

# Well-being and exercise –from improved mental health to reduced obesity –an overview

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# Healthier lifestyles – nature experiences

- Chronic stress and insufficient recovery from stress is an important public health concern
- Prolonged stress is linked to infections, cardiovascular and gastroenterological diseases, diabetes and depression (Wellen et al., 2005; Nilsson et al., 2011)
- Some countries, (e.g. Denmark and the Netherlands), have reported up to 50% of long-term sick leave and disability payments are due to mental disorders, mostly depression



# How nature can help?

- Nature has well demonstrated **restorative and stress reducing effects**
- People's mood and positive feelings increase in nature areas
- Restorative experiences in natural environments such as forests stronger than in built-up parks or outdoor city areas (Korpela et al. 2010).
- Forests are shown to lower blood pressure, pulse rate and reduce stress hormone level (Tsunetsugu 2007, 2103)



# Field experiment in Helsinki, Finland

(Tyrväinen et al. 2014)

- Aim: To investigate the psychological and physiological effects of short term visits to urban nature environments.
- Experimental sites: City centre (control), Urban park, Urban woodland
- Setting: 15 minutes sitting followed by 30 minutes slow walk







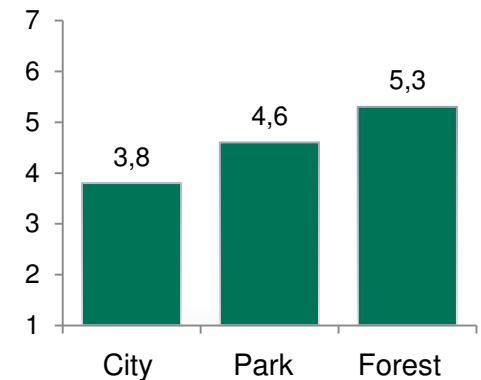
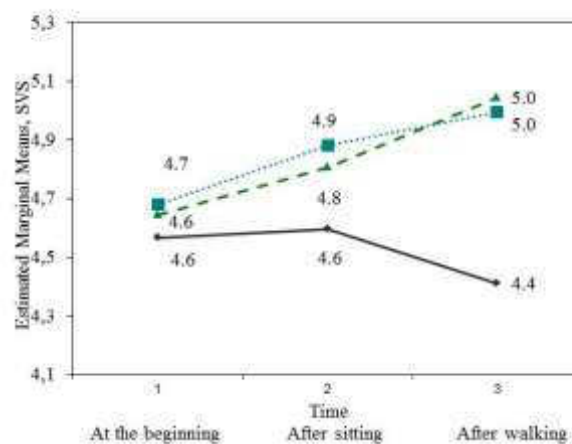
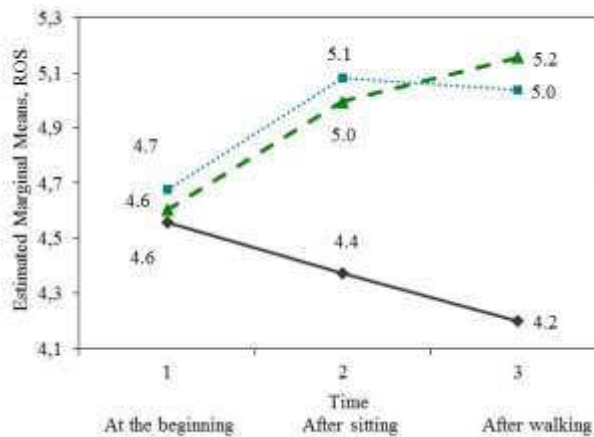
# Experimental study in Helsinki, Finland

The influence of urban green environments on stress relief measures: A field experiment



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- Even short-term visits to urban nature areas have positive effects on psychological well-being
- Perceived restorativeness in green areas was higher already after 15 min
- Green areas have similar positive influence, but the overall perceived restorativeness was higher in the woodland after the experiment



# Children and nature



- Nature areas are found to improve children's concentration, physical activity, self-esteem, emotion regulation
  - Children with attention deficit disorder concentrate better after walking in the park (Faber Taylor and Kuo, 2009)
  - Green playing and studying environments support social and cognitive development of children (Laaksoharju ym. 2012)
  - Green schoolyard improves well-being and diminishes physiological stress, strengthens attention and reduces behaviour problems (e.g. Kelz et al. 2013, Chawla et al., 2014)
- Research evidence suggests that adults visit nature areas less likely if they have not visited them in their childhood (Ward Thompson et al 2008)



# Outdoor Recreation and Physical Activity

Photo: Erkki Oksanen/Metla

- In Europe, low physical activity level is one of the biggest health risks
- Almost 2/3 of adults and 80% of young people do not reach the minimum levels of aerobic PA (150 min/week) (Hallal et al. 2012)
- Greatly due to physical inactivity and unhealthy diet, more than half of the EU population is overweight or obese (WHO 2013)
- Physical inactivity is linked to increased risk of coronary heart disease, type-2 diabetes, and breast and colon cancers (Lee et al., 2012)



# How nature can help?

- People are more likely to undertake physical activity if environment is features nature elements
  - Natural environments are more attractive settings for outdoor recreation than built up areas (Tyrväinen et al. 2005)
  - Proximity to nature increases the frequency and duration of physical activities (e.g. Bird 2004, Neuvonen 2007)
  - Even light physical activity is now considered significant in terms of health risk reduction (e.g. Tremblay, et al, 2011)
- Being physically active in nature provides both positive physical and mental health benefits (Thompson et al., 2011, Korpela et al. 2014).
  - In Scotland regular use of natural environments was associated with lower risk of poor mental health (Mitchell 2012)



# Well-being – living in an attractive location

- Green living environments have long-term health effects on reduced morbidity and increased longevity (Maas et al., 2009; Takano et al., 2002)
  - Green neighborhoods increase well-being (e.g. Van Herzele & de Vries, 2012)
  - Green neighbourhoods have fewer income-related health inequalities (Mitchell and Popham, 2008; Mitchell et al., 2015)
  - Reduced contact with nature and biodiversity affects human microbiota which helps in reducing infection by pathogens
- a -> loss of biodiversity is suggested to have link to diseases such as allergies (Hanski et al. 2012)

Photo: Maija Faehnle



# Urban nature and property values

- Green area benefits are reflected in property values (Kellert, 2005; Tyrväinen et al., 2005)
- The price effect is typically found if the areas are within walking distances (400-600 meters) (Tyrväinen & Miettinen 2000, Luttik, 2000)



• Photo: Maija Faehnle





## A case Example: Chrudim, Czech Republic: The healthy city project

Part of the WHO Healthy Cities Project since 2001:

*-The objective is to increase the health and well-being of the residents in a sustainable way.*

The main health (and social) benefits gained through:

- Voluntary programmes and involving people to green area planning
- Programme for Greening of the City includes:
  - Recrutement of arborists, new public parks
  - greening housing estates, new opportunities for outdoor recreation
- “Health Plan 2015 -2018” is supported by several health/biodiversity promoting campaigns (“Days of Health”, the “Day of the Earth” and the “Bio-market”)



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# Conclusions

- Nature can have a larger role in preventing stress related illnesses in health care system.
- Green exercise can be utilised in encouraging people to adopt a physically active lifestyle.
- The target groups cover a large parts of the society during the whole lifespan.
- Health benefits can be gained both within urban green areas, larger recreation & hiking areas an protected areas including Nature 2000 sites.
- Benefits gained through repeated use: areas should be close to people and easily accessible!
- Need to secure opportunities for nature exposure!



“At the end of the day, we come out in nature not because the science says it does something to us, but because of how it makes us feel.”

Williams, Florence. 2016. This Is Your Brain on Nature. National Geographic. January 2016



Photo: Erkki Oksanen/Metla



- Nature prescription:

- Find your favourite place in nature and visit it walking, cycling or otherwise suitable way for you

- **Outcome:** Improved mental and physical health

- Dosage:

- 5 hours per month in nearby nature areas

- or

- 2-3 times/month in nature areas in the countryside





Thank you!

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# Moved by Nature Programme

– Intervention in Kuopio, Finland

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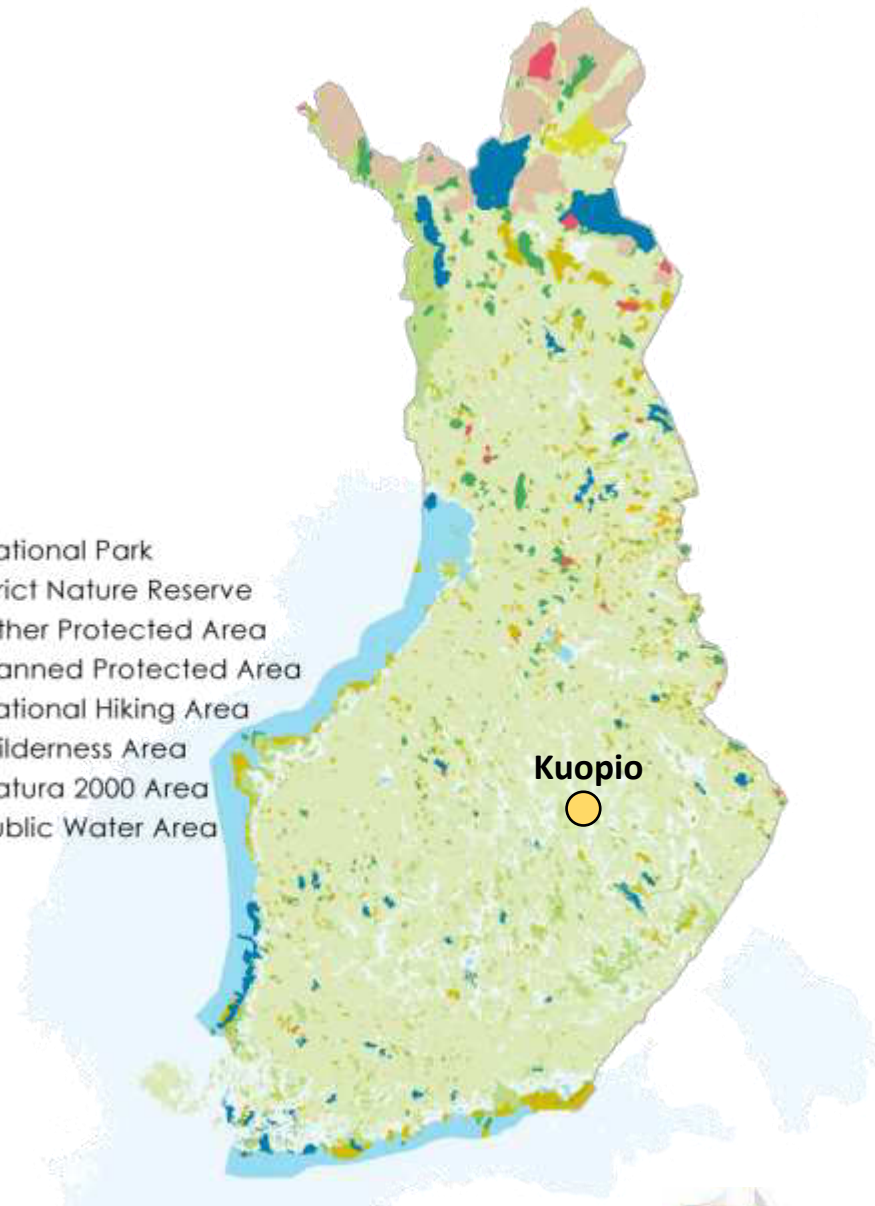


# Parks & Wildlife Finland

Manages all state-owned protected areas and 18% of Finland's surface area

- 39 national parks
- 19 strict nature reserves
- 6 national hiking areas
- 12 wilderness areas
- over 500 other nature reserves
- Finland's state-owned waters

→ Most of the established protected areas belong to Natura 2000 network



Parks & Wildlife Finland manages and protects  
Finland's most valuable natural treasures  
in a responsible manner  
– For the benefit of nature and people





# Healthy Parks Healthy People Finland



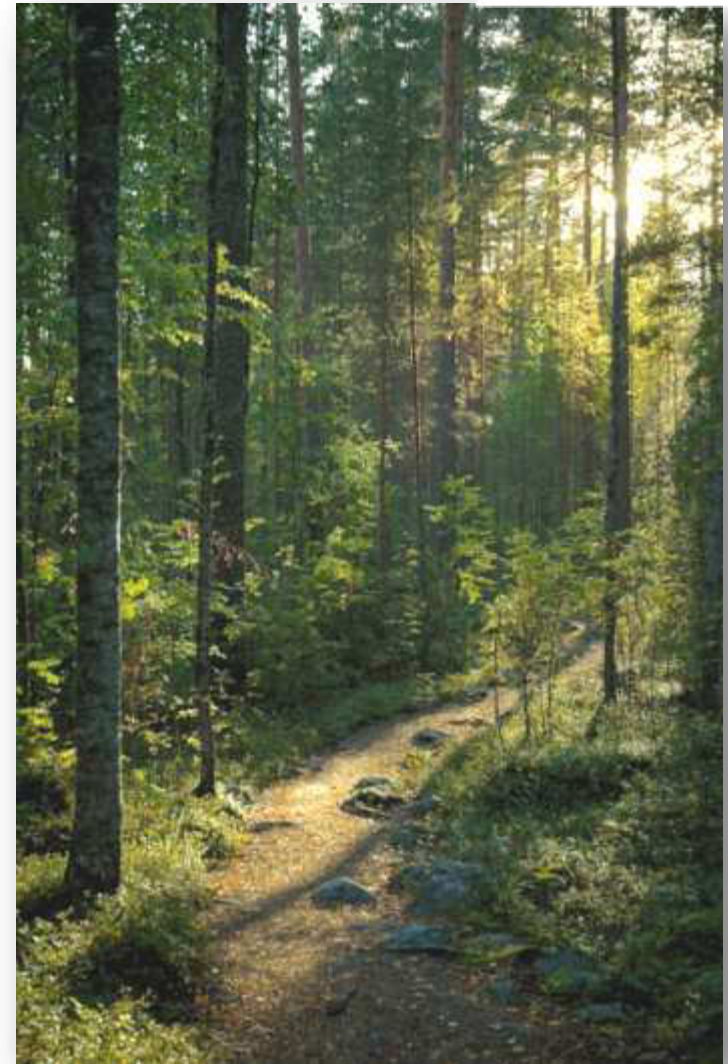
- Public health improves as people get out into natural settings, enjoy positive and authentic experiences, and improve their health through a wide range of outdoor activities.





# Moved by Nature

- April 2013 – January 2015
- Funded by the European Social Fund (75%) and public and private organisations
- Implementing HPHP Finland of P&WF
- Based on cross-sectoral collaboration



# Objectives of the project



Promoting health and well-being through natural environment



Promoting collaboration between nature and health sectors



Developing nature-based health and well-being services for vulnerable groups



# Target groups

- Youth at risk of social exclusion
- Long-term unemployed
- New immigrants
- Obese people





# Target group in Kuopio: men at risk of type 2 diabetes



- Obesity is one of the biggest health risks in Europe:
  - 51 – 69% of men overweight or obese
- Men more difficult to reach for lifestyle interventions than women
- Hypothesis: obese men perceive natural spaces as more friendly and motivating than gyms or other indoor facilities



# Puijo Natura 2000 site in Kuopio



- Located less than 2 km from Kuopio city centre
- Herb-rich forests
- Surrounded by lakes



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# The intervention



- Local newspaper advertisement
- 20 working-age men at risk of type 2 diabetes
- Eight meetings, once a month, 4 hours each, including
  - outdoor activities: canoeing, horseriding, ice-fishing...
  - personal lifestyle counselling: exercise and diet regimes, preparing healthy food on camp fires
- Baseline and follow-up measurements





# Results



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- Nature was experienced as a highly motivating environment
- 16 participants, 60 kg group weight reduction
  - average 3,75 kg/person
- Significant improvements in
  - body mass index
  - activity level
  - body composition
  - visceral fat level
  - physical fitness classification
  - oxygen uptake



# Conclusions

- Cooperation with many sectors and organisations that previously had not worked together
- Results indicate we should use nature much more in health promotion
- Projects are essential in implementation



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# Thank you for your attention

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# Alnarp Rehabilitation Garden

## Session 5 Health benefits: Well-being and exercise

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*Dept. Work Science Business Economics and  
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Alnarp Rehabilitation Garden (2ha)  
Established 2002

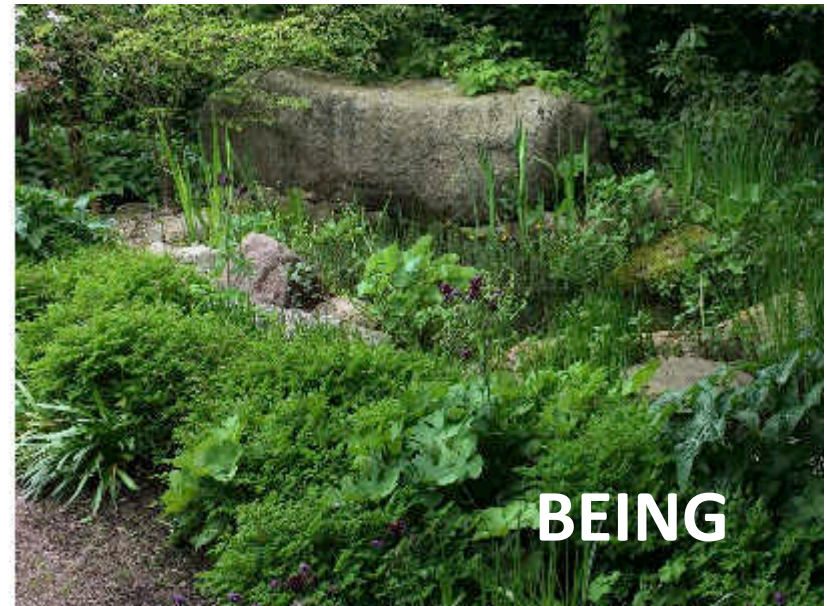
Photo: L Andersson



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# Supportive Environment





# STAKEHOLDERS & PARTNERS



Region Skåne



Champions!



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*Prospective, controlled studies*

*RCT*

*Feasibility study*

Stress-related mental disorder

Stroke

Refugees

Study period I

Study period II

2002

2008

2012

2013

2014

2015

2016

Illustration: Pálsdóttir, A.M. 2016



Region Skåne

Evidence based implementation NBR-

# CHALLENGES

Building Trust & Credibility

Reaching Decision makers & governmental bodies

(local, regional and national level)

Reaching “higher” level of Engagements for long term joint work

Expand cross-sectorial collaborations

**Research & Evidence** based and standardised concepts

Quality assurance system for NBR

Funding





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# Walkability Project



## Pembrokeshire Coast National Park Wales UK



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# Supporting local people of all abilities to use walking routes in Pembrokeshire



Continued participation through enjoyment



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# An environment made for walking



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# Basic figures



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# What is the way from here?



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