

# THE PAEDIATRIC ENVIRONMENTAL HISTORY: A tool for health care providers

TRAINING FOR HEALTH CARE PROVIDERS



Children's Health and the Environment  
WHO Training Package for the Health Sector  
World Health Organization

[www.who.int/ceh](http://www.who.int/ceh)

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## Notes:

- Please add details of the date, time, place and sponsorship of the meeting for which you are using this presentation in the space indicated.
- This is a large set of slides from which the presenter should select the most relevant ones to use in a specific presentation. These slides cover many facets of the problem. A number of slides refer to the specific issues related to e-waste in developing countries, as it represents a major determinant of the burden of disease in children. Present only those slides that apply most directly to the local situation in the region.



This module is an introduction to the paediatric environmental history (PEH), a part of the standard medical history with additions relevant to potential environmental exposures that can and should be adapted to specific localities. The module reviews the need for the paediatric environmental history, shows examples, and discusses how to develop and take the history.

**Image:**

- © WHO / Anna Kari

## Learning objectives

- Recognize and understand the importance of taking the Paediatric Environmental History (PEH)
- Review the basic concepts of children's environmental health that should be considered in an environmentally-oriented questionnaire
- Consider when, where and how the Paediatric Environmental History should be taken – collecting basic data or more detailed information
- Assess the potential barriers to taking the Paediatric Environmental History, and how to overcome these barriers
- Develop the capacity and expertise to develop, record and use the Paediatric Environmental History

At the end of this talk, learners will be able to:

1. Recognize the importance of a Paediatric Environmental History, or PEH
2. Understand the basic concepts that are central to the PEH questionnaire
3. Understand when, where and how the PEH should be taken
4. Assess and understand the barriers to taking a PEH, and how to overcome them
5. Develop the expertise to collect and use the PEH to help patients in need

## Outline

- Introduction and background
- What is the Paediatric Environmental History (PEH)?
- Key areas to address in the PEH & Examples
- Developing and using the PEH
- Who takes the PEH? When and how?
- Barriers to taking the PEH
- Case studies



Outline of the module: main points to address.

**Image:**

- © WHO / Tom Pietrasik

## Introduction and Background



- Children's special susceptibility to environmental threats
- Association between the environment and children's illness
- Environmental threats are present in places where children live, learn, play and work
- Impact occurs early in life, and effects appear during childhood ... or adulthood
- Health care providers have a key role to play in children's environmental health

As an introduction to the subject it is important to review the reasons why children's health and the environment should be considered in more depth.

- Over the past decade, the evidence about the association between the environment and children's diseases has increased. A number of chemical, physical and biological risk factors represent a menace to children's health and development – these should be appropriately identified and recorded.
- There is a new recognition of children's special susceptibility to environmental threats. The fetus, the child and the adolescent may be exposed to environmental threats during crucial periods of growth and development, called "windows of susceptibility". These exposures may not only cause disease in childhood, but also have an impact on health during adulthood.
- A number of different environmental threats are present – and coexist! – in the places where children spend most of their time, where they live, grow, play, learn, and even work, in some circumstances.
- The effects of environmental exposures occurring early in life may be clinically evident or may appear later in life – during childhood or even in adulthood. Effects suffered early in life may have consequences in the adult, for example asthma, chronic bronchitis and cancer are linked to exposures to air pollutants early in life.
- Health care providers and public health professionals play a key role, as they are in the "front line", in dealing with children and adolescents; they are in contact with the parents, teachers and communities. Health professionals are in a key position to identify children at risk, advise parents on how to reduce the risk, and recommend actions to policy-makers. Health care providers should be able to recognize and assess the environmental health threats present in the places where children and adolescents live, learn, play and work. They should also know that the threats are greater in low-income populations and marginalized communities, in degraded environments and when children and adolescents are living under extreme stress (e.g. during civil unrest, or in refugee camps).

### Image:

- © WHO / SEARO / Hayley Goldbach

## Children's unique vulnerability

Children may be at increased risk of adverse health outcomes and developmental consequences from environmental exposures to chemical, physical and biological agents

Children are not little adults

- Different and unique exposures
- Dynamic developmental physiology
- Longer life expectancy
- Politically powerless



INTRODUCTION  
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Children are highly vulnerable to environmental exposures. For a detailed description of children's vulnerabilities, please see WHO CEH Training Module "Children are not little adults"

We now recognize that children, including the embryo, fetus, infant and all life stages until the completion of adolescence, are often at a different and increased risk from environmental hazards from that of adults, for reasons that can be divided into four major categories.

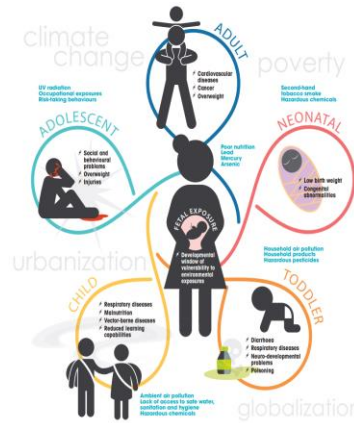
1. Children often have different, and sometimes unique, exposures to environmental hazards from those of adults.
2. Due to their dynamic developmental physiology children are often subjected to higher exposures to pollutants found in air, water and food. These exposures may be handled quite differently by an immature set of systems to the way they are dealt with in adults. Furthermore, the developmental component of a child's physiology is changing: maturing, differentiating and growing in phases known as "developmental windows". These "critical windows of vulnerability" have no parallel in adult physiology and create unique risks for children exposed to hazards that can alter normal function and structure.
3. Children have a longer life expectancy. Therefore they have longer to manifest a disease with a long latency period, and longer to live with toxic damage.
4. Finally, children are politically powerless; they are defenceless. With no political standing of their own, they must rely on adults to protect them from toxic environmental agents. Each of these points is illustrated in more detail in the following slides.

### Image:

- © WHO / Jim Holmes

## The environment and illness over the life course

- Children are exposed to numerous hazards everyday
- Many factors influence the type of exposures a child will experience
- Exposures begin during pregnancy and accumulate over time
- Health effects may be immediate or may appear later in life



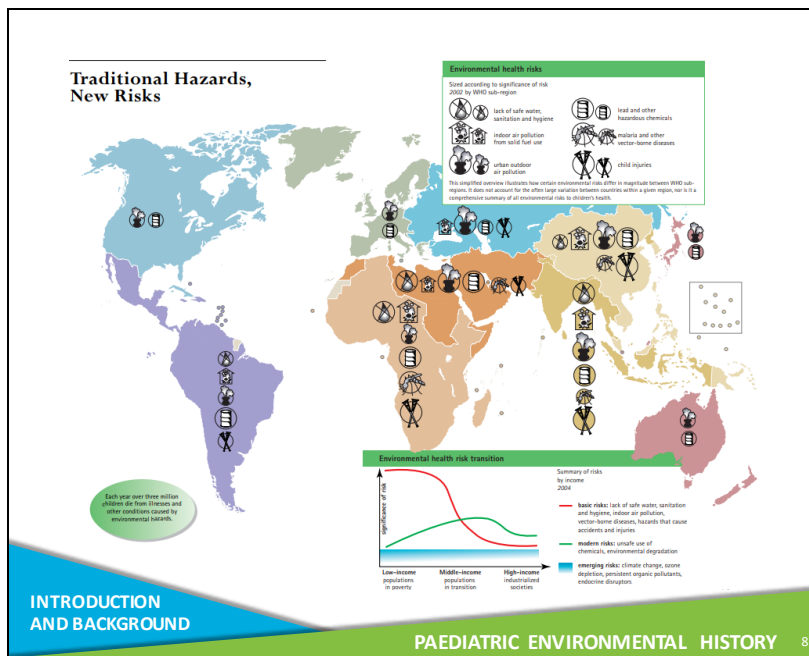
INTRODUCTION  
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- The environment is a complex source of exposures,
- There are many hazards that can impact both the immediate and long term health of children every day, beginning from pregnancy
- It is important to be aware of these exposures, and how they can impact the health, growth and development of our children

### Figure:

- WHO (2017). Inheriting a sustainable world? Atlas on children's health and the environment. Geneva: World Health Organization. (<http://www.who.int/ceh/publications/inheriting-a-sustainable-world/en/>, accessed 2 April 2018).



The world is rapidly changing - urbanization and population growth, climate change, industrialization, increased production and use of chemicals and hazardous waste. This also means increased potential for dangerous environmental exposure for children where they play, live, learn, and work.

New “emerging” risks are always on the horizon, such as natural disasters and illness associated with climate change, dramatic increases in air pollution as a result of increases in traffic and industry, and endocrine disrupting chemicals which are now entering our environment and may impact children’s hormone balance.

This map shows the main environmental risks observed in different parts of the world. These should be known to enable a paediatric history-taking that will aim at identifying the concrete environmental problems faced by children.

**Figure:**

- Gordon B, Mackay R, Rehfuess E (2004). Inheriting the world: the atlas of children's health and the environment. Geneva: World Health Organization. (<https://www.who.int/ceh/publications/atlas/en/>, accessed 8 August 2019).

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