# Uppsala HEALTH SUMMIT

# Healthy Urban Childhoods

8-9 October, 2019
Uppsala Castle, Sweden

Uppsala Health Summit is an international arena for frank and challenging dialogue, exploring possibilities and implementation challenges associated with advancement in medicine and public health. Uppsala Health Summit stimulates dialogue from various perspectives, such as medical, economic and ethical.

We are an enabler for change, and an arena that can lay the foundation for insights and collaborations that can help you in your work to improve health outcomes in your part of the world.

Uppsala Health Summit is organized by partners with long experience of developing health and healthcare solutions through multi-disciplinary efforts. The meeting is a collaborative effort between Uppsala University, the Swedish University of Agricultural Sciences, Uppsala County Council, the City of Uppsala, the Swedish Medical Products Agency, The National Veterinary Institute, Uppsala Monitoring Centre, and the network World Class Uppsala. This year, we welcome the Swedish School of Sports and Health Sciences as an associated partner to Uppsala Health Summit.

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Dear Delegates,

I am pleased to welcome you to the 6th Uppsala Health Summit and a new opportunity to discuss practical solutions to improve health and health care globally.

This year, the theme is children's health in cities. Many of us can relate to this theme – as parents, grandparents or just city dwellers thinking back on how urban environments have changed over the past few decades.

A great deal is known about the health risks associated with growing up in cities. The data give a gloomy picture. Cities are drivers of many of the determinants that make children ill, both physically and mentally.

There is no better time than now to explore what we can do in practice to improve the health and life opportunities of the increasing number of children who grow up in cities. By doing so, in all likelihood we will improve life in cities for everyone.

This year's theme for Uppsala Health Summit is a real opportunity to contribute to the World Health Organization imperative of considering health in policy development in all sectors. We are excited to be able to provide an arena where urban planners, architects, public health strategists, researchers and representatives of youth organisations can meet.

Prioritising children's health in cities is much more than providing playgrounds. Rather, it is a package of interventions to make our cities more sustainable, safer and more liveable for all generations, young as well as old. Building child-friendly cities is fundamentally building for the future and making progress towards several of the Sustainable Development Goals.

For this, we need to bring medical, ethical, economic and other perspectives together.

On behalf of the Uppsala Health Summit steering committee, a warm welcome to you all.

Anders Malmberg, Professor
Chairman of Uppsala Health Summit
Steering Committee
Deputy Vice-Chancellor of Uppsala University

# Time to deliver solutions for healthy childhoods

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PHOTO CREDITS: © PETTER ÅKERBLOM

By 2050, the majority of the world's children will live in cities. What can be done to secure their healthy urban childhoods in both developing and developed countries? While there is a wealth of knowledge and evidence, policies are often slow to change, and implementation mechanisms are still under development.

The 2030 Agenda for Sustainable Development includes commitments to make urban environments more sustainable and healthy (Goal 11) as well as promises to improve prevention and treatment of non-communicable diseases, including mental illness (Target 3.4). These statements along with the New Urban Agenda are the blueprint for achieving a sustainable and healthy urban future for all.

The UN Convention on the Rights of the Child concludes that the best interests of the child shall be a primary consideration (Article 3.1). Every child has the right to rest and leisure, to age-appropriate play and recreational activities, and to a cultural life, including access to the arts (Article 31). Child participation is one of the core principles of the convention, which asserts that children and young people have the right to freely express their views. There is an obligation to facilitate their participation in all matters affecting them within the family, schools, local communities, public services, institutions, government policy, and judicial procedures.

But what is formulated in international conventions and agreements doesn't automatically lead to a change to the better in children's everyday lives.

## Listen to the kids

Greta Thunberg, the young environmental activist from Sweden, mobilises hundreds of thousands of children and young people all over the world in her unyielding critique of politicians and decision-makers in, what she says, their failure to address change. It is time for action, she says: Saving the planet is about listening to the big body of research that points out the best way forward to reduce the negative effects of climate change. Greta Thunberg's mobilisation of children from all over the globe is a call for action on several fronts. One is the clear message that it is time to listen. Listening to children and their concerns will help us see new solutions and possibilities that will benefit the whole society.

A growing body of research also shows that participation in decision-making is health-promoting in itself. However, most landuse planning practices exclude children from the decisions that affect their lives. How can we improve our ability to take in children's very real concerns and to act on these concerns in concrete ways?

## Children's right to their urban environment

The way our cities are planned and developed affects children's health in a variety of ways. Rapid urbanisation and densification of urban areas is a major planning trend today. Green space between buildings and infrastructure are shrinking. Many cities are planned and constructed for an adult labour force. Densifying and an increasing traffic system negatively affect children's independent mobility. In this perspective, children are citizens excluded from public spaces.

From the child's perspective, urban environments should be safe, challenging, and accessible, where they can move around independently, on their own terms. But in reality, children's free mobility is restrained in most countries, and they do not possess the freedom to move about their local area, whether crossing main roads, going to places within walking distance, or travelling home from school.[1]

According to the International School Grounds Alliance, there is also a trend for shrinking school grounds, further limiting children's access to physical activity and reducing one of the few arenas where children still can explore on their own terms. A survey by Statistics Sweden of Swedish school grounds shows that school grounds are shrinking as a result of extending school buildings to accommodate more students.[2]

## Equality for all children everywhere

Cities not only create opportunities, but also create challenges that make inhabitants vulnerable, often as a result of poor characteristics of the built environment.[3] Inequitable access to urban space and exclusion from decision-making has significant health consequences for disadvantaged children and their families. Dense cities with a fast growing population tend to increase anonymity. As a consequence, parents often hesitate to let their children outdoors alone because they fear criminality and traffic accidents. In developed countries, this has turned into a wide-spread approach of either accompanying children to school, activities, and a friend's houses or driving them by car: These children belong to the "back-seat-generation".

## The impact and importance of contact with nature

We know that outdoor play, stay, and contact with nature is fundamental to healthy child development. What can be done in an urban planning context to secure children's and adolescents' access to nature? Is it possible to see urban play opportunities as an ecosystem service and integrate it as a part of sustainable urban planning? If so, how can we plan for urban ecosystems required for nature-based play? The discussion about the ecosystem as foundation to policy agendas that ensure equity and play rich opportunities, is promoted by the Lawson Foundation[4] among others.

Access to nature and natural materials is often considered a crucial part of the outdoor experience. Talbot and Frost coined the term 'playscape' as a way to think about how a particular landscape can afford play and what they call 'magical thinking'.[5] Research suggests that natural landscape elements (e.g., at school grounds) increase the amount of play activities pursued by children in general, not only in the natural landscape but also in adjacent hard-made areas.

Playing in a natural environment leads to a statistically significant increase in motor fitness, balance, and co-ordination, which indicates that landscape features influence physical activity play and motor development in children.

[1]  http://www.psi.org.uk/children_mobility
[2]  Boverket, 2018
[3]  Unicef, 2018
[4]  EECD, 2019
[5]  Fjørtoft, 2004

The qualities of access to nature in urban contexts are more than play opportunities. Conclusions from global-wide research shows that teaching combined with outdoor activities has a positive effect, directly as well as indirectly, on academic performance and achievements as well as on health, wellbeing, and personal and social development.[6] However, the opportunities for active outdoor learning are limited for many children, especially in urban environments.

*What steps can be taken to stimulate an urban development based on this kind of health and learning-stimulating factors among children in different cultures around the world? What can provide children of our time with outdoor experiences, nature contact, and physical activity where they spend their everyday lives? What kind of space is needed from a child's perspective? Are city farms and school gardens a viable model to bring children in an urbanised world closer to knowledge about the producing landscape and to learn about where food comes from (e.g., by growing vegetables and taking care of farm animals)?*

### Childhood obesity connected to limited freedom of movement
Restricted access to physical activity is recognised as one of the contributing factors to the pandemic of childhood obesity and other non-communicable diseases, including mental ill-health.

The majority of children in Sweden do not meet the physical activity recommendation of 60 minutes of daily moderate to vigorous intensity physical activity.[7] The same pattern regarding the physical activity of children and youth has been found worldwide.

According to the WHO, 124 million children and adolescents are obese – a tenfold increase in the last four decades. Most obesity is preventable through coordinated efforts around improving children's access to better nutrition, improving their sleep patterns, and providing opportunity for physical activity in the child's environment. This issue was in focus at the Uppsala Health Summit 2016 Ending Childhood Obesity, which resulted in action plans and activities in several places around the world.

### What indicators in the built environment can guide the way towards healthy childhoods?
The possibilities to promote children's health differ depending on where we are on the planet.

It is common that private interests are gaining an increasing role in the urban planning context and several researchers point out that the formal and constitutional power of the municipalities are undermined by private actors with a focus on securing private investments. This becomes problematic when children themselves do not have any real economic power and suggests an apparent risk that children's participation or needs will not be taken seriously enough. *When it comes to ecosystem services, there are indicators that the builders must fulfil in the bidding process to satisfy the landowner's demands. Could a similar indicator system be possible for promoting a healthy sustainable built environment based on children's needs for healthy, child-friendly built urban environments?* What are the key factors that could be used to transform qualities of an urban childhood into a built environment?

### Uppsala Health Summit – an arena for constructive and frank dialogues
The aim of Uppsala Health Summit 2019 is to gather stakeholders from different policy areas, sectors, and geographies in dialogue on how to take the next steps beyond visions and statements to create healthy, child-friendly urban environments in developing and developed countries. Our goal is to provide an arena that could be truly helpful in development of input for interventions based on what we indeed know about child-friendly city planning, well-functioning urban playscapes, the health situation among children, the key factors that could generate physical literacy, and what we can learn from listening to children's own knowledge about what characterises suitable and attractive urban environments that influence their learning, joy, and pleasure.

Uppsala Health Summit 2019 is focused around nine perspectives on what affects a healthy urban childhood. The aim is to develop recommendations for different levels of society and to develop strategies and action plans that could strengthen children's and adolescent's abilities to influence urban development, considering the city as an environment to live and thrive in, and including both children's and adults' needs. People from near and far are invited to share

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[6]  Faskunger et al., 2018
[7]  Public Health Agency of Sweden, 2019

Since the 1980's the City of Berlin has transformed a big amount of school grounds from asphalt deserts to green oases. The work is led by "Grün macht Schule", a municipal advisory service for creating ecological, sustainable and child-friendly school grounds and kindergartens for play and educational purposes.

Until today more than 3000 small and large projects have been carried out in the outdoor facilities at schools and day-care centers.

their research and their practices to frame and further our discussions about key factors. We need to move from words to actions to fulfil children's right to a healthy childhood:

*What does a child-friendly city look like? How can we plan urban settings for children's health and wellbeing? What does it mean to involve children's perspectives in the process in different parts of the world? How do we make healthier choices easier to make for children in an urban environment?*

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# ECHO-Zones in Practice

## Sustainable prevention of childhood obesity

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In contrast to most interventions, where focus lies on directly changing the behaviour of the child, the ECHO-zone approach focuses on changing the environment of the child.

Overweight and obesity among children has globally increased ten times since the 1970s.[1] In 2016, more than 40 million five-year-olds were overweight or obese.[2] If this trend persists, this figure will reach 70 million by 2025.[3] In conjunction with the present childhood obesity epidemic, the number of metabolic and commensurate psychological diseases in children has also reached alarming levels. Despite numerous attempts to halt these developments, no strategy has been sustainable in lowering the escalating childhood obesity rate. In 2015, this situation prompted the WHO to act on this very serious health threat by presenting the report "Ending Childhood Obesity".[4]

In 2016, the theme of the Uppsala Health Summit was "Ending Childhood Obesity".[5] Dr Sania Nishtar, co-chair of the WHO Commission on Ending Childhood Obesity, opened the summit, where the workshop "Initiate, manage and evaluate multi-stakeholder interventions: ECHO-zones" was attended by about 50 people from six continents. Together, societal representatives attending the workshop started to formulate the content of the term "Ending Childhood Obesity" (ECHO) zone. After the Uppsala Health Summit 2016, work towards initiating ECHO-zones began in diverse places.

At Uppsala Health Summit 2019 "Healthy Urban Childhoods" the workshop EXHO-zones in Practice, people working with ECHO-zones in different parts of the world and in different capacities will share their experiences.

### Workshop aims and objectives
Persons attending the workshop will through dialogue identify systematic approaches to planning and designing cities that improve children's development, health, and well-being. We will address the World Health Organization guidelines on Ending Childhood Obesity (ECHO) and examine concrete work performed in ECHO-zones around the world. We will identify the various barriers, approaches, as well as opportunities, for establishing successful ECHO-zones. The workshop also addresses how to collect data and to demonstrate effectiveness, required for creating sustainable healthy urban childhood communities. Thus, the workshop aims at identifying factors and building evidence that are critical not only for gaining political support but also for guaranteeing sustainable ECHO-zone outcomes.

All workshop participants are invited to contribute their experiences to establish a road map for the ECHO-zone approach. This road map is expected to encompass different standpoints, ranging from high-level decision-makers with economic and political jurisdiction (top-down) to persons responsible for implementing targeted societal activities and for building supportive networks (bottom-up). The ECHO-zone approach will thus use a "top-down-bottom-up" interventional approach. All persons within an ECHO-zone are engaged in achieving the United Nations Sustainable Development Goals, especially SDG 11 (to make cities and human settlements inclusive, safe, resilient, and sustainable) and SDG 3 (good health and well-being).

### Background
*What is the ECHO-zone approach?*
The ECHO-zone approach is a town or community, where multiple stake-holders in society are committed long-term (> 10 years) to initiate and implement societal interventions, which are specific actions changing the environment around the child into one promoting a healthy lifestyle regarding eating, physical activity and sleep habits, as outlined in national guidelines. Societal changes that are connected with dietary, physical activity, and sleeping habits take time. To reach long-term goals, the ECHO-zone approach actively implements health-promoting urbanization policies that depend on (and are formed by) supportive policies in sectors such as

[1] NCD-RiskC, Lancet, 2017
[2] WHO, https://www.who.int/end-childhood-obesity/facts/en/
[3] https://www.who.int/end-childhood-obesity/facts/en/
[4] WHO, http://apps.who.int/iris/bitstream/handle/10665/259349/WHO-NMH-PND-ECHO-17.1-eng.pdf?sequence=1
[5] https://www.uppsalahealthsummit.se/our-summits/summit-2016/

health, agriculture, transport, urban planning, environment, food processing and distribution, marketing, and education. Therefore, implementing long-term decisions, actions, and evidence building will require budgetary decisions that anticipate the above.

In contrast to most interventions, where focus lies on directly changing the behaviour of the child, the ECHO-zone approach focuses on changing the environment of the child. These changes include both the wider urban physical environment, and that which is in closer proximity to the child. In this, an important goal is to make it is easy for children and their parents to make healthy choices. It is believed that such changes will improve children's lifestyles, with an associated decrease in the proportion of children who are overweight or obese, improving not only children's physical health but also their mental health.

Research data is collected to assess how the different societal actions (the intervention) affect the physical and mental well-being of children. *Firstly*, data on the implementation of designated actions is collected (e.g. bike paths and school meal policies). *Secondly*, data is collected on how these actions affect the close environment around the child (i.e., their home, school, and leisure areas). *Thirdly*, data is collected on how these actions affect diet, physical activity and sleep habits, as well as the physical and mental health of the children (questionnaires and interviews). *Fourthly*, anthropometric data (height, weight, and waist circumference) is collected. *Fifthly*, data on genes, hormones, and nutrients connected with regulation of hunger/satiety and energy consumption/storage is collected (blood samples). Biological data collection will be conducted at ages 0 (birth), 1.5, 4, 7, 11 and 14 years. In this, ECHO-zones will form a longitudinal epidemiological study design that includes a biobank. All children living within an ECHO-zone are eligible to participate.

The effectiveness of actions of the ECHO-zone approach on the health of children, is evaluated and based on the collected data. In this way, the ECHO-zone will build evidence on how societal actions affect the environment and health of the child in a direction towards healthy eating, physical activity, and sleep habits.  Such evidence building will identify which intervention compo-

nents and societal actions produce change. Children are assessed on an individual level, which allows differences in biology between children to be taken into account. Evidence-based effective actions are then systematically built into society, transforming the environment of the child. The description of these actions will enable ECHO-zone approaches to be implemented in other places.

The ECHO-zone forms a unique programme, where effects of societal actions are studied at different levels. The ECHO-zone approach is expected to help policy makers make decisions based on the effectiveness of different societal actions on a child's health. Thus, ECHO-zones will determine what actions are effective in combatting different childhood health problems.

**The workshop at Uppsala Health Summit**
At the workshop, participants from different parts of society and persons working within ECHO-zones will discuss and address different aspects of how urbanisation affects the health of children. We invite political decision-makers and representatives from government responsible for different areas of society, not in the least from urban planning, to participate in the workshop. As focus is on the implementation and evidence building of societal actions, we also invite representatives of education, schools and health, practitioners at different levels, and non-governmental organizations, to join the workshop.

To prepare for the workshop, prior to the summit, participants will be directed to a set of brief learning modules. In these modules, persons representing the ECHO-zone approach in different parts of the world briefly present their experiences in initiating, managing, and evaluating such an approach.

At the Summit, to introduce the workshop, there will be short presentations that lift the workshop objectives on how to initiate, manage, and evaluate the ECHO-zone approach. This will be followed by discussions between the participants representing different aspects of society, where some have been involved in setting up ECHO-zones in different parts of the world.

# Listen to the kids in participatory urban planning

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Children's commitment to civic participation increases when they are involved in urban planning. This promotes greener and healthier living spaces for all.

This workshop will identify strategies that will help decision-makers within urban planning and outdoor management to act in favour of child participation and thereby contribute to healthier urban environments.

**The workshop will discuss the following questions:**
- How can urban planners become interested in, aware of, and proactively work for children's rights and needs in urban planning?
- How can key actors be engaged to work together for child-friendly urban planning?
- At what phases of a planning process is it relevant to engage children?
- What obstacles to children´s participation need to be addressed?



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As citizens, children have the right to have their voices heard in all matters in society that affect them according to the UN Convention on the Rights of the Child (CRC). Since its adoption in 1989, studies have shown that children's voices can be understood using methods designed specifically for adult-child communication. The involvement of children and young adults in effective participatory processes contributes to their social development. Moreover, allowing children and young adults to participate in decisions that affect their lives is a matter of respecting children and young people as individuals in their own right, a position emphasised by the CRC. Children and young adults can, and generally want to, share their knowledge, experiences, and perspectives on issues that concern them. Adults need this knowledge to plan child-friendly, sustainable environments as we cannot afford to invest money and resources into building cities that are not sustainable. Children and adolescents can help adults see new solutions or possibilities from a holistic community per-

spective. As the living conditions for many children significantly differ from the conditions that their parents and other adults had themselves during childhood, we cannot rely on adults' recollections of their childhood experiences.

Urban development differs in societies around the world, but the general trend today is for rapid urbanisation and dense new building, often reducing the outdoor space children can use. In addition, urbanisation increases traffic with consequences not only for children's mobility but also for their health. Air quality is affected by traffic in several ways, resulting in disabilities that will stay with them as adults. Dense cities with fast growing populations also tend to increase anonymity. Parents do not want their children to go outside alone fearing dangerous adults. Parents tend to accompany their children to school, activities, and friends' homes or drive them by car. This leads to more traffic as well as to fewer opportunities for children to explore and experience their environment by themselves.

## What is a child-friendly city?

The widespread ratification of CRC prompted UNESCO and UNICEF to launch the Child Friendly Cities Initiative in 1996. This initiative inspired projects and networks working for child-friendly environments, examples include the European Network of Child Friendly Cities which arranges biennial conferences in cooperation with cities with child-friendly environment programs on their agenda. In the USA, the Children, Youth, and Environments Network (as part of the Environmental Design Research Association) organises sessions for child and youth participation at annual conferences. These projects and sessions focus on where children live and how these places can be improved. Theoretical work on children's health and well-being is presented together with efforts to improve children's environments and to involve children in the projects.

From previous studies, we know that the characteristics of child-friendly environments remain constant across generations of children. From an early age, children need to freely move around their physical space to learn about their physical and social environments. These environments are the basis for their identity and their safety and health. They need places to play on their own as well as with friends and they need places within easy access to their parents and other adults. By freely moving about their environments, they learn about environmental risks and how to handle them, including which one's to avoid. That is, children need environmental experiences of their own.

Several actors make decisions about how children's environments are planned and managed, including urban planners, traffic, park and sport facility planners and managers. Public areas such as streets, squares, and parks as well as private areas such as residential yards are part of the environment children encounter and use every day.

## What methods can be used in planning for child-friendly cities?

There are several ways to collect information about children and their living conditions: demographic statistics or surveys and interviews with key informants such as parents, teachers, after-school teachers, and NGO leaders. In addition, observations can provide information about how a site functions. For example, observations of three- to five-year-olds playing in a preschool yard can be used to map behaviours that show the connection between the physical environment and the activity level among children. Well-planned interviews with children as young as three years old can provide valuable background information and focus groups can be used with children ten years old and older.[1] These methods do not involve children as active partners, but they give valuable information about children and the areas where they live.

There are also methods that actively involve children and youth. For example, art-based methods can encourage dialogue about a place or community. Art-based methods include drawing, film-making, photography, or story-telling. For example, Photo-voice, a method developed in China, brings everyday experiences into decision making.[2] Interviews, focus groups, and surveys can be used by children and youth themselves to gather information about their community.

Digital survey methods have been developed and tested in practice in the Nordic countries, for example, *Kid´s Tracks* in Norway, *Children's Maps in GIS* in Sweden, and *soft GIS* in Finland.

The project "Safe Communities" in India is an example of a project using multiple methods, including surveys, interviews, observations, and focus groups. Children seven to 19 years old participated with adult volunteers with the goal to develop a model to mainstream the protection of children in high-risk urban areas into city and community development.[3]

In all participatory projects, it is important to clearly communicate the end of a project as well as to acknowledge the children's participation. This communication can be manifest as an event or as a workshop where the project and the results are shared with decision-makers, parents, and other stakeholders. When children present their work to parents, politicians, or the community, it is also a form of celebration.[4]

[1]  Derr, V. et al., 2018, pp. 51-66
[2]  Derr, V. et al., 2018, p. 82
[3]  Derr, V. et al., 2018, p. 297
[4]  Derr, V. et al., 2018, pp. 201-202

## What characterises an effective participatory process?

When children participate in projects to develop their own community, it must lead to some useful results and changes that contribute to a child-friendly city to be effective. Here are some conclusions from the project "Growing up Boulder" [5]

- The project should deal with issues that are local and place-based. People, children, as well as adults care about their community and want to influence how their communities are developed and managed.

- The process should be transparent to all participants. Limitations, responsibilities, and roles of participants should be clearly stated. Children understand and accept, for example, technical or economical limits if they are informed.

- The process should deal with issues that are relevant to the participants. Children should not be involved just as decoration or to gain political goodwill.

- The project should be educational for all parties. The potential for children to learn about city planning and democratic processes is sometimes highlighted. But just as important is the possibility that the adults can learn about the capacity of children at different ages. That is, an experience can change how adults talk to and about children and how they frame important political issues.

- All participation should be voluntary, and it helps if it is playful and fun.

We believe that there is an abundance of knowledge about the importance of outdoor environments for children's development and well-being. We also see the need for children's participation in matters that concern them. Several methods for describing children's outdoor environments as well as methods for children's participation have been developed and used, contributing to knowledge on how to involve children in planning

processes. We know what characterises an effective participatory project with children. Nonetheless, it is obvious that a children's perspective as well as children's own perspectives are lacking in many urban planning processes.

One conclusion from participatory projects with children and adolescents is that it is important to raise awareness about children's needs and capabilities among decision makers as well as create changes in policies and institutional frameworks.[6]

Childhood is just a few years. At the same time ten years is a life-time in a young person's life. In this workshop, we will focus on how decision-makers influence children's outdoor environments in ongoing, everyday work. Decisions taken today have consequences for the health and well-being of children's future lives.

As an introduction to our discussion in the workshop, Mara Mintzer (Boulder, Colorado, USA) will share her experiences with the "Growing Up Boulder" project. Mintzer and her colleagues describe the project in their new book – *Placemaking with Children and Youth. Participatory Practices For Planning Sustainable Communities.* This is an inspirational guide for people new to participatory practice as well as a resource for practitioners who seek new approaches or ideas and includes examples from all over the world.

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[5] Derr, V. et al., 2018, pp. 329-332
[6] Driskell, D., 2002

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# Supporting mobilities in complex urban contexts

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This workshop will address how to develop strategies that support children's mobilities in urban contexts and enable a range of experiences through mobility.

**The discussion will address the following questions:**

- What do children want to experience and realize through their mobility?
- What physical features of urban environments support and restrict children's mobility?
- What other factors – e.g., society, culture, and family – support or restrict children's urban mobilities?
- How can these various supports and barriers be addressed in policy, planning, and other practical work to promote children's mobilities?
- What are the 'good' examples and what can we learn from them?

Cities constitute paradoxical and complex living environments when it comes to children's mobilities. While cities provide many places for children to explore through different means of mobility, children might not be able to access many of these places without adult accompaniment. Many of the world's cities are planned and constructed for an adult labour force, a focus that has spatially shaped everything from transport systems to housing, labour, and school markets. As vehicular mobility and infrastructure centred on the private car has increased, children's ability to independently explore their city has decreased. In many ways, this trend has excluded children from public spaces to such an extent that they have been forced to 'retreat from the street' (Valentine 1996). On a general level and in terms of presence and participation in the public space, children's right to their city is conditional.

These societal changes have contributed to changes in the ways children are being and becoming mobile. Structural conditions are an integral part of the everyday lives of city residents. Although structural conditions in many cities have led to a decline in what has been referred to as children's independent mobility, children are also co-producers of urban structures through their actual mobility practices. In spite of these structural conditions, children are social actors. As such, structural conditions are at times conformed to, negotiated, or contested by children and adults alike; in short, children's and adults' mobility practices reveal urban life and thus construct the urban fabric.

**What do children want and need from their mobilities?**
The changes mentioned are not necessarily negative for children. In fact, research on children's mobilities shows how children enjoy the comfortable one-on-one time with a parent in the car when travelling from home to school (Barker 2003). Childhood research has also discussed how children in the 1950s, 1960s, and 1970s were not allowed to play indoors and how the only alternatives involved long, sometimes boring, hours outdoors (Karsten 2005).

However, there is also widespread concern in policy and certain strands of research about how these changes in mobility might affect children's health and wellbeing. Sedentary lifestyles are more common for children as well as for adults in many parts of the world, affecting not only levels of physical activity but also children's psychosocial and emotional wellbeing (Ergler, Kearns & Witten 2017). Children engaging with and establishing relations to their material and spatial surroundings have been put forward as important. However, few studies have examined the importance of children's mobility when it comes to creative play, interaction, and exploration of their surroundings. Yet, the possibility to withdraw, contemplate, reflect, and recover may be just as important for their development and health as physical activity. Children's mobilities are thus associated with their wellbeing through diverse and intertwined pathways. Within an urban context, the conditions that support these diverse pathways – e.g., activity, recovery, reflection, and creativity – can reveal contradictions and present challenges on many levels.

Within the large and multidisciplinary research field of children's mobilities, research has shown that independent mobility has declined in many cities for many children (Shaw et al., 2013; Hillman et al., 1991). Children are accompanied by adults on their way to school, to friends' houses, or to leisure activities more often today than previous generations (Bradshaw, 2001; Kyttä et al., 2015). Many children also have a smaller home range compared to their parents and grandparents. The rate of bicycle use among children has also decreased in many parts of the world even in high-rate cycling countries. Some groups of children are also found to cycle less than their peers. Such changes affecting children's mobilities presumably have implications for their wellbeing and development.

**The complexity of children's mobility**
The reasons for the decline in children's active mobility are complex and related to structural changes and conditions partly specific to national contexts. While the causal relationships between children's mobility practices and aspects of their wellbeing are unclear and quantitative and qualitative research around the intersections of socio-economic factors, gender, age, ethnicity, and mobility is lacking, many studies have connected mobility and outdoor play. In a systematic review of quantitative research on children's mobility, (Bradshaw, 2001; Kyttä et al., 2015) identified factors in children's broader physical, economic, and socio-cultural environments that were most highly associated with the tendency for children to use active travel (walking and biking). The factors that were the most important for children's mobility in the physical environment were the presence of parks, play areas, sporting venues, and recreation facilities in neighbourhoods (Bradshaw, 2001; Kyttä et al., 2015). As many cities are now being developed to avoid urban sprawl, they become denser due to high exploitation rates, brown field development, and exploitation of open space. In addition, a functionalist planning paradigm has resulted in a tendency to ignore 'soft issues' such as diversity and difference among users of land or transport, so children's perspectives and views are often neglected. For example, while dense cities may be designed to increase walkability for adults, these designs might actually decrease walkability and playability for children by increasing social fears and by decreasing the availability of undeveloped spaces that children

might otherwise appropriate (Janssen & King, 2015).

A focus on how children and families actually move in a city on an everyday basis may provide tools that support more sustainable urbanisms. Children live in local worlds and conditions that provide them with certain opportunities and restrictions in terms of their mobility. In many ways, children's mobility is very much local and centred on the immediate neighbourhood, despite notions of the world becoming increasingly hypermobile (Pooley et al., 2015). However, small-scale qualitative studies have shown that the location of organised leisure activities beyond the immediate neighbourhood decreases children's mobility (Tillberg-Mattson 2002; Hjorthol and Fyhri 2009). The institutionalisation of children's lives together with the fact that schools, day care centres, and leisure activities often are spread out in the urban environment have resulted in an 'insularisation' of children's lives where they are driven from island to island (Zeiher 2003). In their review of quantitative studies, Pont et al., (2009) show that the presence of walking and/or bike paths might encourage children's mobility. In addition, a longitudinal study has shown that satisfaction with the number of pedestrian crossings is positively associated with active transport to school, whereas few traffic lights and crossings are associated with lower odds of active transport to school (Hume et al., 2009). In many urban contexts, shared space is introduced on the assumption that these spaces create democratic environments where bicyclists, pedestrians, and drivers are imagined to be equal irrespective of the traditional traffic culture. For children, however, these new shared spaces are seldom experienced as safe or equal due to the lack of signs, crossings, and other clues in the streetscape as well as the ambiguity in other users' behaviour (Christensen et al., 2018). These findings illustrate how the material environment is entrenched in and vital for understanding the practices and behaviours of people.

Pont et al. (2009) identified economic factors such as increasing household car ownership and increasing household income that were negatively associated with children's mobility. Socio-cultural factors such as having a minority ethnic background and living in one-parent households were associated with a higher degree

of mobility for children. In addition, perceptions of safety among parents were associated with a higher degree of children's active mobility. Small-scale qualitative studies show that parents' and children's fear of traffic, strangers, and unruly teenagers might restrict children's independent mobility (Valentine 2004).

Embodied and affective dimensions that partake in and support children's mobilities are a further emerging research area (Ekman Ladru & Gustafson 2018; Joelsson 2019). According to Pont et al.'s (2009) review, social interaction with other children in the neighbourhood was associated with a higher degree of active travel. Similarly, a longitudinal study shows that knowing many children and adults in the neighbourhood is positively associated with children's active transport to school (Hume et al., 2009). To increase children's mobility, studies point to the importance of enhancing the neighbourhood's social environment (Mitra et al. 2014).

Children's mobility is further bound up in the temporal-spatial organisation of the daily life of the household, including parental commuting and tight time-schedules. Children's mobility is also closely linked to diverse institutional contexts, such as the school or organised leisure activities. Thus, children's mobility is tied to the mobility of other family members and others close to the child (Nansen et al. 2015; Holdsworth 2013). Contemporary childhood is characterised by spending time with parents while being driven to school, peer activities, and family outings (Nordbakke 2015; Karsten 2005), also known as a way of 'doing family' (van der Burgt & Gustafson 2013) and associated with norms and cultures around parenting and parenthood (Dowling 2000). How parents or other adults close to the child understand, encourage, or discourage their children's mobility is closely linked to the everyday child-parent negotiations around the child's mobility practices (Barker 2003). Here, technologies such as mobile phones can be understood both as new forms of child surveillance (Fotel & Thomsen 2004) and as aids that encourage children's mobility (Kullman 2010). Parents' perceptions and evaluations of their child's competence and maturity can be emotionally charged, illustrating the centrality of affect in risk management.

In sum, understanding children's mobility requires addressing children as a heterogeneous group as they live in widely differing urban contexts under widely different socio-economic and cultural conditions. Although ample research has been conducted on children's independent mobility, this research has largely been Eurocentric (Malone 2011).

**How can we support children's mobilities in European cities and elsewhere?**
At Uppsala Health Summit, we will depart from the complexity of children's mobility in urban contexts and share thoughts on and experiences of how to support children's varying ways of being mobile, such as roaming, exploring, ('just') walking, and (kick)biking, and how this can also include time and space for quiet reflection and withdrawal that encourages stress recovery and assimilation of everyday experience into a developing sense of self. We will discuss the varying and changing characteristics of children's mobility in cities and how these are being supported in cities in different geographical contexts. This focus includes considering examples of how the urban environment and planning context can support the diverse ways of children being mobile.

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# City gardening and farms for learning and wellbeing

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Although global research indicates that outdoor education with physical activities improves learning and wellbeing, opportunities for active outdoor learning are limited for many children, especially in urban areas. How can we improve access to physical activities for children from different backgrounds in different countries? Perhaps, we need to focus on physical activities that can be conducted during school as most children go to school regularly. For example, outdoor education and physical activity during school could include the use of city farms and school gardens. In addition, exposing children to farming practices, including animal husbandry and growing vegetables, will not only provide children with important knowledge about food production but also will provide them with knowledge about how healthy lifestyle choices directly influence their physical and mental wellbeing. The goal of the workshop is to identify who can support children's access to outdoor education by promoting school gardens and city farms and how this can be done. This type of program is a social investment, which should be motivated in financial terms. Our suggestions will be put together in an action plan that can be used to help politicians, city planners, landscape architects, school leaders, teachers, health care workers, and others facilitate the creation, management, and use of school gardens and city farms and thereby support a healthier childhood.

**The focus areas for the workshop**
• Who are the stakeholders with the power to influence the development of cities and systems where active outdoor education in an eco-health context is provided for all children?

• How can the creation and continuity of pedagogical outdoor environments favouring children's learning and wellbeing be facilitated? What is needed to meet this goal?

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According to UNESCO, 91% of all primary school children and 84% of all secondary school children attend school. Most of these children live in cities, removed from the realities of food production that farmers and rural residents live every day. We want our children to grow up as healthy individuals in a healthy world, and we know health and learning are strongly linked as students with good mental and physical health perform better in school and adults with a higher level of education tend to have less health problems and live longer.[1] Therefore, schools and preschools can be the most important health promoting arenas for children, especially if they take advantage of outdoor activities that promote healthy life styles such as gardening.

**Positive effects on wellbeing from physical and outdoor activities**
Physical activity is associated with a reduced risk for cardiovascular disease, type 2 diabetes, and cancer.[2] Cardiorespiratory and muscular fitness levels in children and youth are strong predictors of future cardiometabolic disease .[3] A recent study found that physical activity for 10-59 minutes per week resulted in 18% lower risk of all-cause mortality among US adults. This physical activity does not have to be intense – brisk walking, dancing, and gardening are sufficient – although prolonged time of physical activities reduced the risk up to 31%.[4] Clearly, healthy physical habits should be established early in life.

Outdoor activities are also essential for musculoskeletal development and balance in growing individuals. For example, exposure to daylight regulates vitamin D supply and complex hormonal functions. In addition, participating in outdoor activities improves self-confidence and positively affects impulse control and the ability to collaborate with others.[5] Spending time in nature also improves resistance to stress and depression as well as reduces myopia and lowers child obesity.[6] In spite of this information, children today spend less time being active outdoors and diagnoses of ADHD and stress-related problems are increasing.

[1]  Faskunger et al., 2018
[2]  Yang et al., 2019; Zhao et al., 2019
[3]  Bangsbo et al., 2016
[4]  Zhao et al., 2019
[5]  Faskunger et al., 2018
[6]  South University, 2012

## Positive effects of outdoor education on learning

Pedagogical activities in nature can be one way to stimulate and increase a connection to and concern for environmental issues in participating students.[7] Students also seem to benefit in terms of their development of social competencies and social relations. Students seem to improve academic performance in several subjects and improve their ability to transfer knowledge to real life situations.[8] A variation in learning activities as well as engaging the students' different senses supports deeper learning.[9] These outcomes are enhanced by school gardens and city farm activities. Evidence suggests that children with low motivation for traditional theoretical indoor teaching perform better through outdoor education where they can be physically active. Children with diagnoses such as ADHD and lack of emotional and/or impulse control tend to improve their cognitive abilities with physical activity.[10] Outdoor education that includes physical activity can also create an inclusive learning environment for these special needs children, helping satisfy The 2030 Agenda UN Sustainable Development Goal of providing a quality education for every child.

## Social inclusiveness

Pedagogical activities in nature can also affect identity and the sense of belonging in a group and possibly in a community.[11] When children engage in gardening or taking care of animals as part of their educational activities, they also learn to take responsibility and cooperate with others. Children can see the direct effect of their actions, that their actions matter. The feeling of participation and social inclusiveness has positive effects on self-confidence and mental health.

## School gardens

A school garden as part of outdoor education can create learning opportunities unavailable in traditional classrooms. To plant a seed, watch it grow, take care of the plant, and finally eat the fruit helps children learn about the natural cycles in a very direct way. The work in a school garden also includes group activities and can involve many academic subjects, from maths and economics to art and biology. In addition, school gardens can also contribute to The 2030 Agenda Sustainable Development Goal of zero hunger. As many children go to school with an empty stomach because of poverty, school gardens can provide an inexpensive and healthy way to ensure children get some needed nutrition. For example, in the Gambia, the non-profit organisation Future In Our Hands uses school gardens not only as teaching tools but also as a way to provide nutritious lunches to students. As student hunger decreases, student performance improves.

## City farms and animal contact

The youth organisation 4-H, a global non-profit organisation, exposes children to farms, often located in cities, to teach children about farming and food production. The four H's stand for head, heart, hands, and health, which are all essential components of activities performed on 4-H farms. The organisation exists in more than 50 countries, cooperating through international exchanges, global education programs, and communication. The concept used is 'Learn by doing' and the goal is to develop citizenship, leadership, responsibility, and life skills. One focus is on healthy living. Many studies have examined the impact of 4-H projects and activities on life skills. They indicate that 4-H members develop critical life skills, such as decision- making, leadership, communication, personal development, and social skills that continue to influence them in later life.[12] Large cities, like London, have several city farms open to the public, with activities for children like gardening and meeting farm animals. Not all city farms are connected to 4-H, but a general feature is that the farms are run on a voluntary basis and depend on subsidies from society, donations, foundations, and lots of voluntary work. In some parts of the world, the main goal of 4-H projects is connected to providing food. In 2012, independent 4-H country programs were set up in 15 African countries with a three-year goal to equip 250,000 young people in Sub-Saharan Africa with the knowledge and skills needed for improved, sustainable livelihoods.[13] In Ghana, for example, the 4-H experience resulted in a 250% increase in maize yields. This increase contributed to greater access to nutritious food, increased income, improved school attendance, and a better basic understanding of supply chains and entrepreneurial skills.

## Health aspects

There are many benefits associated with school gardens and animal contact provided that these activities safely handle exposure to UV light, allergies, hygiene, and other risks. Visiting farms requires some basic knowledge of hygiene to prevent the potential risk of transmission of harmful bacteria between animals and humans. Washing hands before and after handling animals is an easy way to minimise the risk. This also teaches children basic knowledge about the way diseases can be transmitted and how to prevent them. This knowledge can be used to reduce infection risks in different situations such as handling food in the kitchen. Another risk associated with animal contacts is allergic reactions. However, studies show that children growing up on farms have fewer allergies[14], which is probably due to sensitising through gradual habituation to the exposure of potential allergens. The risk for children who are allergic to animals varies, but in many cases these risks are low as long as there is no direct contact with the animals. Being outdoors in general, providing the air is fresh, contributes to a lower risk of children contracting disease as it is more difficult for air-born infectious microbes to spread and the children's immune system is strengthened when they spend time outdoors.

## Planning

So why don't all schools have school gardens or city farms nearby? To provide an environment in the city where the suggested activities can be included is a challenge. Cost of land is high in many urban areas, and different incentives have to be considered when planning. Therefore, large green areas are not always part of the city plan. Still, there are examples from all over the world of how the outdoor environment can be used to create green niches where children actively can learn about eco health. The planning process is one key to providing children with living green environments for active outdoor learning. How can we ensure that city plans prioritise school gardens and city farms?

## Regulations

Regulations vary between countries and are sometimes local or regional. For example, Swedish national guidelines suggest a distance of 200 meters between an animal farm and private homes.[15] Although this is only a guideline and not a law, it is often strictly followed. To officially let visitors come to a farm on a regular basis, a special license is required. Are regulations an obstacle to establishing school gardens or city farms?

## Sustainability

Another challenge is to make the school gardens and city farms work in the long run. Running a garden or an animal farm is expensive. Somebody must be willing to pay for the investments and the running costs. Today, many school gardens and city farms are run by enthusiasts or an organisation and the connection to the school curriculum is weak. There is nobody who has the ultimate responsibility to make sure schools have access to school gardens and city farms.

[7] Fägerstam, 2012

[8] Faskunger et al., 2018

[9] Biggs et al., 2011

[10] Faskunger et al., 2018

[11] Fägerstam, 2012

[12] Radhakrishna and Sinasky, 2005

[13] 4-H Partnerships in Africa

[14] Müller-Rompa et al., 2018; Vasileiadou et al., 2018

[15] Boverket, 2011

This means that the system is fragile and depends on somebody's good will. For outdoor educational programmes to be successful, they require frequent users. How do we motivate schools to operate outdoor programmes? Who has the ultimate responsibility to ensure that school gardens and city farms provide the appropriate educational opportunities?

**The Future**
Although outdoor education provides substantial benefits for society and children, many children do not have access to school gardens or city farms. There are challenges to bridge to provide children with this resource and there are many stakeholders from different parts of society to involve in the process. Who are the stakeholders with the power to influence the development of cities and systems where active outdoor education in an eco-health context are provided for all children? How can the creation and continuity of pedagogical outdoor environments be facilitated? What is needed to make this happen?

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# Nature Play Enhanced with Digital Elements

## - Access to Everyday Play with High Play Value

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This workshop focuses on how to integrate digital interactivity with typical natural environments by combining the positive aspects of computer gaming with play in nature. We know both the natural world and the digital world can instil a sense wonder in children and captivate their attention. How can we combine these two worlds to improve the value of play in the everyday environments children and young people live in? Although combining these worlds is important for all children, easily accessible outdoor environments are especially important for children at risk and children with special needs.

In this workshop, we will experientially explore different outdoor settings that build play value. We will discuss how to foster outdoor play with high play value in different conditions across the world. Society needs to prioritise outdoor environments of residential areas and schools to promote children´s health and well-being. Improving outdoor play requires understanding how the design of play environments affects the value of play, knowledge that will also improve the procurement pro-

cess. In this workshop, we will discuss the perquisites for outdoor play in a digitalised society and examine the tools needed to improve procurement processes.

### Aim of the workshop

As this workshop aims to co-write a manifesto for interventions that ensures children's access to outdoor play in their everyday environments, the following questions will be addressed:

- Who are the stakeholders? What are the immediate actions needed at the policy and local level?

- How can interactive technology and natural surroundings combine to make play and socialising outdoors an integrated part of the everyday lives of children?

- How can interactive technology support the design of sustainable and engaging play environments that are easily accessible to children (i.e., accessible every day)?

### Access to Play

Today, urban spaces are increasingly more valuable and every piece of land needs to cater to the needs of several groups. Car-free environments in residential areas are considered non-productive and therefore are being phased out. When the urban landscape is designed primarily for vehicle access, children lose access to easily accessible play areas, requiring children to depend on adults for transportation to activities.[1] Moreover, school yards are decreasing in size. The National Board of Housing, Building and Planning in Sweden[2] found that school yards are decreasing in size as a result of densification. Vegetation areas are shrinking, and some new schools have almost no outdoor areas accessible to children. As school breaks are one of the rare opportunities for children to play and socialise outdoors, this limitation can have major consequences on children's health and wellbeing. As playgrounds become increasingly scarce, outdoor play becomes a matter of a family excursions rather than a part of children's everyday activities. Although often beautiful and well-designed, these 'excursion' playgrounds tend to be impoverished from a play perspective, covered in rubber or asphalt and equipped with climbing structures but curiously void of vegetation, sand, and other loose materials. Clearly, many countries, including Sweden, have radically decreased children's access to their local natural surroundings.

### The role of nature in outdoor play

Access to nature and natural materials is often considered a crucial part of the outdoor experience.[3] Talbot and Frost (1989) coined the term 'Playscape' as a way to think about how a particular landscape can afford play and what they call 'magical thinking'. In a detailed study of outdoor play in a natural forest, Fjørtoft and Josefein (2000) discuss how shrubbery encourages vigorous play such as hide-and-seek as well as imaginative play (e.g., playing house). Retaining natural landscape environments in school grounds can increase the amount of play children pursue in general, not only in the natural landscape but also in adjacent hard-made areas.[4] In addition, loose material seems to encourage children to play and to explore the dynamic

aspects of outdoor play under changing conditions such as wind, snow, sun, dusk, heat, and cold.[5] Playing outdoors in green and varied spacious areas synergistically affects children´s health, benefiting their overall wellbeing and executive functions.[6] Interventions such as planting areas with both natural and ornamental

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1   Back et al., 2017; Mårtensson and Nordström, 2017
2   Boverket, 2015
3   White and Stoecklin, 1998
4   Lindholm, 1995; Mårtensson et al., 2014
5   Mårtensson, 2009
6   Wells et al., 2018

species in the schoolyard can improve the physical wellbeing of children and change the culture of play in the school grounds.[7]

## Interactive technology and outdoor play

A number of research projects have presented designs that support free and creative play with interactive technology. De Valk et al. (2012) propose a specific design strategy called open-ended play. This design strategy guides play without constraining play. The design goal in open-ended play is to encourage children to explore the installations, an exploration that might include inventing a game or playing that is based on their exploration.[8] Ideally, this process is never-ending as children constantly invent and reinvent their own play activity. While these projects offer insights into the contributions of interactive technology in outdoor settings, they have focussed on the technology in isolation. That is, the role of physical space, including its vegetation and natural materials, has not been considered. In fact, many user studies on interactive playgrounds have taken place in gyms[9] and labs.[10] Most studies on interactive playgrounds in outdoor settings primarily focus on the digital props and the isolated play with these props. However, in a study of a mobile play companion, Seitinger et al. uncovered how this playground prop served to mediate between children and the play environment so as to 'enhance open-ended and physically active play in playgrounds' (2006). The authors report that this playground prop increased physical activity, engagement level, and exploration.

## The DigiPhys Project

This workshop will elaborate on learnings from a five-year collaboration project called Digital and Physical Play Environments (DigiPhys).[11] In DigiPhys, urban planners, landscape architects, and interaction designers collectively set out to develop new strategies for redesigning the urban landscape with children's play in mind. A design strategy for a digiphysical playscape was developed in which the landscape, the installations, and their digital augmentations are designed to work together. Key values related to children's access to play in their everyday life are considered, including the importance of nature and greenery and the design of play interventions to support children's natural play activity. When digital interactivity is integrated in the children's everyday environment, together with

vegetation, natural materials, and terrain, the result is a digiphysical playscape that combines the advantages of digital and nature play. Apart from the technology innovation, the DigiPhys project produced several policy documents, performed multiple studies, and engaged iteratively with children, teenagers, and families in schools and residential areas.

Giving children access to play in their everyday environment became a key value in the designs in the DigiPhys project. As a consequence of supporting play everywhere, the DigiPhys project focused on small, simple, and easily installed equipment that would complement the play value of existing equipment.[12] The idea was that these projects could be installed as singular installations in small areas such as on school grounds, between residential housing, or in a park close to the children's homes.

The key design values include using existing natural resources such as vegetation and natural materials. These values strongly influenced the choice of location for the trials. The locations were selected to allow us to investigate how technology and nature can complement each other. Particular emphasis was put on providing access to different kinds of loose natural materials. In addition, the focus has been on complementing the opportunities offered by the place itself and with opportunities for developing digital interactions. The installations are not seen as the only design resource, but work together with the existing physical layout and the social practices of the place.

## Interactive technology

Digital technology can be included in physical outdoor play in many ways. Today, the most common experience of digital outdoor play relates to mobile apps, including using Augmented Reality. DigiPhys focuses on ways that the digital landscape can be integrated into the physical landscape with the goal of creating permanent installations that constitute a rich resource for play activities. To provide rich opportunities for

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7   Bell and Dyment, 2006; Mårtensson et al., 2014

8   Bekker and Sturm, 2009

9   de Valk et al., 2012

10  Tetteroo et al., 2012

11  Back et al. 2016; 2018

12  Back et al., 2018

varied and sustainable play, it is crucial to consider how the game is connected to the place and the landscape. These couplings are therefore important in themselves. In the digital material, there are connections at several different levels: between cause and effect in the digital material, between different installations, and between and within physical locations. The digital material is not used in isolation, but interacts with the surrounding environment. The most common effect of digital interaction is that something is visible on a screen, but DigiPhys primarily works with other effects – such as sound, light, and vibration – built into the surroundings and in the play installations. In the DigiPhys play concept, three kinds of sensors are triggered by a specific quality of the natural materials such as moisture, movement, or sound. When the sensors are triggered, the installation gives feedback using sounds and light. This soundscape and lightscape adds a layer of magic and interactivity. For example, when children throw stones, pinecones, sand, or water into the play installations creating sounds and light patterns, they create an instant as well as cumulative multi-sensory experience. This design strategy takes advantage of digital mechanisms such as interactivity, accumulating resources, inter-connectedness, and sensory experience as well as the qualities of nature play.

## Creating change

In this workshop, participants will discuss how to resist the present trend of locating children's play parks far from children's homes and schools. That is, we will examine what is needed to establish play environments close to children's homes and schools. We will also discuss how to stop the current trend in society to build very expensive traditional playgrounds with climbing gear, rubber asphalt, and a surrounding fence, choices that research shows have low play value. In addition, we will discuss the methods used and the procurement support tools developed in the DigiPhys project. Finally, we will co-write a manifesto describing interventions that ensure that children have access to natural environments in their neighbourhoods that also provide opportunities compatible with our digitalised society.

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# Measuring segregation and child health

## – setting a standard for a healthy urban childhood

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In 2015, the United Nations published 2030 Agenda for Sustainable Development Goals (SDG), a document that emphasises equity and social justice as essential elements for achieving a viable future. According to the International Panel on Social Justice (IPSP), humankind's survival depends on establishing sustainable, equitable, and free societies[1], a goal that is especially important in light of the rapid urbanisation taking place all over the globe. Children represent more than our future: they represent a vulnerable population that needs special attention. To successfully

address the current challenge of segregation and its effects on health, it is vital that we accurately and efficiently identify, measure, and track inequalities in the health of children who live urban environments. In addition, to safeguard children's wellbeing and to nurture their potential, we must accurately identify and measure the causes of ill health.

This workshop aims to propose a universal and standardised child health index to measure the status and development of healthy urban childhoods.

### Workshop aim

The purpose of this workshop is to discuss and inventory variables and aspects that need to be considered when measuring child health inequities in urban contexts. Is it possible to create an index of urban child health using data available in Sweden that provides a fair representation of children's wellbeing? Can the same indicators be useful in other settings? If so, can these indicators enable international comparisons and allow the tracking of improvements in child health? The expected outcome of this workshop is a validated index that can be tested in diverse contexts.

### Background

Tackling inequities in the health of children is a global priority. To address this global priority, society has employed many different approaches, ranging from targeted health interventions to improvements in determinants of health through social and economic policies. Social determinants of health include the conditions in which people are born and live and how power, money, and other resources are distributed, driving urban segregation. Low parental income, high parental unemployment, unstable housing, and neighbourhood deprivation shape children's wellbeing and development.[2] To ensure equitable health for all children, the magnitude of these disparities needs to be defined.

When the World Health Organization Commission on the Social Determinants of Health published its final report in 2008, it confirmed that social inequities are significant drivers of poor health outcomes and poor survival in low-,

middle-, as well as high-income countries[3]. These social inequities are evident not only as differences between regions (e.g., differences in rural and urban areas) but also as differences within regions, especially cities. That is, countries with vastly different social contexts often exhibit differences in social determinants within their cities that are larger than between their regions, often described as segregation. If these trends in geographic distribution are to be properly understood, statistics on both child health and its social determinants need to be broken down on a sub-regional level. Currently, the inability to easily visualise inequities in child health within cities can be attributed to the absence of standardised methods for measuring differences and identifying indicators, information needed when deciding how to distribute limited resources equitably.

### Measuring the gradient in child health

Although the relationship between socioeconomic status and health status is evident when comparing the lowest- and highest-ranking geographical areas or income groups, differences in health typically parallel socioeconomic status – the lower the socioeconomic status, the worse the health status. This very predictable pattern has been labelled the social gradient of health, and it permeates all cultural and economic contexts[3]. Moreover, as the early years in a person's life are formative, a suboptimal socioeconomic

1   Fleurbaey et al., 2018
2   Maggi et al., 2010
3   Marmot et al., 2008

environment in childhood can result in life-long negative effects on health and behaviour.[4]

No country is immune to the social gradient of health. Research investigating high-income countries (HICs) has found a relationship between poverty and preterm birth as well as low birth weight[5], less breastfeeding and shorter breastfeeding duration[6], as well as greater exposure of infants to tobacco smoke[7]. Similar trends are seen later in childhood. Both child obesity and poor dental health are significantly correlated to socioeconomic deprivation in countries that are otherwise well-off [8, 9]. This effect can be seen on the family level, as parental education and family income are correlated with knowledge of health-related issues, access to high-quality food, and access to other aspects of a healthy lifestyle.

The gradient in child health from rich to poor can also be found in low- and middle-income countries (LMICs), but individual variables often follow different paths. Differences in availability of public health care, sanitation, and food security can contribute to more pronounced inequities. These inequities can also take the opposite form in low-income and high-income settings. For example, in LMICs, children from high-income families are at higher risk of overnutrition (i.e., being overweight or obese)[10], and children from low-income families are at higher risk of undernutrition affecting immunity, survival, education outcomes, and opportunities for success in adulthood[11]. Because family education and income affects child health status in different ways depending on whether the families live in LMICs or HICs and what the families' specific income status in these countries, these differences need be considered when deciding how to measure and evaluate health outcomes.

### Healthy, safe, and socially-integrated neighbourhoods
Children's lives are shaped by their family's circumstances as well as the conditions of their neighbourhood. Poor children not only have fewer material family resources, but also have less access to well-functioning schools and safe recreation. Children growing up in unsafe neighbourhoods spend less time engaged in physical activity and more time watching television, perhaps increasing their risk of becoming overweight compared to children living in safer areas[12].

Apart from a stable income, education, and safe surroundings, prevention and mitigation of poor health outcomes also requires the ability to navigate the health system and knowledge of where to find help and support when needed. Possessing this type of knowledge and reduced socioeconomic adversity make it more likely that immigrant children will successfully integrate in society, ultimately improving child health outcomes such as obesity and poor dental health. In Swedish urban areas, several city districts are classified as especially underprivileged. Lack of social integration in these areas has resulted in high rates of unemployment and high school drop outs, and subsequently lower socioeconomic status than the national average. Children in these areas also have a higher risk of developing dental caries, a risk that remains even when controlling for family income[13].

### Measurements of wellbeing
Data on education, employment, and income can provide clues about which areas or demographic groups need help improving child health, but it does not offer a tool to objectively track improvements in health, a circumstance that will inhibit follow-up of targeted interventions. Several attempts to create standardised measurements for child health have been made, and their approaches have differed between settings.

The SDGs include a reduction in child mortality as a target[14]. Child mortality is an important indicator to track in areas where it is high in the first place, and reductions in mortality are rightfully highly prioritised on a global and national level. It is, however, not an equally useful indicator in high-income settings where universal healthcare prevents the social gradient from affecting survival rates. Since adverse childhood conditions do not always affect mortality or even result in evident outcomes during childhood, there might be value in tracking risk factors as

well as health-promoting factors alongside disease and mortality.

Such indicators are included in the European Core Health Indicators (ECHI), a set of variables used in the EU to compare child and adult health on national levels[15]. These variables include protective factors and risk factors that have been demonstrated to run along the social gradient for child health, such as low birth weight, early tobacco exposure, breastfeeding, and vaccine coverage. The ECHI includes variables for several aspects of health, but they are not meant to be used on a sub-regional level. In addition, not all 88 indicators need to be measured with the highest statistical detail to enable comparisons.

### An index of urban child health
One way to clarifying complex statistical inequalities is to create an index. To account for the many aspects of wellbeing in childhood, an intra-urban index of child health should include variables measuring outcomes, risk factors, and protective factors. Apart from the preventive effects of immunisation and breastfeeding, protective factors can also include availability of services and support. Furthermore, both physical health and mental health constitute different facets of a healthy childhood, and objective measurements and self-evaluated wellbeing can provide different types of information. As demonstrated with the example of child weight in LIMIs and HICs, some variables might have to be interpreted differently in different contexts. Although a child health index should cover as many aspects of children's health as possible, it should be adapted to available data. That is, a compromise has to be made between what is desirable and what is possible.

Peter Drucker, Austrian-American management consultant and author, is credited with having said that 'what gets measured gets managed'. In an attempt to manage the impact of segregation on children's wellbeing, an index of urban child health could be a valuable tool for providing a clear overview of the current state of inequity in child health in urban settings.

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# Social inclusion and empowerment in urban planning

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**Aim and objective of the workshop**
The anticipated outcome of this workshop is a list of points to consider when involving disadvantaged youth in the entire urban planning cycle (before as well as during planning and implementation of new residential and commercial areas). In addition, this workshop will identify strategies to ensure that disadvantaged youth feel a connection to the physical spaces in their communities.

What are effective ways to listen and act on the needs and concerns of "disconnected" children and youth in an urban planning context? How can we ensure their ownership of their local spaces? What are the potential pathways to sustainability? What role do stakeholders play to ensure that these groups

of children and youth are included in these processes? What are the benefits of social inclusion of "disconnected" children and youth to the private and public stakeholders and to society in general?

To encourage dialogue and find the answers to these questions at the Uppsala Health Summit, our point of departure will be the House of Plenty Model. By focusing on this model in different contextual settings, we intend to open up the discussion for other experiences and solutions. We will also discuss solutions to sustainability challenges and the role that various stakeholders from the private, public, and volunteer sectors can play in the upscaling and funding of such social innovation ventures.

## Background
The United Nations defines a socially cohesive society as a place where all groups have a sense of belonging, participation, inclusion, recognition, and legitimacy (United Nations, 2009). For citizens of any given nation to survive and prosper, they must be willing to cooperate with each other even though individuals have different backgrounds or circumstances. Social integration has been identified as the underlying condition to enable societies and individuals living therein to fully participate in all the activities in all the domains of life, be they political, economic, cultural, or other areas. When societies fail to achieve social integration, societies often become socially fragmented, increasing disparities and inequalities among groups. These divisions undermine the social cohesion needed to resist conflicts. In parts of Europe, the growing migrant crisis, slow economic growth, and failing integration of new groups into communities add to this social fragmentation and to disparities in societies, particularly in "disadvantaged areas" with already high unemployment rates among young people (European Commission, 2005).

Therefore, there is a great need to identify and apply ways to include all members of society so as to foster stable, safe, and just communities. The first step is to develop inclusive, sector-wide policies and promote an approach and process

that includes all groups. This means resisting the exclusion of specific groups (especially the weak and marginalised), which is inherent in society as the result of discrimination and authoritarian mindsets. Urban policy and planning can promote a society where individuals play an active role in the functioning of government and society, giving even excluded youth a sense of belonging.

To ensure inclusive planning is adopted in earnest, the elements of inclusive policy processes have to be broken into operational steps that provide tools that can support that process. Strong community engagement provides opportunity, builds wealth, promotes social harmony, and ensures greater equity for all citizens. Community engagement is important as a cohesive society will naturally work towards the wellbeing of all its members, fighting exclusion and marginalisation, creating a sense of belonging, promoting trust, and offering members the opportunity of upward mobility (OECD, 2011). (Re)search (see definition below) can unveil broader unmet social needs among "disconnected" children and youth, encouraging dialogue about successful and meaningful innovative practice for social inclusion in urban planning processes. Researchers need to rethink and move away from the traditional methods where they detach themselves from the subjects they are studying and instead
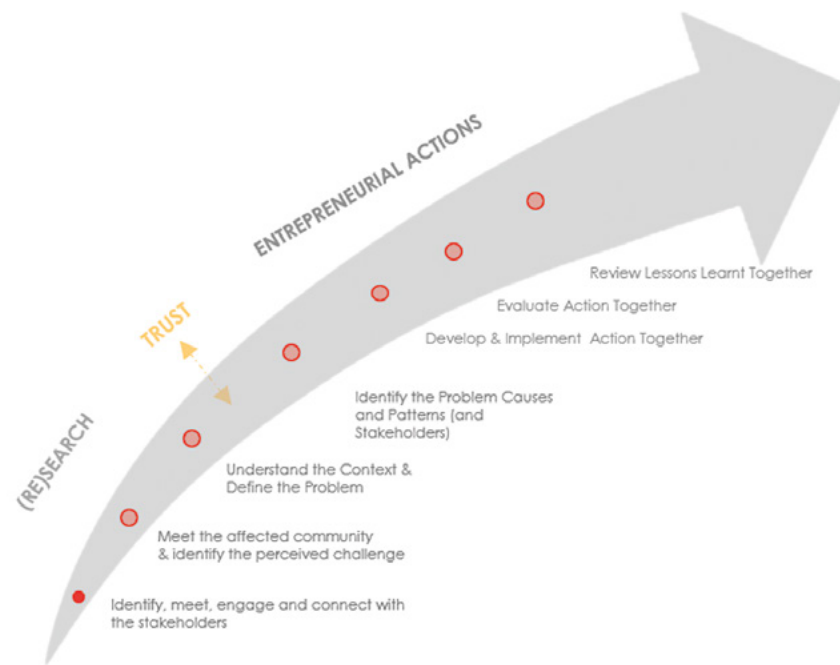
Figure 1. HOPE Social Innovation Model 2000 (Adapted)



Trust Building Model

Figure 2. Relationship and Trust Building Processes (1996)

begin to do research with the study population. Moreover, to capture the attention of relevant stakeholders and to develop the necessary trust, researchers benefit from being "present" by developing strong relationships with affected groups both in formal and informal settings. Such relationships will aid in the understanding of political sensitivities and encourage the researcher to engage rather than to just present evidence and recommendations.

**A Community Approach to Encourage Inclusive Urban Planning**
In this workshop the point of departure is one example of a community approach called the House of Plenty Model. Below is a step-by-step implementation process that will serve to encourage dialogue in the workshop.

The Hope Social Innovation Model (Figure 1) combines (Re)search and Entrepreneurial Actions to better address social issues of marginalised children and youth in East and Southern Africa, Southeast Asia, and Sweden. The model's goal is to help these children move from the margins of society into mainstream society as active, contributing citizens. The (Re)search process consists of "search" and research processes where the former is the critical community entry process within which various target groups, including researchers and stakeholders, are brought together to create a safe space to freely engage a common vision and goal. Within this safe space, social challenges are expressed and understood and with this knowledge, actions are developed and implemented to achieve the desired positive change, a process driven by

trust, co-creation, and action (Kaime-Atterhög, 2000). We suggest the adaptation of the model as a starting point to outline elements of inclusivity in standard urban planning steps and processes.

For the HOPE Model to be successful, it must operate within its three grounding principles:

1. Societal change has the ultimate impact if applied with respect to its approach, rationale, and steps.
2. Societal change is defined and manifested when researchers, stakeholders, and affected groups meet, engage, and connect to co-create an environment of change.
3. The model allows the researcher to stay true to the first and second principles by enabling the researcher to act as a facilitator rather than an expert.

The HOPE Model has three aims:

1. To facilitate access to groups that are "hard-to-reach" and engage with;
2. To ensure collection of high quality and reliable data necessary for development of entrepreneurial actions; and
3. To bring together multiple stakeholders who, in turn, apply the (re)search findings to a joint action or to their respective services and programmes.

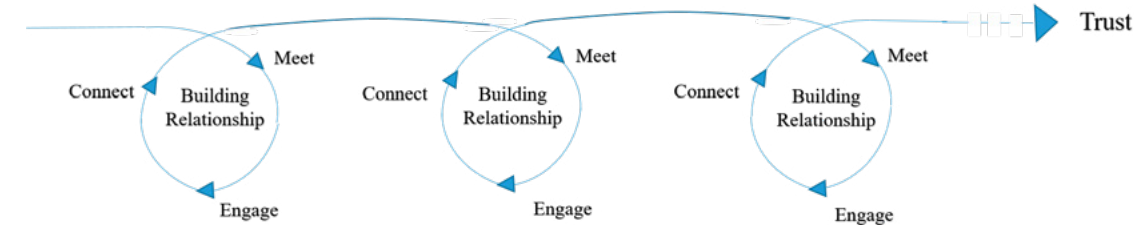Below is a step-by-step description of the model's components.

### Step 1. Identify, meet, engage, and connect with stakeholders
*Identify the stakeholders*
Stakeholders can be professionals or organisations who directly or indirectly work with urban planning issues. These groups hold insider knowledge and networks that enable access to the target group and/or the issue(s) at hand. Once identified, the stakeholders are classified either as core stakeholders or functional stakeholders. Core stakeholders have authority and resources in their respective organisations to influence the application of the results from the research. They are also opinion leaders within their organisations. It is important to note that they can also be gatekeepers who can prevent action. Core stakeholders are actively engaged throughout the project, while functional stakeholders are engaged on specific issues depending on the focus of their organisations.

*Meet, Engage, and Connect with stakeholders*
The HOPE model requires that the researchers and stakeholders develop a connection based on trust through the creation of a safe space for engagement, especially with the vulnerable groups and the hard-to-reach groups (Figure 2). Once contact is established, the engagement with stakeholders continues to be strengthened. Throughout the process of building trusting relationships, there are various ways that researchers and stakeholders engage and connect, including participation in functions attended by different professional groups in their networks. To further enhance the connection with the stakeholders and to prevent stronger personalities from deflecting the dialogue and trust-building process, the researchers engage these people one-on-one to establish a deeper connection before bringing them together into a dialogue group. In addition, "insiders" can also be identified and included to facilitate entry and access to target groups that are difficult to reach and engage.

### Step 2. Meet Engage and connect with the hard-to-reach/affected groups
During step 2, researchers connect with marginalised groups of youth. This step is made possible by the kind of engagement established with the stakeholders and "insiders" in step 1 of the HOPE model. The stakeholders and "insiders" facilitate the researchers' access to hard to reach groups in the project sites. Access is facilitated, for example, by engaging and connecting with the stakeholders and by attending stakeholders' meetings where those target groups are present. These contacts are made possible because of the trust created between the researchers and the stakeholders. This step further creates an avenue of connecting with the affected community, enabling the researchers to gain their trust. Thereafter, meetings with these groups can be arranged independently of the stakeholders.

*Meeting hard-to-reach groups*
The first few meetings take place one-on-one or directly during events. More opportunities to meet with the affected community are created to enhance the relationship and connection. During the meetings, the researchers maintain openness and create an informal setting where the participants can set the agenda based on their priorities and perceived challenges. To bring the group into the project, the researchers connect by being transparent with the agenda, focusing on the interests of the participants. The researchers listen to the affected community to learn about their perceived challenges and their needs. The researchers also provide information, knowledge, and contacts that can be helpful to the affected community to create reciprocity in the relationship and prepare for the next interactions.

*Engaging with the affected community*
The researchers target the engagement so it peaks in a crescendo and at different speeds

and intensities for different people. Engagement occurs through participating in the events organised by the hard-to-reach groups through the stakeholders or by organising events. The researchers invite the hard-to-reach groups to a neutral environment or activities where they feel safe and relaxed and can have fun and restore their dignity, even if it is temporary, for example, through dance and singing.

*Connecting with the affected community*
Connection is expected to gradually develop through continuous meetings and engagement with the participants in person. A connection is achieved when the researchers and the affected groups can engage freely and feel part of each other's team in relation to the study/project. This connection is expected to ease data collection. The researchers always keep in mind that although most of the affected groups connect, they might each have had different levels of connection. The researchers ensure that they keep the trust of each person and reach out to those who need more time to connect.

*Identifying perceived challenges*
Perceived challenges refer to the direct or indirect fears or needs of the affected community. The researchers observe and listen to them and respond to their immediate needs either directly or by referring to the relevant stakeholders.

## Steps 3 and 4. Understand the context and define the problem; identify the causes and patterns of the problem

This step of the HOPE model is where formal data collection (baseline data) takes place in form of face-to-face interviews with all target groups based on accessibility. It follows a sequence of informal data collection through the first two steps whereby, the researchers, stakeholders, and some affected groups come together in participatory workshops or special events. The stakeholders and the affected group help the researchers understand the group's perspectives, interpretation of information, and feedback with

the end user in mind. The HOPE model ensures collaborative data collection and reflection of findings in a non-threatening and non-confrontational environment where target groups share and reflect their views openly. In this context, reflections are part of data analysis.

## Steps 5, 6, and 7: Develop, implement, and evaluate action together

In steps 5, 6, and 7, interventions are developed based on the findings in steps 3 and 4. The direction of these interventions is based on the findings, whereas the scope is based on the resources available.

The project management steps, including initiation, planning, execution, monitoring, evaluation, and project closure, are all carried out in a transparent, collaborative and participatory manner involving all members of the project in the entire project process. Together, the concerned parties define what needs to be done, who should do it and their roles, how it should be done, and when it should be done within a realistic timeframe (a project management plan). In addition, they identify costs and available resources and decide how each step of the process will be implemented, monitored, reviewed, approved, and documented. This approach provides a systematic controlled project process that benefits all parties involved and leads to their participation, project ownership, and long-term sustainability of results. At the close of the project, the findings, project process, and lessons learned are documented and shared and hopefully inspire a new project idea that addresses another social challenge identified in the same community or in other geographical contexts. In this way, the (re)search and entrepreneurial action becomes a model of change. In the case of Wanjiku's (re)search and entrepreneurial actions mentioned above, the House of Plenty Social Innovation Model was adapted and applied to address social issues facing vulnerable groups in Africa, Asia, and Europe.

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# Indicators for Children's Built Environment

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The number of children living in urban areas is increasing at the same time as urban structures for everyday movement and spaces for children's play are decreasing. The Convention of the Rights of the Child (CRC), has proven to be a blunt tool in guiding the planning process to consider children's need for space in urban contexts. In addition, there is a lack of international and national regulations and guidelines for planning child-friendly urban structures and designing child-friendly spaces.

Attempts are being made to formulate strategies to plan child-friendly cities, but it is unclear whether such strategies result in changes in the local communities. In some cases, Swedish municipalities create their own local regulations, but these regulations seldom have the penetrating power to influence design outcomes in a densified urban context.

A significant amount of research has investigated the connection between children's health and the built environment. From this knowledgebase, data could be used to help formulate measurable standards for child-friendly cities such as requiring a specific amount of open space per child based on expected health benefits and establishing the maximum distance to a playground or open green space. In addition, data regarding health costs for children deprived of open space should be collected. Inserting measurable standards in regulations and guidelines could provide a way to safeguard children's rights in contemporary political and spatial planning contexts. On the other hand, we know that planning urban environments by following checklists with measurable data seldom results in good design. We also have to include qualitative standards for spatial distribution and design that entice free mobility and an appetite for movement and play.

### Aims and objectives of the workshop

The objective of this workshop is that participants will acquire a mixture of ideas and suggestions about which characteristics can be formulated into indicators to be used in planning for child-friendly cities. This is done partly by discussing the advantages and limitations of measurable standards in planning for a child-friendly city and partly by discussing how we can make qualitative standards and 'un-measurable' values be accounted for in planning discourse.

- What are the quantifiable standards for a child-friendly city?
- What are the advantages and limitations of these standards?
- What values are missed when indicators are based on checklists?
- Are there qualitative standards that can be formulated as indicators?
- How can qualitative indicators be used in a planning discourse?

- Is it possible for qualitative indicators to be surveyed or certified?

To frame these standards, we need to formulate the characteristics of built environments that ensure children's physical, psychological, and cognitive health. Moreover, we need to know how to evaluate these characteristics in the planning context. These are complex issues where questions such as which characteristics have validity from a child's perspective and which characteristics can be surveyed from a planning perspective should be discussed. The discussion should also address how to formulate these characteristics into indicators that can be used in planning discourse for child-friendly cities.

### Nexus between children's health and the built environment

The nexus between children's health and physical activity is well documented. A child's activity

level not only directly affects several health indicators, but also affects a child's future attitudes regarding an active lifestyle. That is, children's access to physical activity will affect their adult health. Despite this knowledge, research shows that physical activity, in general, is declining. In part, this decline in physical activity is the result of fewer transports by foot or bike to school, less time spent outdoors in free play, and more time spent in front of screens.

Organised physical activity such as in physical education, team sports, and individual sports can boost children's health and wellbeing. These activities often require an adult's engagement after work and school time and they also require special and allocated spaces, often at some distance from the child's home. Adult's engagement involve driving children to the activity, monitoring the activity, and paying for the activity. Rather than encouraging physical activity in organized form, it can be encouraged by focusing on movements that take place during unorganised everyday life. These activities often are interwoven with the activities children do with purposes other than to boost health, such as walking, bicycling, shopping, and spontaneous play. Whether these everyday movements are encouraged will depend on how we structure, plan, and design our urban areas. That is, it should be done in ways that offer secure and attractive walking and bicycling and encourage unorganised play.

Research and well-established experience show that children's access to many different kinds of spaces and places are crucial for an active everyday life. This position is supported by a wide range of viewpoints and research, such as physical health issues connected with obesity and social issues connected with changing spatial structures that affect children's agency in shaping community dynamics. In addition, open space research has highlighted how the distribution of space and the structure of the city affects children's everyday lives.

### New planning ideals affect urban growth

Contemporary national and international trends indicate that young families with children want to live in cities rather than in suburbs. At the same time, planning ideals and urban growth have changed; instead of expanding the city via suburban growth, the trend is to 'grow inwards', with denser urban structures as a result. The consequences are different and denser neighbourhood and community structures, smaller courtyards, heavier traffic, and rising land prices in central locations. Consequently, the urban spaces and structures children use for their everyday movement and play are being displaced by the infrastructure needed for urbanisation, resulting in denser courtyards, diminishing green/open spaces and parks, and more barriers to their mobility such as traffic. These trends have a negative effect on children's access to inclusive spaces that encourage their own agency and freedom of movement and make it harder for them to act and be seen in the public realm. In addition to the decrease in access to public spaces, there are fewer 'spaces left over from planning' where children can independently shape their own places.

Another new noticeable contemporary trend in Sweden is that specific, separate places traditionally allocated for children's play are being claimed by different societal actors. There are examples of schools and pre-schools being built without schoolyards or accessible outdoor environments. At the conference "Competition for Space" (Skolhusgruppen, 2013), it was noted that young people's requirements for outdoor space often are crushed between different land-use needs underpinned by economic interests. Statistics Sweden (SCB) recently showed that schoolyards have on average diminished by about 4 m2/child in Sweden between 2014 and 2017 (2018).

### The economic driving force in planning and constructing new urban areas

In the new housing development *Hammarby sjöstad* in Stockholm, children's needs were excluded for economic reasons. A sharp critique of this development was offered by the auditor of the City of Stockholm: 'Children are not as profitable as building houses'. The auditor also noted the urgent need for a new type of planning that considers the general public. The consequences for public space and places for children due to rising land prices in central locations have also been discussed internationally.

The legal framework, planning processes, and planning tools vary a great deal among nations. In most cases, national legal frameworks consider communal and user values. Contemporary trends and research indicate that these legal frameworks cannot protect children's need for everyday movement. Moreover, important urban structures and crucial spaces for children in the city are diminishing and disappearing.

The Convention of the Rights of the Child (CRC) stresses the children's right to play, which implies a spatial obligation where physical active play can take place. The CRC is mentioned in ten of 26 Swedish general municipal land-use plans, and half of the municipal land-use plans mention the concept of 'children's perspective'. However, municipalities are not legally bound to ensure that these regulations are followed. The CRC does not specify quantifiable units for children's outdoor environments, nor are any qualitative directives given such as spatial distribution, design, or content. In Sweden, the formulation in the Plan and Building Act states that 'sufficient open space [. . .] shall be provided on the site or areas nearby schools'. This directive obviously gives ample opportunity for interpretation; as shown in several contemporary examples, this can, surprisingly, be taken to mean 0m2/child.

Today, new housing areas, neighbourhoods, and public environments are planned and built in response to private economic forces; at the same time, the formal and constitutional responsibilities for ensuring that national or international laws and policies are implemented rest on a quagmire. Private interests are gaining an increasing role in the planning context, and several researchers note that the formal and constitutional power of the municipalities are undermined by private actors who push for securing private investments. As the driving forces in contemporary planning discourse are becoming more oriented toward a market economy, children, like every other group, are expressed in terms of economic value. This commodification becomes problematic when children themselves do not have any real economic power, and suggests an apparent risk that children's participation or needs will not be taken seriously. International studies have also found that children's participation in the public environment is prevented and obstructed by social restrictions, physical barriers, and legal measures.

### Could indicators for children's sustainable built environment be a key?

Research shows that so-called soft values are routinely passed over in planning contexts. Thorén-Halvorsen and colleagues (2000), for example, point out that quantitative standards and requirements have the largest impact on spatial planning, as they are always implemented in the physical environment. Highest priorities are given to standards for which the guidelines are expressed in terms of technical demands, such as reducing noise or air pollution, and in quantitative terms such as providing m2/parking and number of parking lots/built apartment. Nielsen (2014) shows how the total playable space covered by pre-schoolyards in Norway has fallen by 20-30% since a national quantitative guideline was removed in 2006. Within the same timeframe, the car-parking space at pre-schools fell by no more than 1.6% — one of the reasons for this much smaller decrease is the strict quantitative guidelines governing parking space. Clearly, soft values are difficult to manage in contemporary planning context irrespective of whether the values relate to children; that is, quantifiable values seem to have the greatest influence in contemporary planning.

Perhaps, advocating for measurable units might help emphasise children's need for space. After all, without enough square meters there will be no space (m2) to create places for children. However, the downside of seeking to safeguard children's rights to space by applying and improving quantifiable units (m2/child) is that it very quickly focuses on spaces specifically fenced off for children, thus falling in line with the seemingly prevailing conception that 'planning for children' means allocating and designing separate special places for children.

The dilemma seems to be that spatial guidelines expressed in qualitative terms, as in designing and shaping spaces to be attractive for everyday movements and activities and particular those that relate to inclusive spaces, get lost in the clamour for densification, infill, and economic driving forces. Guidelines expressed in quantifiable units that penetrate the prevalent planning discourse tend to focus on children's separated places. The hard fact is that there is a risk that

no space at all will be made available to children in locations with high land prices, resulting in no space left to discuss soft values or qualitative aspects of children's needs. Thus, quantity in space in some cases also means quality in place.

In contemporary political, economical, and spatial planning context, it is difficult to survey valid qualitative characteristics from a child's perspective that will promote child-friendly cities. The qualitative characteristics and soft terms that have to be used are not translatable into the required measurable units that planners prefer. We believe that promoting child-friendly cities cannot be effected simply by using quantifiable criteria and measurable units, but they might be needed to safeguard children's allocated and designated places.

The desired outcome of this workshop is that the participants will acquire a tool box of ideas and suggestions about which characteristics can be formulated into indicators that can be used in planning child-friendly cities and how these indicators can be surveyed in planning discourse.

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# Industry-academy collaborations for healthy brain functions through physical activity

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There is an opportunity for private sector companies to take a leadership role in creating, coordinating and supporting, and sustaining strategies that promote physical activity together with scientists, government agencies and civil society.

A growing body of research concludes that physical activity positively influences brain functions, including cognitive functions and mental health. Moreover, participating in sports and spontaneous physical activities during childhood positively influences health outcomes at all stages of life and supports cognitive and emotional functions in children's developing brains.

However, countries all over the world have witnessed an increase in sedentary behaviour among young people that parallels the rapid increase of urbanisation. Commercial forces are often seemed as being the trigger of sedentary behaviour by promoting attractive products and services that limit physical activity. To reduce the negative impact of these commercial solutions, governmental and non-governmental organisations try to compensate for this by developing rules, regulations and recommendations or provide compensating activities.

In this workshop, we will discuss how to explore and build fruitful collaborations between scientists, governments, non-governmental organisations, and companies to ensure that children have access to regular physical activity throughout childhood so they have the best conditions to grow and thrive.

**This workshop has one main aim:**
To identify key factors that ensure research, governmental and non-governmental stakeholders to collaborate and co-produce knowledge that will be used to develop commercial innovations that promote physical activity for healthy brain functions among children and young people.

To address this aim, this workshop will focus on the following questions:
- Is it possible to organise collaboration and co-production of knowledge in a way that is beneficial for all stakeholders, including the profit interests of the businesses and still guarantee the researchers independence?
- Which are the barriers and facilitators for collaboration and co-production of knowledge and how do we ensure a long-term mutual commitment?

The majority of children in Sweden do not meet the physical activity recommendation of 60 minutes of moderate to vigorous intensity physical activity daily,[1] a finding also evident in children and youth worldwide.[2] However, more research is needed to understand the effects of sedentary behaviours on children's health. Today, children and young people spend a great deal of their time in sedentary activities often in front of screens, further discouraging their participation in regular physical activity. In addition, in Sweden the reported prevalence of poor mental health among children and adolescents has escalated over the last ten years.[3] As a growing body of research has linked physical activity and healthy brain functions (including mental health and cognitive functions), identifying the predictors for child and adolescent physical activity is essential. Predictors of child and adolescent physical activity include the child's socio-economic status and the child's physical environment,

1  Hallal et al., 2012
2  Aubert et al., 2018
3  Socialstyrelsen, 2016

especially the degree of urbanisation of the child's neighbourhood. Although some studies show that environmental aspects are more strongly related to active school commuting,[4] socioeconomic status probably plays a more important role when it comes to lifestyle, including physical activity.

Previous studies show that sub-urban children and adolescents seem to have higher physical activity levels compared to rural and urban children.[5] Physical activity in an urban setting requires access to organised activities and facilities as urbanites often do not require much physical energy to access, for example, work, school, and shopping. If such facilities are not available, physical activity levels might drop to unhealthy levels. These facilities may include bicycle paths, sports pitches, play areas, parks, or neighbourhoods with a high 'walkability'. Some studies indicate that the closer to a park, the more active an individual is likely to be.[6] The same seems to go for active commuting. For example, in Chinese children, a number of key specific route environment characteristics have been associated to more physically active commuting to and from schools.[7] However, the more organised an activity is, the less likely participants will continue with the activity when the organised activity ceases. Therefore, creating opportunities for everyday physical activities (e.g., bicycling to and from school) may be more beneficial than creating opportunities for organised activities. One study shows that adolescents benefit more than younger children from physical activity-supportive built environments.[8] For young children, playgrounds and safer traffic have been shown to support walking without an increase in injuries and accidents. Since a growing number of people are living in urban areas, there is a great need to keep exploring and identifying facilitators for habitual physical activity. These facilitators may include perceived safety or accessibility as well as environmental, physical, and legal incentives.

Poor mental health not only increases suffering, but also decreases one's ability to study and work, increases risk for future illness, and lowers productivity, outcomes that ultimately increase

public health costs. These negative outcomes can be mitigated by physical activity during childhood and adolescence, resulting in significant short- and long-term physical and mental health benefits.[9] Physical activity improves cardiovascular and muscular fitness, bone health, weight status, and cardiometabolic risk factor status. For the most part, the more intense the physical activities, the more benefits. For adolescents, more research needs to be done that examines the relationships between different aspects of physical activity and healthy brain functions, including cognition and mental health.

How physical activity patterns affect the many physiological mechanisms underpinning healthy brain functions in adolescents is still not known. Previous studies indicate that physical activity and fitness are associated with physiological mechanisms that enhance cognitive functions and mental health in children and adolescents. Also, studies have found that physical activity in school improves academic-related outcomes, academic achievement, and classroom behaviours, although results are conflicting. However, the detailed characteristics of the most effective exercises (in terms of intensity, type, duration, and frequency) and of the most attractive (or at least most acceptable) form of presentation need further investigation. Furthermore, breaking up prolonged periods of sitting with physically activity during lessons has been shown in some studies to promote learning and improve classroom behaviour.[10] Although earlier studies have shown relationships between physical activity patterns and healthy brain functions vital for learning, the route by which physical activity patterns impact healthy brain functions is very complex and is likely moderated by several variables. The ability of physical activity to improve cognitive functions is promising but uncertain,

in part, due to the level of heterogeneity in intervention components and academic-related outcomes in different studies. As most studies rely on self-reported data of physical activity and sedentary behaviour (an unreliable data collection method), drawing definitive conclusions is impossible. Consequently, little is known about how physical activity patterns affect physiological mechanisms underpinning healthy brain functions in adolescents. Moreover, few studies have used nutrition, diet, and biomarker data to investigate the influence of physical activity and sedentary behaviours on brain functions. Therefore, researchers cannot provide schools with definitive interventions that promote health and learning in their students.

In addition, this lack of knowledge also prevents the development of practical solutions and innovations of new services and products on the consumer and business-to-business market that will offer families, young people, and schools ways to stimulate a physical activity pattern that promotes healthy brain functions. Bridging the knowledge gap in this field will play a crucial role when companies develop their strategies for implementing Agenda 2030 in their business models in the same way that climate and environmental issues now have become natural and important parts of what responsible companies offer.

Another key motive for companies to invest in applicable knowledge formation in this field is that young people are the next generation of employees, who employers want to attract for taking on demanding tasks in high performing, innovative work environments. Recruiting well-educated and competent staff is a competitive advantage of growing importance on the global market.

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# Some thoughts from children and youth in Uppsala about life in the city

During the spring of 2019, the Uppsala County Ombudsperson for Children (UCOC) conducted three discussion workshops to elicit some thoughts and opinions from children and youth ahead of the Uppsala Health Summit. One visit session was with children ages 4 to 6 at a preschool, one with 11-year-olds in grade 5 and one with unaccompanied refugees around the age of 18.

The children and youth were asked to express their opinion on how their needs can be met regarding physical activity, recreation, being with other adults and children, and going to various places and activities. They indicated on maps what is good about different places and described what is important to them and what they want to convey to those who design the city, and to those who will participate in the Uppsala Health Summit.

### Workshop in preschool, children ages 4 to 6

The children in this preschool expressed a clear need for physical activity. They want to climb, run, bicycle, play football and more. They prefer running on grass because then they can "throw themselves down" without hurting themselves. Climbing was the physical activity they talked about most. Outdoors the children also showed that they climb on things that are not intended for that purpose. In addition to grass, the preschool children also think it is important to have trees, flowers and shrubs.

They also want to be able to withdraw, be alone or with just a friend or hide. Outside the children hide among the shrubs, under the slide or in some secluded nook. Inside this is harder, but one place to relax is on the couch.

The children said they felt safe both at home and at preschool. They also described the way to and from preschool as safe and good. Cars that drive too fast can be scary; "I think it's frightening when the cars drive too fast. You feel it in your bones."

The children prefer having adults present – sometimes involved in play, sometimes alongside. Some of the older children sometimes played by themselves out in a playground when they were at home.

When adults build, the children think they should not construct houses too close together. Because then "you might not want to live there". The place where you live should have plenty of light, with room for green areas.

This preschool was relatively new, built perhaps ten years ago. The preschool teacher in charge said they had not been consulted before planning the outdoor surroundings. Neither with the staff nor the children.

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## Workshop with 11-year-olds in the Sävja neighbourhood

*Mental and social aspects of the physical surroundings*
When we left the bus, the sun was shining. Crossing the road, we saw the school and the medical centre opposite the school a bit ahead of us. It was lush with budding trees. The schoolyard seemed large with plenty of space for running around. Although there were many children of all ages outside, the schoolyard was not at all crowded.

Later, when the class had been divided into groups and the discussion had begun, a child told us that there have been some threats and crime in the vicinity. Another child said, "My father lets me bike around by myself, but I don't want to". Other places in the neighbourhood, such as the grove of trees at the sports field, were pointed out as potentially unsafe.

It became clear in the discussion how closely intertwined the mental and physical environment is. For someone who has never been to this community before, this is a lush community place with an idyllic schoolyard. The children's stories partly support that view, but they also reflect the fact that the mental environment, the people present and what they are involved in, play a major role in the children's well-being and their view of the physical environment.

During the discussion it became clear that almost the whole class likes to be on the sports ground and to hang out in the cultural centre, at around the medical centre or at the grocery store. Students tell us that what they like about the sports ground is that it is safe. There they can play football, throw snowballs in the winter, walk, swing, use the climbing frame and spin on the roundabout. The cultural centre is a good place to socialise with friends, and it has a youth recreation centre and a library as well. The children

enjoy hanging out all around Sävja because they can play football and bandy, spend time in playgrounds and move about freely in the area.

Some of the children say that their need for rest, sleep and rejuvenation is not met. They say that energy drinks and mobile phones keep them awake. Some of the children also want more physical activity.

*What can be improved?*
The children say the many creepy dead-end streets make them feel insecure. They also want more crosswalks, an outdoor water tap, an obstacle course and a football field where they can play that has real grass and more activities, like table tennis.

To improve the cultural centre, they want a better staff and better indoor lighting.

*Animals and nature*
The village Sävja is a neighbourhood with many green areas. When presented with maps, the children were surprised to see the number of trees. The area has both multi-family dwellings and a lot of townhouses and private homes. About half of the children have never worked in a garden. The work done by those who have included picking apples, tending flowers and mowing lawns. Some thought it was fun, but most found it boring.

Most of the children like to be with animals.

## Workshop with unaccompanied refugee youth in Uppsala County Ombudsperson for Children's (UCOC) Expert Council

The Expert Council consists of eight unaccompanied refugee youth with their own experiences as newcomers to Uppsala. The Expert Council provides input to decision-makers on various issues, such as being young in Uppsala, integration, the housing situation and health. Six of the youth attended this meeting.

During 2015 and over the next few years, many unaccompanied refugee youths came to Sweden, mainly from Afghanistan. A large proportion of them ended up in Uppsala and have remained there. At the end of 2016 and in the beginning of 2017, there were more than 500 children and

youths seeking asylum that had come to Sweden and Uppsala without guardians. In addition to these, approximately 800 youths who belong to other municipalities were placed in residential care homes in the Uppsala area. About one in six young persons in Uppsala was an unaccompanied refugee in 2016. The proportion has probably declined since then, but there are still several hundreds of youth in this group. Since many of them have been denied asylum but have still chosen to try to stay here, it is difficult to obtain clear numbers. About 200 have been granted asylum and go to high school. Another 100 lack support from adults and a place to stay. Many have expressed that they want help to integrate, not the least for mental health reasons.

The young people in the council have moved around a lot in Uppsala or between different cities. This is partly because they have moved among different foster homes or accommodations – both within Uppsala and to other municipalities – but also because they had lost the right to placement through social services when they turned 18. Instead they have been referred to the Swedish Migration Board's adult housing in northern Sweden. Some of the youth have remained in the Uppsala area by finding voluntary foster homes or by living with friends. Others have moved but then returned to Uppsala. With this in mind, we can more easily understand why they do not feel a special affinity for any specific area of the city, but feel most at home in the central part where they have always been able to meet each other. However, the results below clearly show that the youth lack any organised place in which to gather. In many cases, they have felt relegated to outdoor places, which has become apparent in an altered street scene in Uppsala in recent years, with some groupings of unaccompanied youth mainly around the Central Station and the main square.

### Results of the discussion:
*General activities*
The youth expressed a desire for more organised recreational activities. They can engage in some activities through associations and recreation centres, but they often feel relatively segregated. Some associations organise football, dances, gatherings and the like, but usually this does not involve much integration with Swedes.
One problem is that the recreation centres do not admit people age 19 and above. Going to a

café or tavern to meet Swedish youth is not an option for many of the unaccompanied youth with small means, according to the Expert Council.

*Gathering places*
The Expert Council would like to see more gathering places for people of different ages. The library is considered a good place – although with some division between the "academic" uses and children's areas. It serves as a great place to study because it is quiet, but it's not exactly a place to spend time with friends. The Expert Council would like to see some kind of "live museum" or multinational gathering place in the city – preferably with elements of historical perspective, such as the organisation of a medieval week. This would also attract tourists to Uppsala. Another thing that would be enjoyable is more concerts with young musicians, preferably from various countries.

The Expert Council cites the problem of many Swedes choosing to travel abroad in winter, which involves air travel that is not good for the environment. It would be good if there were some tropical place in Uppsala that could be an alternative experience, preferably a warm gathering place where people can socialise, take part in different activities and become familiar with each other's cultures. That would make it possible to experience warmth and other cultures without having to travel somewhere.

The participants have also thought about an activity centre open to all ages that is easily accessible and in an attractive location so that youth would actually go there. Ideally it would offer activities such as table tennis and other activities. The centre would be similar to a recreation centre, but without an upper age limit. If everyone is not welcome, that leads to alienation, which can have a negative impact and lead to criminality, the participants explain. They consider it important for all youth to have the same opportunity to go somewhere. Council members also expressed a desire for the centre to be open 24 hours a day and for staff to be present so they can feel safe – but not a security company because of potential problems with prejudice and stereotypical images they typically hold of unaccompanied refugee youth.

The Expert Council thinks it is a shame that so much segregation exists among different immigrant groups and stresses the importance of being able to become involved in the community. They cite the following example: "If children with immigrant backgrounds do not meet Swedish children, they can never become familiar with Swedish culture and language. This will affect society even more in the future".

It would also be good if the meeting point, besides being a good place for youth to hang out indoors and have activities such as table tennis, could provide assistance. For example, there could be a psychologist connected to the meeting point – a recreational psychologist!

*Developing activities of recreation centres*
There are plenty of parks in which to spend time with friends during the summer in Uppsala, but not so many places during the winter. The recreational facilities that exist are similar. They lack variety and become boring. It would be fun to expand the recreation centres' activities. There are already places, but there is not much to do there that really promotes integration.

*Bikes*
It is good that rental bikes are available, but the Expert Council is not sure whether it is good or bad that it costs money to use the bikes. In a way it would be better if they were completely free, because that would encourage people to bicycle more. Biking is both healthier and better for the environment than going by bus or car. However, the question is whether, there could be problems with people not taking care of the bikes. A small cost might still be necessary.

## Other comments
- The environmental perspective and safety need to be considered in new construction or renovations. Build more bike lanes and make sure the bus stops are well-located and safe. Consider the children.
- The infrastructure needs to take into account the fact that Uppsala is a growing city. Ask children and youth before you build!
- The Expert Council does not know if Uppsala uses low-energy light bulbs to illuminate public places, but if not, it should begin doing to do so!

## Conclusions of the Expert Council:
- It would be good to have a gathering place for many different ages and groups of people with different backgrounds (socio-economic, cultural, ethnic, etc.)
- Ideally, this would be a warm place where you can meet others and encounter different cultures without having to travel
- Recreational centres/activity centres for ALL ages open 24-hours and centrally located
- There should be a greater focus on the environmental perspective and integration when building and in city planning
- Integrate more! Create conditions for integration through a central gathering place with attractions such as music, preferably with younger artists, and with access to psychologists/counsellors

The Expert Council sees the need for a holistic approach to the concept of health – that it is a matter of promoting a sense of solidarity and participation and that we need to protect the environment so that we can all feel better. Uppsala as a city needs to evolve, and there is potential if you listen to children and youth!

## Reflections of the Ombudsperson for Children about the discussions

It is difficult to draw general conclusions from the three discussions carried out in this context, because they differ so much. This in itself is also something worth remembering – that children are a very heterogeneous group. What most unites these discussions is how much relevant information emerged from only a one-hour workshop per group. Both the group of 11-year-olds and youth from the Expert Council clearly indicate that we cannot draw any sharp dividing lines between social work and environment and the physical surroundings. The one presupposes the other. The youth in the Expert Council talk a lot about gathering places that they lack, and the 11-year-olds illustrate some concerns about dark areas that are in the vicinity of the gathering places they actually have. Preschool children do not move around independently in their local area or in the city in the same way as the older groups of children and youth but rather talk mostly about their preschool surroundings, where they also spend most of their waking hours. However, they also connect the social aspect with their desire to have an adult present,

at least alongside. We have heard similar reflections from other youth who have talked about schoolyards – that the absence of adults, rather than the physical setting itself, creates concern.

The fact that 11-year-olds say their need for recreation and sleep is not being met and that they have also themselves analysed the reasons for this (energy drinks and mobile phones) is also worth considering. The line of reasoning before the discussions revolved around, among other things, how we can help children move away from their screens. But the question is whether children need to be motivated to do so or whether adults need to take greater responsibility for helping children to less screen-time and increasing the amount of time they spend in social interaction and physical activity. And ultimately offer surroundings where it is possible to exercise these basic needs within the city.

Lisa Skiöld
Uppsala County Ombudsperson for Children

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**Programme Uppsala Health Summit 2019**

# Healthy Urban Childhoods

**Uppsala Castle, Sweden**

## Monday 7 October

**17:30** **Welcome reception hosted by Uppsala Municipality**

## Tuesday 8 October

**08:00** **Registration Opens**

**08:50-09:00** **Performance by Uppsala Dance Academy**

**09:00** **Uppsala Health Summit Opening**

**Welcome Address by Uppsala University Deputy Vice-Chancellor Prof. Anders Malmberg,** Chairman of Uppsala Health Summit Steering Committee

**Opening Remarks by H.R.H. Prince Daniel of Sweden**

**09:30** **Time to deliver on children's mental and physical health**
*The aim of this session is to achieve a common understanding for the global urbanization, the associated risks to children's health and development, and the changing nature of urban childhoods.*

**Dr Graham Alabaster,** Chief, Waste Management and Sanitation, **UN HABITAT**
*Protecting future generations: An Urban future that cares for health*

**Dr Fiona Bull,** Program Manager, *Prevention of Non-communicable Diseases*, **World Health Organisation**

**Jens Aerts,** Urban planning specialist, **UNICEF**

**10:45** **Coffee break**

**11:30** **Workshops in parallel:**
**A.** ECHO-Zones in practice: How to deliver evidence
**B.** Listen to the kids!
**C.** Supporting children's mobility in complex urban contexts
**D.** City gardening and farms for learning and well-being
**E.** Nature play enhanced with digital elements

**13:00** **Lunch**

**14:00** **Workshops in parallel continue**

**15:30** **Coffee break**

**16.15** **From knowledge and vision to implementation**
*How to gain traction for policies supporting healthy urban childhoods?*

**Dr Tim Gill,** Independent scholar, advocate and consultant on childhood
*Child-friendly Urban Planning and Design, Insights from 12 Cities*
**Roger Madelin,** CBE, Joint Head of Canada Water Development,
British Land: *Make the kids happy, make more money*
**Dr Sudeshna Chaterjee,** CEO, Action for Children's Environments,
(ACE) India: *Designing Cities for Children in the Majority World*

**19:00** **Dinner at Norrland's Nation,** one of Uppsala's renowned student clubs

## Wednesday 9 October

**09:00** **Towards a balanced risk perception on childhood and adolescence**
**Prof. Mariana Brussoni, Faculty of Medicine, University of British Columbia.**
*Outdoor play and risk is essential for healthy child development.*
**Henry Mathias, NCS Strategic Lead of Care Inspectorate, Scotland.**
*'Better a broken bone than a broken spirit!' How new standards of regulation of early learning and childcare changed children's experience of outdoor play.*

**10:00** **Coffee break**

**10:45** **Workshops in parallel:**
**F.** Measuring segregation and child health
**G.** Social inclusion and empowerment in urban planning
**H.** Indicators for children's built environments
**I.** Industry-academy collaborations for physical activity

**12:15** **Lunch**

**13:15** **Workshops continue**

**14:45** **Coffee break**

**15:15** **Conclusions from workshops**
*Moderator Sharon Jåma in dialogue with workshop leaders on main conclusions and suggestions.*

**15:45** **Take home messages – How to act on insights and conclusions?**
*Programme committee chair Dr. Petter Åkerblom discusses with delegates.*

**16:15** **Uppsala Health Summit 2019 closes**

# Governance

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