

# Fit work design

## The Goldilocks principle of promoting health and well-being

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**Goldilocks Work**

@profHoltermann

@GoldilocksWork

# Do you know this girl?



Illustration: Birte Mølgaard

# Who has the healthiest physical activity at work?

# Who has the healthiest physical activity at leisure?

# The Danish picture

Massive political, media and societal interest and debate about work, health and sustainable employment!

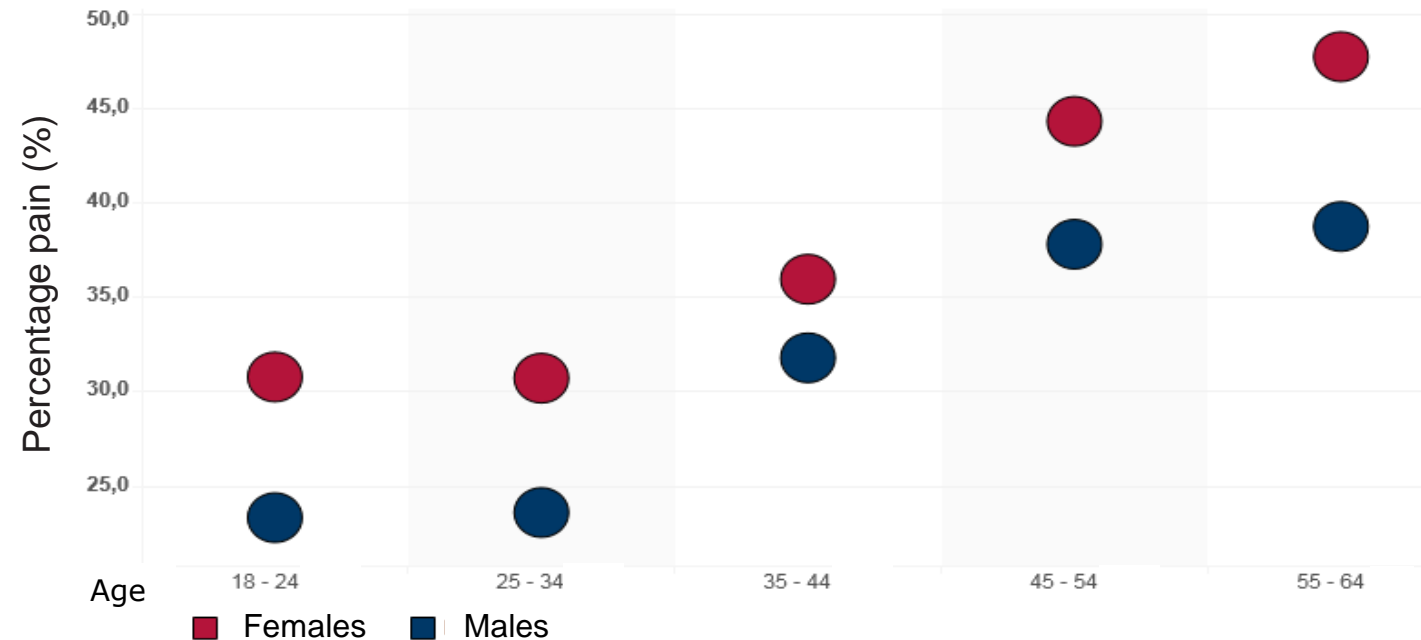
## Retirement age

- Currently: **65 years**
- In 2030: **68 years**
- In 2040: **70 years**
- In 2050: **72 years (world record?)**



# Several large work-related challenges

- Many with musculoskeletal pain
- Prevalent mental health issues
- Obesity epidemic
- Increasing social health inequalities
- Aging population



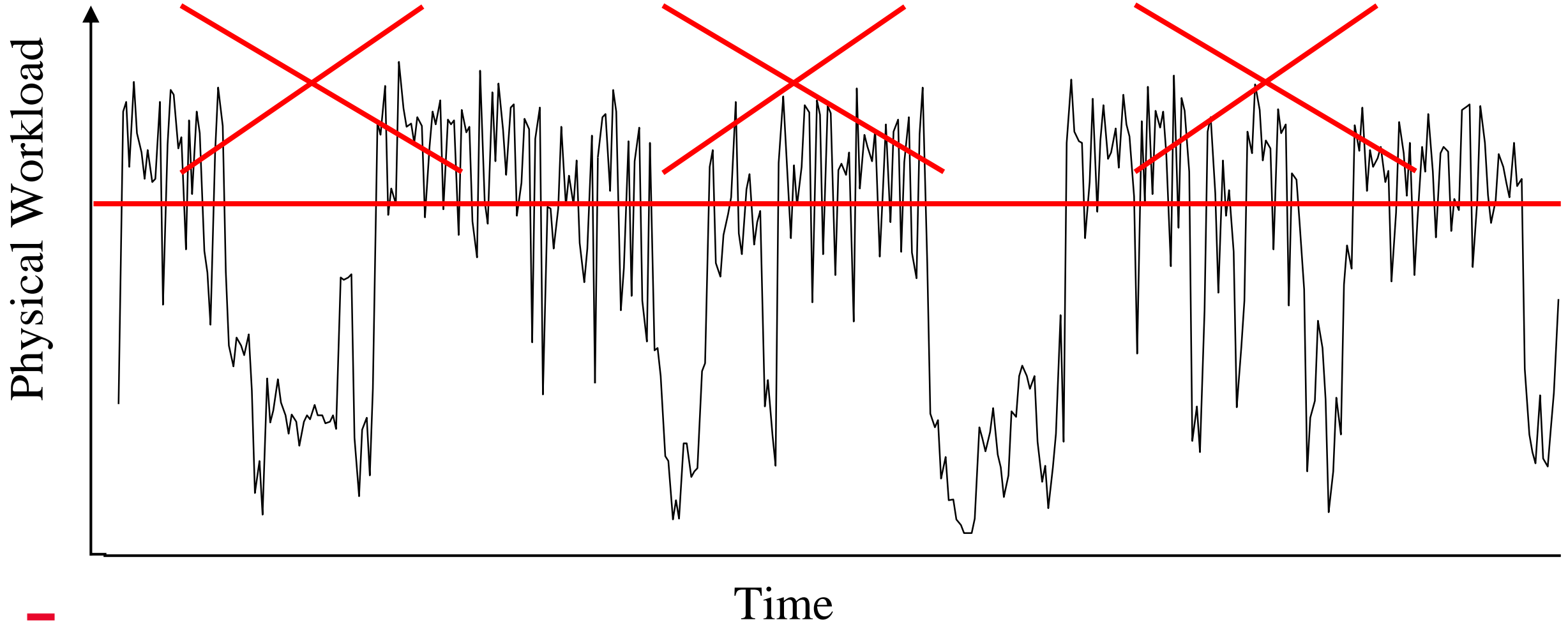
**How achieve sustainable healthy employability  
for all until 70+?**

**Is the current dominating paradigm  
“prevent harm from work”  
sufficient for overcoming these main  
work-related challenges?**

**Need a NEW AMBITIOUS approach**

**Is this approach good for healthy sustainable work?**

**The “minimization approach”**



**What would you recommend to promote wellbeing and health?**



**Do you know any jobs improving  
physical fitness and health?**



# Physical activity and movements are healthy!



.... if comprise sufficient variation,  
breaks and time for recovery

Without sufficient variation, breaks and recovery – can  
cause overload and health issues



# Physical activity at leisure – the same effect as during work?

Long-term sickness absence



Original article

Adjusted for Age, Gender, Smoking, Alcohol, BMI, Chronic disease, Questionnaire method, Social support, Emotional demands, Social class and leisure/work physical activity

The health paradox of occupational and leisure-time physical activity      Holtermann et al, BJSM 2012

**The Physical Activity Paradox**

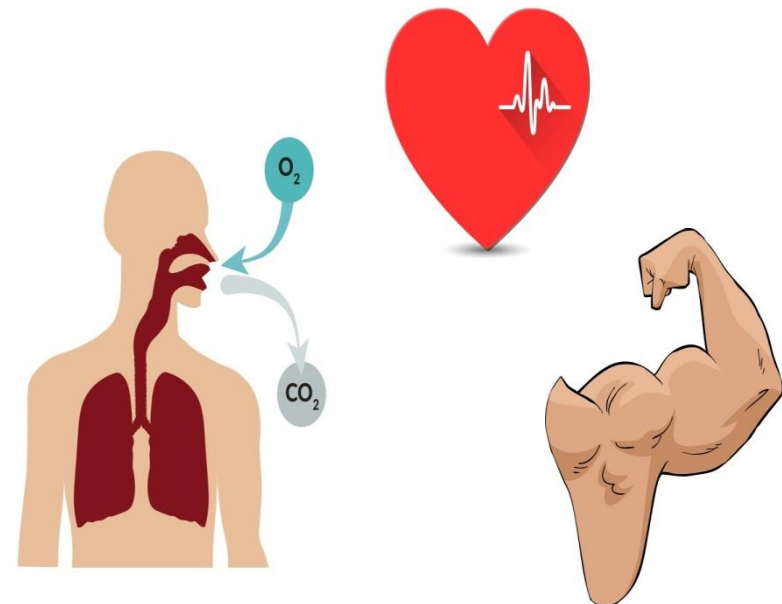
# Characteristics of physical activity promoting fitness and health

1. High intensity
2. Breaks and rest when needed
3. Variation



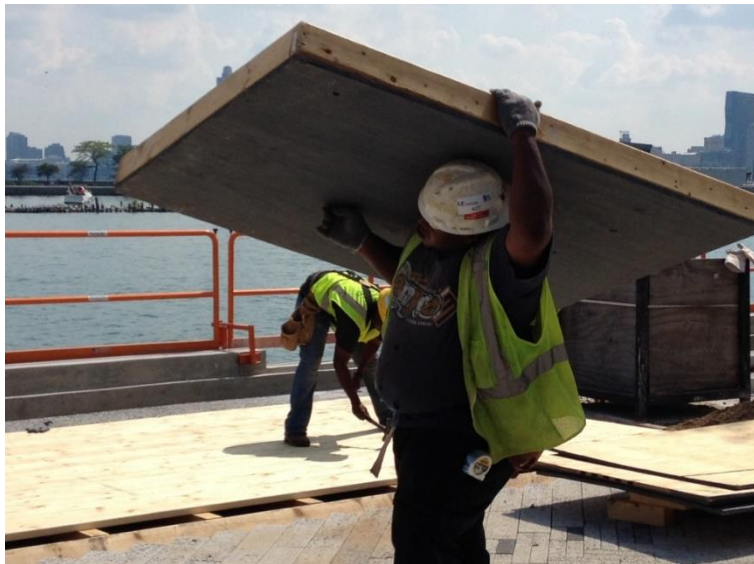
## Response

1. Improved fitness
2. Improved physical and mental wellbeing
3. Improved cardiovascular and musculoskeletal health





# Physical activity at work – why not promoting health?



## Characteristics physical activity at work

- Low/moderate intensity
- Long duration (many hours per day)
- Static, awkward and repetitive movements
- Often insufficient breaks, rest and recovery



## Physiological response

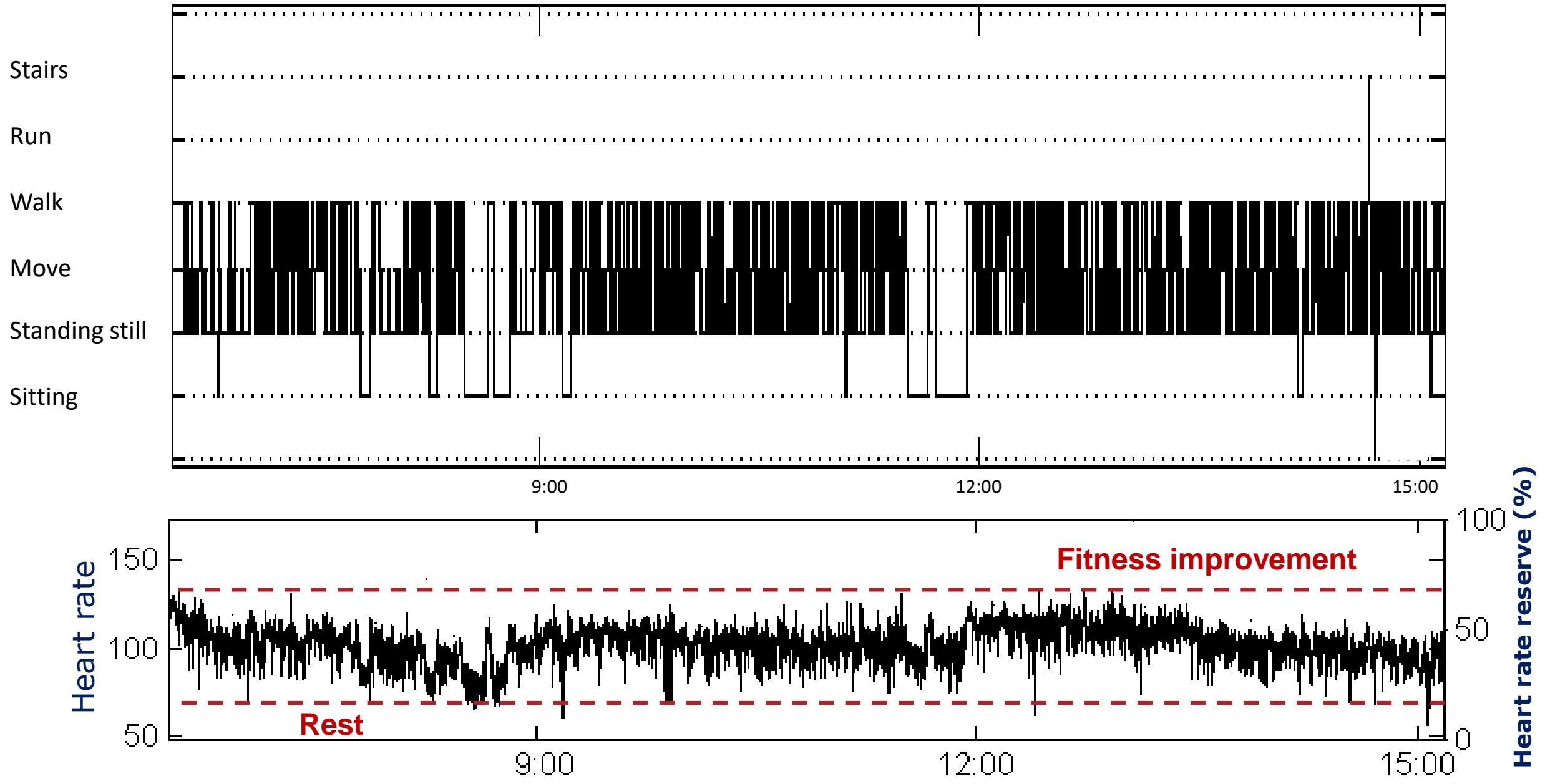
- Unchanged physical fitness
- Increased 24-hours heart rate and blood pressure
- Elevated inflammation
- Pain and reduced functional ability

Editorial

The physical activity paradox: six reasons why occupational physical activity (OPA) does not confer the cardiovascular health benefits that leisure time physical activity does 📌

Holtermann et al. Br J Sports Med 2018;52:149-150

# So, why does a cleaner not improve fitness and health?



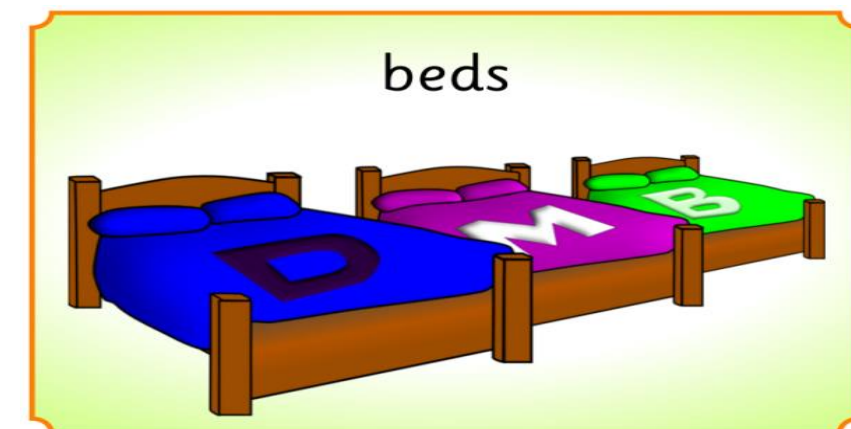
# Imagine

**If work was designed,  
so includes the beneficial characteristics of  
physical activity  
directly promoting wellbeing, physical fitness  
and health for all workers**

# The Goldilocks Work principle

The physical activity during productive work is often not "just right"

Could it be designed to be "just right" to promote health and fitness?





# Vision of the Goldilocks Work Principle

Work should be designed, so directly promotes work capacity, health and sustainable employment for all



Goldilocks Work



@GoldilocksWork

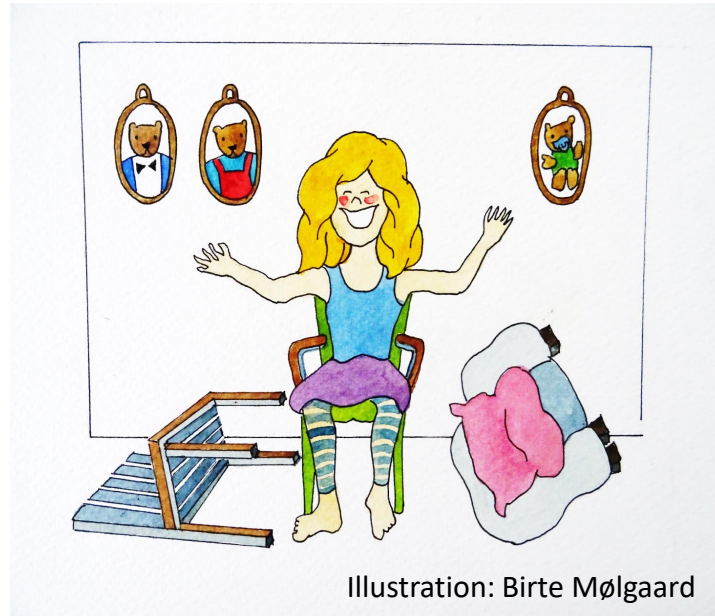


Illustration: Birte Mølgaard



## **Discussion paper**

Scand J Work Environ Health [2019;45\(1\):90-97](#)

doi:10.5271/sjweh.3754

## **Promoting health and physical capacity during productive work: the Goldilocks Principle**

by [Holtermann A](#), [Mathiassen SE](#), [Straker L](#)

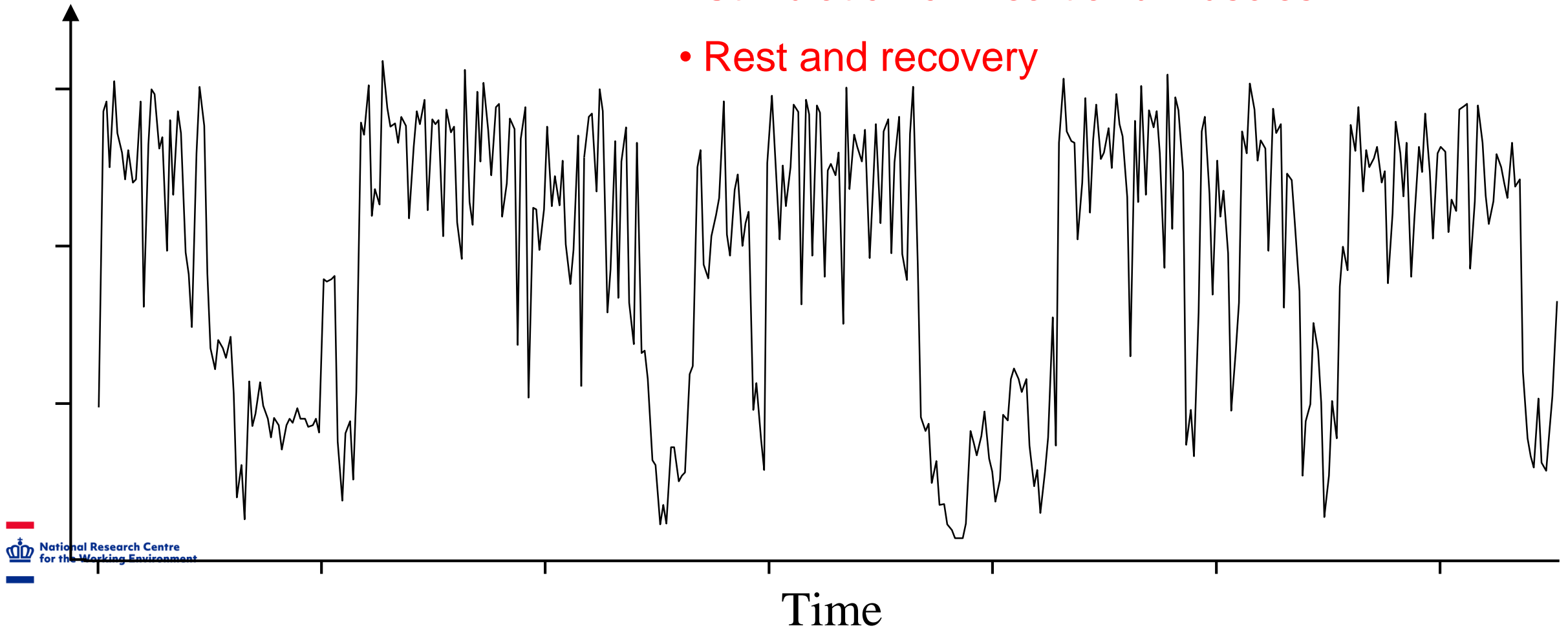
A large potential for improving occupational health remains unexploited by a limited focus on preventing health impairments by reducing physical activity at work. The Goldilocks Principle aims to promote health and physical capacity by designing physical activity during productive work to be "just right". If effective, the Goldilocks Principle has a great potential to contribute in solving major work-related challenges of our time.

# Goldilocks "Fit Work Design"

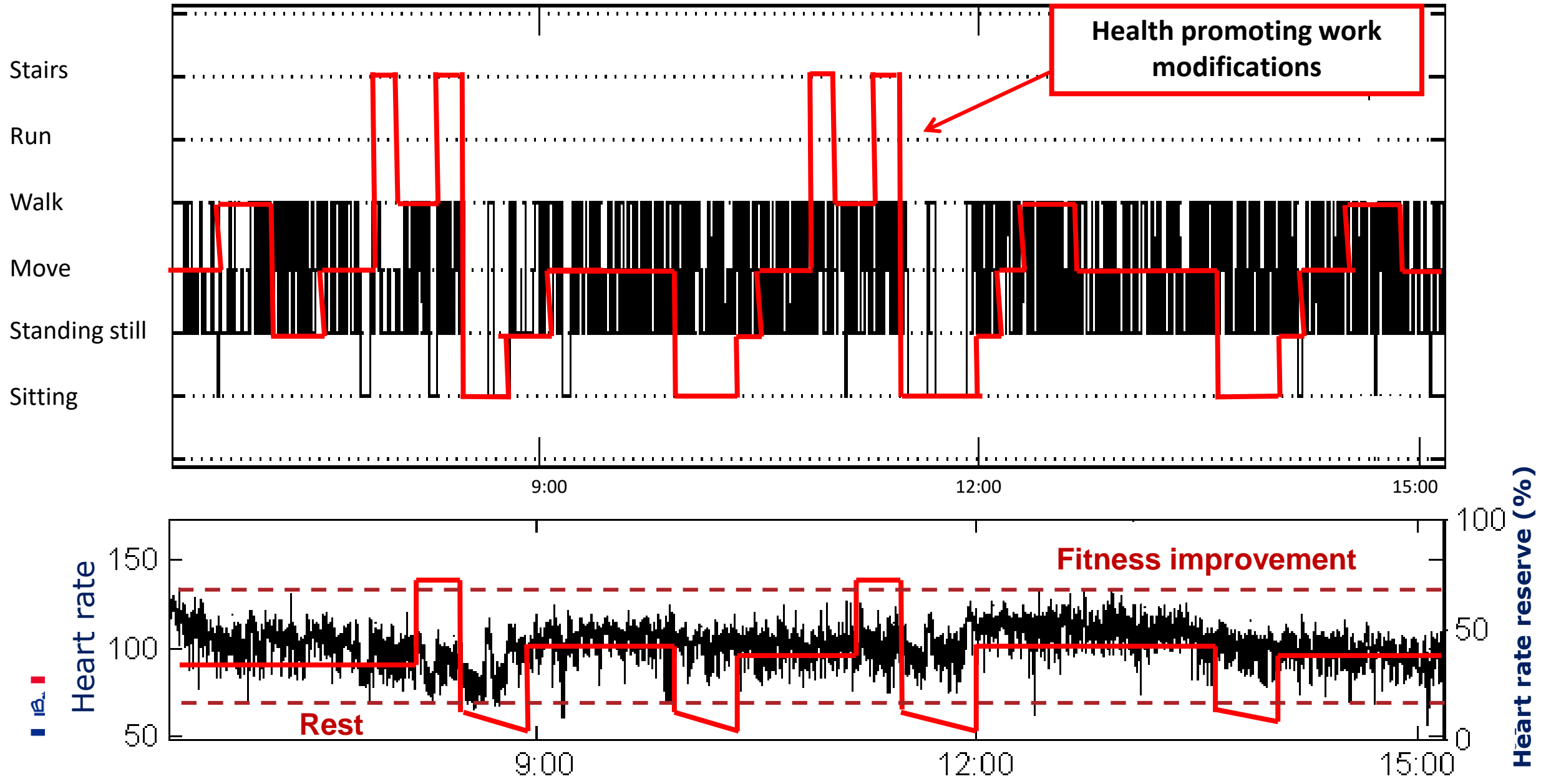
Design work to provide healthy balance of:

- Variation
- Stimulation of "heart and muscles"
- Rest and recovery

Workload



# How design Goldilocks work?

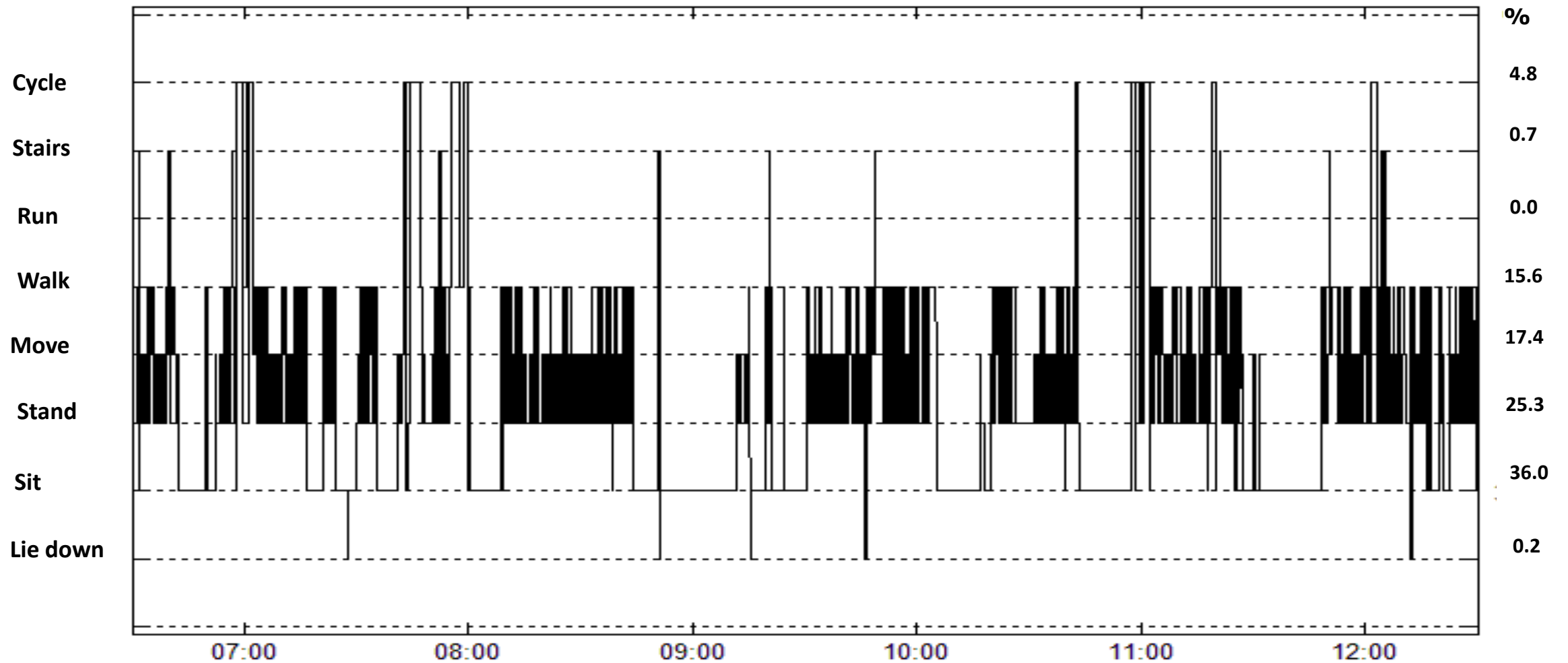


# Goldilocks childcare

**Making children more physical active,  
and improving work capacity, health and  
sustainable employment for workers**



# Goldilocks homecare for elderly in Copenhagen



**Will it promote fitness and health?**

# Physical activity profile homecare work

## Low intensity



Slow walk: 36 min



Stand: 2,8 timer



Sit: 2,4 timer

## Moderate intensity



Fast walk: 13 min  
(120 steps per min)



Run: 0 min



Walking stairs: 6 min



Cycle: 20 min

**Fitness-improving heart rate (65% HRR):**  
**3 min**

# How much is necessary to improve fitness and health?

2-4 times per week?



Walking fast, 30 min  
(*>120 steps per min*)



Run, 10 min



Walking stairs, 10 min

**Feasible to implement during productive work in  
many occupations?**



# Is the vision of the Goldilocks Work feasible?

Work should be designed, so directly promotes work capacity, health and sustainable employment for all



Goldilocks Work



UNIVERSITY  
OF GÄVLE



@GoldilocksWork

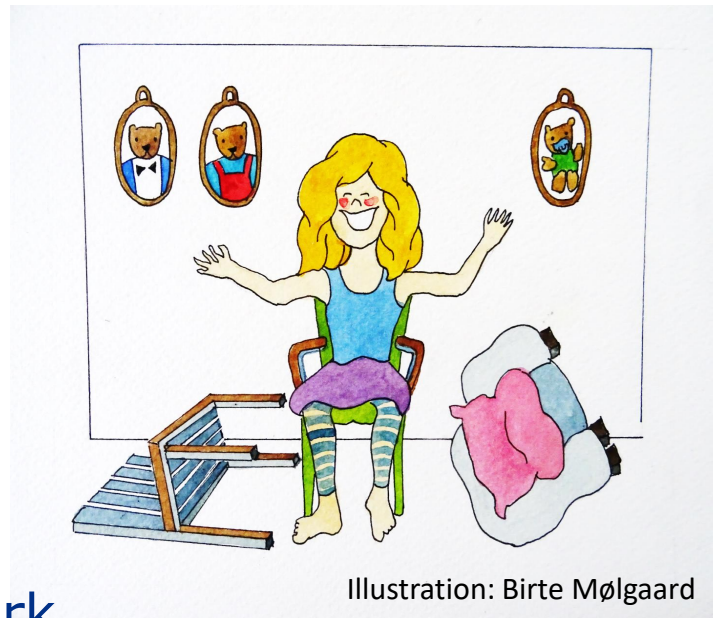


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# Do we really know how Goldilocks work should look like for different occupational groups?

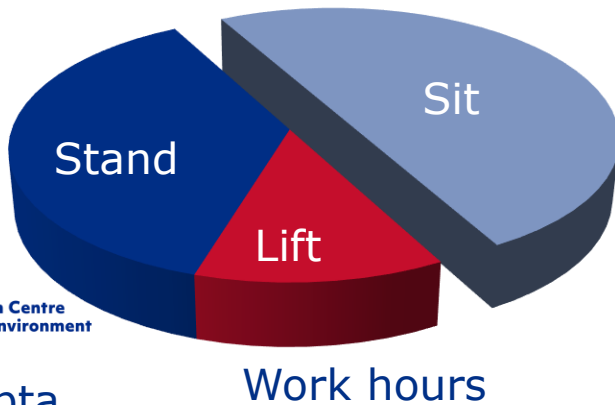
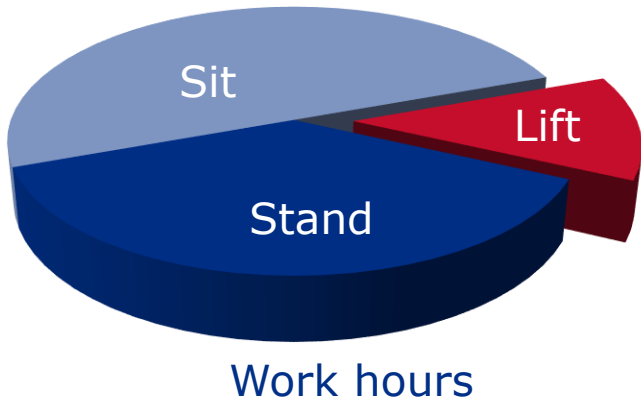
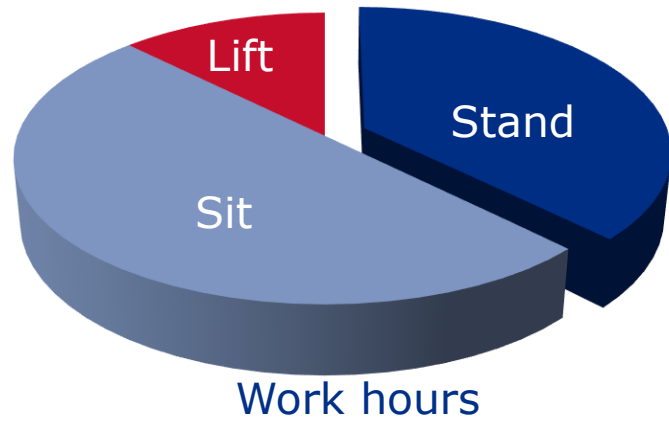


# Dominating notions on physical activity

- *"Eliminate strenuous physical activity at work"*
- *"Do as much (physical activity) as you can"*
- *"Every step counts"*
- *"Maximize moderate to vigorous physical activity"*
- *"Minimalize sedentary time"*

## According with Goldilocks Work?

# Current ergonomic research paradigm



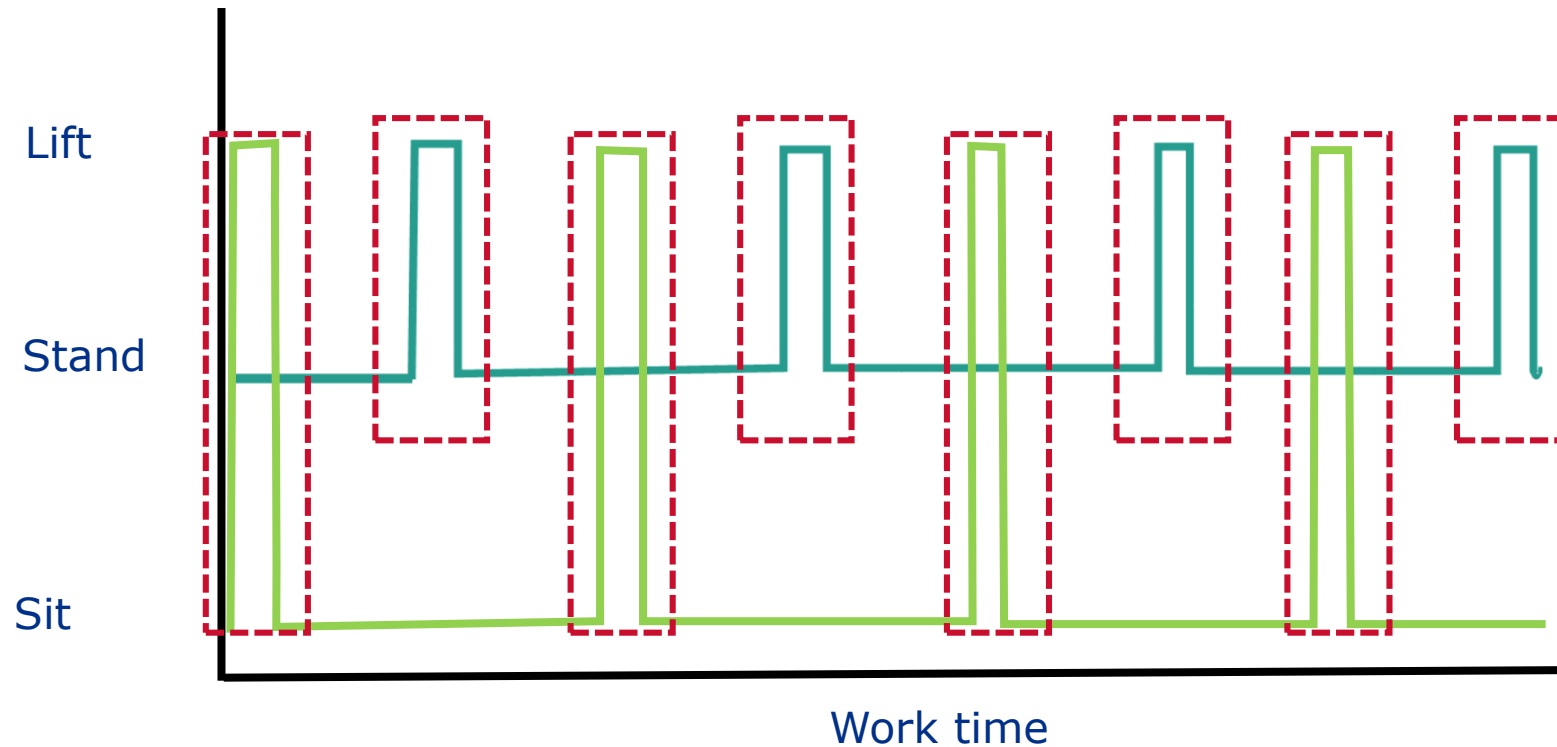
**Health impairment  
Sickness absence  
...etc**

**Wellbeing, fitness and health  
not determined by single, independent  
behaviors (exposures) –  
but the composition of all behaviors  
Compositional Data Approach (CoDA)**

# Traditional ergonomic research approach

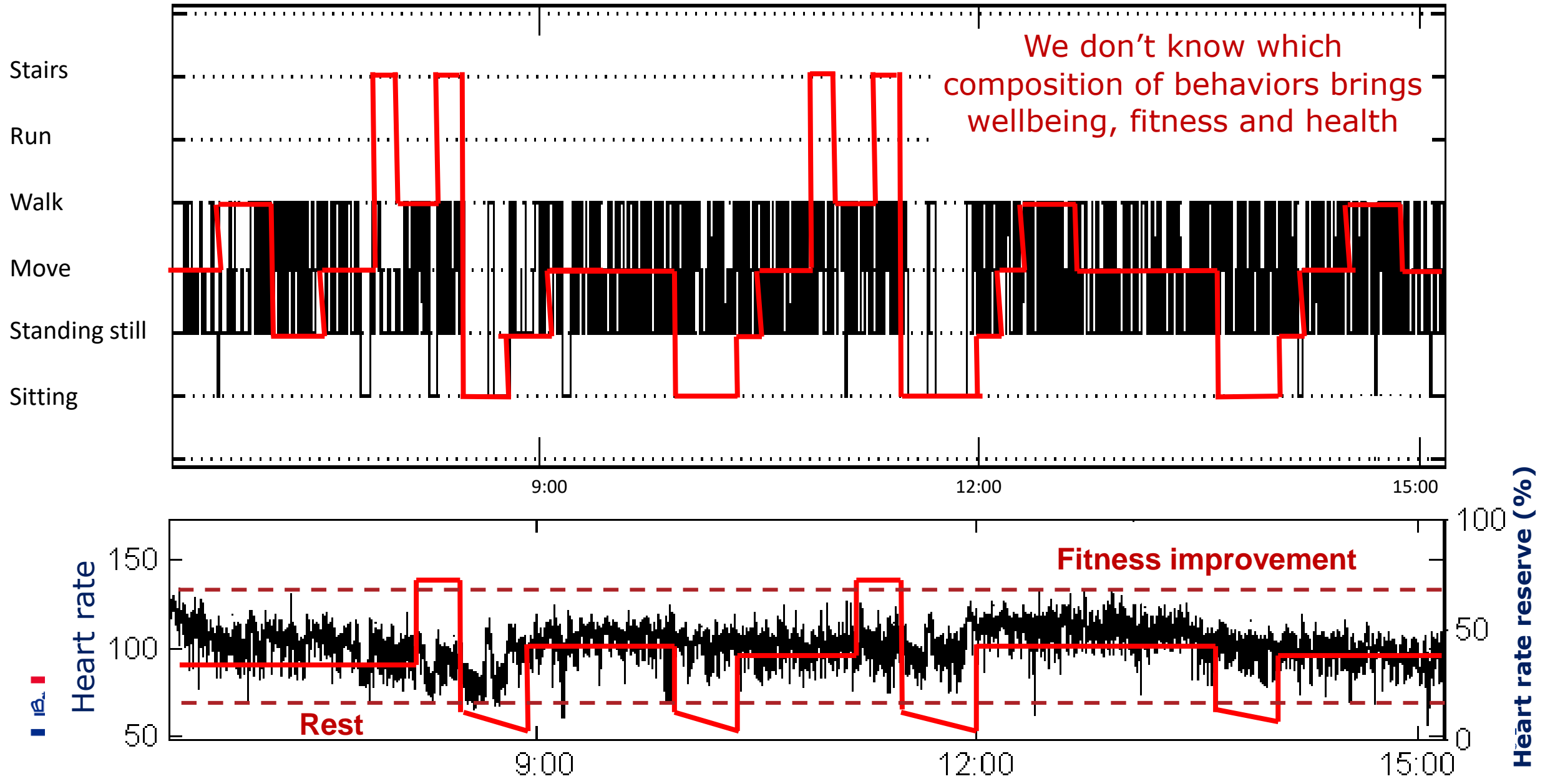
**The composition of all behaviors determines wellbeing, fitness and health**

**Only focus on single behavior/exposure**



**Same health effects?**

# Need to investigate the «just right» composition of behaviors during productive work for Goldilocks Work



# Take home messages

- For solving main work-related challenges of our societies – not sufficient to prevent harm from work
- “Preventing harm approach” leads to very different work design than the “Promoting wellbeing, fitness and health approach”
- Need a much more ambitious approach - where work directly promotes wellbeing, fitness and health
- Productive work should be designed so contains the “just right” healthy composition of behaviors for promoting wellbeing, fitness and health
- There is a need for the new “Goldilocks approach” for research and practice focusing on composition of behaviors for promoting wellbeing, fitness and health



# Goldilocks Work

Design work, so directly promotes  
work capacity, health and  
sustainable employment for all

## Goldilocks Work Research & Practice Collaborative

- To promote development, collaboration, use and spread of the Goldilocks Work approach worldwide
- Twitter: @GoldilocksWork
- Contact: [goldilocks@nfa.dk](mailto:goldilocks@nfa.dk)

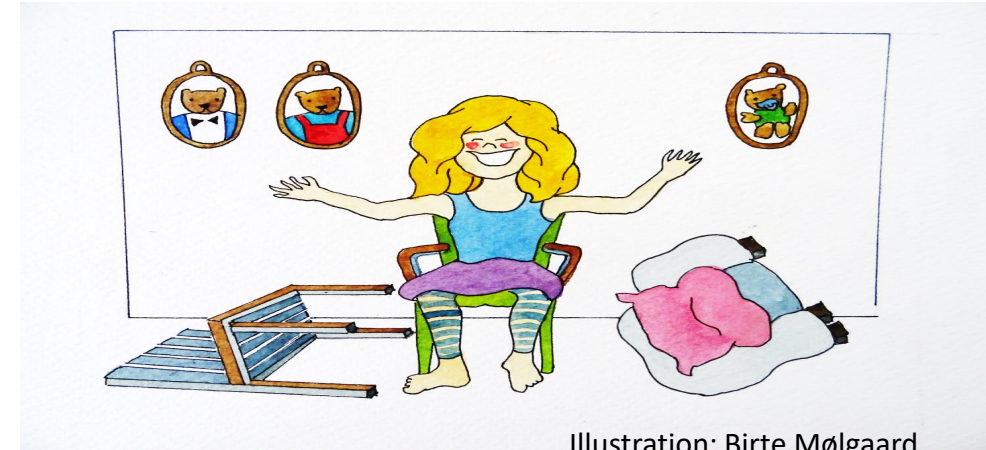


Illustration: Birte Mølgaard



Goldilocks Childcare team