URBAN FORESTRY
Research

HOW CITY TREES SUPPORT HUMAN HEALTH

The environmental services and benefits of urban trees are diverse and well recognized. Trees capture and store carbon, remove other air pollutants, decrease stormwater runoff and flooding, and keep our communities cool. **What is less recognized is the relationship between urban trees and human health.**

The University of Washington, Natural Resources Canada, Health Canada, University of British Columbia, Toronto and Region Conservation Authority, and Tree Canada partnered to analyze 201 scientific studies from across North America, Europe and Asia. Results revealed more in-depth knowledge about the impacts of urban trees on human health.

RESEARCH HIGHLIGHTS

To understand the associations between urban trees and human health, studies were analyzed and sorted into three areas:

REDUCING HARM (41% OF STUDIES):

Urban trees mitigate conditions that can affect human health, including reducing exposure to air pollution, noise, extreme heat and UV rays and increasing the safety of our communities.

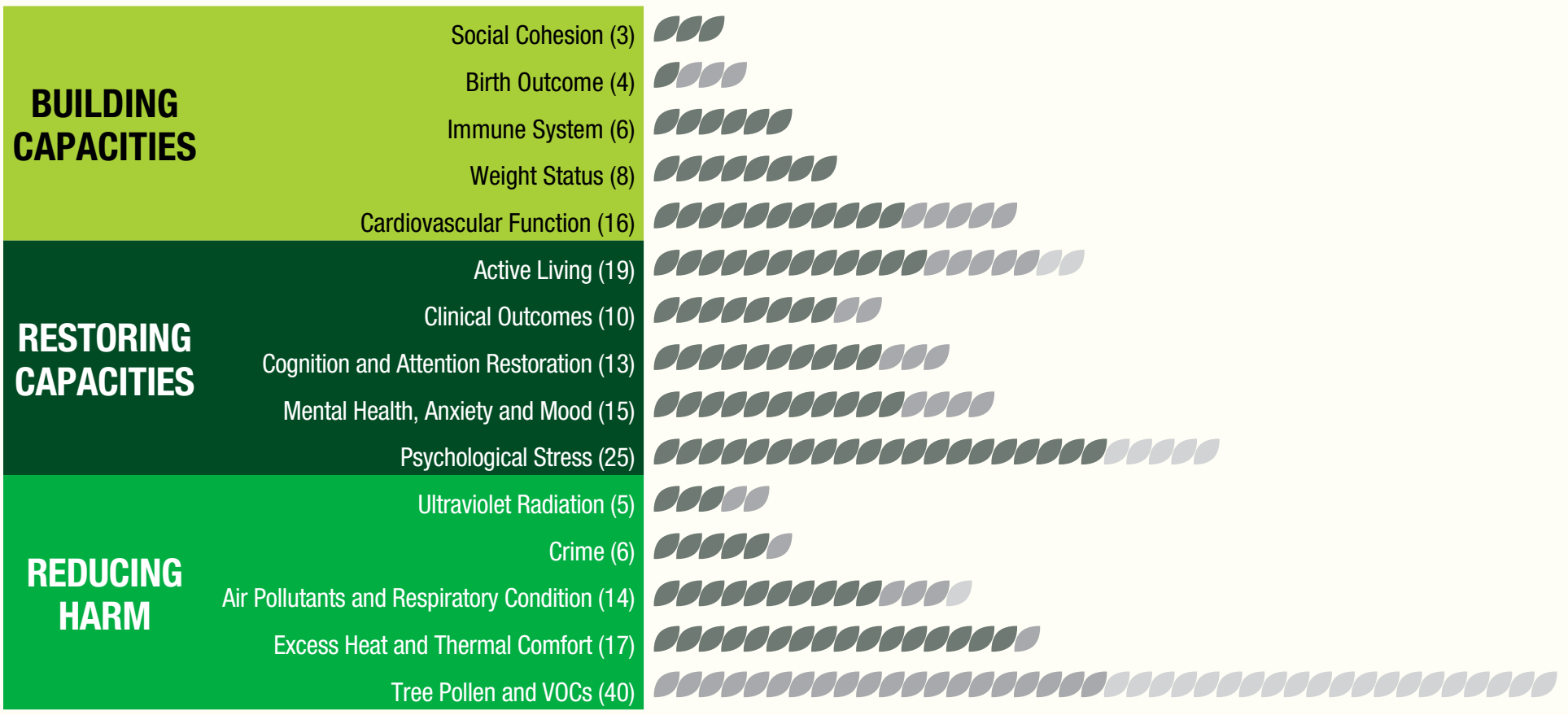
RESTORING CAPACITIES (31% OF STUDIES):

Urban trees positively impact psychological and physiological functioning, including boosting our ability to focus (cognitive attention restoration) and adapt to stress (stress recovery), as well as improving our mood and reduce anxiety.

BUILDING CAPACITIES (28% OF STUDIES):

Urban trees encourage wellness on both individual and community levels, such as encouraging physical activity and providing settings for social gatherings and improved social connections.

The chart below shows the many ways that urban trees provide health and well-being benefits for people, from individuals to communities. Studies examined exposure using multiple types of tree settings including individual trees, trees as pollen sources, trees in a park, canopy or land cover, forest immersion, and images or simulations of trees. Studies found a wide range of positive health outcomes, indicating the importance of trees and the urban forest as an essential component of health-supportive environments. Yet more research is needed, as some studies found mixed results while others found negative health results, such as asthma and pollen allergies.



WHO CAN USE THIS INFORMATION?

Health and environmental professionals. Trees are essential in supporting human health and well-being. We encourage professionals across disciplines to unite in advocating for more trees and canopy cover in communities.

Policymakers. Tree planning and management is a long-term public health and economic investment. This should be factored into policy discussions and budgets.

Social justice advocates. Trees should be equitably and responsibly distributed across towns and cities so all residents can experience their health benefits.

FUTURE RESEARCH OPPORTUNITIES

Our knowledge about the relationship between urban trees and human health is developing quickly. Future research could investigate:

1. How 'dosage', meaning the amount of time and frequency spent among trees, can lead to different health outcomes.
2. How the health and condition of a tree or forest, as well as biodiversity, can affect human health benefits.
3. How rapid environmental changes and stresses such as climate change affect tree health and the consequent impacts on human health, such as mental well-being or heat-related illnesses and deaths.

RESEARCH PARTNERS

The peer-reviewed results are available as an open access publication:

Wolf, K.L., S.T. Lam, J.K. McKeen, G.R.A. Richardson, M. van den Bosch, and A.C. Bardekjian. 2020. Urban trees and human health: A scoping review. *International Journal of Environmental Research and Public Health* 17(12):4371.

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