

Foundations of Health and the Built Environment

Mona Shum, MSc, CIH
Manager, NCCEH

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National Collaborating Centre
for Environmental Health

Centre de collaboration nationale
en santé environnementale



BC Centre for Disease Control
An Agency of the Provincial Health Services Authority

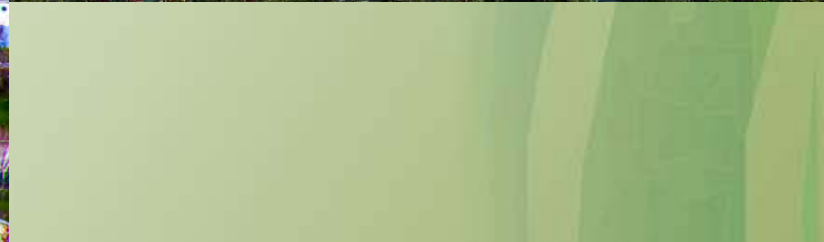
Outline

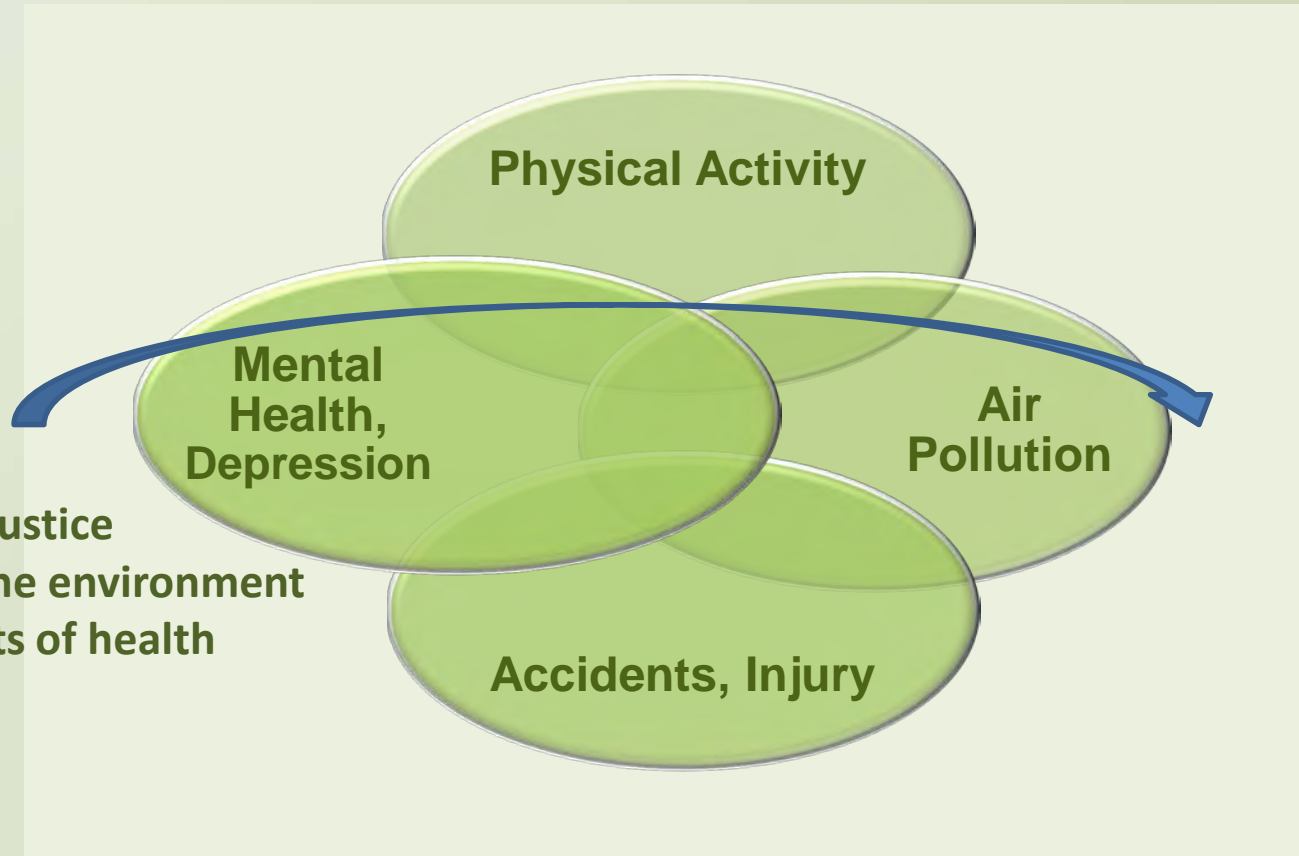
1. What is *the built environment* and why should environmental health professionals care about it?
2. Health effects of *the built environment*
3. Look beyond change in individual behaviour
4. Why environmental health professionals need to collaborate with planners

Defining *the Built Environment*

- constructed places, features, and elements that together make our cities, villages, and towns
- varies from large-scale urban areas to rural development and personal space
- includes indoor and outdoor places

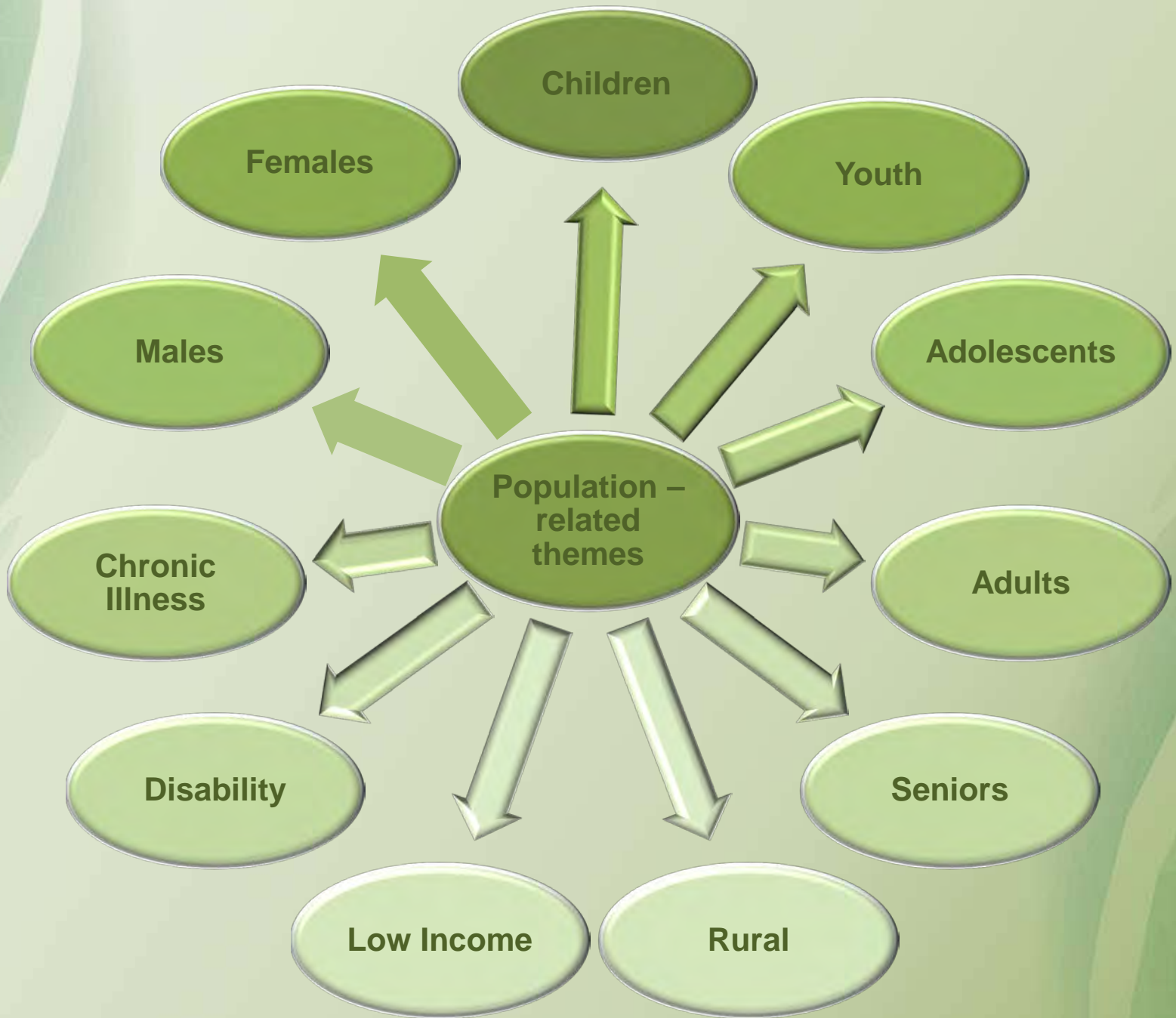


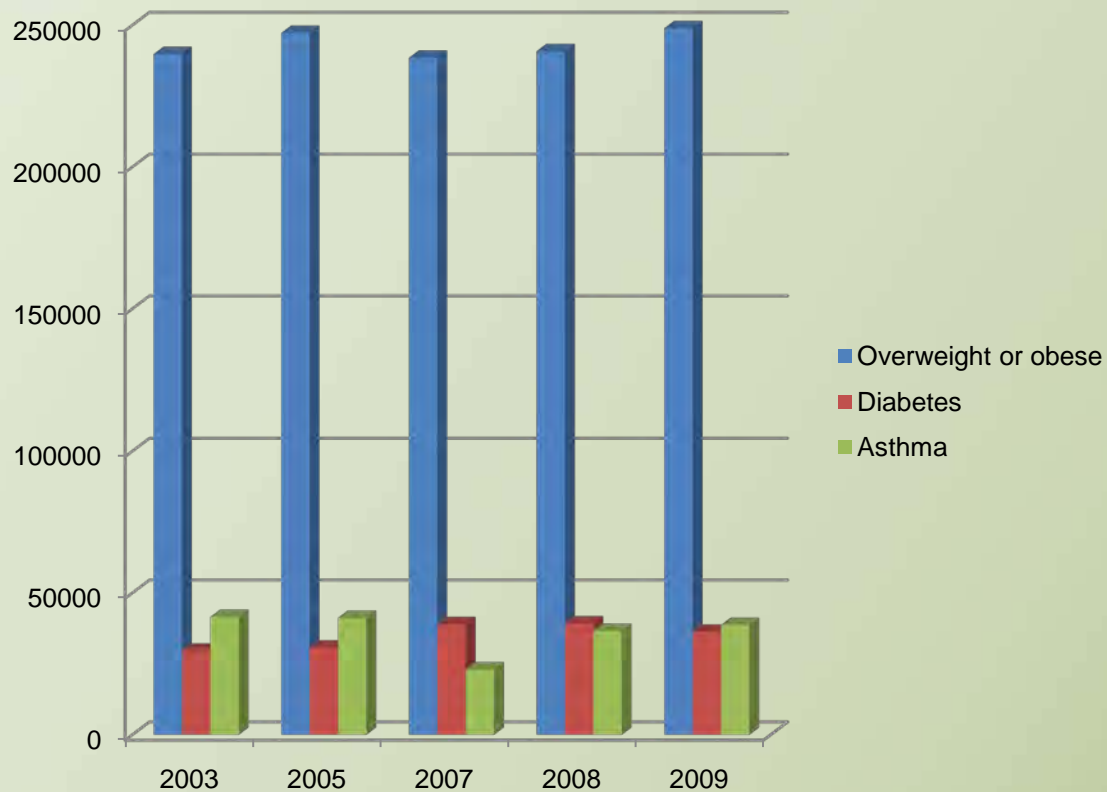




Health and the built environment themes

Tucs and Dempster, 2007. Linking health and the built environment.





Overweight and obese, diabetes, asthma in Newfoundland and Labrador

Population vs. year (Ref: Statistics Canada)

Why do built structures matter to environmental health professionals?

- Chronic illness and injury are a risk to both public health and our universal health care system.
- Promoting healthy lifestyles is not enough. Effects of *the built environment* must also be addressed.
- Environmental health, planning, and design professionals share the responsibility to promote environments that enhance public health.

urban sprawl



asphalt nation



environmental hazards

schools on the fringe



How Planning and Design Affect Health

planning and investment policies
(provincial initiatives, regional and municipal plans, zoning and development rules)

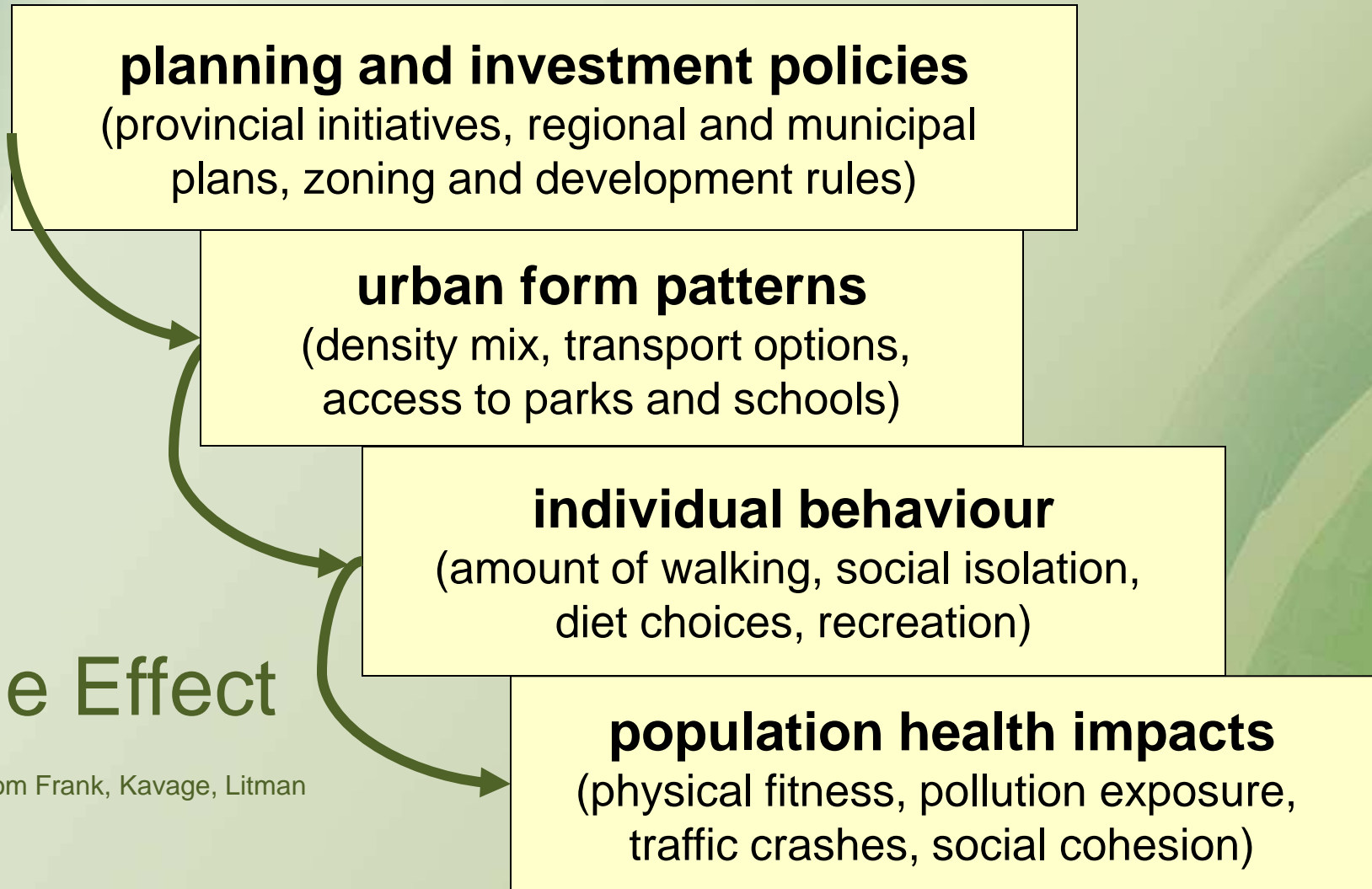
urban form patterns
(density mix, transport options, access to parks and schools)

individual behaviour
(amount of walking, social isolation, diet choices, recreation)

population health impacts
(physical fitness, pollution exposure, traffic crashes, social cohesion)

Ripple Effect

Adapted from Frank, Kavage, Litman



Many Aspects of Planning and Design Affect Short and Long-term Health

- accessibility of buildings, programs, and services
- injuries from poorly maintained or poorly designed built elements
- mental health and social inclusion
- physical activity, transportation, and recreation
- indoor and outdoor air quality
- water quality
- food security
- noise



Ensure Access and Inclusion to Improve Health

- loneliness and isolation are toxic
- social relationships can promote health
- people with strong social networks:
 - live longer
 - have less heart disease
 - are less depressed; use alcohol and drugs less
 - have fewer teen births
 - are healthier overall



Prevent Injury Through Design and Maintenance of Built Elements

- activity may be a risky behaviour if *the built environment* is not supportive
- seniors and school children are most vulnerable
- road design - wide arterials in suburban areas are most dangerous
- traffic calming - reducing vehicle speed reduces risk of pedestrian injury



Promote Activity and Healthy Nutrition in Children and Youth

- rate of overweight Canadian children has nearly tripled since 1981
- 26% overweight/obese in Canada, 36% in Newfoundland & Labrador (Health Canada, 2004)
- obesity is highly predictive – a *conveyor belt* to being overweight or obese as adults
- 1 in 3 will be diabetic





Physical Activity

- Walkability
- Active transportation
- Accessibility of stairwells
- Etc.

Su et al, 2010. Designing [a route planner](#) to facilitate and promote cycling in Metro Vancouver, Canada.

Walkability

- Walkability – good street lighting, continuous sidewalks, a variety of shops, services, parks, schools, and workplaces within walking distance of homes
- People living in more walkable neighbourhoods are more likely to walk more than 10 minutes a day
- Research indicates that risk of obesity can decline by as much as 10% by walking 24 minutes a day



Grand Concourse Authority

Enjoy Spring...
on the Grand Concourse

- About The Grand Concourse
- Concourse Walks & Open Spaces
- Current & Future Projects
- Design & Maintenance Services
- Get Involved

Contest Closing

Our Contests have come to a close and we know who the winners are!!!! Check your emails to see if it could be you... [read more >](#)

Previous 1 2 3 Next

Welcome To Our Website!

DISCOVER OUR WALKERS PARADISE

The **Grand Concourse** is an award-winning integrated walkway network spanning the metropolitan area of the Newfoundland and Labrador Provincial Capital, St. John's, and its neighbouring communities of Mount Pearl and Paradise. Approximately 125 km in length, the Grand Concourse links a series of rivers, lakes and ponds, parks and green spaces, providing access to the beautiful natural features of the metro region. Become an official Concourse Walker and enjoy our walkers paradise.



Interactive Mapping

[Check out our new interactive mapping system.](#) Explore any walk or park space, measure how far you are walking and see how to travel through the St. John's Metro area by foot. Are you a frequent walker? Want to keep a tally of how far you have walked or how many calories you have burned? Create a personal profile and [become a concourse walker.](#) Retrace your steps, chat with other walkers and much more...



WHAT IS THE GRAND CONCOURSE OUR VISION AND PLAN

Since 1993 the Grand Concourse has seen a steady stream of activity on all our walkways... and even more activity in our offices! New walkways and green spaces are being planned, and better maintenance systems developed employing GPS and satellite technologies. [Click below to view our Photo Gallery.](#)



Visit Our Online Store



Donations And Contributions



Weather for the Area



Sign Up

Become a Concourse Walker

Contact Us





Air Pollution Impacts

- Asthma
- Respiratory Illness
- LBW babies
- Coronary heart disease
- Premature mortality

Health Canada, 2010. Diseases and health conditions. [Summary tables](#).
[Body mass index](#), overweight or obese, youth

Health Canada, 2010. [Physical activity levels](#) of Canadians by province.

Public Health Agency of Canada, 2010. Chronic disease infobase maps.
[Asthma prevalence](#).

Improve Air Quality



- asthma is the most common chronic childhood disease
- 7% more asthma among youth living in neighborhoods with high traffic pollution
- anti-smoking and anti-idling by-laws and congestion charges are examples of local policies that can improve public health

Improve Water Quality and Quantity

- contamination from runoff creates disease risks and closes public beaches
- water shortages limit recreational options



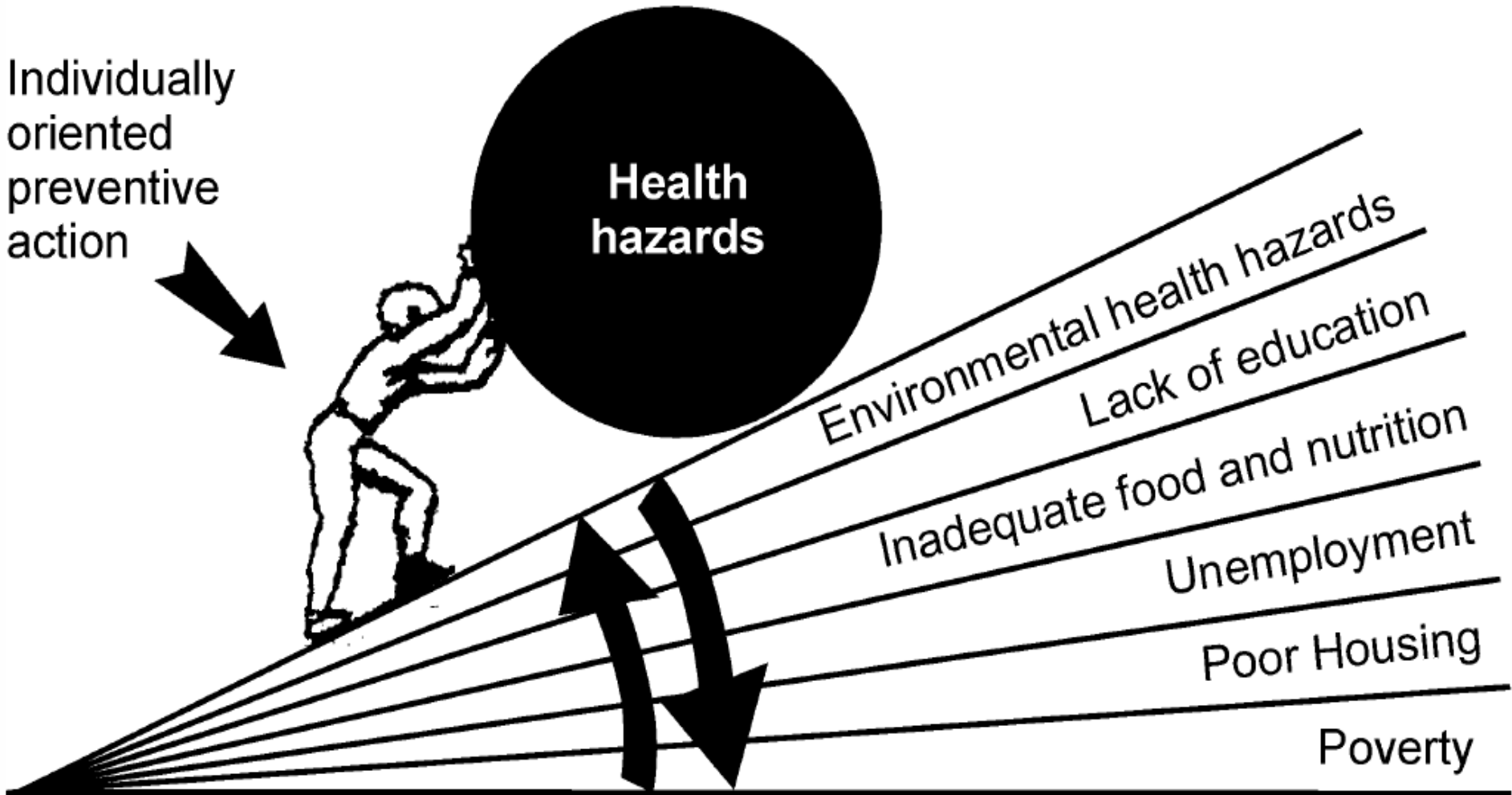
Recognize that Behavioural Changes Alone will not be Enough



Why are some people healthy while others are not?

- people with lower income and less education consistently have worse health status than those with higher income and more education
- these inequalities in health are called the socio-economic determinants of health (including occupation, income, education, housing, and access to transportation)
- **good planning and design can help people avoid or change unhealthy physical environments**

Individual action can reduce the impact of health hazards but socio-economic factors make the job harder



Environmental Health Professionals play a key role in reducing causes of chronic illness and injury

- policy changes at the local level can be most effective
- neighborhood environment is one of the strongest predictors of whether a person will be physically active
- people want to live in places where they can be active



Urban Planning and Environmental Health Share Historical Roots

- 19th century - public health was part of municipal planning; tackled infectious diseases (e.g., water, sanitation, rodent, mosquito control)
- 20th century - injury and disease prevention (e.g., building permits and zoning for ventilation, exposure to toxic substances, development, separating residences from industrial areas)
- 21st century - need to consider chronic health problems

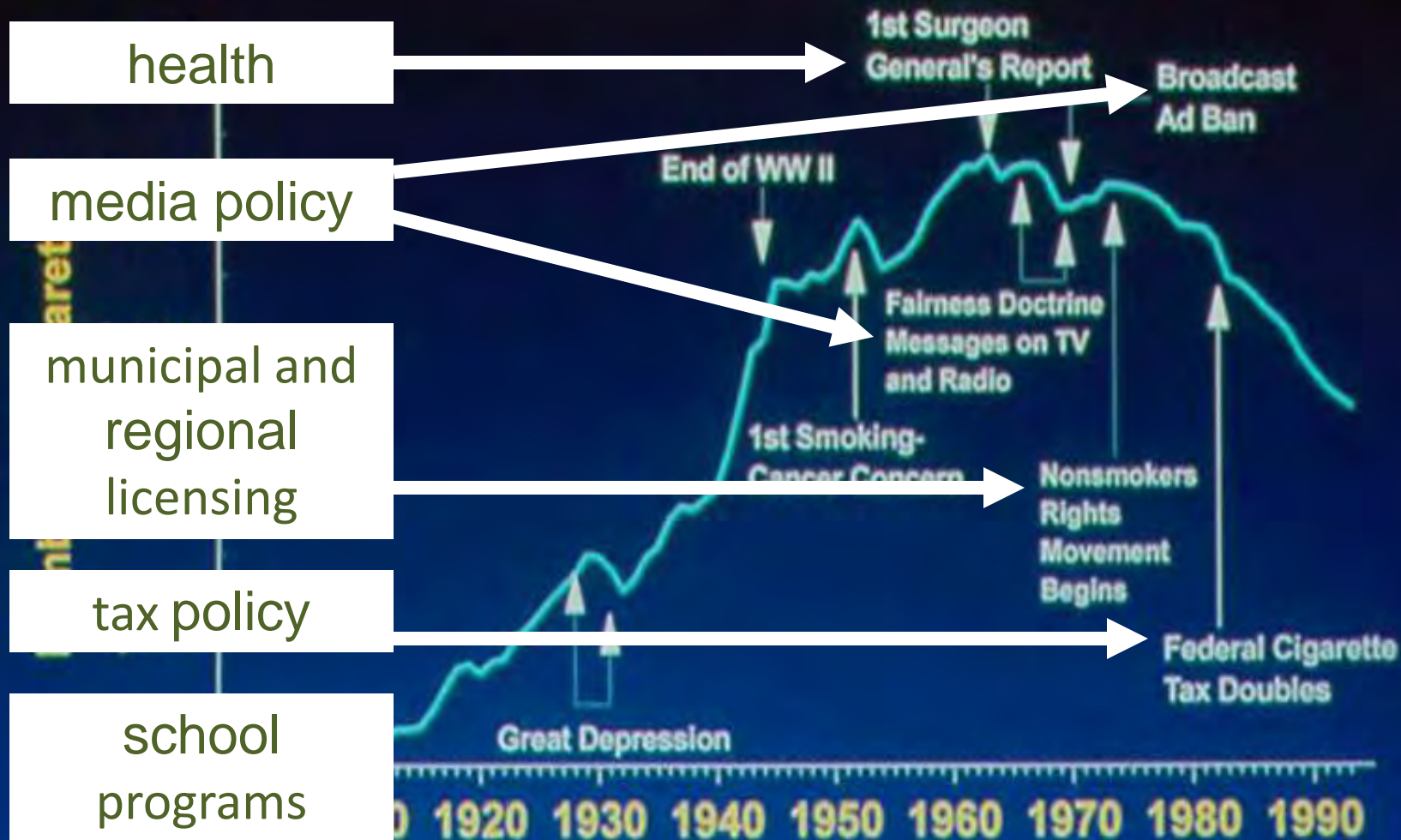
Collaboration between Planners and EH Professionals is Crucial to Create *Healthy Built Environments*

complex problems require leadership by:

- community groups
- planners
- the development industry
- engineers
- design professionals
- elected officials
- environmental health professionals



Tobacco Control – an example of cross-sector collaboration



Source: USDA; 1989 Surgeon General's Report

A Multi-focus Approach to Child Obesity

- marketing to children
- childcare
- school environment
- food systems
- enforcement
- built environment





Methodologies

- Surveys
- Focus groups
- Health GIS
- Walkability measures

Walk Score, 2010. [Walkable neighborhoods.](#)

Environmental Health Professionals are natural leaders for collaborative efforts with planning and design professionals

- inherently multidisciplinary
- research based on populations, including behavioral, environmental, biologic factors
- equipped with policy tools
- involved in communities at different levels
- track record of accomplishments in public health

References

1. Tucs E, Dempster B, (Civics Research Cooperative). Linking health and the built environment: An annotated bibliography of Canadian and other related research. Toronto, ON: Ontario Health Communities Coalition; 2007 September. Available from: <http://www.ohcc-ccso.ca/en/linking-health-and-the-built-environment-a-literature-review>.
2. Su JG, Winters M, Nunes M, Brauer M. Designing a route planner to facilitate and promote cycling in Metro Vancouver, Canada. Transport Res A - Pol. 2010;44(7):495-505.
3. Transport Canada. The grand concourse: An integrated walkway system. St. John's metropolitan area, Newfoundland and Labrador. Ottawa, ON: Transport Canada; 2010; Available from: <http://www.tc.gc.ca/eng/programs/environment-utsp-grandconcourse-880.htm>.
4. Health Canada. Diseases and health conditions. Summary tables. Ottawa, ON: Health Canada; 2010; Available from: <http://www.statcan.gc.ca/subject-sujet/result-resultat.action?pid=2966&id=1887&lang=eng&type=CST&pageNum=1&more=0>.
5. Health Canada. View data by province Ottawa, ON: Health Canada, Food and Nutrition; 2010; Available from: <http://www.hc-sc.gc.ca/fn-an/surveill/atlas/province/index-eng.php>.
6. Public Health Agency of Canada. Chronic disease infobase maps. Ottawa, ON: Public Health Agency of Canada; 2010; Available from: <http://204.187.39.30/surveillance/Maps.aspx>.
7. Walk Score. Walkable neighborhoods. Seattle, WA: Walk Score; 2010; Available from: <http://www.walkscore.com/walkable-neighborhoods.shtml>.
8. Economist Intelligence Unit - The Economist. Global liveability report. Vancouver remains top, Harare remains bottom. London, UK: EIU; 2010; Available from: http://www.eiu.com/site_info.asp?info_name=The_Global_Liveability_Report&page=noads&rf=0.
9. City Mayors. German-speaking cities occupy top places in best-cities survey. A report by Mercer Consulting. London, UK: City Mayors; 2010; Available from: http://www.citymayors.com/features/quality_survey.html#Anchor-The-47857.

Images

10. Flickr. Online photo management and sharing application. Creative commons selections. Flickr; 2010;

NCCEH Resources

- [Readiness assessment tool](#)
- [Fact sheets](#)
- [Case studies](#)
- [Workshop agenda](#)
- [Workshop presentation](#)

NCCEH Evidence Reviews

- Minimizing Children's Non-residential Exposure to Traffic-related Pollution (UBC Bridge Program)
- Are Naturally Ventilated LEED Buildings Healthier? (UBC Bridge Program)
- Active Transportation in Urban Areas: Exploring Health Benefits and Risks (UBC Bridge Program)

for further information . . .

- [NCCEH Additional Resources](#)
- [Foundations for a Healthier Built Environment](#)
PHSA 2009



Thank You

Questions?
Comments?

www.ncceh.ca | www.ccnse.ca

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