



# Urbanization and cardiovascular disease

Raising heart-healthy children in today's cities





# Executive Summary

**Non-communicable diseases (NCDs), including cardiovascular disease (CVD), cancers, chronic respiratory diseases and diabetes, are the biggest cause of death globally, killing more people each year than all other causes combined.<sup>1</sup> In September 2011, the United Nations (UN) convened a High-Level Meeting (HLM) on NCDs with Presidents and Heads of State in attendance; this was only the second time in history the UN had convened a special HLM on a specific health issue, and was in recognition of the importance of this group of diseases globally as a threat to human health and a hindrance to economic development.**



*CVD is often referred to as a lifestyle disease. This term is misleading however; it implies individual responsibility for, or choice of, poor heart health. It does not take into account social, economic and physical constraints that may force people into unhealthy behaviour. A mother trying to feed her children with limited budget may have little option but to purchase cheap but unhealthy food high in fat, sugar and salt. Children living in an urban slum may have no space to play and exercise safely. A teenager may be so heavily influenced by industry marketing that they choose to smoke, without knowledge or appreciation of the dangers to health posed by tobacco use. Tackling these issues requires a multi-stakeholder approach: by working together we can improve health education, strengthen healthcare and fight industry tactics, to address the world's number one killer.*

**Johanna Ralston**  
**Chief Executive Officer**  
World Heart Federation



New data released by the World Economic Forum during the UN HLM revealed that NCDs will cost economies a staggering \$USD 30 trillion over the next 20 years, with one-third being attributed to CVD.<sup>2</sup> This makes CVD the most significant NCD not only in terms of the number of deaths and level of disease they cause but also because of the financial strain they put on countries, especially those least well-equipped to deal with them. Contrary to common belief, the burden of morbidity and mortality from heart disease and stroke is not confined to affluent, high-income countries; with the exception of sub-Saharan Africa, CVD is the leading cause of death in low- and middle-income countries (LMICs),<sup>3</sup> and the cost of inaction is immense.

Major risk factors for CVD include high blood pressure, high cholesterol, smoking, obesity, physical inactivity and diabetes. Much of this risk factor burden can be prevented or controlled, however the rise of CVD in LMICs has been linked to progressive urbanization and the coinciding "globalization of unhealthy lifestyles, which are facilitated by urban life – tobacco use, unhealthy diets, physical inactivity and harmful use of alcohol."<sup>4</sup>

Although urbanization brings with it many great opportunities (including employment choices, healthcare, educational prospects, social connections and political mobilization), inherent to city life are practical and logistical obstacles to adopting heart-healthy behaviours. Urban living can also remove the autonomy of individuals to make healthy choices, via dominant pressures and influences to adopt unhealthy ones.<sup>5</sup> For example, foods high in salt, sugar and fats are often more cheaply and readily available than fresh fruit and vegetables as such, urbanization poses serious health challenges. Children are particularly vulnerable to the negative health aspects associated with city life, as they have the least independence from, and are most manipulated by, their living environment. In unplanned urbanization, which is predominant in LMIC settings, this is accompanied by limitations on space for physical activity including lack of planning, crime, and heavy and dangerous traffic. Thus, CVD is not just an issue of lifestyle and individual behaviour choices it is the environment around such diseases that have a major impact.

In response to the UN HLM and the resulting focus on the prevention of NCDs including CVD, the World Heart Federation commissioned research to examine the perceived relationship between rates of modern urbanization and CVD. With population forecasts predicting continued urbanization in the 21st century,<sup>6</sup> the research specifically queried how our future generations may thereby be at risk of poor heart health.

The research undertook a literature review to assess evidence that children living in cities from Shanghai to Sao Paulo and from Buenos Aires to Mexico City are at increased likelihood of exposure to CVD risk factors, including physical inactivity, unhealthy diets, tobacco use and exposure to second-hand smoke. The study assumes four main observations that:

- CVD continues to be the leading cause of death worldwide, and places a massive socioeconomic burden on individuals and societies, particularly in LMICs.
- Urbanization is continuing to occur rapidly worldwide, particularly in LMICs.
- City living can impose certain limitations on the way in which people live, and restricts their opportunities to be heart healthy.
- Informed action by governments and other stakeholders has been shown to dramatically reduce the level of CVD risk.

The report then makes important conclusions:

- Urbanization tends to hinder heart-healthy lifestyles, particularly for children. For many urban dwellers, heart-healthy options are non-existent, as people are constrained by their physical and economic environments; even those with more freedom from a physicality and economic perspective may be heavily influenced by their social environment, impacted particularly by industry marketing and development via which the consumption of unhealthy food or tobacco becomes intrinsic to city life.
- There is an urgent necessity to consider children specifically in discussions and policy developments related to both CVD prevention, and indeed, city planning, since children are particularly vulnerable to CVD and its consequences.



*The report on Urbanization and cardiovascular disease: Raising heart-healthy children in today's cities reveals the cross-cutting links between the environment in which a child lives, the CVD risks that they are exposed to, and the resulting threat of developing CVD. It reveals an urgent need to protect our most vulnerable members of society from poor heart health, and makes recommendations as to how some of the barriers to achieving this can be addressed. Following the commitment of world-leaders at the UN HLM to reduce the burden of NCDs, including CVD, we hope that this report encourages and inspires all those involved in city planning or child care to take action towards a heart-healthy world.*

**Sidney C. Smith Jr, MD**  
**President**  
 World Heart Federation



- Since the behaviour of children affects the likelihood of an “epidemic” in future years, the report determines that children are core to global efforts to prevent and control CVD, particularly in the context of rapidly urbanizing populations.
- Cities have also been places where success in reducing NCDs has occurred, and there is significant potential to impact the current and future heart health of children by linking to best practices in urban policies around health and development.

At the World Heart Federation, we are acutely conscious that with every new generation, we face increased risks to cardiovascular health. Based on the report conclusions, the World Heart Federation is calling for improved prevention of CVD via what the report’s authors have termed the ‘S.P.A.C.E’ approach: **S**takeholder Collaboration; **P**lanning Cities, **A**ccess to Healthcare; **C**hild-focused dialogue; and, **E**valuation.

It is recognized that the S.P.A.C.E approach is comprehensive, and may not be fully applicable or affordable for many nations currently experiencing the rapid urbanization of their populations. But it is hoped that the report presents a range of options to policymakers that are looking for initiatives to make a difference to CVD health outcomes, and so, it is hoped, protect the cardiovascular health of generations living in the cities of the future.

• **Stakeholder collaboration:** Making improvements to children’s living conditions, and therefore to their health and wellbeing, is not a role for governments alone but for the whole of society: all government sectors, the private sector and civil society including educators and religious leaders intrinsic to child care.

The report content is exploratory, and the World Heart Federation recognizes that further research is necessary to facilitate a full understanding of the issues. However, we hope that it provides a useful stepping stone for further studies to explore the determinants of heart health particularly within urban environments.

• **Planning cities:** As cities increase in size, it is vital that infrastructures are developed to facilitate heart-healthy behaviour. Policies and strategies that allow individuals to adopt healthy behaviours and avoid unhealthy ones are crucial to successful urbanization.

We also hope that whether you are a policy maker, healthcare professional, business manager, educator, religious leader, parent, researcher or other, you find the report interesting and it stimulates thought around the topic of child heart health linked to city-living. Heart health is everyone’s responsibility, and by working together to reduce CVD risks, particularly those risks faced by children, we can fight against the burden of CVD.

• **Access to healthcare:** Investment in paediatric diagnostic tools, quality improvements in medical centres, education and increased access to essential medicines will greatly improve CVD outcomes within cities.

• **Child-focused dialogue:** Policy discussions around CVD must focus on children specifically; since children have specific needs, child health should not be wrapped into decisions for adult healthcare.<sup>7</sup>

• **Evaluation:** Reducing CVD risk involves understanding the burden through surveillance; knowing which city dwellers face which barriers to heart-healthy living and why.<sup>4</sup> Once this is understood, actions can be taken to break down the barriers and facilitate healthier lifestyles.



*Children in LMICs face the most significant burden of CVD. It is possible for children to experience the physical effects of it if they are born with heart defects, or if they develop rheumatic heart disease in their childhood or adolescence. In this instance, they may face a life-time of disability or social stigma, particularly if they are unable to access healthcare. Alternatively, they may face the socioeconomic burden of disease should a family member experience CVD. For example, a family who lose a young parent to CVD not only face the emotional consequences, but also face the prospect of malnourishment and financial debilitation. Finally, since children are our future, they will experience the huge impending global burden of CVD, if we do not take action now.*

**Dr Kathryn Taubert**  
**Chief Science Officer**  
 World Heart Federation



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## About the World Heart Federation

The World Heart Federation is dedicated to leading the global fight against heart disease and stroke, with a focus on low- and middle-income countries, via a united community of more than 200 member organizations. With its members, the World Heart Federation works to build global commitment to addressing cardiovascular health at the policy level, generates and exchanges ideas, shares best practice, advances scientific knowledge and promotes knowledge transfer to tackle cardiovascular disease – the world's number one killer. It is a growing membership organization that brings together the strength of cardiac societies and heart foundations from more than 100 countries. Through our collective efforts we can help people all over the world to lead longer and better heart-healthy lives. For more information, please visit: [www.worldheart.org](http://www.worldheart.org)

## References

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