

What we see and what we measure – The developing field of environmental determinants and physical activity



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Presentation Objectives

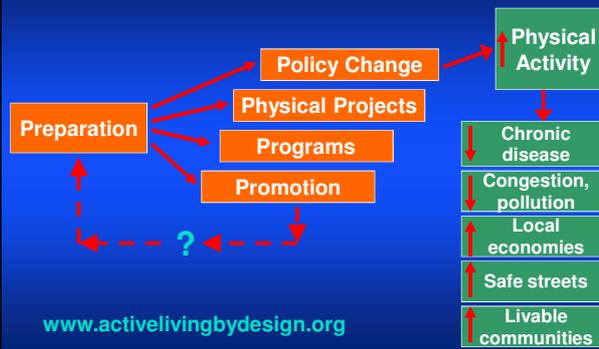
- Why has the environment become so important in policy, practice and research?
- To define the relationship between the environment and physical activity
- Present the theoretical models and concepts that underpin this relationship
- To offer directions for future research questions, methods and measures



Growth of interest

- Effectiveness of individual approaches are often limited by the environment
- Policy makers can create active environments and improve other social and political goals
- HEPA promoters can promote active environments

The Active Living 5 Ps Approach



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Environment



What is the environment?

- Scale
 - Macro, micro, city, street, home
- Context dependent
 - Park, school, surgery, swimming pool
- Type
 - Built, natural
- Social environment
 - Rules, conventions, acceptable behaviours, crime, safety, culture
- Physical activity specific
- Temporal

What is the built environment?

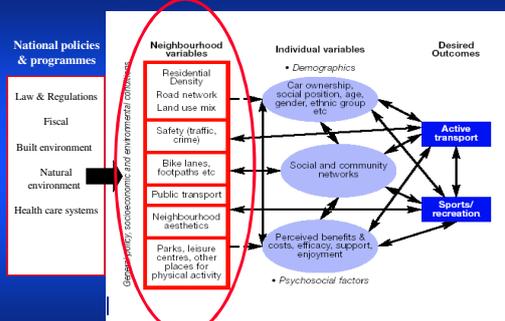
- Physical design
- Land use patterns
 - » Residential, commercial, office, industrial
- Transportation systems

Handy SL, Boarnet MG, Ewing R, Killingsworth RE. How the built environment affects physical activity: views from urban planning. *American Journal of Preventive Medicine* 2002;23(2, Supplement 1): 64-73

The environment is....

- Physical activity related
 - » What physical activity behaviour
 - » What type of person?
 - » Which context?
 - » Plus mix of other variables (demographic, social, psychological, health)

A social-ecological model of physical activity behaviour



Foster et al (2006). Understanding why adults and children participate in physical activity and sport. London, Sport England.

What are determinants or correlates?

- Factors that are associated with physical activity (but are not necessarily causal)
- Trost et al (2002) identified five domains
 - » Demographic & biological
 - » Psychological, cognitive and emotional
 - » Behavioural attributes and skills
 - » Social and cultural
 - » **Physical environment**

How is the environment measured?

- Two types of exposure measures
 - » (i) measures of perceptions of the environment using a questionnaire
 - » (ii) objective measures of the environment derived from observations of the environment (audits, ground truthing) or GIS data (Spittaels et al., 2009; Foster et al., 2009).

Spittaels H, Foster C, Opperi JM, Rutter H, Oja P, Sjöström M, De Bourdeaudhuij I. Assessment of environmental correlates of physical activity: development of a European questionnaire. *International Journal of Behavioral Nutrition and Physical Activity*. 4:29
Foster C, Hillsdon M, Jones A, Grundy C, Wilkinson P, White M, Sheehan B, Wareham N, Thorogood M. Objective Measures of the Environment and Physical Activity - Results of the Environment and Physical Activity Study in English adults. *Journal of Physical Activity & Health*. 2009; 6, 70-80.

What are GIS?

Geographical Information Systems

- A collection of systems and tools to manage, query, analyse and display spatially referenced data
- Offers the ability to analyse environmental exposures and physical activity data, through geographical and spatial analysis and mapping

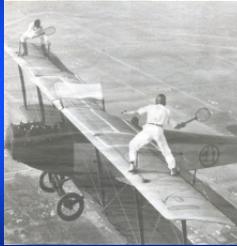


So what... any public health application?

- Map cycle paths, footpaths, benches, trees, roads, electrical, telecommunications, road networks, connectivity – “Urbanicity”
- Food marketing environment
- Possible scoring of the quality of variables
- Allows audits to be performed remotely using visual recognition software
- All items are geo-coded so faster analysis
- Temporality with survey data

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Conclusions

- Better understanding will lead to improved interventions
 - » Perceptions and objective assessment methods
 - » Interactions between social, cultural and built environment

Conclusions

- Built environment is related to health
- Research should connect to policy levers
- Our environment and how we use it does impact on our health
 - » Place, people and policy

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