Restorative benefits of everyday green exercise: A spatial approach

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Green exercise

Do physical activities in green and natural environments provide more restorative benefits than physical activity in indoor or other outdoor settings?

Green exercise

- Do results of field studies apply, when participants choose their physical activity environments freely?
- What kind of “green and natural environments”?
- Where does everyday green exercise take place?

Study objectives

1. To locate and identify real-life green exercise environments
2. To test for significant statistical differences in the perceived restorativeness of these environments
3. To discuss implications for health promotive urban planning
Restorative outcomes

→ Three self-reported outcome variables, following Hartig et al. (2014)

- Decreased amount of stressors
  - Stress reduction – *Environments that help me to escape stress*

- Restoring adaptive resources
  - Relaxation – *Environments that help me to relax*

  - Nature enjoyment – *Environments where I enjoy nature and the outdoors*
5/10 My leisure time physical activity on the map

Please mark all the places where you are physically active on your leisure-time in this time of the year.

You can also mark routes if the activity includes a lot of moving around, and to mark routes for travelling actively from place to place.

Places for leisure time physical activity
Places for physical activities, such as sport facilities, parks, fields, courts, gyms, forests etc.
• PPGIS survey for adults aged 18 to 65

• Helsinki Metropolitan Area, August 2018

• N 1,531

• Mapping leisure-time physical activity
Secondary sources of land-use data

Topographic Database / National Land Survey of Finland

CORINE Land Cover
Identifying outdoor physical activity environments

- Blue spaces: 14%
- Parks and gardens: 14%
- Large recreational forests: 9%
- Other built areas: 21%
- Large urban forests: 17%
- Small urban forests: 10%
- Sports facilities: 16%
- Small urban forests: 10%
Perceived restorative benefits

Blue spaces
- Stress reduction: 65%
- Relaxation: 72%
- Nature enjoyment: 82%

Sports facilities
- Stress reduction: 48%
- Relaxation: 58%
- Nature enjoyment: 77%

Parks and gardens
- Stress reduction: 56%
- Relaxation: 58%
- Nature enjoyment: 63%

Small urban forests
- Stress reduction: 49%
- Relaxation: 55%
- Nature enjoyment: 89%

Large urban forests
- Stress reduction: 61%
- Relaxation: 67%
- Nature enjoyment: 92%

Large recreational forests
- Stress reduction: 70%
- Relaxation: 75%
- Nature enjoyment: 91%

Other built areas
- Stress reduction: 42%
- Relaxation: 50%
- Nature enjoyment: 68%
<table>
<thead>
<tr>
<th>Category</th>
<th>Stress reduction</th>
<th>Relaxation</th>
<th>Nature enjoyment</th>
</tr>
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<td>Blue spaces</td>
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<td>1.91*</td>
<td>2.83*</td>
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<tr>
<td>Sport facilities</td>
<td>1.57*</td>
<td>1.89*</td>
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<td>Parks and gardens</td>
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<td>Small urban forests</td>
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<td>Large urban forests</td>
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<td>Large recreational forests</td>
<td></td>
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<td>3.04*</td>
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<tr>
<td>Other built areas</td>
<td></td>
<td></td>
<td>3.35*</td>
</tr>
</tbody>
</table>

- Odds Ratio (adjusted)
- * $p < .05$

Perceived restorative benefits
Distance from home and visiting frequency

Network distance from home (km)

Monthly visiting frequency

- Small urban forests
- Parks and gardens
- Blue spaces
- Large urban forests
- Sports facilities
- Other built areas
- Large recreational forests
Stress reduction, Hot spot -analysis
Conclusions

- Restorative benefits were associated particularly with exercising in **large natural areas and in blue spaces**

- From a public health perspective, small to large urban forests provide important **access to green exercise close to the residential location**, while improving the accessibility of larger recreational natural environment and forest areas has the potential to **increase the benefits of green exercise on a population level**.

- Promoting possibilities for physical activity in these environments with sensitivity to other users and ecosystem services offered by these areas.
Thank you!

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References


