

# GIS-derived measures of health promoting childhood environment determinants: A systematic review

## **For oral presentation (session)**

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**Key words:** Built environment; geographical information systems; children; participation in activities; mental health and well-being

**Background:** Children's health and well-being are a profound value for the society, and the built environment is suggested as one important determinant of influence. A growing body of evidence identifies several characteristics of the built environment promoting active living, health and well-being among children, such as mixed land-use, higher residential density and access to greenspace and versatile places. Investigating the impact of the built environment on health and well-being in childhood, raises important questions about how to measure and operationalize the environmental determinants. For such purposes, Geographic Information Systems (GIS) is considered a major advance. However, in presence of disagreement and significant uncertainty in defining the spatial context of exposure, together with a multiplicity of existing measures and operational definitions, using GIS is not without challenges.

**Aim:** To identify and discuss concepts and operational definitions of GIS-derived measures in the existing literature, focusing on the spatial context of exposure, which often involves selecting an appropriate buffer type and distance/scale, and built environment features relevant for activity, health and well-being in childhood.

**Methods:** A literature review was conducted searching for combinations of key words related to the categories environment, GIS, activity, mental health, and the target group children and youth. Searches were carried out within the following databases: Web of Science, Medline, PubMed, PsychINFO and SweMed+. The search strategy involved three stages, through which we identified 1062 records. After removing duplicates, the title and abstract of 597 records were screened. We retrieved 71 full-text articles, each assessed for eligibility and screened for additional articles.

**Results:** The results will be presented and discussed at the conference. Analyses of the material are yet not completed.

**Significance:** This study contributes with greater informativeness, systematization and discussion of ways to operationalize environmental determinants of health and well-being in childhood, using GIS. Raising methodological awareness and facilitate the choice of relevant GIS-measures is one significant and important step to further understand how to develop the built environment, in order to secure children's health and well-being. Further, it has implications for policy-making, planning and public health development processes.

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