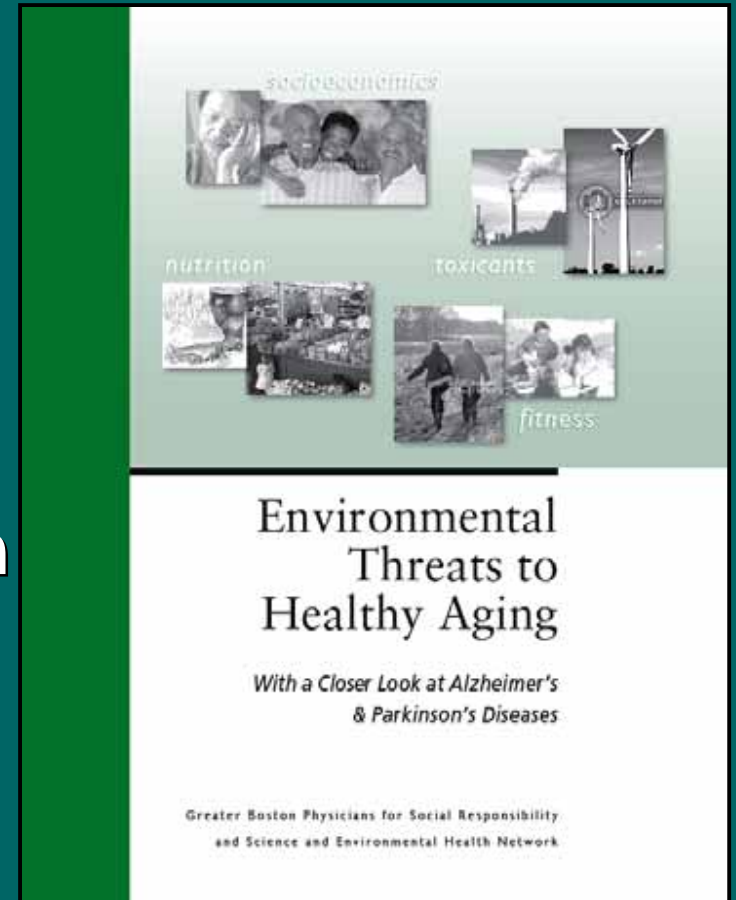


Designing Healthy Environments Across Communities and Generations

New Partners for Smart Growth
Kansas City
Feb 7, 2013

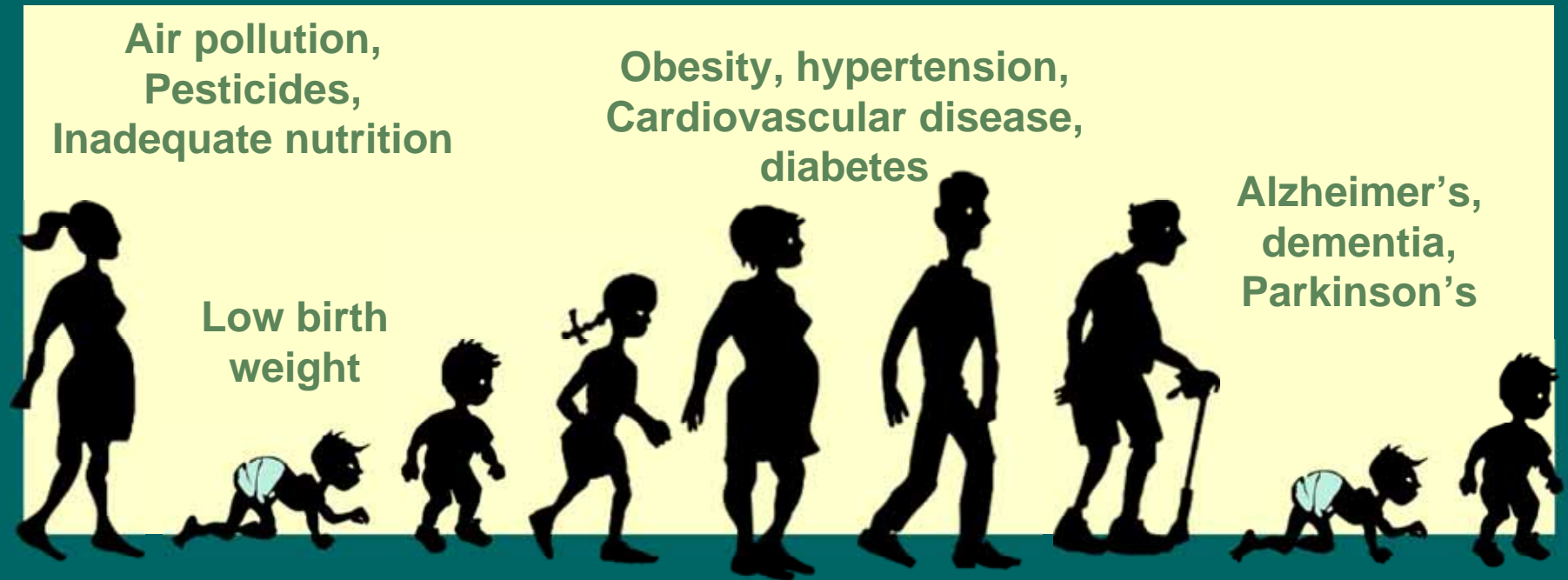


Ted Schettler MD, MPH
Science and Environmental Health Network
www.sehn.org
Collaborative on Health and the Environment

Key Points

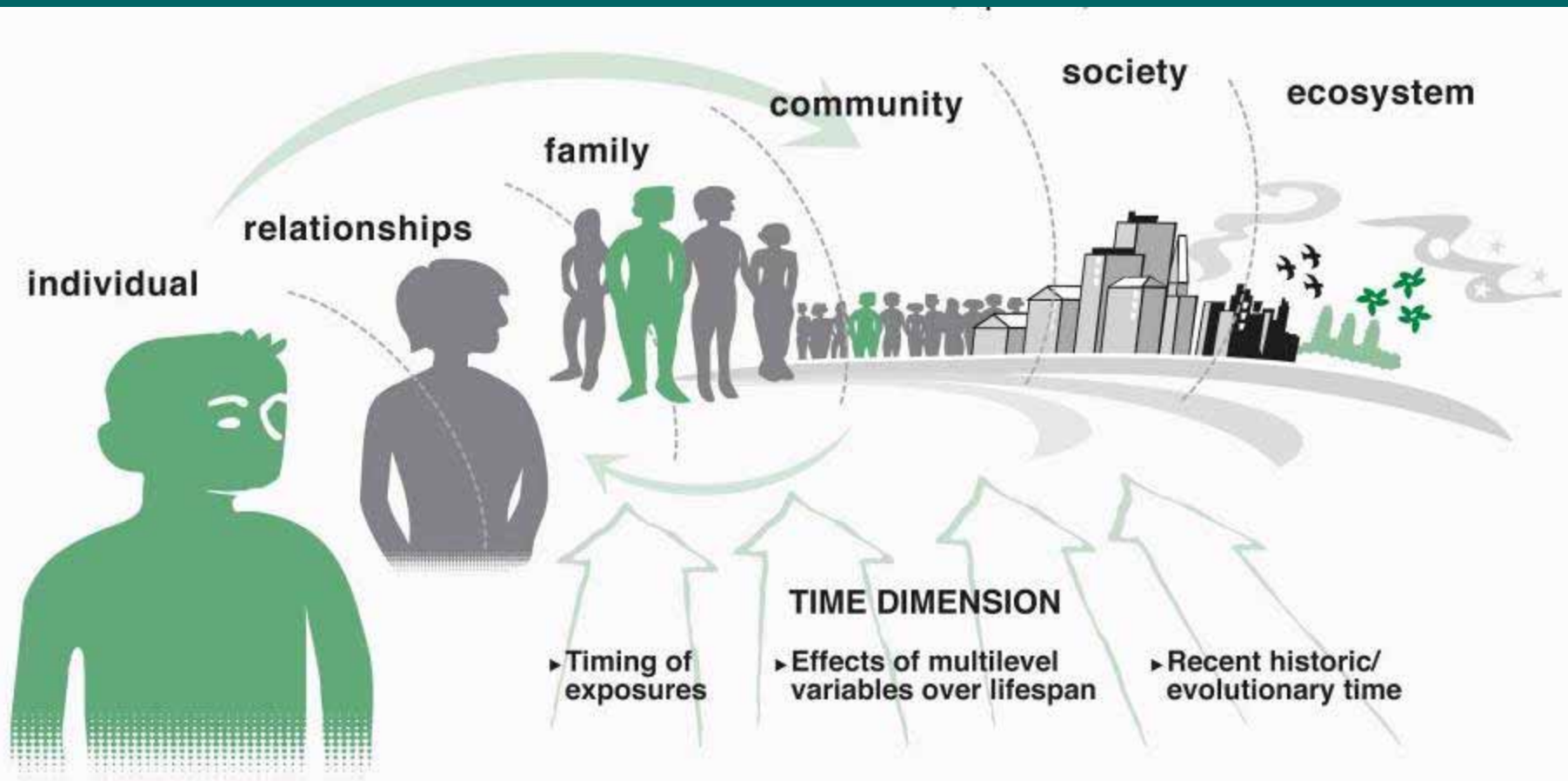
- **Environmental factors are key drivers of many common chronic diseases**
- **A life-course, intergenerational perspective**
- **An ecological framework**
- **Important environmental determinants of health include:**
 - **Food system, diet, nutrition**
 - **Toxic chemicals; environmental pollution**
 - **Built environment / physical activity**
 - **Socioeconomic stress**
- **Virtually all public policy decisions have public health implications**

Life-course Perspective



Aging begins at conception

An ecological or “systems” health framework considers the individual in the context of family, community, society, and ecosystem.



Environment and Chronic Disease

Environmental Factors

- Food system/Diet
- Environmental chemicals, pollutants
- Socioeconomic Stress
- Built Environment/ Transportation



Altered Pathways

- Inflammation
- Disrupted Insulin Signaling
- Oxidative Stress
- Other

Chronic Diseases and Patterns

- Diabetes
- Obesity
- Abnormal lipids
- Metabolic syndrome
- Cardiovascular disease
- Cognitive decline
- Asthma
- Some kinds of cancer



Improved mechanistic understanding of these links

Food System and Diet



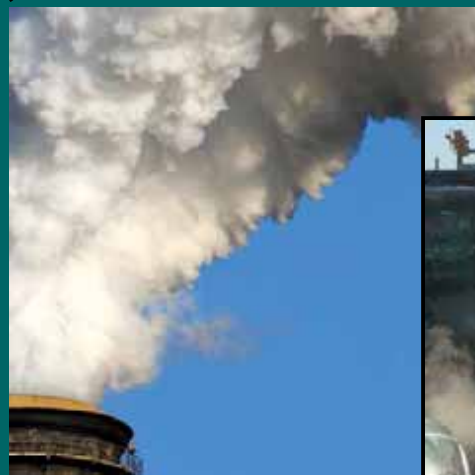
Diet and chronic disease risks

- Increase risks
 - saturated and trans fats
 - high glycemic carbohydrates
 - lack of fruits/vegetables/omega 3s
 - large excess omega 6s over omega 3s
- Reduce risks
 - fruits, vegetables, nuts
 - omega 3s
 - low glycemic carbohydrate
 - “Mediterranean-type” diet



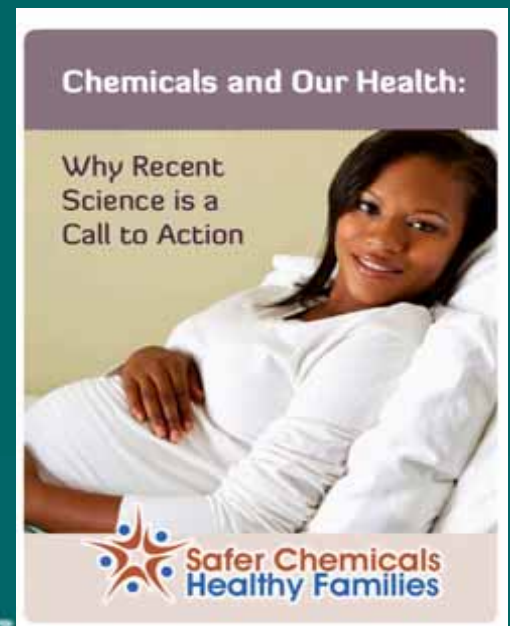
Environmental Chemicals: Air Pollution and Chronic Disease

- Low birth weight
- Cardiovascular disease, early mortality
- Lung disease: asthma, bronchitis, cancer
- Cognitive decline, dementia
- Diabetes (?)



Other Environmental Chemicals

Lead, Mercury, Arsenic,
Pesticides, Carcinogens, Asthma Triggers,
Endocrine Disruptors



<http://healthreport.saferchemicals.org/>

Built Environment, Physical Activity Green Space

Reduces Stress, Mortality, Improves Cognitive Function

- Increased opportunities for exercise
- Attention deficits in children improve with green space walks (Effect = ritalin)

Taylor '08

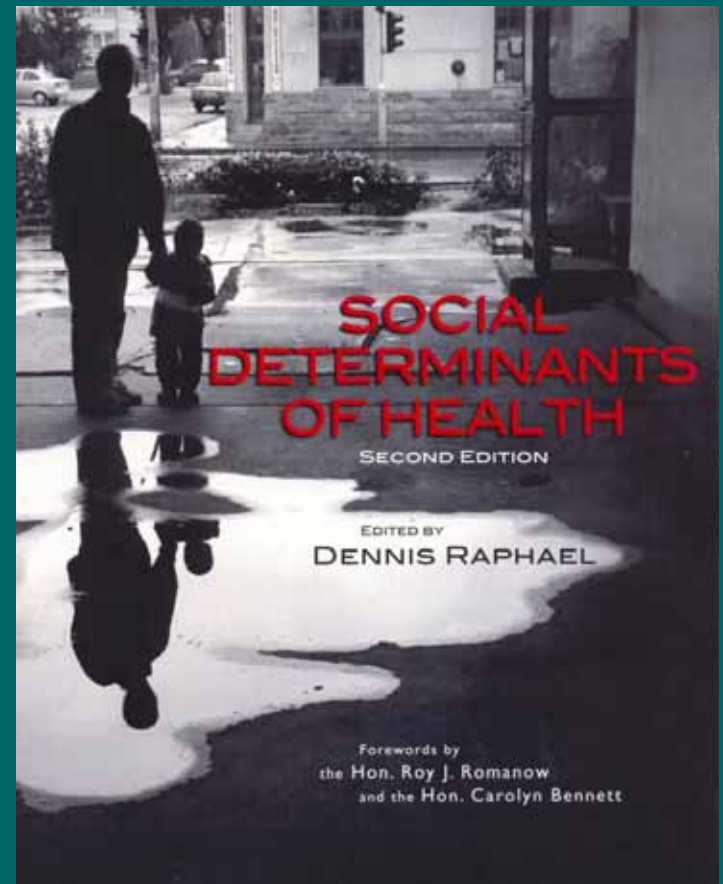
- Access to green space reduces the effect of poverty on all-cause mortality by ~50%. Mitchell '08
- Regular exercise reduces risk of cardiovascular disease, obesity, diabetes, and cognitive decline



Socioeconomic, Psychosocial Stressors

- Lower socioeconomic status → risk of impaired neurodevelopment, cardiovascular disease, diabetes, obesity, metabolic syndrome, Alzheimer's disease, many kinds of cancer, asthma.
- Due to: Combinations of increased exposures to hazards, increased susceptibility, decreased capacity to cope and recover.
- Elevated levels of inflammatory markers, stress hormones

<http://www.unnaturalcauses.org/resources.php>



Solutions for Healthy People, Healthy Planet



Key Policy Areas

- Food & agriculture
- Energy environment - fossil fuels, transportation
- Built & activity environment
- Chemical & toxicologic environment
- Social environment
- Health care

Opportunities for Intervention

Individual, family, community, state
Schools, business, public buildings,
hospitals



Livable Communities Enhance Health for All

- Walkable Cities Projects
- Healthy Schools
- Community Gardens
- Farmer's Markets
- Rails to Trails



Acknowledgements

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To download the report *Environmental Threats to Healthy Aging*
go to

<http://www.healthandenvironment.org/>