COVID19, TRANSPORT, HEALTH AND ENVIRONMENT

Mark J Nieuwenhuijsen
The New Coronavirus: Some Answers and Many Questions
More than 2.4 million infected
Almost 200K deaths
Large impact on the economy
Lock down measures
IMPACTS

Barcelona/Catalonia

Reduced physical activity  -40%
Increase in poor mental health  +20%
Domestic violence  +20%
Reduced traffic  70-80%
Reduced air pollution (NO2)  70-90%
Green space visits  -90%
Reduced noise  -9Db(a)
TRANSMISSION REDUCTION MEASURES

Hygiene/hand washing
Physical distancing (1.5 meters)
Self isolation when ill

Light to severe lockdown measures
PREREQUISITES FOR CHANGE

• Crisis
• Knowledge
• Technology
• Partnership
• Vision
• Leadership

Adapted from Lucia Reisch
1.5 meters distance society
Impact on use of public space

<table>
<thead>
<tr>
<th>Mode</th>
<th>CR</th>
<th>Space</th>
<th>health benefits</th>
<th>Environ. impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>L</td>
<td>H</td>
<td>L</td>
<td>H</td>
</tr>
<tr>
<td>Public transport</td>
<td>H</td>
<td>M</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>Walking</td>
<td>L</td>
<td>L</td>
<td>H</td>
<td>L</td>
</tr>
<tr>
<td>Cycling</td>
<td>L</td>
<td>L</td>
<td>H</td>
<td>L</td>
</tr>
<tr>
<td>others</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Guardian view on Covid-19 and transport: walk to the future

**Editorial**

The need for physical distancing means that space in our towns and cities must be shared in new ways

- Coronavirus - latest updates
- See all our coronavirus coverage
Milan announces ambitious scheme to reduce car use after lockdown
BARCELONA SUPERBLOCk MODEL

Baseline situation

Superblocks model

Mueller et al 2019, Env Int
Barcelona Superblock
San Antoni

Before

After

ISGlobal Institute for Global Health
Benefits of physical activity well outweigh the risks of air pollution and accidents for cyclists.
Multisectorial approach

Multi sectorial and systemic approaches are needed to address current problems and find solutions.
SYSTEMIC APPROACHES

- It is important that we have a more systemic approach to our cities,

  Tackling
  - COVID19
  - Air pollution
  - Noise
  - Heat islands
  - Lack of green space
  - Lack of physical activity
HOLISTIC APPROACHES

- It is important that we have a more holistic approach to our cities,

Addressing

- Health
- Livability
- Sustainability
- Climate change
- Equity
Urban and transport planning pathways to carbon neutral, liveable and healthy cities; A review of the current evidence

Mark J. Nieuwenhuijsen*

ISGlobal, Barcelona, Spain
Universitat Pompeu Fabra (UPF), Barcelona, Spain
CIBER Epidemiología y Salud Pública (CIBERESP), Madrid, Spain
Mary MacKillop Institute for Health Research, Melbourne, Australia

EMAIL: mark.nieuwenhuijsen@isglobal.org
Green cities, healthy people

Active cities, healthy people,

Clean cities, healthy people

Social cities, healthy people
BARCELONA SUPER BLOCKS

- 19.2% car reduction
- 11.5 ug/m³ (24.3%) NO₂ reduction
- 2.9 dB noise reduction
- 3 fold increase green space (6.5% to 19.6%)
- 20% Surface temperature reduction
IMPACTS ON MORTALITY

681 premature deaths preventable (95% CI: 245-1,113)

36 deaths  95% CI: 26-50
61 deaths  95% CI: 0-123
131 deaths  95% CI: 114-153
163 deaths  95% CI: 83-246
291 deaths  95% CI: 0-838
Integrating Human Health into Urban and Transport Planning
A Framework

This volume brings together the world’s leading experts on urban and transport planning, environmental exposures, physical activity, health and health impact assessment to discuss challenges and solutions in cities. The book provides a conceptual framework and work program for actions and outlines future research needs. It presents the current evidence-base, the benefits of and numerous case studies on integrating health and the environment into urban development and transport planning.

Within cities there is considerable variation in the levels of environmental exposures such as ambient air pollution, noise, and temperature, green space availability and physical activity. Many of these exposures, and their adverse health impacts, are related to and are being exacerbated by urban and transport planning and policy. Emerging research suggests that urban and transport planning indicators such as road network, distance to major roads, traffic density, household density, industry, and natural and green space can explain a large proportion of the variability in environmental exposures and therefore represent important and highly modifiable factors.

The urban environment is a complex interlinked system. Decision-makers need not only better data on the complexity of factors in environmental and developmental processes affecting human health, but also an enhanced understanding of the linkages between these factors and health effects to determine at which level to target their actions most effectively. In recent years, there also has been a shift from trying to change at the national level to more comprehensive and ambitious actions being developed and implemented at the regional and local levels. Cities have come to the forefront of providing solutions for environmental issues such as climate change, which has co-benefits for health, but yet need better knowledge for wider health-centric action. This book provides the latest and most up-to-date information and studies for academics and practitioners alike.
URBAN TRANSITIONS 2020
Integrating Urban and Transport Planning, Environment and Health for Healthier Urban Living
10–12 November 2020
Sitges, Barcelona, Spain
Figure 1. Visualisations for a typical urban terraced street. The four figures are taken from the visualisations used in the Visions 2030 Walking and Cycling Project http://www.visions2030.org.uk/. Each vision represents four different possibilities for urban transport in 2030 in the UK. These visualisations are of a ‘typical’ Victorian terraced street. Visualisations created by the School of Computing at the University of East Anglia. doi:10.1371/journal.pone.0051462.g001

Woodcock et al 2013