

Occupational health: future challenges and solutions

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HERA CONSORTIUM

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Why Research Priorities on Occupational Health?



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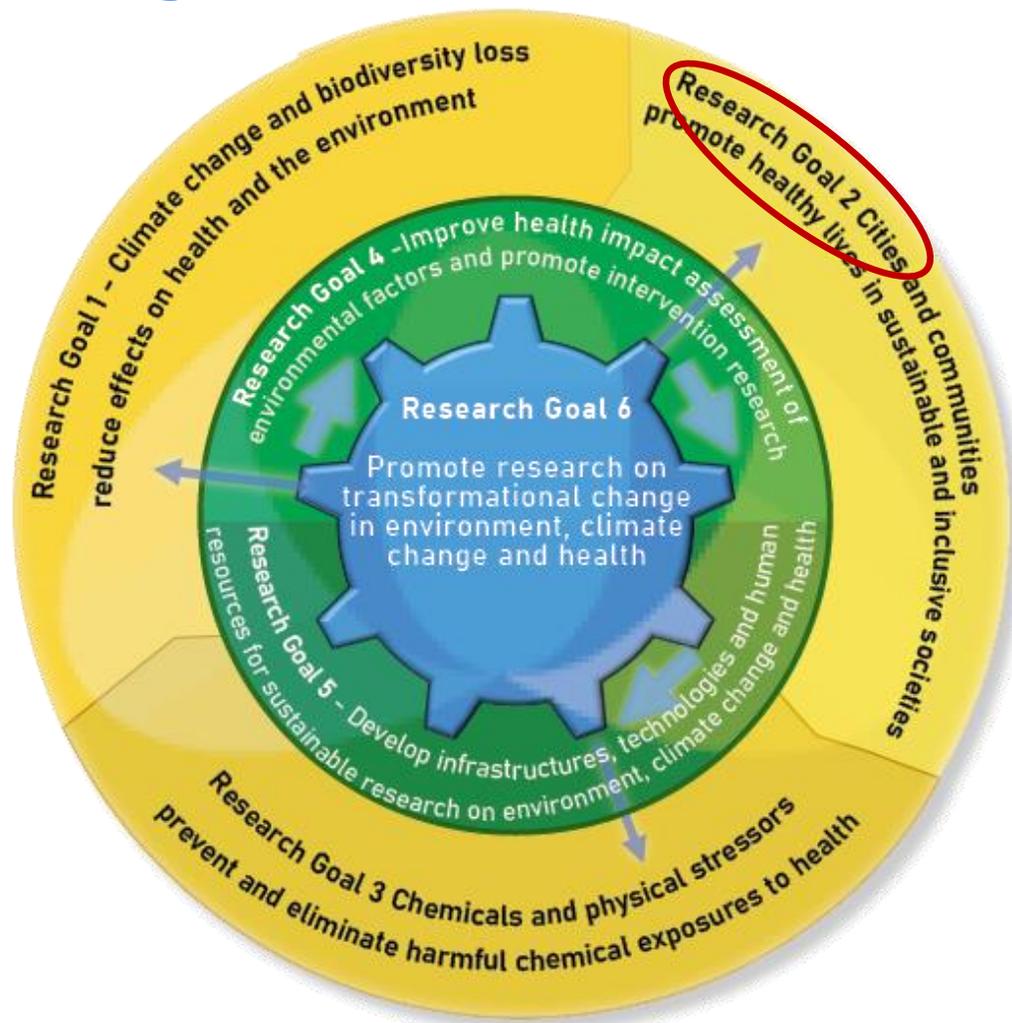
- Employment is an essential component of adult life, and occupation is a major determinant of health
- There are profound changes in working life



Why Research Priorities on Occupational Health?

- Employment is an essential component of adult life, and occupation is a major determinant of health
- There are profound changes in working life
- **There has been little coordinated European occupational health research**

Integration in the HERA Research Goals

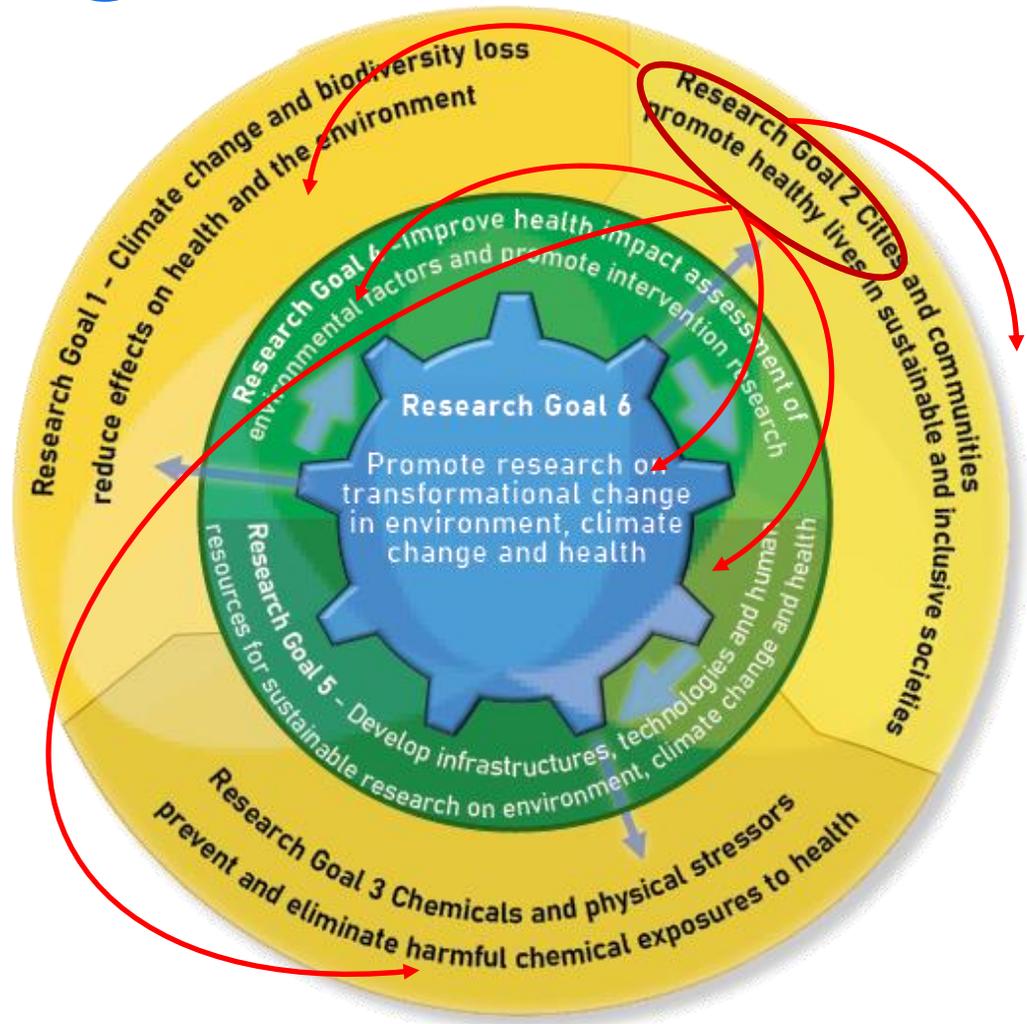


RG2.4 Changing work and employment conditions

Research Needs

1. Climate change, key enabling technologies, the Green Deal
2. Changing and ageing workforce
3. Working time
4. Changing employment patterns
5. Neglected occupational diseases
6. Monitoring, electronic health records, and surveillance in occupational health

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Climate change

- ▶ Changing working environments
 - ▶ Heat stress
- ▶ Changing exposure patterns
 - ▶ Allergens
 - ▶ Agricultural practice - pesticides



Key enabling technologies, the Green Deal

Key enabling technologies and the European Green Deal, are rapidly transforming the European economy, production systems, and labour market.

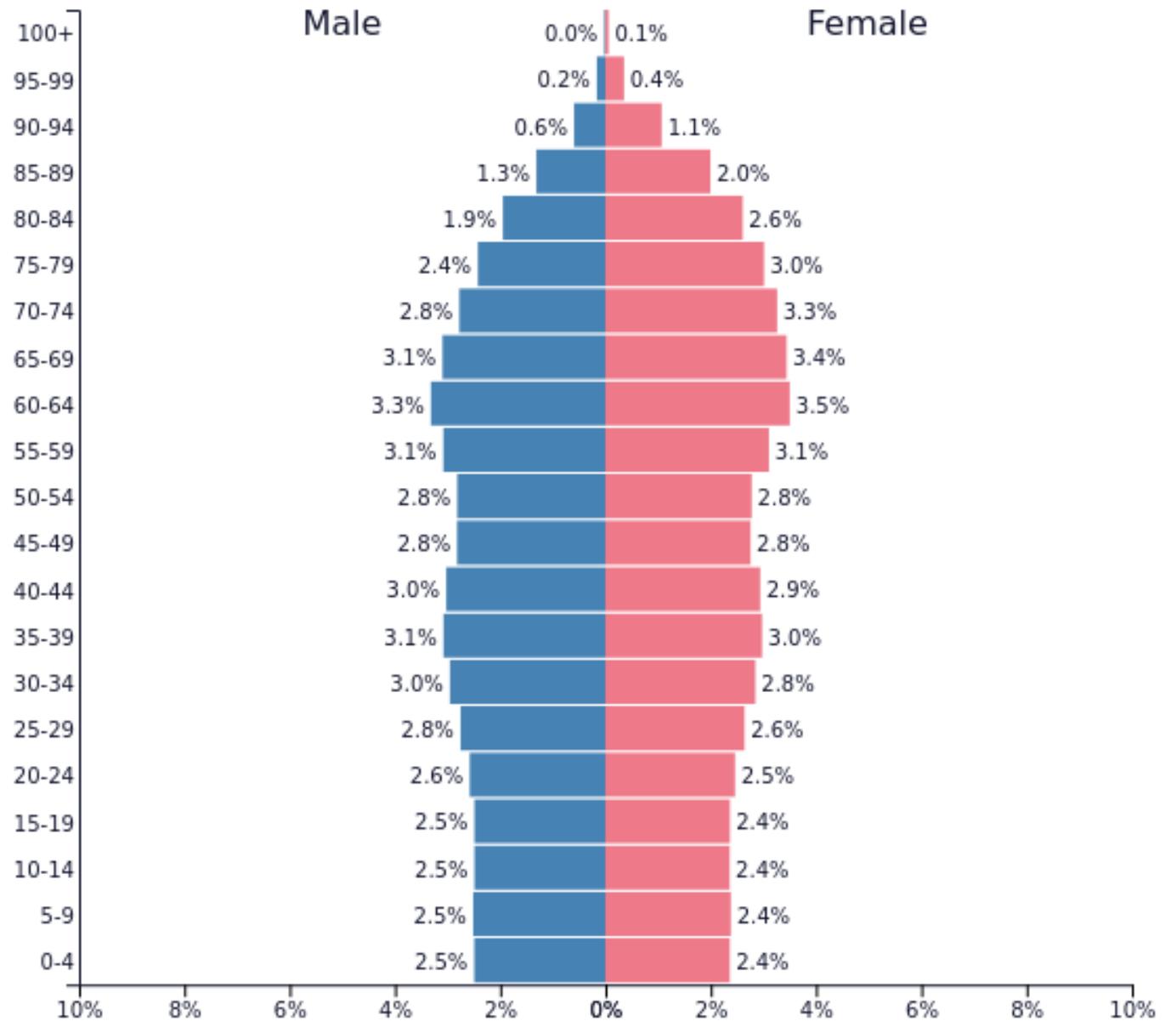
New materials are introduced and mitigation measures, e.g. circular economy, result in **new exposures**.

Knowledge gaps. Research on new solutions should integrate risk assessment with implementation of sustainable technologies (e.g. green chemistry).



Aging workforce

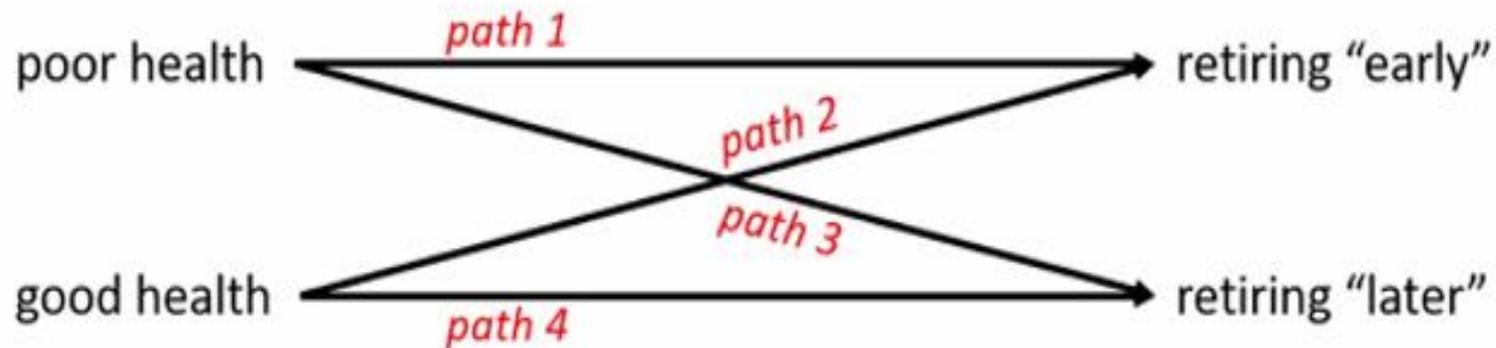
European population
pyramids (1990 – 2050)



Ageing workforce and prolonged working life

National policies with economic drivers to **prolong working life** may adversely affect those who would have retired if they could, e.g. for economic reasons.

The association of health with retirement timing





OPEN
24 HOURS

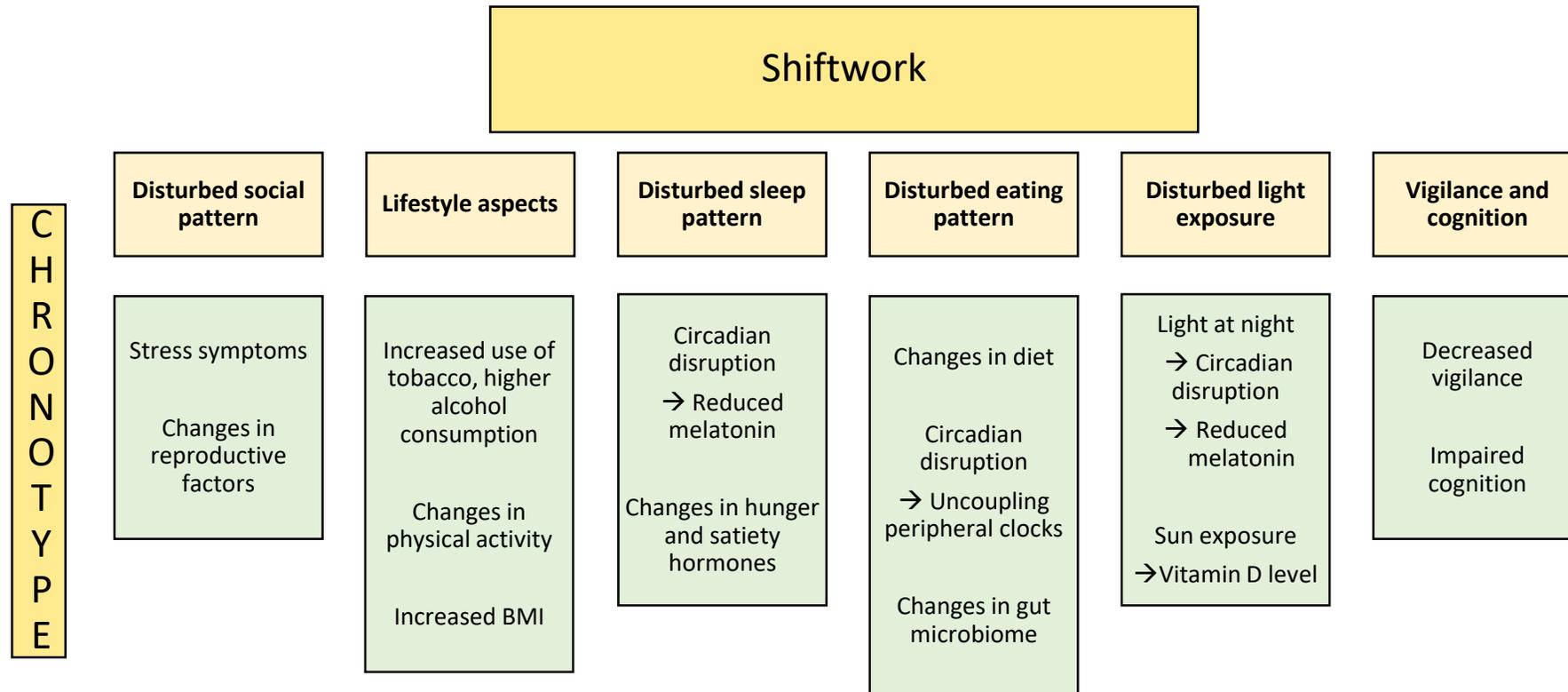
Working time – prolonged hours and shift work

Long term and more recent changes in employment patterns and work patterns are all related to multiple effects on health and wellbeing.

New research is needed on working-time both concerning effects of **prolonged working hours** and **shift work**, including **exposome** approaches and comprehensive evaluation of factors such as light, sleep, physical activity and diet in shift workers and **emphasis on preventive measures and interventions.**



Shift work as a complex exposure scenario; an exposome approach



Changing employment patterns - Precarious employment and work-life balance

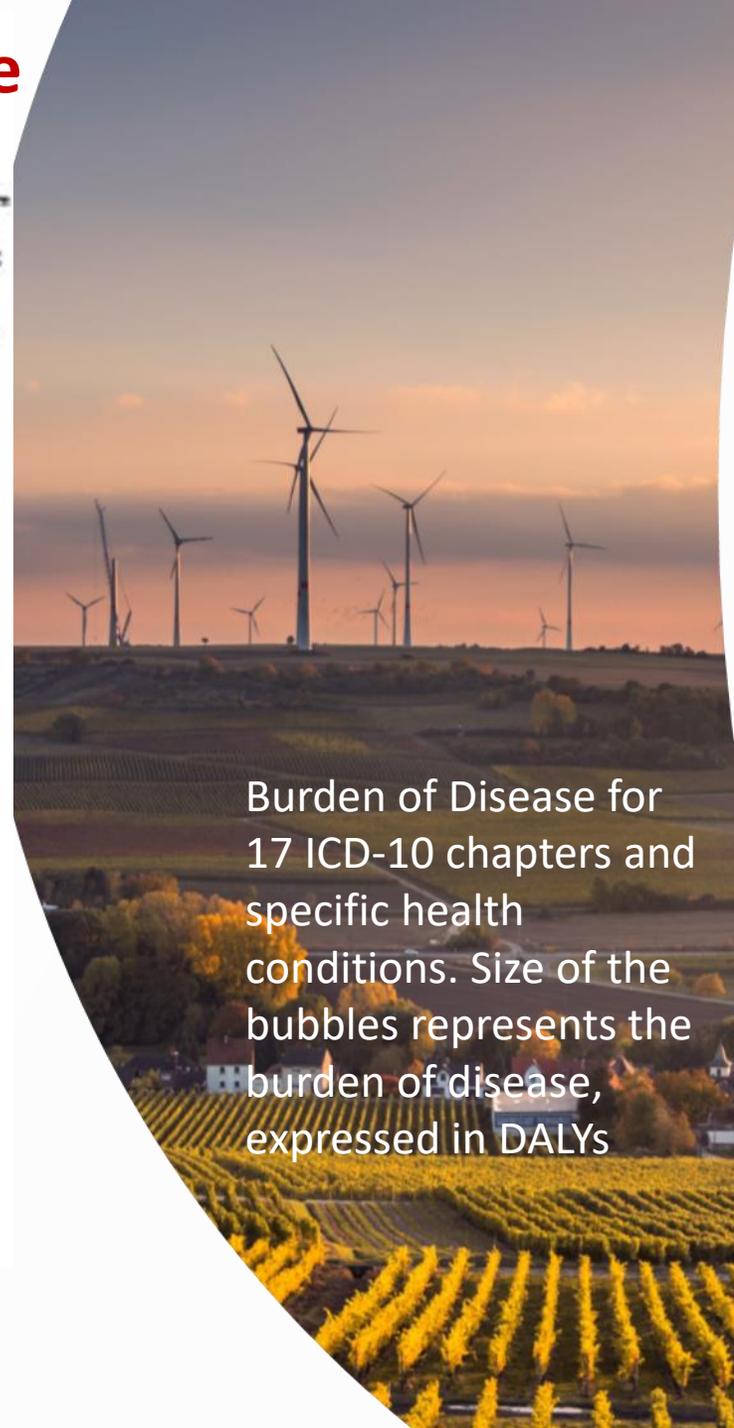
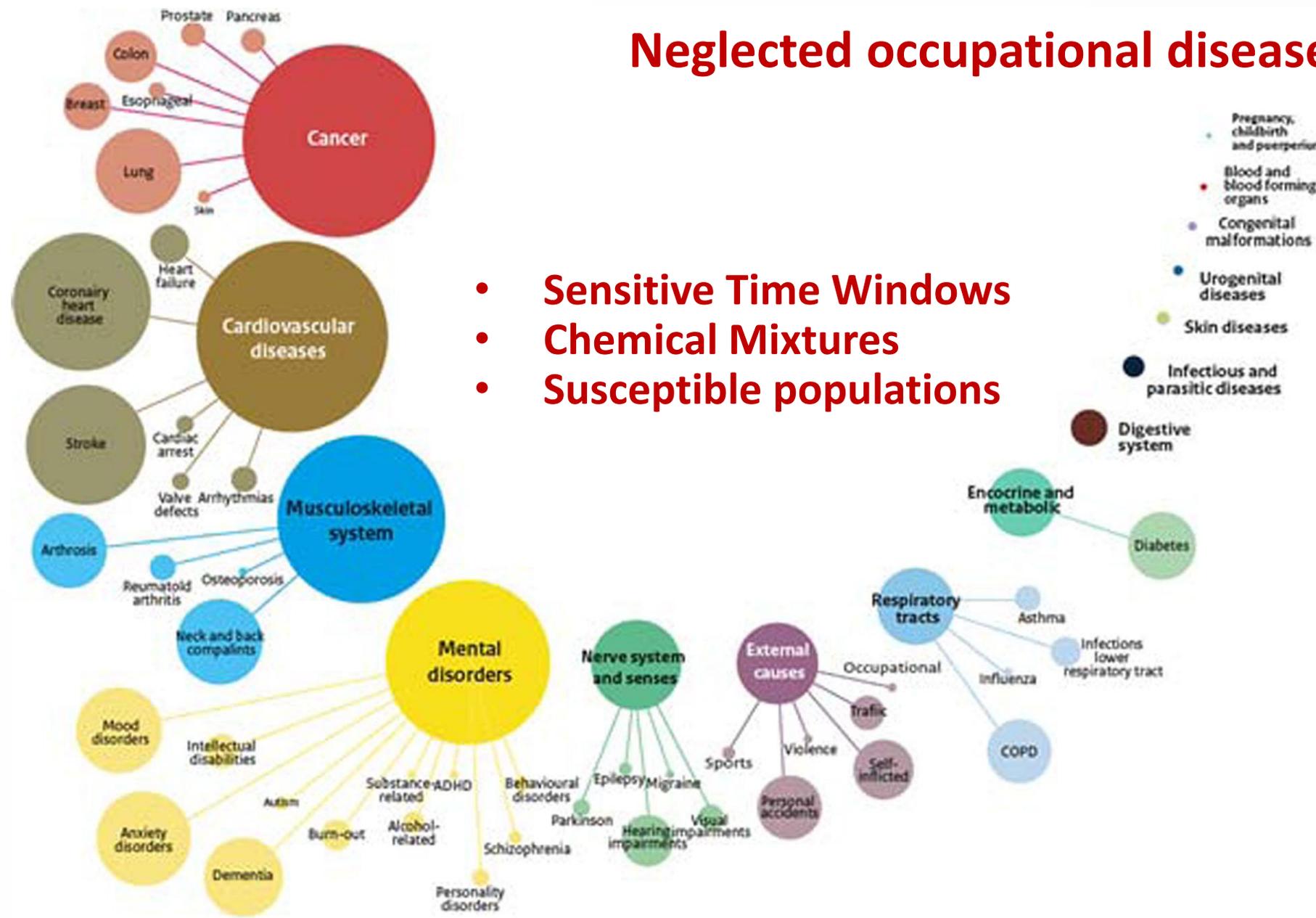
- ▶ **Precarious employment**, increasingly common - mental health, neurodegenerative, cardiovascular diseases, quality of life.
- ▶ **Non-standard employment** - women, immigrants, the young and low educated; instability, multiple jobs, gig economy
- ▶ Societal changes following the **COVID-19** pandemic. Evaluate full complexity of work-life balance with emphasis in younger women, with the ultimate goal to provide **intervention strategies**

The COVID-19 pandemic and gender equality (Flor LS, Lancet 2022)

- ▶ Between March, 2020, and September, 2021, women more likely to report:
- ▶ employment loss: women 26% (95% UI 24–29); men 20% [18–23]
- ▶ forgoing work to care for others (ratio of women to men: 1·8 by March, 2020, and 2·4 by September, 2021).
- ▶ women and girls 1·21 times (1·20–1·21) more likely than men and boys to report dropping out of school for reasons other than school closures

Neglected occupational disease

- Sensitive Time Windows
- Chemical Mixtures
- Susceptible populations



Burden of Disease for 17 ICD-10 chapters and specific health conditions. Size of the bubbles represents the burden of disease, expressed in DALYs

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