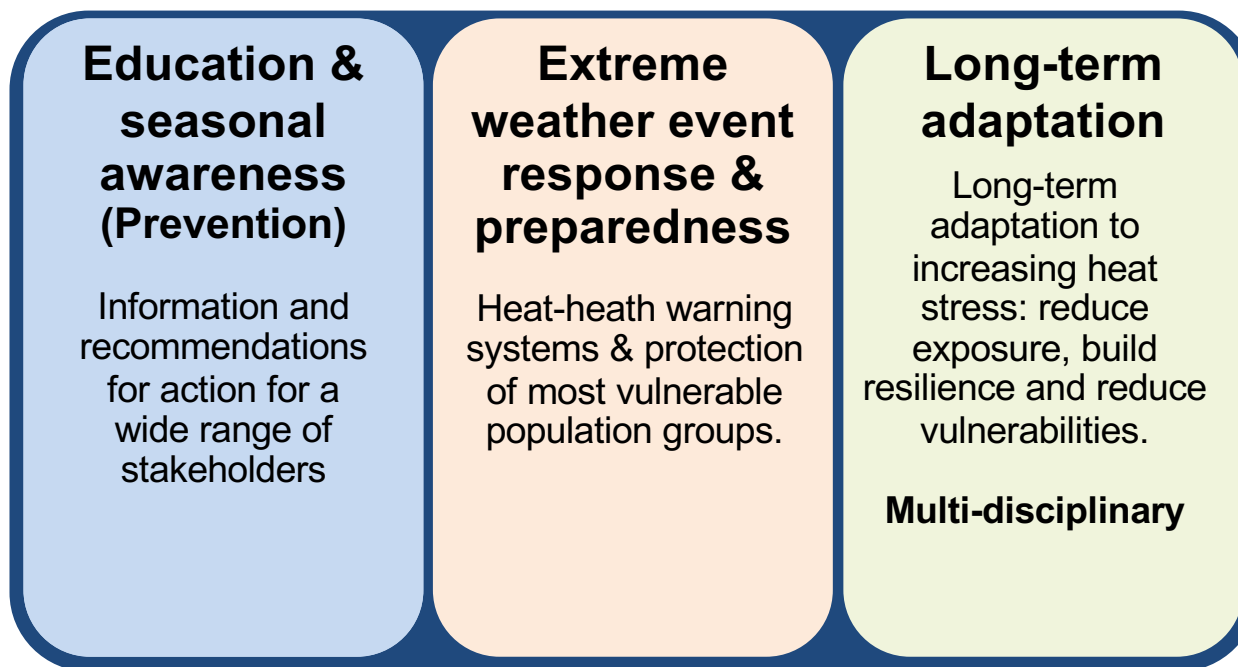
## Increased mortality risk already at moderate hot temperatures



Based on individual mortality data May-Sept 2003-2016;  
Ragettli et al. 2023

# Adaptation & Prevention: Three levels of action

Heat-related deaths and illnesses are largely preventable through good public health practice



**Hitze-Massnahmen-Toolbox 2021**

***La boîte à outils de mesures contre la chaleur***

[www.hitzewelle.ch](http://www.hitzewelle.ch)





## Education & seasonal awareness (Prevention)

Information and recommendations for action for a wide range of stakeholders

## Seasonal awareness & short-term behavioral changes



**Basler Hitze-Hotline**  
**061 206 44 42**

### Communications:

- Repeat every year
- Tailor to target groups, their risk perception & attitudes
- Use various information channels

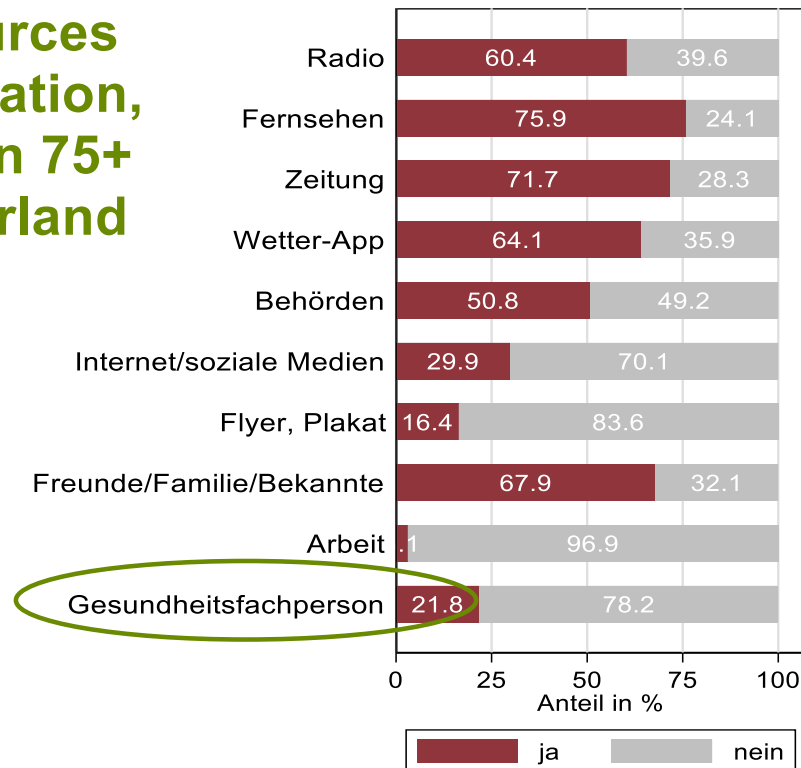
« Die drei goldenen Regeln für Hitzetage (BAG) »  
« Trois règles d'or pour les jours de chaleur (OFSP) »

## Education & seasonal awareness (Prevention)

Information and recommendations for action for a wide range of stakeholders

## Seasonal awareness & short-term behavioral changes

### Used sources of information, population 75+ in Switzerland 2023

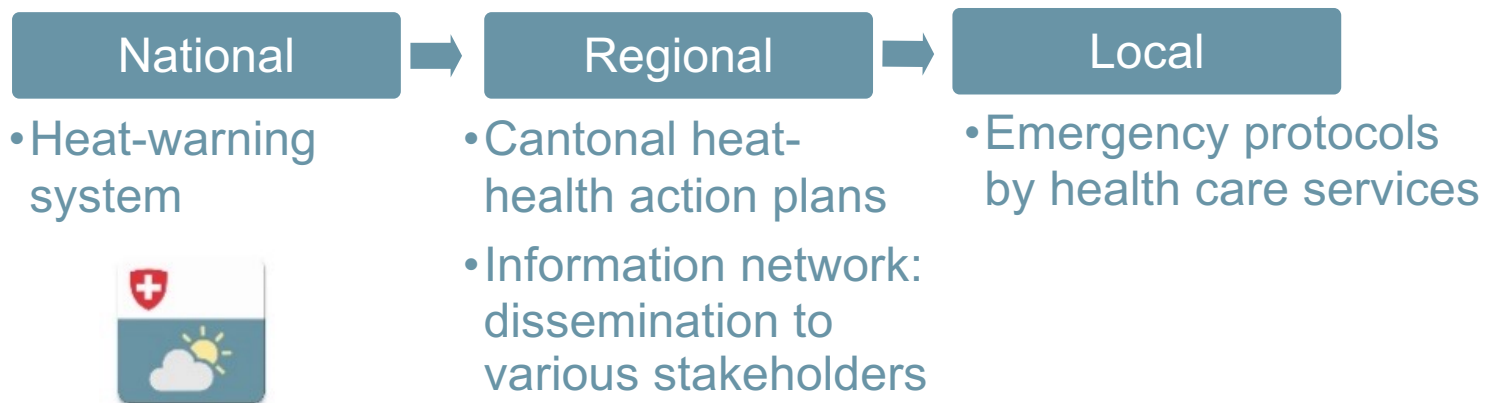


Befragung Hitzeкомпетenz  
BAG & Swiss TPH 2023  
*Enquête auprès de la  
population concernant la  
chaleur et la santé OFEV &  
Swiss TPH 2023  
(Martucci et al. 2024)*

### Extreme weather event response & preparedness

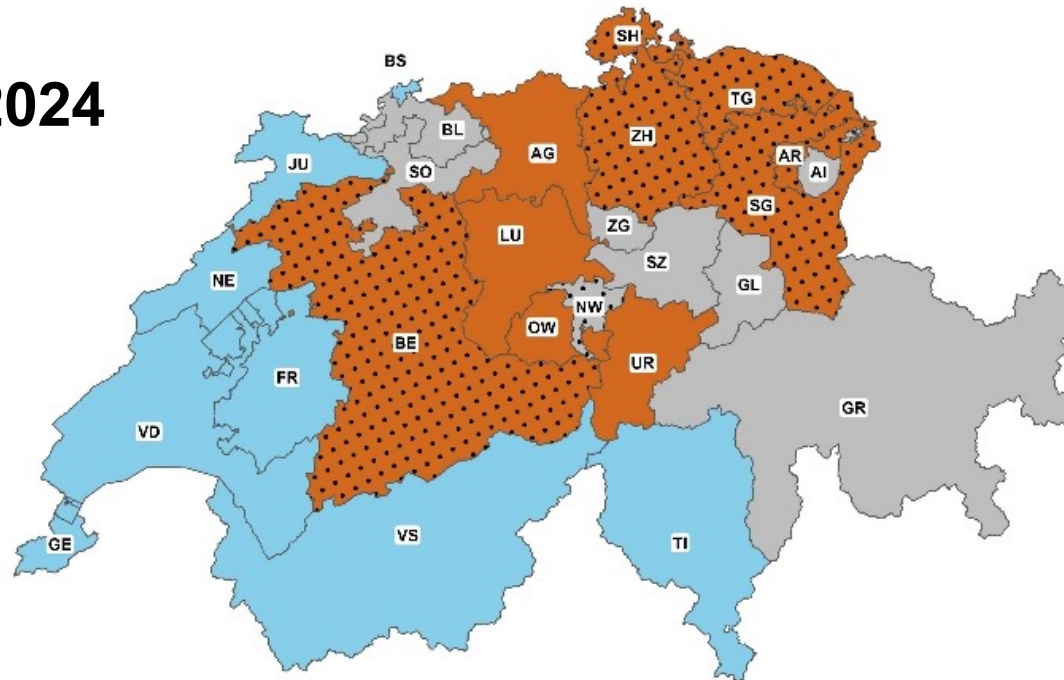
Heat-health warning systems & protection of most vulnerable population groups.

## Meteorological warning system & protection of most vulnerable population



The number of cantonal health departments engaging in heat-health protection and implementing heat-health action plans (HAP) is increasing

2024



■ Cantonal heat-health action plan (HAP) ■ Other measures ■ None ■ HAP in development

Befragung: Hitzeaktionspläne und Engagement der Gesundheitsbehörden 2024, BAG & Swiss TPH 2025  
Enquête: Plans d'action canicule et engagement des autorités sanitaires 2024, OFEV & Swiss TPH

## Long-term adaptation

Long-term adaptation to increasing heat stress: reduce exposure, build resilience and reduce vulnerabilities.

Multi-disciplinary

## Reduce urban heat islands to improve quality of life

- Reduce inequalities
- Consider the co-benefits of measures e.g. improved air quality, more green space, a higher quality of life

### Example: school playground in Besançon (F)



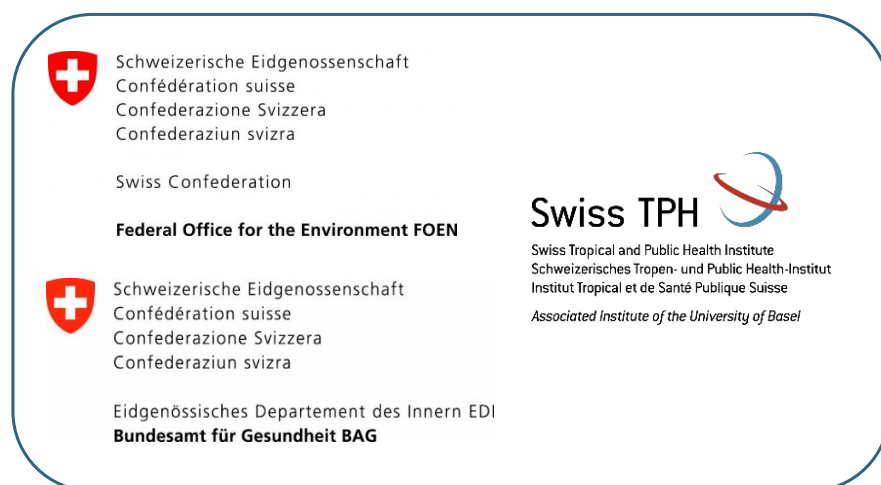
**Eco-friendly, gender-respectful & inclusive playground**

*Santé publique France 2022*

# Monitoring the effects of public health measures

## Impacts indicator:

### Heat-related deaths (since 2023)



Indicator Climate:

[Website Federal Office for the Environment](#)

## Response to heat:

### Surveys on implementation of measures in the health sector

Population / vulnerable groups (2023)

Cantonal health authorities (2024)

Health professionals (2025)

Hospitals (2026)

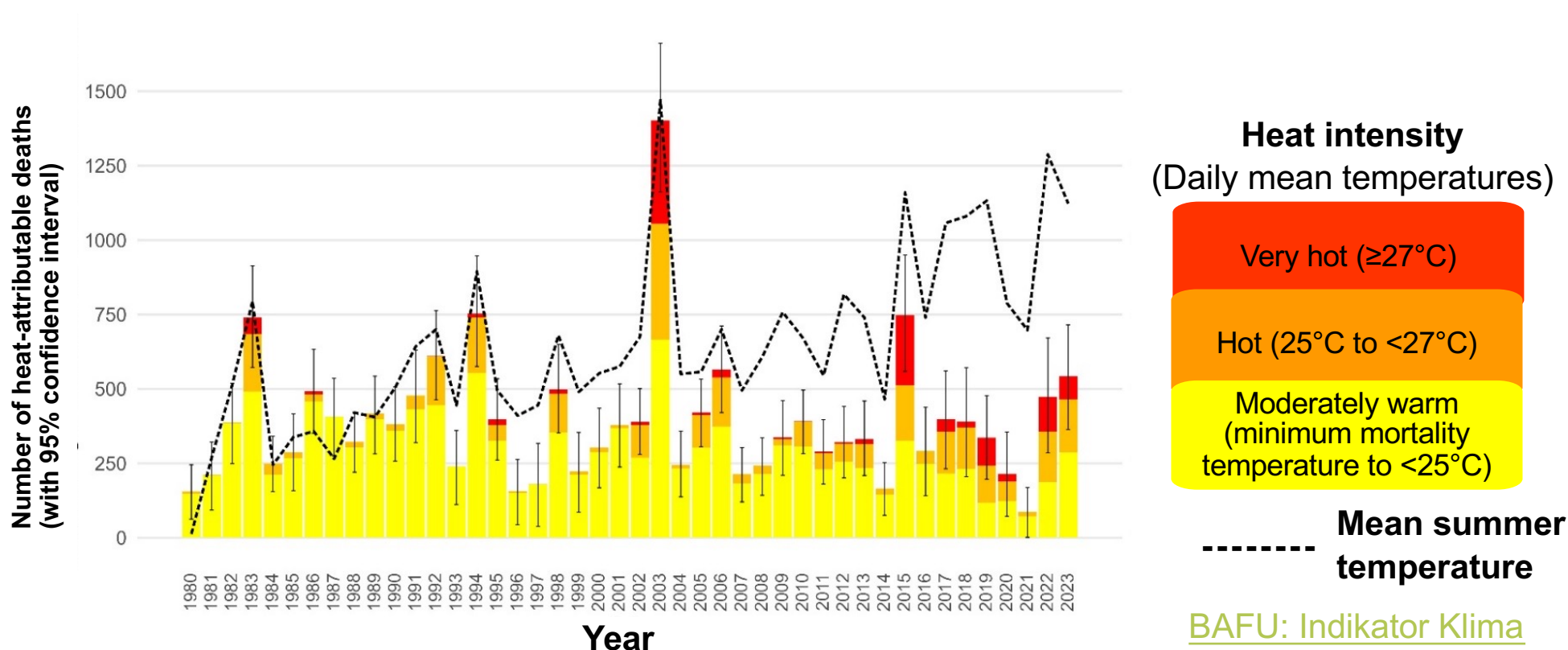
NCCS Website:

[Anpassungsmassnahmen bei Hitze](#)



## Impacts: Monitoring of heat-attributable deaths in Switzerland

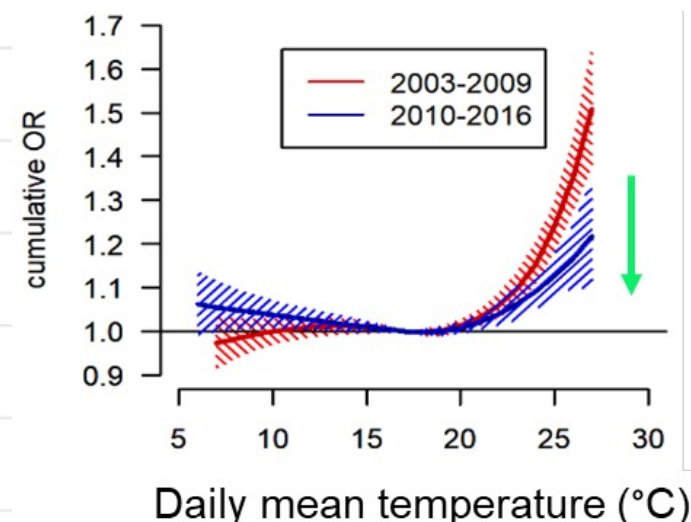
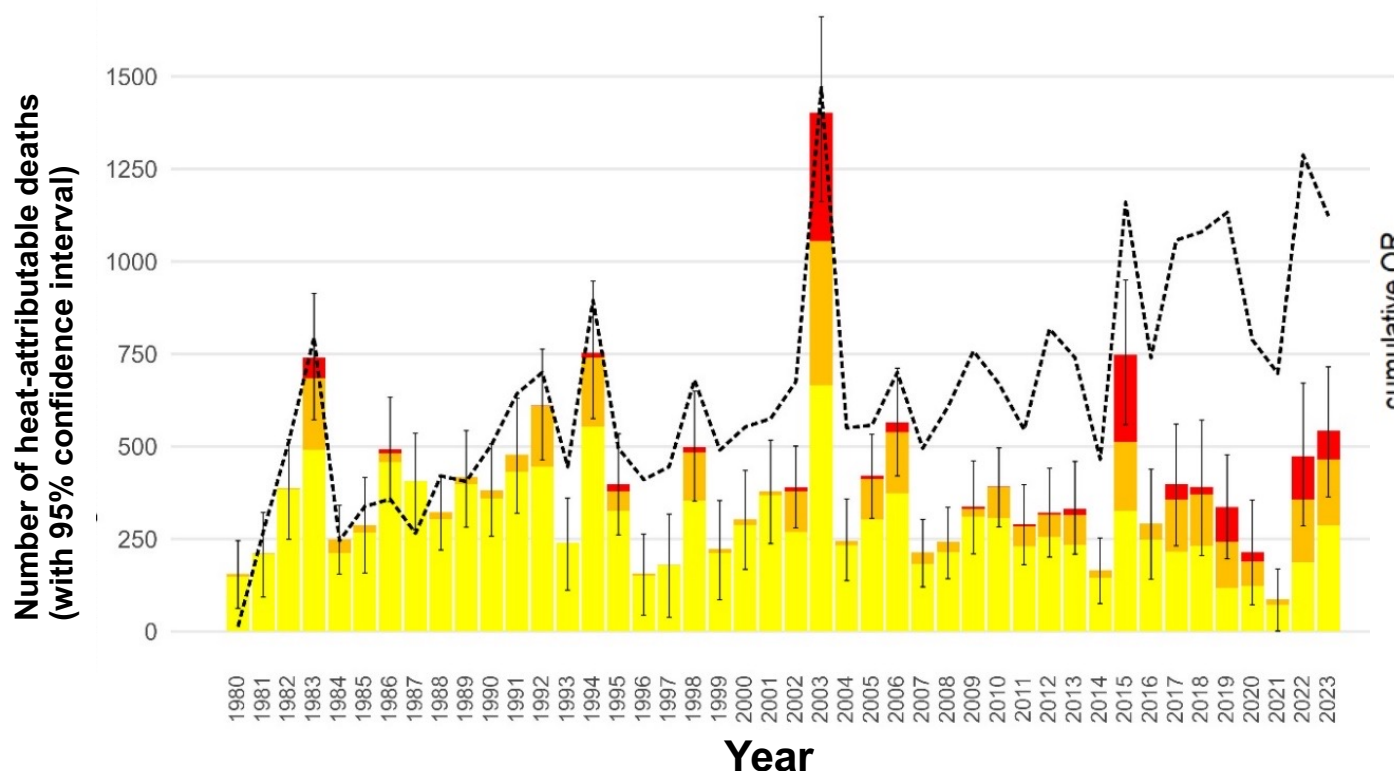
- **Less heat-attributable deaths in recent hot summers (2022) than in 2003 & 2015.**





## Impacts: Monitoring of heat-attributable deaths in Switzerland

- **Less heat-attributable deaths in recent hot summers (2022) than in 2003 & 2015.**
- **Adaptation occurs more to moderately warm days than to very hot days.**



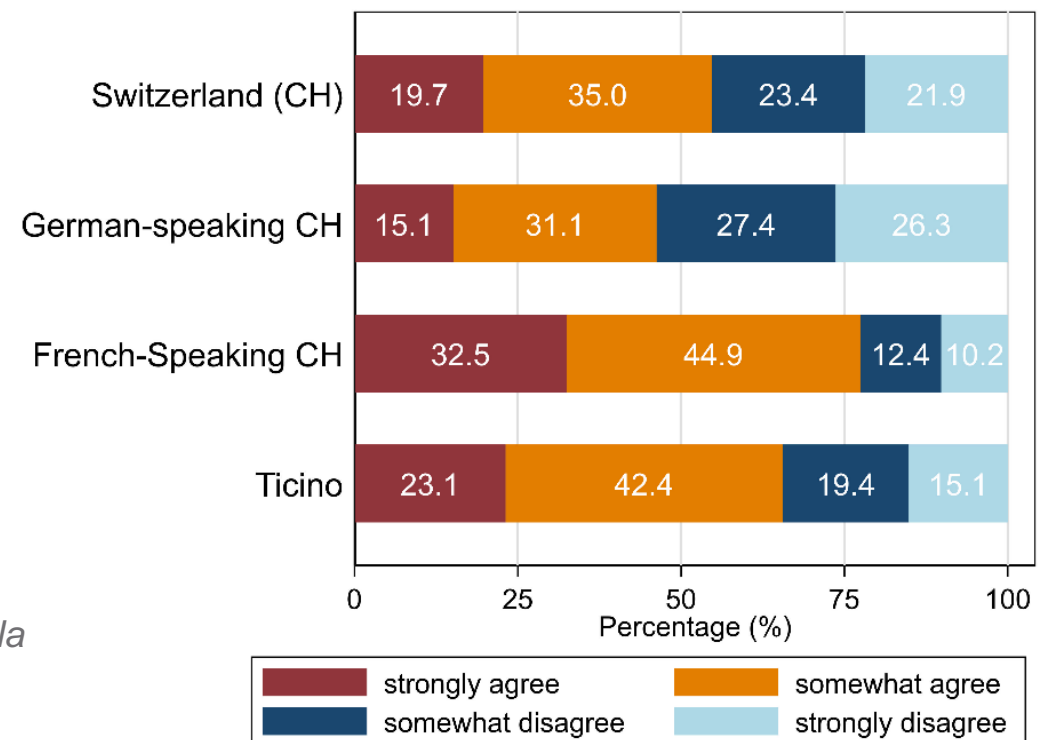
*Ragettli et al. 2023*



## Response: Regional difference in risk perception

### Is the population aged 50+ aware of the health risks of heat?

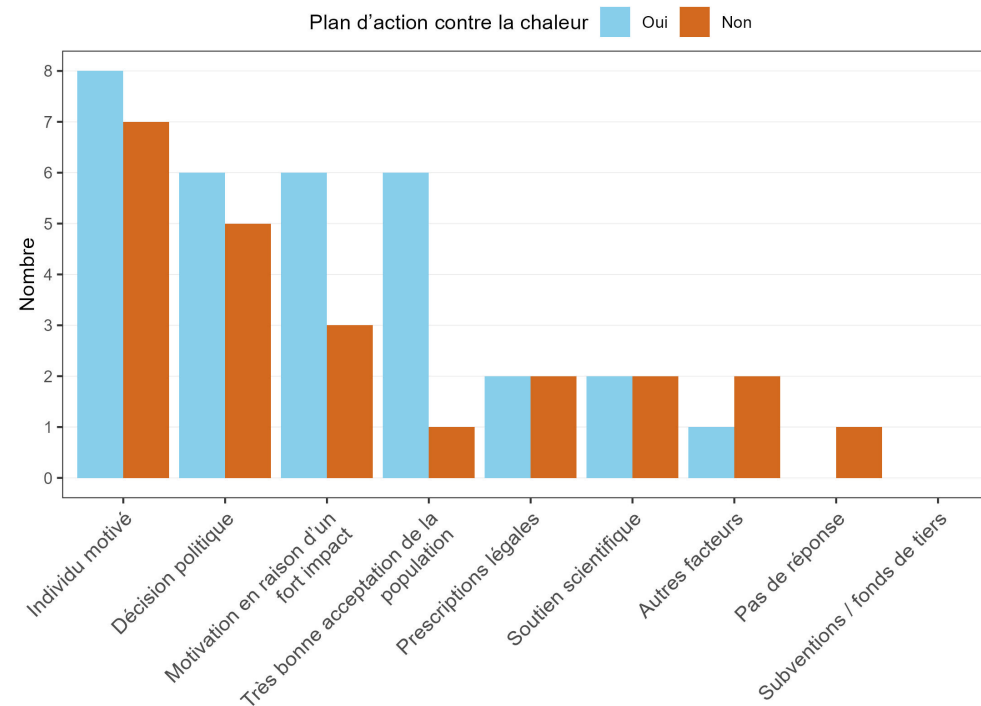
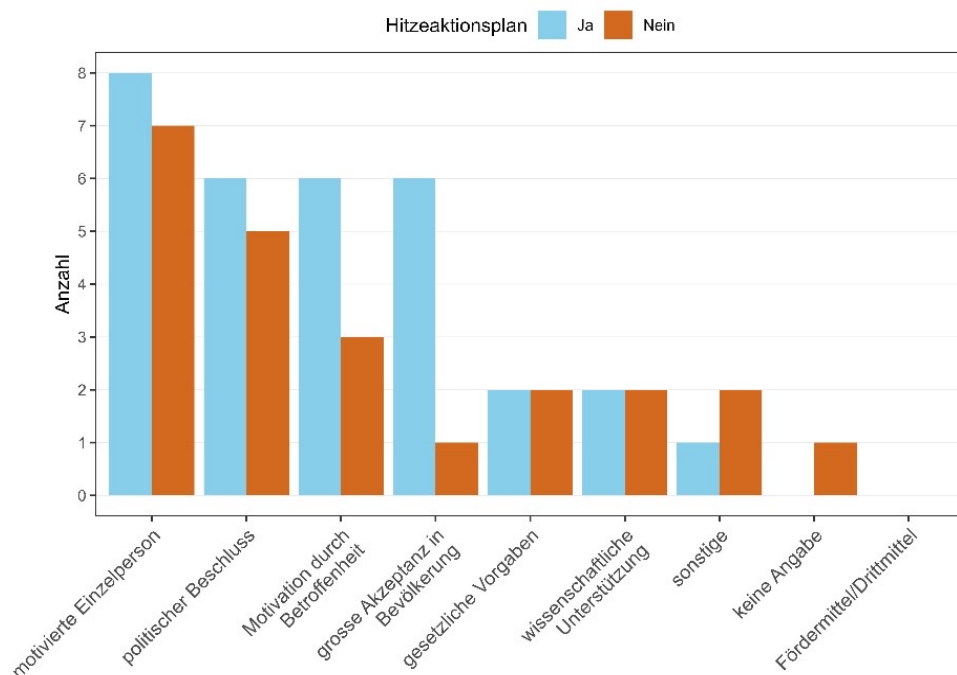
- **55%** of the population 50+ consider heat to be a risk to their own health.
- Lower agreement in **German-speaking** Switzerland (46%) than in French-speaking (76%) Switzerland and Ticino (66%).



Befragung Hitzekompetenz BAG  
*Enquête auprès de la population concernant la chaleur et la santé OFEV (Martucci et al. 2024)*

# Success factors for the introduction of measures from the perspective of the cantonal health authorities (2024)

## Committed individuals, a political decision & concern due to risks



Befragung: Hitzeaktionspläne und Engagement der Gesundheitsbehörden 2024, BAG & Swiss TPH 2025  
Enquête: Plans d'action canicule et engagement des autorités sanitaires 2024, OFEV & Swiss TPH 2025

# Are public health strategies effective in reducing the health risk of hot weather?



- Mortality risk on hot days of 30°C has decreased over time.
- Decrease is stronger in cities and cantons with heat-health action plans.
- Adaptation occurs more to moderately warm days than to very hot days.

**BUT:** Hot days become more frequent and more intensive.

## **We need more:**

- Multi-sectoral interventions to ensure health & well-being
- Protection of specific risk groups (children, people with specific chronic diseases, outdoor workers, socially disadvantaged persons)
- Support in surveillance & implementing measures
- Inter-cantonal coordination & political decisions



## BEAT THE HEAT CONFERENCE 2025

Join us on **28 August at Swiss TPH** to address the challenges posed and potential solutions to urban heat.

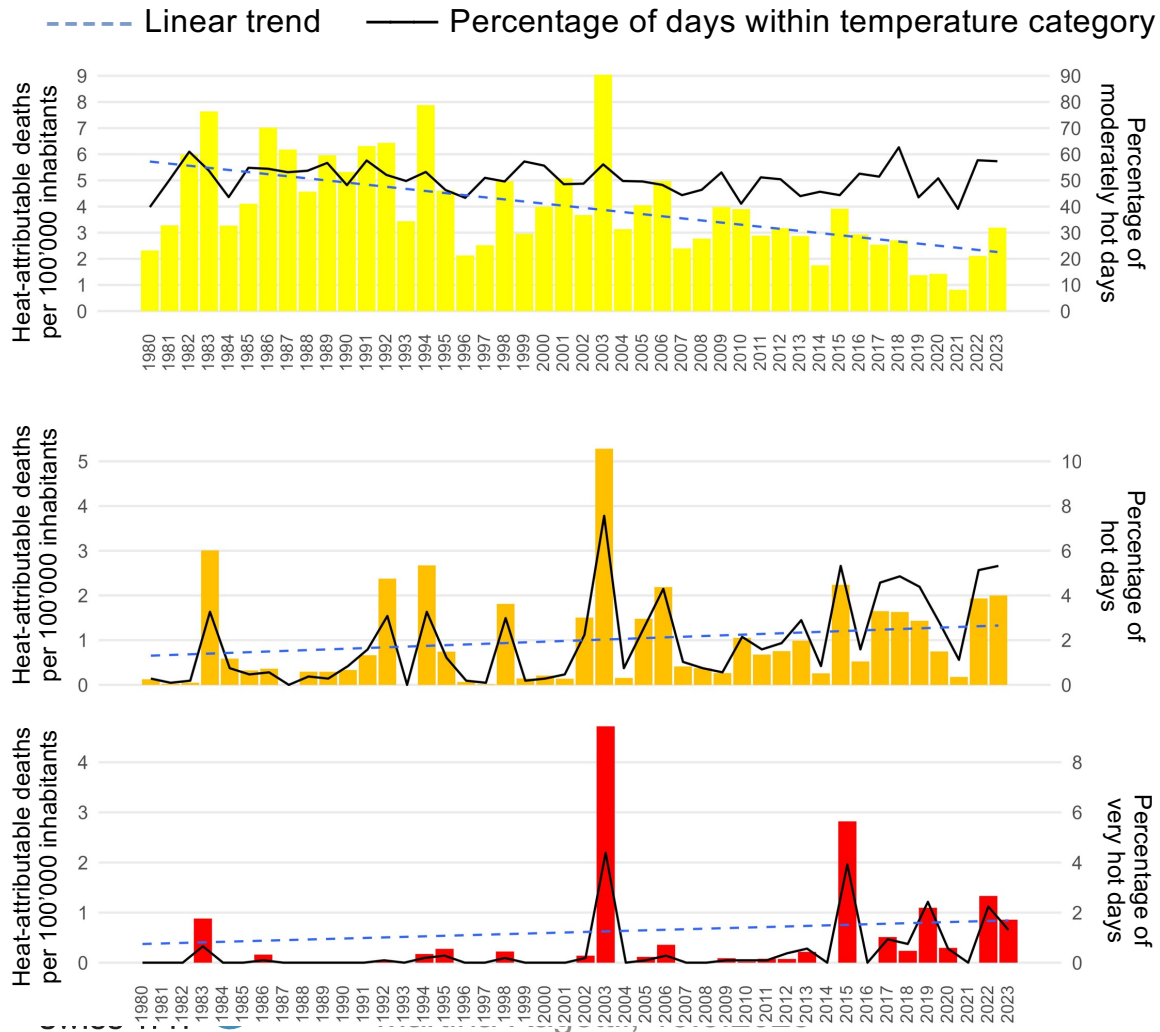
Swiss TPH 

Thank you for your attention

Martina.Ragetti@swisstph.ch



# Heat-attributable mortalities by heat intensity



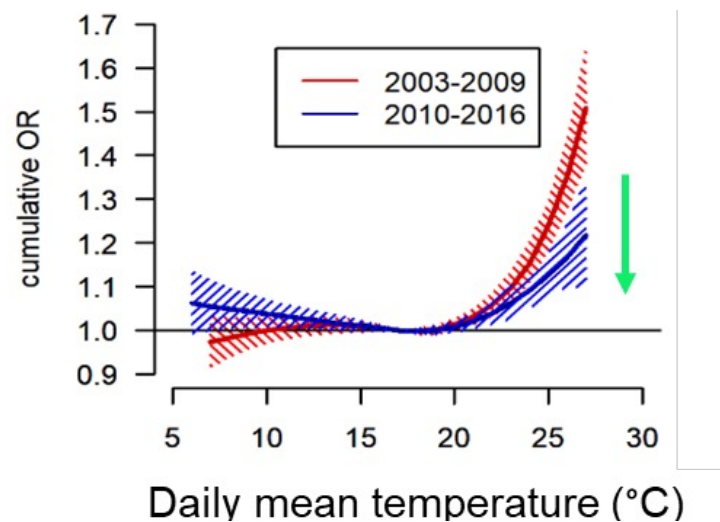
Decrease in heat-related mortality on moderately hot days

Increase in heat-related mortalities on hot and very hot days

# Are the public health measures effective?

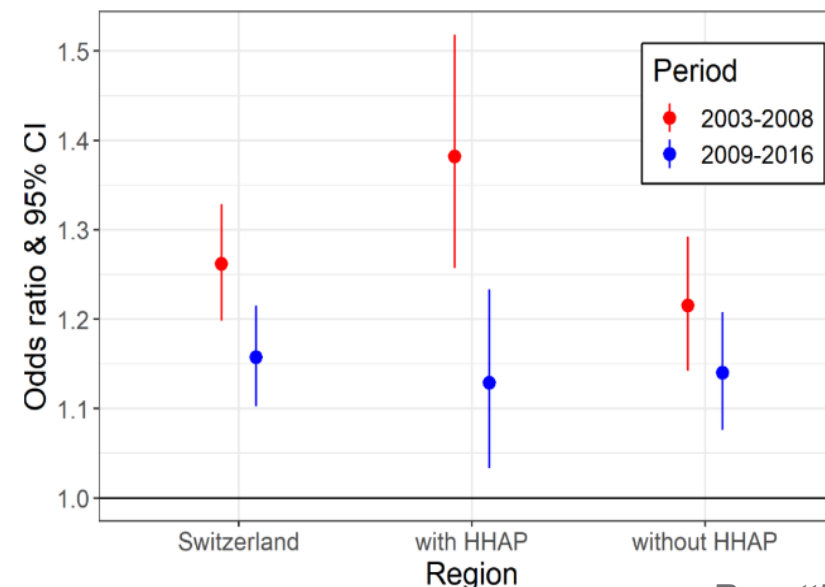
## Heat-related mortality risk decreased in the recent years in Switzerland.

The heat-related mortality risk on a hot day with daily maximum temperatures of 33°C is lower today than it was 20 years ago.



*Ragetti et al. 2023*

The heat-related mortality risk on a hot day with 33°C decreased significantly in cities and cantons with heat-health action plans (HHAP).



*Ragetti et al, 2024*