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Newsletter

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Editorial

Drinking-water quality and waterborne disease

Waterborne disease remains one of the major health concerns in the world. Diarrhoeal diseases, which are largely derived from microbially contaminated water and inadequate sanitation, account for 2.4 million deaths each year and contribute over 73 million Disability Adjusted Life Years (a measure of disease burden, WHO 1999). This health burden is primarily borne by the populations in developing countries and by children, but outbreaks of waterborne disease continue to occur in both developed and developing countries, leading to loss of life, disease and economic burden for individuals and communities. In addition to risks to drinking-water, safety may also be compromised by chemical and radiological constituents. The world's most important pathogen causing diarrhoeal diseases is the bacterium *Vibrio cholerae*, There are an estimated 3–5 million cholera cases and 100,000–120,000 deaths due to cholera every year of which only a small proportion are reported to WHO [1].

In developed countries like Germany, cholera infections are rare. The last major cholera epidemic in Germany took place in the hot summer of 1892 in Hamburg where 16,956 people became ill and 8,605 died [2]. Robert Koch (*1843 - †1910) determined the causative agent of cholera, isolating *Vibrio cholerae* in 1884. During the Hamburg epidemic, he implemented his insights gained during a cholera epidemic in Egypt for the first time, inducing concrete measures e.g. the sandfiltration of drinking water for the reduction of the number of pathogens [3]. By these measures, cholera incidences could be reduced considerably. These principles for the purification of surface water were reviewed by the Imperial Health Office and communicated to all federal governments in Germany as early as 1899 (W. Schumacher in [4], S. 13).

During routine measurements, the detection of pathogenic bacteria in water was difficult or even impossible, so that the detection of „marker" bacteria was used to deduce indirectly possible pathogenic bacteria and so determine the water quality. The determination of markers does not only mean a quality control of the final product, but already represents the so called *principle of indication.* It was already known that pathogenic bacteria transmittable by water are excreted mainly or exclusively with the feces. Therefore, water contaminated by feces may occasionally be infected with pathogenic bacteria, too [5].

Even nowadays, bacteria like *Salmonella Typhi* und *Salmonella Paratyphi* , *Vibrio cholerae*, *Shigella sonnei, E. coli* and their toxin-producing strains may lead to waterborne diseases, if drinking water is contaminated. However, also parasites such as *Cryptosporidium* and *Giardia* or several viruses occuring in polluted water (hepatitis A virus, human polioviruses, hepatitis E virus, norovirus e.g.) have

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repeatedly led to outbreaks of disease. Beside microbial contaminations, millions of people are exposed to unsafe levels of chemical, physical and radiological constituents in their drinking-water. This may be linked to a lack of proper management of urban and industrial wastewater or agricultural run-off water – potentially giving rise to long term exposure to pollutants, which can have a range of serious health implications. Or it may be linked to naturally-occurring arsenic and fluoride, which cause cancer and tooth/skeletal damage, respectively.

In 1984 and 1985, the World Health Organization (WHO) published the first edition of Guidelines for Drinking-water quality which is one of the longest-standing normative publications of WHO. Whereas the first and second editions of the Guidelines for Drinking-water Quality were used by developing and developed countries worldwide as the basis for regulation and standard setting to ensure the safety of drinking-water, they have been comprehensively updated during the last decades. The latest, forth edition of the Guidelines provides an evidence-based point of departure for standard setting and regulation as a basis for health protection. The European Commission e.g. uses these Guidelines as the scientific point of departure for their drinking-water directive and drinking-water quality standards [6], and many developing countries use the Guidelines directly or indirectly in setting national standards.

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References

1. *WHO 10 facts on cholera. http://www.who.int/features/factfiles/cholera/facts/en/index1.html. Accessed 16 May 2013.*
2. *Institut für Hygiene und Umwelt (2003) Die Cholera - Hamburg. http://www.hamburg.de/contentblob/111730/data/grossbuch.pdf. Accessed 16 May 2013.*
3. *Deutsche Lepra- und Tuberkulosehilfe e.V. (2010) Robert Koch Biographie. http://www.dahw.de/media/file/1065.Robert_Koch__Biografie.pdf. Accessed 17 May 2013.*
4. *Aurand K (1991) Die Trinkwasserverordnung: Einführung und Erläuterungen für Wasserversorgungsunternehmen und Überwachungsbehörden, 3rd edn. Berlin: Erich Schmidt Verlag.*
5. *Klut H (2012) Untersuchung des Wassers an Ort und Stelle, 1st edn. Paderborn: Salzwasser Verlag.*
6. *(2013) EU Trinkwasserrichtlinie - Richtlinie 98/83/EG des Rates vom 3. November 1998 über die Qualität von Wasser für den menschlichen Gebrauch.*

Water Safety Planning in the European Region

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The WHO Guidelines for drinking-water quality (GDWQ) describe Water Safety Plans (WSP), a holistic risk assessment and risk management approach of drinking-water supplies which is implemented by the water utility and aims at improving drinking-water safety and thereby protecting public health. They encompass comprehensive risk assessment and management of these risks, building on the multiple-barrier principle to prevent or reduce contamination of drinking-water. By carrying out such control of the drinking-water supplies from catchment to consumer, the focus is shifted from relying on end-product testing only which has a limited capability to identify short-term contamination with pathogens, and which may provide results only after people possibly already have been exposed to contamination. In order to support implementation of WSP, several tools have been developed by WHO.

Water Safety Planning in small-scale water supplies

One of these tools gives guidance on implementation of WSP in small supplies: the manual on water safety planning for small community water supplies. Describing the implementation step by step, it supports communities in day-to-day risk management, operation and consistent improvement of the safety of their supplies. The WHO Collaborating Centre for Research on Drinking-Water Hygiene of the Federal Environment Agency (UBA) is involved in several activities to support water safety planning in small supplies in the European Region. It implemented a national pilot project on the added value, feasibility and implementation modes for WSP in small-scale water supplies in Germany. As an outcome of the project, it is planned to publish a handbook to support the application of this approach. The WHO CC was furthermore involved in a project to develop WSP in small supplies in Tajikistan (http://www.euro.who.int/en/where-we-work/member-states/tajikistan/news/news/2012/08/safe-water-in-tajikistan) during which WSP were implemented in rural water supplies, and facilitators were trained for future support of WSP. The Protocol on Water and Health, which aims at protecting human health and well being by better water management, also addresses WSP in small-scale water supplies.

Water Safety Planning in buildings

For application of the WSP approach in buildings, WHO has published a monograph particularly aiming at those involved in design, construction, management, operation, maintenance and regulation of building water systems. It gives guidance on managing these systems in buildings (including for example hospitals, schools, and child and aged care facilities). Information is provided on how to create a supporting environment, and the concept is illustrated through a model WSP in a daycare facility for children. The WHO CC for Research on Drinking-Water Hygiene aided in implementing WSP steps in German legislation for Legionella prevention in water distribution systems in buildings. Building operators are required to provide public health authorities with a system description, hazard identification and risk assessments. This change in national legislation is backed up by a research project on risk assessment and risk communication concerning *Legionella* issues in buildings. The WHO CC also implemented a national pilot project on the added value, feasibility and implementation modes of WSP in buildings in Germany. The WSP approach was found to particularly support operators of buildings in fulfilling their responsibilities and in knowing about the legal requirements and being in compliance with them.

References

WHO, World Health Organisation, 2009, ***Water safety plan manual (WSP manual): Step-by-step risk management for drinking-water suppliers****, Geneva.*

WHO, World Health Organisation, 2011, ***Guidelines for drinking-water quality, fourth edition****, Geneva.*

WHO, World Health Organisation, 2011, ***Water safety in buildings****, Geneva.*

WHO, World Health Organisation, 2012, ***Water safety planning for small community water supplies. Step-by-step risk management guidance for drinking-water supplies in small communities****, Geneva.*

Aspects of drinking water hygiene in buildings

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The European Drinking Water Directive (Council Directive 98/83/EC of 3 November 1998) aims to protect human health from negative effects of water for human consumption. Drinking water that meets the Directive's requirements is wholesome and clean.

The Drinking Water Directive applies to:

- all distribution systems serving more than 50 people or supplying more than 10 cubic metres per day, but also distribution systems serving less than 50 people/supplying less than 10 cubic metres per day if the water is supplied as part of an economic activity;
- drinking water from tankers; in bottles or containers and water used in food-processing industries.

It doesn't apply to natural mineral water and waters which are medicinal products.

To ensure water quality standard at EU level a total of 48 microbiological, chemical and physical indicator parameters must be monitored and tested regularly. Among others, this comprises microbiological indicators for fecal contamination, plant nutrients, pesticides and metals. Scientific basis for the quality standards are the Guidelines for Drinking water of the World Health Organization and the opinion of the EU Commission's Scientific Advisory Committee. Member States of the EU are allowed to include additional requirements they consider to be relevant for their country, and they can set higher standards. Lower standards, however, are not allowed in order to protect human health on the same basic level within the whole EU.

Additionally, the EU allows Members States to depart from chemical quality standards for a limited time (derogation, Annex I). Derogations can be granted, if it doesn't constitute a potential health danger and the drinking water supply cannot be maintained by any other reasonable means.

The results of the drinking water quality monitoring are reported to the European Commission every three years and published as a synthesis report, which summarizes the quality of drinking water and its improvement at a European level.

The EU Drinking Water Directive ensures that water for human consumption is wholesome and clean. Member States need to set up monitoring programs that enable to ensure that the water reaches the consumer with a quality that meets the requirements of the Directive. If the water fails to meet the requirements, water consumption needs to be prohibited and consumers need to be informed promptly and to be given the necessary advice to prevent them from health risks. It is also necessary to regulate that no substances, materials from new installations and impurities associated with such materials affect the drinking water quality. In order to be able to react to actual developments, the EU Commission regularly reviews Annex I parameters and parametric values in the light of scientific and technical progress.

Lead in drinking water

Lead is a heavy metal that can severly affect the central nervous system. It is a cumulative poison, resulting in health effects even in small doses if they are taken up for a long time. Lead has been shown to affect the IQ by 3 to 4 points for each 10 µg Pb/dL increase in the blood levels of children. Aside from children, pregnant women are one of the main risk groups that should not be exposed to lead.

Human exposure to lead can occur via food, water, air, soil and dust (SCHER, 2009). To date, food, including drinking water, is the major source of exposure to lead for the majority of population (EFSA, 2010). Aside from ingestion of contaminated food, the use of lead in pipes for water supplies remains an important source of lead in some areas. The formerly widespread use of lead-based paint and soil and/or dust ingestion are additional sources of potential exposure (especially indoors), specifically for children (VRAR, 2008).

In 1993, WHO proposed an amended guideline value for lead in drinking water of 10 µg Pb/L, based upon an overall assessment of studies of human populations. In 1994 the Scientific Committee on Toxicity, Ecotoxicity and the Environment (CSTEE) agreed that, in conformity with the precautionary principle, the maximum level of lead in drinking water should be ultimately reduced to 10 µg/L. In the revised drinking water directive, adopted by the Council in 1998, a maximum concentration of lead of 10 µg/L was laid down, effective 25 December 2013. In 2008, WHO confirmed the guideline value for lead in drinking water (10 µg/L), fully taking into account that the use of lead-containing additives in

petrol is decreasing, that lead concentrations in air are declining, and that lead intake from drinking water constitutes a greater proportion of the total intake.

In Germany, lead can still be found in many drinking water pipes. While lead pipes were forbidden in Southern Germany already at the end of the 19th century, they were used in northern and eastern parts of the country until the 1970s. Water supplied in building as part of commercial (houses for rent) or public activity, has to be monitored by the building owner and they have to proof to the public health authorities that their pipes are free of lead. If lead pipes are found they have to be removed or the taps have to be marked as unsuitable for human consumption.
If the lead origins from parts of the water supply outside the building, e.g. the connection between the building and central drinking water supply system, the water distribution company has to remove the lead pipes from their system. In general, the central drinking water distribution system is free of lead pipes nowadays, but especially in city areas with houses built at the beginning of the 20th century small lead pipe connections can still be found. Large German cities such as Frankfurt have started monitoring and awareness raising campaigns to get rid of lead pipes more than ten years ago and are quite successful. But still many buildings exist, where the water is contaminated with low levels of lead and these buildings will not meet the new guideline value entering into force at the end of 2013.
Low lead levels may also origin from other sources such as lead-containing faucets or soldering material. It could be shown that the lead from these parts of the drinking water supply can provide sufficient lead to exceed the guideline value of 10 µg/L. Also, the lower acceptable lead level affects the choice of building materials, as some pipe materials are containing small amounts of lead and are not suitable for drinking water supplies anymore. Design and construction of drinking water installation have to undergo revisions in order to provide a safe packing for one of our primary food.

Legionella in water supplies of the built environment

The bacterium *Legionella pneumophila* and related *Legionella* species cause infections known as legionellosis. The first infections were recognized in the 1970s and associated with contaminated water systems operating at above ambient temperature. Legionellosis range from mild flu-like illness (Pontiac fever) to severe and often fatal forms of pneumonia (Legionaire´s disease). In 2011, 4,897 cases of legionellosis were reported by the EU Member States Iceland and Norway. Six countries (France, Italy, Spain, Germany, the Netherlands and the United Kingdom) accounted for 83% of all notified cases.

The natural habitat of *Legionella* is sweet water and they multiply well in warmer artificial aquatic environments in the built environment, such as cooling towers, water systems in hotels, homes, ships and factories, respiratory therapy equipment, fountains, misting devices; and pools. The infection is caused via inhalation of aerosols, mists or droplets of contaminated water. The optimum growth temperature for Legionellae is usually between 20 and 45 ºC. *L. pneumophila* is thermotolerant, can withstand temperatures of 50 °C for several hours, and has been isolated from hot-water systems up to 66 ºC. However, it is destroyed above 70 ºC. Warm water systems in the built environment often use water in the temperature range that encourages *Legionella* growth, and many of these systems potentially produce aerosols, i.e. the route of infection.

In the EU Drinking Water Directive, *Legionella* is not mentioned explicitly. Nevertheless, it is stated that drinking water needs to be free of pathogens. On national level, drinking water legislation should consider *Legionella* and associated health risks and provide the legal framework for disease prevention. In the following, the current status for Germany is presented:
With the revision of the German Drinking Water Ordinance (Trinkwasserverordnung, TrinkwV 2001) in November 2011, the requirements for *Legionella* monitoring in warm water systems of the drinking water supply changed. Water supplied in buildings as part of commercial (houses for rent) or public activity, has to be monitored for *Legionella* once per year, if a large device for water heating is in place and if showers or other aerosol-producing devices exist in the building. This doesn't apply to single or two family homes. Large devices for water heating are defined as devices with a storage volume of more than 400 litres or more than 3 litres pipe volume between the drinking water heating

device and the tap. The house owners are responsible for the monitoring and need to show to the public health authorities that their building complies with the Drinking Water Ordinances.
If the water in the building has met the quality values for three years, the local public health authority can decide to expand the monitoring period, so that less than one monitoring per year is necessary.
The results from the monitoring are evaluated by the local public health authorities, and they decide if additional action becomes necessary. This evaluation is based on the threshold level of 100 cfu/100mL for *Legionella*, the inspection of the technical installation in place and the risk assessment of the drinking water installation system.

House owners, planners, technicians, hygienists and health authorities need to work together to fulfill the requirements of the Drinking Water Directives. Together, they are able to protect public health and ensure a high water quality from source to consumption.

References

EU Drinking Water Legislation. http://ec.europa.eu/environment/water/water-drink/legislation_en.html

*EFSA (2010). EFSA Panel on Contaminants in the Food Chain (CONTAM); Scientific Opinion on Lead in Food. EFSA Journal **8**, 1570. http://www.efsa.europa.eu/en/efsajournal/pub/1570.htm.*

European Agency for Safety and Health at Work (EU-OSHA) (2011) Legionella and Legionaires´disese. https://osha.europa.eu/en/publications/literature_reviews/legionella-policy-overview.pdf

European Centre for Disease Prevention and Control (2013) Legionnaires' disease in Europe, 2011. Stockholm. http://ecdc.europa.eu/en/publications/Publications/legionnaires-disease-in-europe-2011.pdf

Federal Environmental Agency (Umweltbundesamt) (2012) Trinkwasserverordnung und Legionellen (Stand 18.6.2012). http://www.bmg.bund.de/fileadmin/dateien/Downloads/T/Trinkwasserverordnung/120720_Trinkwasserverordnung_und_Legionellen.pdf

Scientific Committee on Health and Environmental Risks (SCHER) (2009). Opinion SCHER on Voluntary Risk Assessment Report on lead and lead compounds(HH). http://ec.europa.eu/health/archive/ph_risk/committees/04_scher/docs/scher_o_111.pdf

Scientific Committee on Health and Environmental Risks (2011) Lead in Drinking Water. http://ec.europa.eu/health/scientific_committees/environmental_risks/docs/scher_o_128.pdf

VRAR (2008). Voluntary Risk Assessment Report on lead and some inorganic lead compounds – Human Health section. Report prepared by ILZRO and EBRC Consulting under contract to the LDAI Lead Risk Assessment Working Group. http://www.chem.unep.ch/Pb_and_Cd/SR/GOV/VRAR_Pb_0707_hh.pdf

WHO (2003). Lead in drinking water. Background document for preparation of WHO Guidelines for drinking- water quality. World Health Organization, Geneva. *http://www.who.int/water_sanitation_health/dwq/chemicals/lead.pdf*

Publications and Resources

Healthy water from private wells - German Federal Environment Agency helps owners with new guidebook

Nearly one per cent of the population in Germany relies on a private well for its drinking water. The Drinking Water Ordinance (*TrinkwV*) also sets quality standards for the drinking water in these very small water supplies, which are typically found in rural areas. A new Federal Environment Agency (UBA) publication on healthy drinking water from private wells has recommendations for operation and use and shows what to do so that water can continue to be safe and healthy. The publication is available in German and free of charge. It provides information about compliance with certain laws regarding the use and operation of private wells and springs, and it names potential risks to drinking water quality. It also gives advice on how to address risks. “Only safe operation of wells or springs results in drinking water that is tasty and healthy“, said UBA President Jochen Flasbarth.
More than 700,000 people in Germany draw their drinking water from their own wells and springs. That figure is equal to the population of Frankfurt/ Main, or about one per cent of the entire population. Private wells are a vital source of drinking water in many rural regions. Unlike at central water works, however, the drinking water from these systems does not always meet the requirements of the Drinking Water Ordinance for microbiological and chemical quality. Data available to UBA verify this finding. “Each and everybody in Germany has the right to water that is both tasty and healthy”, said the UBA president. The guidebook aims to help operators of private wells and springs in achieving this goal. Further information is available on: UBA - Press Releases 2012 - Healthy water from house wells

Study: Better learning in good indoor air

A study conducted by the Danish consulting company Slotsholm A / S in cooperation with the Centre for Indoor Hygiene and Energy at the Technical University of Denmark on behalf of the skylight manufacturer *Velux* assesses the socio-economic consequences of improved indoor air quality in primary schools.The study compares the situation in Danish and Swedish as well as Norwegian schools and concludes that Danish students could perform better by 10 percent in the PISA tests. One of the causes herefore, so the authors, could be the poorer indoor air quality in Danish schools. In Sweden and Norway, thanks to widespread automatic ventilation in school buildings, indoor air concentrations of CO_2 are much lower there than in Denmark. According to the authors, this may also have positive impact on economic processes. Further Information: Socio-economic consequences of better air quality in primary schools.

WHO international stakeholder seminar on radiofrequency policies

Concern has been growing about the possible adverse health effects resulting from exposure to radiofrequency (RF) electromagnetic fields, such as those emitted by wireless communication devices and networks. In response, WHO is assessing health risks from RF fields in the frequency range of 100 kHz to 300 GHz in an upcoming *Environmental Health Criteria Monograph*. On 5 June, 2013 more than 110 stakeholders from 40 countries – ranging from policy-makers to campaigners, and industry representatives – participated in a seminar to gather suggestions on technical topics to be covered in the monograph, and exchanged information on national risk management practices related to the use of RF-based devices and technologies. The seminar was hosted by the French Agency for Food, Environmental and Occupational Health and Safety (ANSES) in Paris, France. Further Information: WHO | World Health Organization

From Construction Products Directive to Construction Products Regulation: up to date environmental requirements in sight - Format for the mandatory designation of construction products

From 1st July 2013, the EU Construction Products Regulation requires new complementary data to accompany construction products with CE marking. If the construction product contains substances of very high concern, these must be declared. Alternatively - if available - a safety data sheet must be enclosed. The Federal Environment Agency hands out advice for the format of the mandatory data. Further Information: Building Products - From Construction Products Directive to Construction Products Regulation

Literature

In this section we will provide a collection of recent housing and health publications from a variety of backgrounds. Literature published in German or French, respectively, is indicated with the German flag or the French flag.
If you have suggestions for interesting journals that we should screen for the literature collection, please let us know!

Table of Topics

Allergies and Respiratory Diseases

The relationship between exposure to microbial volatile organic compound and allergy prevalence in single-family homes.
Araki A, Kanazawa A, Kawai T, Eitaki Y, Morimoto K, Nakayama K, Shibata E, Tanaka M, Takigawa T, Yoshimura T, Chikara H, Saijo Y, Kishi R.
Sci Total Environ. 2012 Apr 15;423:18-26.

Childhood obesity and asthma control in the GALA II and SAGE II studies.
Borrell LN, Nguyen EA, Roth LA, Oh SS, Tcheurekdjian H, Sen S, Davis A, Farber HJ, Avila PC, Brigino-Buenaventura E, Lenoir MA, Lurmann F, Meade K, Serebrisky D, Rodriguez-Cintron W, Kumar R, Rodriguez-Santana JR, Thyne SM, Burchard EG.
Am J Respir Crit Care Med. 2013 Apr 1;187(7):697-702.

Residential proximity to a major roadway is associated with features of asthma control in children.
Brown MS, Sarnat SE, DeMuth KA, Brown LA, Whitlock DR, Brown SW, Tolbert PE, Fitzpatrick AM.
PLoS One. 2012;7(5):e37044.

The impact of pre- and postnatal exposures on allergy related diseases in childhood: a controlled multicentre intervention study in primary health care.
Dotterud CK, Storrø O, Simpson MR, Johnsen R, Øien T.
BMC Public Health. 2013 Feb 8;13:123. *Free Article.*

Exposure to cats: update on risks for sensitization and allergic diseases.
Dharmage SC, Lodge CL, Matheson MC, Campbell B, Lowe AJ.
Curr Allergy Asthma Rep. 2012 Oct;12(5):413-23.

Environmental intervention for house dust mite control in childhood bronchial asthma.
El-Ghitany EM, Abd El-Salam MM.
Environ Health Prev Med. 2012 Sep;17(5):377-84.

Environmental factors and allergic diseases.
Jenerowicz D, Silny W, Dańczak-Pazdrowska A, Polańska A, Osmola-Mańkowska A, Olek-Hrab K.
Ann Agric Environ Med. 2012;19(3):475-81. *Free Article*. *Review.*

Childhood asthma and allergies in urban, semiurban, and rural residential sectors in chile.
Kausel L, Boneberger A, Calvo M, Radon K.
ScientificWorldJournal. 2013 May 23;2013:937935. *Free Article.*

House dust bioactivities predict skin prick test reactivity for children with high risk of allergy.
Kim H, Tse K, Levin L, Bernstein D, Reponen T, LeMasters G, Lummus Z, Horner AA.
J Allergy Clin Immunol. 2012 Jun;129(6):1529-37.e2.

Is cat-keeping the main determinant of new-onset adulthood cat sensitization?
Liccardi G, Salzillo A, Cecchi L, D'Amato M, D'Amato G.
J Allergy Clin Immunol. 2012 Jun;129(6):1689-90; author reply 1690-1.

Does pet ownership in infancy lead to asthma or allergy at school age? Pooled analysis of individual participant data from 11 European birth cohorts.
Lødrup Carlsen KC, Roll S, Carlsen KH, Mowinckel P, Wijga AH, Brunekreef B, Torrent M, Roberts G, Arshad SH, Kull I, Krämer U, von Berg A, Eller E, Høst A, Kuehni C, Spycher B, Sunyer J, Chen CM, Reich A, Asarnoj A, Puig C, Herbarth O, Mahachie John JM, Van Steen K, Willich SN, Wahn U, Lau S, Keil T; GALEN WP 1.5 'Birth Cohorts' working group.
PLoS One. 2012;7(8):e43214. *Free Article.*

Identity of the fungal species present in the homes of asthmatic children.
Meng J, Barnes CS, Rosenwasser LJ; Children's Mercy Center for Environmental Health.
Clin Exp Allergy. 2012 Oct;42(10):1448-58.

Association between latitude and allergic diseases: a longitudinal study from childhood to middle-age.
Oktaria V, Dharmage SC, Burgess JA, Simpson JA, Morrison S, Giles GG, Abramson MJ, Walters EH, Matheson MC.
Ann Allergy Asthma Immunol. 2013 Feb;110(2):80-5.e1.

Environmental improvements brought by the legal interventions in the homes of poorly controlled inner-city adult asthmatic patients: a proof-of-concept study.
O'Sullivan MM, Brandfield J, Hoskote SS, Segal SN, Chug L, Modrykamien A, Eden E.
J Asthma. 2012 Nov;49(9):911-7.

Early-life cockroach allergen and polycyclic aromatic hydrocarbon exposures predict cockroach sensitization among inner-city children.
Perzanowski MS, Chew GL, Divjan A, Jung KH, Ridder R, Tang D, Diaz D, Goldstein IF, Kinney PL, Rundle AG, Camann DE, Perera FP, Miller RL.
J Allergy Clin Immunol. 2013 Mar;131(3):886-93.

Allergens in urban schools and homes of children with asthma.
Permaul P, Hoffman E, Fu C, Sheehan W, Baxi S, Gaffin J, Lane J, Bailey A, King E, Chapman M, Gold D, Phipatanakul W.
Pediatr Allergy Immunol. 2012 Sep;23(6):543-9.

Environmental interventions for mite-induced asthma: a journey between systematic reviews, contrasting evidence and clinical practice.
Pingitore G, Pinter E.
Eur Ann Allergy Clin Immunol. 2013 May;45(3):74-7.

Exposure to dog allergens and subsequent allergic sensitization: an updated review.
Smallwood J, Ownby D.
Curr Allergy Asthma Rep. 2012 Oct;12(5):424-8. *Review.*

Time for new methods for avoidance of house dust mite and other allergens.
Tovey E, Ferro A.
Curr Allergy Asthma Rep. 2012 Oct;12(5):465-77.

What do we know about asthma triggers? a review of the literature.
Vernon MK, Wiklund I, Bell JA, Dale P, Chapman KR.
J Asthma. 2012 Dec;49(10):991-8. *Review.*

Urban air pollutants are significant risk factors for asthma and pneumonia in children: the influence of location on the measurement of pollutants.
Vieira SE, Stein RT, Ferraro AA, Pastro LD, Pedro SS, Lemos M, da Silva ER, Sly PD, Saldiva PH.
Arch Bronconeumol. 2012 Nov;48(11):389-95. *Free Article.*

Dampness and moulds in relation to respiratory and allergic symptoms in children: results from Phase Two of the International Study of Asthma and Allergies in Childhood (ISAAC Phase Two).
Weinmayr G, Gehring U, Genuneit J, Büchele G, Kleiner A, Siebers R, Wickens K, Crane J, Brunekreef B, Strachan DP, The ISAAC Phase Two Study Group
Clin Exp Allergy. 2013. [Epub ahead of print]

Air pollution indicators predict outbreaks of asthma exacerbations among elementary school children: integration of daily environmental and school health surveillance systems in Pennsylvania.
YoussefAgha AH, Jayawardene WP, Lohrmann DK, El Afandi GS.
J Environ Monit. 2012 Dec;14(12):3202-10.

Indoor mite allergen levels, specific IgE prevalence and IgE cross-inhibition pattern among asthmatic children in Haikou, southern China.
Zheng YW, Chen S, Lai XX, Gjesing B, Zhong NS, Spangfort MD.
Chin Med J (Engl). 2012 Sep;125(17):3059-63. *Free Article.*

Indoor Air

In vitro assessment of the bioaccessibility of brominated flame retardants in indoor dust using a colon extended model of the human gastrointestinal tract.
Abdallah MA, Tilston E, Harrad S, Collins C.
J Environ Monit. 2012 Dec;14(12):3276-83.

Carbon Dioxide and Volatile Organic Compounds Levels in Mosque in Hot Arid Climate.
A. N. Al-Dabbous AN, Khan AR, Al-Rashidi MS, Awadi L.
Indoor and Built Environment April 2013 22: 456-464.

Early life exposure to air pollution: how bad is it?
Backes CH, Nelin T, Gorr MW, Wold LE.
Toxicol Lett. 2013 Jan 10;216(1):47-53. *Review.*

Exceptionally high serum concentrations of perfluorohexanesulfonate in a Canadian family are linked to home carpet treatment applications.
Beesoon S, Genuis SJ, Benskin JP, Martin JW.
Environ Sci Technol. 2012 Dec 4;46(23):12960-7.

Individual dose and exposure of Italian children to ultrafine particles.
Buonanno G, Marini S, Morawska L, Fuoco FC.
Sci Total Environ. 2012 Nov 1;438:271-7.

The Impact of Air-conditioning Usage on Sick Building Syndrome during Summer in China.
Bin Cao B, Qi Shang Q, Zizhu Dai Z, Zhu Y
Indoor and Built Environment June 2013 22: 490-497

Particle size: a missing factor in risk assessment of human exposure to toxic chemicals in settled indoor dust.
Cao ZG, Yu G, Chen YS, Cao QM, Fiedler H, Deng SB, Huang J, Wang B.
Environ Int. 2012 Nov 15;49:24-30.

Pay attention to the fate of an emerging hazardous waste: PBDE-contaminated indoor dust.
Cao Z, Yang Y, Yu G, Zhang T, Deng L, Zhang K, Wang B, Deng S, Huang J.
Environ Sci Pollut Res Int. 2013 Mar;20(3):1895-7.

Indoor exposure to "outdoor PM10": assessing its influence on the relationship between PM10 and short-term mortality in U.S. cities.
Chen C, Zhao B, Weschler CJ.
Epidemiology. 2012 Nov;23(6):870-8.

Holistic Health Considerations to Prevent Sick Buildings for a Sustainable Caring Society.
Chuck WF Yu, Jeong Tai Kim.
Indoor and Built Environment. 2013 Feb;22: 5-6.

Material Emissions and Indoor Simulation.
Chuck WF Yu, Jeong Tai Kim.
Indoor and Built Environment. 2013 Feb;22: 21-29.

Monitoring Indoor Carbon Dioxide Concentration and Effectiveness of Natural Trickle Ventilation in a Middle School in Rome.
Cornaro C, Paravicini A, Cimini A.
Indoor and Built Environment April 2013 22: 445-455.

Phosphorus-containing fluorinated organics: polyfluoroalkyl phosphoric acid diesters (diPAPs), perfluorophosphonates (PFPAs), and perfluorophosphinates (PFPIAs) in residential indoor dust.
De Silva AO, Allard CN, Spencer C, Webster GM, Shoeib M.
Environ Sci Technol. 2012 Nov 20;46(22):12575-82.

Country specific comparison for profile of chlorinated, brominated and phosphate organic contaminants in indoor dust. Case study for Eastern Romania, 2010.
Dirtu AC, Ali N, Van den Eede N, Neels H, Covaci A.
Environ Int. 2012 Nov 15;49:1-8.

Bioaccessibility of pesticides and polychlorinated biphenyls from house dust: in-vitro methods and human exposure assessment.
Ertl H, Butte W.
J Expo Sci Environ Epidemiol. 2012 Nov;22(6):574-83.

The effects of indoor environmental exposures on pediatric asthma: a discrete event simulation model.
Fabian MP, Stout NK, Adamkiewicz G, Geggel A, Ren C, Sandel M, Levy JI.
Environ Health. 2012 Sep 18;11:66. *Free Article.*

A New Diffusive Sampler for Determining Nicotine and 3-Ethenylpyridine Contents in Second-Hand Smoke.
Ishizu Y, Ishizu Y.
Indoor and Built Environment June 2013 22: 520-527.

Assessment of inter-individual, geographic, and seasonal variability in estimated human exposure to fine particles.
Jiao W, Frey HC, Cao Y.
Environ Sci Technol. 2012 Nov 20;46(22):12519-26.

Risk assessment of human exposure to bioaccessible phthalate esters via indoor dust around the Pearl River Delta.
Kang Y, Man YB, Cheung KC, Wong MH.
Environ Sci Technol. 2012 Aug 7;46(15):8422-30.

Organophosphorus flame retardants in house dust from the Philippines: occurrence and assessment of human exposure.
Kim JW, Isobe T, Sudaryanto A, Malarvannan G, Chang KH, Muto M, Prudente M, Tanabe S.
Environ Sci Pollut Res Int. 2013 Feb;20(2):812-22.

Determination of heavy metals in indoor dust from Istanbul, Turkey: estimation of the health risk.
Kurt-Karakus PB.
Environ Int. 2012 Dec 1;50:47-55.

Within-room and within-building temporal and spatial variations in concentrations of polybrominated diphenyl ethers (PBDEs) in indoor dust.
Muenhor D, Harrad S.
Environ Int. 2012 Oct 15;47:23-7.

Assessment of early acute lung injury in rats exposed to aerosols of consumer products: attempt to disentangle the "Magic Nano" conundrum.
Pauluhn J, Hahn A, Spielmann H.
Inhal Toxicol. 2008 Nov;20(14):1245-62.

Could houseplants improve indoor air quality in schools?
Pegas PN, Alves CA, Nunes T, Bate-Epey EF, Evtyugina M, Pio CA.
J Toxicol Environ Health A. 2012;75(22-23):1371-80.

PAHs in indoor dust samples in Shanghai's universities: levels, sources and human exposure.
Peng H, Yang Y, Liu M, Zhou JL.
Environ Geochem Health. 2012 Oct;34(5):587-96.

Indoor air quality in Portuguese archives: a snapshot on exposure levels.
Pinheiro AC, Viegas C, Viegas S, Veríssimo C, Brandão J, Macedo MF.
J Toxicol Environ Health A. 2012;75(22-23):1359-70.

Organophosphorous pesticide breakdown products in house dust and children's urine.
Quirós-Alcalá L, Bradman A, Smith K, Weerasekera G, Odetokun M, Barr DB, Nishioka M, Castorina R, Hubbard AE, Nicas M, Hammond SK, McKone TE, Eskenazi B.
J Expo Sci Environ Epidemiol. 2012 Nov;22(6):559-68.

Levels and indoor-outdoor relationships of size-specific particulate matter in naturally ventilated Portuguese schools.
Madureira J, Paciência I, Fernandes Ede O.
J Toxicol Environ Health A. 2012;75(22-23):1423-36.

Sampling, extraction and measurement of bacteria, endotoxin, fungi and inflammatory potential of settling indoor dust.
Madsen AM, Matthiesen CB, Frederiksen MW, Frederiksen M, Frankel M, Spilak M, Gunnarsen L, Timm M.
J Environ Monit. 2012 Dec;14(12):3230-9.

Assessment of the indoor environment and implications for health in Roma villages in Slovakia and Romania.
Majdan M, Coman A, Gallová E, Duricová J, Kállayová D, Kvaková M, Bosák L.
Cent Eur J Public Health.

Comparison of the effects of e-cigarette vapor and cigarette smoke on indoor air quality.
McAuley TR, Hopke PK, Zhao J, Babaian S.
Inhal Toxicol. 2012 Oct;24(12):850-7.

Indoor air pollution-related acute lower respiratory infections and low birthweight: a systematic review.
Misra P, Srivastava R, Krishnan A, Sreenivaas V, Pandav CS.
J Trop Pediatr. 2012 Dec;58(6):457-66. *Review.*

Airborne indoor particles from schools are more toxic than outdoor particles.
Oeder S, Jörres RA, Weichenmeier I, Pusch G, Schober W, Pfab F, Behrendt H, Schierl R, Kronseder A, Nowak D, Dietrich S, Fernández-Caldas E, Lintelmann J, Zimmermann R, Lang R, Mages J, Fromme H, Buters JT.
Am J Respir Cell Mol Biol. 2012 Nov;47(5):575-82.

PAHs in indoor dust samples in Shanghai's universities: levels, sources and human exposure.
Peng H, Yang Y, Liu M, Zhou JL.
Environ Geochem Health. 2012 Oct;34(5):587-96.

Experimental Investigation of Indoor Air Pollutants in Residential Buildings.
Tan CCL, Finney KN, Chen Q, Russell NV, Sharifi VN, Swithenbank J.
Indoor and Built Environment June 2013 22: 471-489.

The burden of disease related to indoor air in the Netherlands: do different methods lead to different results?
Schram-Bijkerk D, van Kempen EE, Knol AB.
Occup Environ Med. 2013 Feb;70(2):126-32.

Household air pollution is a major avoidable risk factor for cardiorespiratory disease.
Mortimer K, Gordon SB, Jindal SK, Accinelli RA, Balmes J, Martin WJ 2nd.
Chest. 2012 Nov;142(5):1308-15. *Review.*

Indoor fuel exposure and the lung in both developing and developed countries: an update.
Sood A.
Clin Chest Med. 2012 Dec;33(4):649-65. *Review.*

England's legislation on smoking in indoor public places and work-places: impact on the most exposed children.
Sims M, Bauld L, Gilmore A.
Addiction. 2012 Nov;107(11):2009-16.

Development of a simultaneous extraction and cleanup method for pyrethroid pesticides from indoor house dust samples.
Van Emon JM, Chuang JC.
Anal Chim Acta. 2012 Oct 1;745:38-44.

Occurrence and human exposure of p-hydroxybenzoic acid esters (parabens), bisphenol A diglycidyl ether (BADGE), and their hydrolysis products in indoor dust from the United States and three East Asian countries.
Wang L, Liao C, Liu F, Wu Q, Guo Y, Moon HB, Nakata H, Kannan K.
Environ Sci Technol. 2012 Nov 6;46(21):11584-93.

The Toll-like receptor 5 ligand flagellin promotes asthma by priming allergic responses to indoor allergens.
Wilson RH, Maruoka S, Whitehead GS, Foley JF, Flake GP, Sever ML, Zeldin DC, Kraft M, Garantziotis S, Nakano H, Cook DN.
Nat Med. 2012 Nov;18(11):1705-10.

Holistic Health Considerations to Prevent Sick Buildings for a Sustainable Caring Society.
Yu CWF, Kim JT.
Indoor and Built Environment February 2013 22: 5-6. *Free Article.*

Mould and Dampness

Characterization of allergens and airborne fungi in low and middle-income homes of primary school children in Durban, South Africa.
Jafta N, Batterman SA, Gqaleni N, Naidoo RN, Robins TG.
Am J Ind Med. 2012 Dec;55(12):1110-21.

Mould and dampness in dwelling places, and onset of asthma: the population-based cohort ECRHS.
Norbäck D, Zock JP, Plana E, Heinrich J, Svanes C, Sunyer J, Künzli N, Villani S, Olivieri M, Soon A, Jarvis D.
Occup Environ Med. 2013 May;70(5):325-31.

Light and Radiation

Influence of indoor air conditions on radon concentration in a detached house.
Akbari K, Mahmoudi J, Ghanbari M.
J Environ Radioact. 2013 Feb;116:166-73.

Variation in residential radon levels in new Danish homes.
Bräuner EV, Rasmussen TV, Gunnarsen L.
Indoor Air. 2012 Dec 5. doi: 10.1111/ina.12021. [Epub ahead of print]

Predicted indoor radon concentrations from a Monte Carlo simulation of 1,000,000 granite countertop purchases.
Allen JG, Zwack LM, MacIntosh DL, Minegishi T, Stewart JH, McCarthy JF.
J Radiol Prot. 2013 Mar;33(1):151-62.

Assessment of Radiological Levels at Schools in Trabzon, Turkey.
Çevik U, Çelik A, Çelik N, Özkalayci F, Akbulutc S.
Indoor and Built Environment April 2013 22: 376-383.

Prediction of residential radon exposure of the whole Swiss population: comparison of model-based predictions with measurement-based predictions.
Hauri DD, Huss A, Zimmermann F, Kuehni CE, Röösli M; for the Swiss National Cohort.
Indoor Air. 2013 Mar 6. [Epub ahead of print]

Radon, smoking, and lung cancer: the need to refocus radon control policy.
Lantz PM, Mendez D, Philbert MA.
Am J Public Health. 2013 Mar;103(3):443-7.

Human exposure to indoor radon: a survey in the region of Guarda, Portugal.
Louro A, Peralta L, Soares S, Pereira A, Cunha G, Belchior A, Ferreira L, Monteiro Gil O, Louro H, Pinto P, Rodrigues AS, Silva MJ, Teles P.
Radiat Prot Dosimetry. 2013 Apr;154(2):237-44.

A comparison of two methods for ecologic classification of radon exposure in british columbia: residential observations and the radon potential map of Canada.
Rauch SA, Henderson SB.
Can J Public Health. 2013 Mar 6;104(3):e240-5.

Exposure to residential radon and lung cancer in never-smokers: the preliminary results of the LCRINS study.
Ruano-Ravina A, Prini-Guadalupe L, Barros-Dios JM, Abal-Arca J, Leiro-Fernández V, González-Silva AI, Golpe-Gómez A, González-Barcala FJ, Pena C, Montero-Martínez C, Martínez-González C, Mejuto-Martí MJ, Veres-Racamonde A.
Arch Bronconeumol. 2012 Nov;48(11):405-9. *Free Article.*

Lung cancer risk from occupational and environmental radon and role of smoking in two Czech nested case-control studies.
Tomasek L.
Int J Environ Res Public Health. 2013 Mar 7;10(3):963-79. *Free Article.*

Radon Exhalation Rate from Building Materials Using CR-39 Nuclear Track Detector.
Topçu N, Biçak D, Çam S, Ereeş FS.
Indoor and Built Environment April 2013 22: 384-387.

Radon in Finnish apartment buildings.
Valmari T, Arvela H, Reisbacka H.
Radiat Prot Dosimetry. 2012 Nov;152(1-3):146-9.

Smoking / Environmental Tabacco Smoke

Low birth weight and prenatal exposure to indoor pollution from tobacco smoke and wood fuel smoke: a matched case-control study in Gaza Strip.
Abusalah A, Gavana M, Haidich AB, Smyrnakis E, Papadakis N, Papanikolaou A, Benos A.
Matern Child Health J. 2012 Nov;16(8):1718-27.

Exposure to second-hand smoke and direct healthcare costs in children - results from two German birth cohorts, GINIplus and LISAplus.
Batscheider A, Zakrzewska S, Heinrich J, Teuner CM, Menn P, Bauer CP, Hoffmann U, Koletzko S, Lehmann I, Herbarth O, von Berg A, Berdel D, Krämer U, Schaaf B, Wichmann HE, Leidl R; GINIplus and LISAplus study groups.
BMC Health Serv Res. 2012 Oct 2;12:344. *Free Article.*

Ban on smoking in workplaces in India has led to more smoke free homes.
Bhaumik S.
BMJ. 2013 Apr 8;346:f2186.

Cotinine versus questionnaire: early-life environmental tobacco smoke exposure and incident asthma.
Carlsten C, Dimich-Ward H, DyBuncio A, Becker AB, Chan-Yeung M.
BMC Pediatr. 2012 Dec 5;12:187. *Free Article.*

Association between environmental tobacco smoke exposure and dementia syndromes.
Chen R, Wilson K, Chen Y, Zhang D, Qin X, He M, Hu Z, Ma Y, Copeland JR.
Occup Environ Med. 2013 Jan;70(1):63-9. *Free Article.*

Impact of a stepwise introduction of smoke-free legislation on the rate of preterm births: analysis of routinely collected birth data.
Cox B, Martens E, Nemery B, Vangronsveld J, Nawrot TS.
BMJ. 2013 Feb 14;346:f441. *Free Article.*

Household smoking, maternal atopy and allergic sensitization in children: is it all academic?
D'Vaz N, Franklin P.
Respirology. 2012 Oct;17(7):1029-30. *Free Article.*

Smoke-free-home rules among women with infants, 2004-2008.
Gibbs FA, Tong VT, Farr SL, Dietz PM, Babb S.
Prev Chronic Dis. 2012;9:E164. *Free Article.*

Exposure to secondhand smoke in terraces and other outdoor areas of hospitality venues in eight European countries.
López MJ, Fernández E, Gorini G, Moshammer H, Polanska K, Clancy L, Dautzenberg B, Delrieu A, Invernizzi G, Muñoz G, Precioso J, Ruprecht A, Stansty P, Hanke W, Nebot M.
PLoS One. 2012;7(8):e42130. *Free Article.*

Deaths from secondhand smoke exposure in the United States: economic implications.
Max W, Sung HY, Shi Y.
Am J Public Health. 2012 Nov;102(11):2173-80.

Hospital admissions for childhood asthma after smoke-free legislation in England.
Millett C, Lee JT, Laverty AA, Glantz SA, Majeed A.
Pediatrics. 2013 Feb;131(2):e495-501.

Parents smoking in their cars with children present.
Nabi-Burza E, Regan S, Drehmer J, Ossip D, Rigotti N, Hipple B, Dempsey J, Hall N, Friebely J, Weiley V, Winickoff JP.
Pediatrics. 2012 Dec;130(6):e1471-8.

Air pollution, fetal and infant tobacco smoke exposure, and wheezing in preschool children: a population-based prospective birth cohort.
Sonnenschein-van der Voort AM, de Kluizenaar Y, Jaddoe VW, Gabriele C, Raat H, Moll HA, Hofman A, Pierik FH, Miedema HM, de Jongste JC, Duijts L.
Environ Health. 2012 Dec 11;11:91. *Free Article.*

Concern about passive smoking and tobacco control policies in European countries: an ecological study.
Willemsen MC, Kiselinova M, Nagelhout GE, Joossens L, Knibbe RA.
BMC Public Health. 2012 Oct 15;12:876. *Free Article.*

Home Safety

Playground safety and quality in chicago.
Allen EM, Hill AL, Tranter E, Sheehan KM.
Pediatrics. 2013 Feb;131(2):233-41.

Trampoline safety in childhood and adolescence.
Council on Sports Medicine and Fitness, American Academy of Pediatrics, Briskin S, LaBotz M.
Pediatrics. 2012 Oct;130(4):774-9.

[Home falls in infants before walking acquisition].
Claudet I, Gurrera E, Honorat R, Rekhroukh H, Casasoprana A, Grouteau E.
Arch Pediatr. 2013 May;20(5):484-91.

Head injuries in children under 3 years.
Crowe LM, Catroppa C, Anderson V, Babl FE.
Injury. 2012 Dec;43(12):2141-5.

Falls among children in an Italian hospital: a prospective study.
Della Mora Rda R, Calza S, Urbano A, Esibiti F, Sperlinga ML, Bagnasco A, Sasso L.
Nurs Child Young People. 2012 Dec;24(10):22-6.

Acute poisoning in children; a population study in isfahan, iran, 2008-2010.
Gheshlaghi F, Piri-Ardakani MR, Yaraghi M, Shafiei F, Behjati M.
Iran J Pediatr. 2013 Apr;23(2):189-93.

Injury prevention and care: an important public health agenda for health, survival and safety of children.
Gururaj G.
Indian J Pediatr. 2013 Mar;80 Suppl 1:S100-8.

Bathroom injuries in children less than 15 years old.
Head EN, Stevens JA, Haileyesus T.
Inj Prev. 2013 Jan 15. [Epub ahead of print]

Poison politics: a contentious history of consumer protection against dangerous household chemicals in the United States.
Jones MM, Benrubi ID.
Am J Public Health. 2013 May;103(5):801-12.

School-based injury outcomes in children from a low-income setting: results from the pilot injury surveillance in Rawalpindi city, Pakistan.
Khan UR, Bhatti JA, Zia N, Farooq U.
BMC Res Notes. 2013 Mar 7;6:86. *Free Article.*

Home Unintentional Non-fatal Injury Among Children Under 5 Years of Age in a Rural Area, El Minia Governorate, Egypt.
Kamal NN.
J Community Health. 2013 May 1. [Epub ahead of print]

Home safety education and provision of safety equipment for injury prevention.
Kendrick D, Young B, Mason-Jones AJ, Ilyas N, Achana FA, Cooper NJ, Hubbard SJ, Sutton AJ, Smith S, Wynn P, Mulvaney C, Watson MC, Coupland C.
Cochrane Database Syst Rev. 2012 Sep 12;9:CD005014. *Review.*

Fatal unintentional injuries in the home in the U.S., 2000-2008.
Mack KA, Rudd RA, Mickalide AD, Ballesteros MF.
Am J Prev Med. 2013 Mar;44(3):239-46. *Free Article.*

Environmental risks of insecticides cholinesterase inhibitors.
Mandour RA.
Toxicol Int. 2013 Jan;20(1):30-4.

Emergency department surveillance of injuries associated with bunk beds: the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP), 1990-2009.
McFaull SR, Fréchette M, Skinner R.
Chronic Dis Inj Can. 2012 Dec;33(1):38-46. *Free Article.*

Pesticide exposure in children.
Roberts JR, Karr CJ; Council On Environmental Health.
Pediatrics. 2012 Dec;130(6):e1765-88. Erratum in: Pediatrics. 2013 May;131(5):1013-4.

Are children still at risk for lead poisoning?
Roberts JR, Allen CL, Ligon C, Reigart JR.
Clin Pediatr (Phila). 2013 Feb;52(2):125-30.

Firearm injuries of children and adolescents in 2 Colorado trauma centers: 2000-2008.
Sauaia A, Miller JI, Moore EE, Partrick D.
JAMA. 2013 Apr 24;309(16):1683-5.

Risk factors for unintentional poisoning in children aged 1-3 years in NSW Australia: a case-control study.
Schmertmann M, Williamson A, Black D, Wilson L.
BMC Pediatr. 2013 May 24;13:88. *Free Article.*

Prevention of unintentional childhood injury.
Theurer WM, Bhavsar AK.
Am Fam Physician. 2013 Apr 1;87(7):502-9. *Review.*

Housing and Ageing Society

The Effect of the Public Exercise Environment on the Physical Activity for the Active Ageing of the Elderly.
An S, Lee Y, Kim JT.
Indoor and Built Environment February 2013 22: 319-331.

Home ownership and fall-related outcomes among older adults in South Korea.
Do YK, Kim CS.
Geriatr Gerontol Int. 2012 Dec 17. [Epub ahead of print]

Is “Walkability” A Useful Concept for Gerontology?
Glicksman A, Ring L, Kleban M, Hoffman C.
Journal of Housing For the Elderly. 2013 27(1-2): 241-254.

Identifying Characteristics of Design Guidelines for Elderly Care Environments from the Holistic Health Perspective.
Lee Y, Hwang J, Lim S, Kim JT.
Indoor and Built Environment February 2013 22: 242-259.

“Being Grounded”: Benefits of Gardening for Older Adults in Low-Income Housing.
Wang D, Glicksman A.
Journal of Housing For the Elderly. 2013 27(1-2): 89-104.

Housing Conditions

[Health risk assessment of traffic-related air pollution near busy roads].
Host S, Chatignoux E, Leal C, Grémy I.
Rev Epidemiol Sante Publique. 2012 Aug;60(4):321-30. *Review.*

A Critical Review of User Studies on Healthy Smart Homes.
Kim MJ, Oh MW, Cho ME, Lee H, Kim JT.
Indoor and Built Environment February 2013 22: 260-270.

Relationship between Housing and Health: A Cross-Sectional Study of an Urban Centre of India.
Firdaus G, Ahmad A.
Indoor and Built Environment June 2013 22: 498-507.

Common phenotypic and genotypic antimicrobial resistance patterns found in a case study of multiresistant E. coli from cohabitant pets, humans, and household surfaces.
Martins LR, Pina SM, Simões RL, de Matos AJ, Rodrigues P, da Costa PM.
J Environ Health. 2013 Jan-Feb;75(6):74-81.

High life in the sky? Mortality by floor of residence in Switzerland.
Panczak R, Galobardes B, Spoerri A, Zwahlen M, Egger M.
Eur J Epidemiol. 2013 May 10. [Epub ahead of print]

Explaining the individual processes leading to adaptive comfort: Exploring physiological, behavioural and psychological reactions to thermal stimuli.
Schweiker M, Brasche S, Bischof W, Hawighorst M, Wagner A.
Journal of Building Physics April 2013 36: 438-463.

Water quality and management of private drinking water wells in Pennsylvania.
Swistock BR, Clemens S, Sharpe WE, Rummel S.
J Environ Health. 2013 Jan-Feb;75(6):60-6.

Leukemia risk in children exposed to benzene and PM10 from vehicular traffic: a case-control study in an Italian population.
Vinceti M, Rothman KJ, Crespi CM, Sterni A, Cherubini A, Guerra L, Maffeis G, Ferretti E, Fabbi S, Teggi S, Consonni D, De Girolamo G, Meggiato A, Palazzi G, Paolucci P, Malagoli C.
Eur J Epidemiol. 2012 Oct;27(10):781-90. *Free Article.*

Lead in the Japanese living environment.
Yoshinaga J.
Environ Health Prev Med. 2012 Nov;17(6):433-43. *Review.*

Variables associated with active and inactive behavior during the after-school period.
Wickel E.
Pediatr Exerc Sci. 2013 May;25(2):288-99.

Housing and Mental Health

Social role valorization in community mental health housing: Does it contribute to the community integration and life satisfaction of people with psychiatric disabilities?
Aubry T, Flynn RJ, Virley B, Neri J.
J Community Psychol. 2013 Mar;41(2):218-235. *Free Article.*

Health effects of neighborhood demolition and housing improvement: a prospective controlled study of 2 natural experiments in urban renewal.
Egan M, Katikireddi SV, Kearns A, Tannahill C, Kalacs M, Bond L.
Am J Public Health. 2013 Jun;103(6):e47-53. *Free Article.*

Indigenous round houses versus 'healthy houses': health, place and identity among the Dawan of West Timor, Indonesia.
Kambaru Windi Y, Whittaker A.
Health Place. 2012 Sep;18(5):1153-61.

The role of gender in housing for individuals with severe mental illness: a qualitative study of the Canadian service context.
Kidd SA, Virdee G, Krupa T, Burnham D, Hemingway D, Margolin I, Patterson M, Zabkiewicz D.
BMJ Open. 2013 Jun 20;3(6). *Free Article.*

Were the mental health benefits of a housing mobility intervention larger for adolescents in higher socioeconomic status families?
Nguyen QC, Schmidt NM, Glymour MM, Rehkopf DH, Osypuk TL.
Health Place. 2013 May 24;23C:79-88. [Epub ahead of print]

Thermal Comfort / Energy

Historic Variations in Winter Indoor Domestic Temperatures and Potential Implications for Body Weight Gain.
Mavrogianni A, Johnson F, Ucci M, Marmot A, Wardle J, Oreszczyn T, Summerfield A.
Indoor and Built Environment April 2013 22: 360-375.

Temperature modifies the acute effect of particulate air pollution on mortality in eight Chinese cities.
Meng X, Zhang Y, Zhao Z, Duan X, Xu X, Kan H.
Sci Total Environ. 2012 Oct 1;435-436:215-21.

Housing improvements for health and associated socio-economic outcomes.
Thomson H, Thomas S, Sellstrom E, Petticrew M.
Cochrane Database Syst Rev. 2013 Feb 28;2:CD008657. *Review.*

Temperature, traffic-related air pollution, and heart rate variability in a panel of healthy adults.
Wu S, Deng F, Liu Y, Shima M, Niu J, Huang Q, Guo X.
Environ Res. 2013 Jan;120:82-9.

Urban Planning / Built Environment

The urban brain: analysing outdoor physical activity with mobile EEG.
Aspinall P, Mavros P, Coyne R, Roe J.
Br J Sports Med. 2013 Mar 6. [Epub ahead of print]

Human health risks of Pb and As exposure via consumption of home garden vegetables and incidental soil and dust ingestion: a probabilistic screening tool.
Bacigalupo C, Hale B.
Sci Total Environ. 2012 Apr 15;423:27-38.

Architectural design and physical activity: an observational study of staircase and elevator use in different buildings.
Bassett DR, Browning R, Conger SA, Wolff DL, Flynn JI.
J Phys Act Health. 2013 May;10(4):556-62.

Disentangling neighborhood contextual associations with child body mass index, diet, and physical activity: The role of built, socioeconomic, and social environments.
Carroll-Scott A, Gilstad-Hayden K, Rosenthal L, Peters SM, McCaslin C, Joyce R, Ickovics JR.
Soc Sci Med. 2013 Apr 10. [Epub ahead of print]

A Community Survey on Neighborhood Violence, Park Use and Physical Activity Among Urban Youth.
Echeverria SE, Luan A, Isasi CR, Johnson-Dias J, Pacquiao D.
J Phys Act Health. 2013 Jan 28. [Epub ahead of print]

Greening vacant lots to reduce violent crime: a randomised controlled trial.
Garvin EC, Cannuscio CC, Branas CC.
Inj Prev. 2013 Jun;19(3):198-203.

Long-term exposure to NO2 and PM10 and all-cause and cause-specific mortality in a prospective cohort of women.
Heinrich J, Thiering E, Rzehak P, Krämer U, Hochadel M, Rauchfuss KM, Gehring U, Wichmann HE.
Occup Environ Med. 2013 Mar;70(3):179-86. *Free Article.*

Evaluation of the neighborhood environment walkability scale in Nigeria.
Oyeyemi AL, Sallis JF, Deforche B, Oyeyemi AY, De Bourdeaudhuij I, Van Dyck D.
Int J Health Geogr. 2013 Mar 21;12:16. *Free Article.*

Neighborhood walking among overweight and obese adults: age variations in barriers and motivators.
Lee C, Ory MG, Yoon J, Forjuoh SN.
J Community Health. 2013 Feb;38(1):12-22.

Outdoor built environment barriers and facilitators to activity among midlife and older adults with mobility disabilities.
Rosenberg DE, Huang DL, Simonovich SD, Belza B.
Gerontologist. 2013 Apr;53(2):268-79.

Independent and Joint Associations between Multiple Measures of the Built and Social Environment and Physical Activity in a Multi-Ethnic Urban Community.
Schulz A, Mentz G, Johnson-Lawrence V, Israel BA, Max P, Zenk SN, Wineman J, Marans RW.
J Urban Health. 2013 Feb 23. [Epub ahead of print]

Factors influencing mode of transport in older adolescents: a qualitative study.
Simons D, Clarys P, De Bourdeaudhuij I, de Geus B, Vandelanotte C, Deforche B.
BMC Public Health. 2013 Apr 10;13:323. *Free Article.*

Children's physical activity and parents' perception of the neighborhood environment: neighborhood impact on kids study.
Tappe KA, Glanz K, Sallis JF, Zhou C, Saelens BE.
Int J Behav Nutr Phys Act. 2013 Mar 27;10:39. *Free Article.*

Reprint of: "I'm always entirely happy when I'm here!" Urban blue enhancing human health and well-being in Cologne and Düsseldorf, Germany.
Völker S, Kistemann T.
Soc Sci Med. 2013 Apr 24. [Epub ahead of print]

Association between Physical Activity and Neighborhood Environment among Middle-Aged Adults in Shanghai.
Zhou R, Li Y, Umezaki M, Ding Y, Jiang H, Comber A, Fu H.
J Environ Public Health. 2013;2013:239595.

Social Inequality

Perceived neighborhood quality, sleep quality, and health status: evidence from the Survey of the Health of Wisconsin.
Hale L, Hill TD, Friedman E, Nieto FJ, Galvao LW, Engelman CD, Malecki KM, Peppard PE.
Soc Sci Med. 2013 Feb;79:16-22.

Home/social environment and asthma profiles in a vulnerable community from Caracas: lessons for urban Venezuela?
Hulett AC, Yibirin MG, Brandt RB, García A, Hurtado D, Puigbó AP.
J Asthma. 2013 Feb;50(1):14-24.

Socioeconomic inequalities in childhood exposure to secondhand smoke before and after smoke-free legislation in three UK countries.
Moore GF, Currie D, Gilmore G, Holliday JC, Moore L.
J Public Health (Oxf). 2012 Dec;34(4):599-608. *Free Article.*

Social disparities in children's exposure to second hand smoke at home: a repeated cross-sectional survey.
Pisinger C, Hammer-Helmich L, Andreasen AH, Jørgensen T, Glümer C.
Environ Health. 2012 Sep 17;11:65. *Free Article.*

Impact of asthma on educational attainment in a socioeconomically deprived population: a study linking health, education and social care datasets.
Sturdy P, Bremner S, Harper G, Mayhew L, Eldridge S, Eversley J, Sheikh A, Hunter S, Boomla K, Feder G, Prescott K, Griffiths C.
PLoS One. 2012;7(11):e43977. *Free Article.*

Noise

Are primary school students exposed to higher noise levels than secondary school students in Germany?
Bhardwaj M, Baum U, Markevych I, Mohamed A, Weinmann T, Nowak D, Radon K.
Int J Occup Environ Med. 2013 Jan;4(1):2-11. *Free Article.*

Can Expectations Produce Symptoms From Infrasound Associated With Wind Turbines?
Crichton F, Dodd G, Schmid G, Gamble G, Petrie KJ.
Health Psychol. 2013 Mar 11. [Epub ahead of print]

Noise and cardiovascular disease: a review of the literature 2008-2011.
Davies H, Kamp IV.
Noise Health. 2012 Nov-Dec;14(61):287-91. *Review. Free Article.*

'Wind turbine syndrome': fact or fiction?
Farboud A, Crunkhorn R, Trinidade A.
J Laryngol Otol. 2013 Mar;127(3):222-6.

Effect of nocturnal road traffic noise exposure and annoyance on objective and subjective sleep quality.
Frei P, Mohler E, Röösli M.
Int J Hyg Environ Health. 2013 Apr 22. pii: S1438-4639(13)00057-6. [Epub ahead of print]

Traffic density in area of residence is associated with health-related quality of life in women, the community-based Hordaland Health Study.
Gundersen H, Magerøy N, Moen BE, Bråtveit M.
Arch Environ Occup Health. 2013;68(3):153-60.

Prevalence of complaints related to wind turbine noise in northern New England.
Kaliski K.
J Acoust Soc Am. 2013 May;133(5):3418.

Living with helicopter noise – evaluating sound insulation techniques for domestic dwellings using real helicopters.
Kerry G, Waddington D, Lomax C.
Building Services Engineering Research and Technology. 2013 May; 34: 223-239.

[Social inequities regarding annoyance to noise and road traffic intensity: Results of the German Health Interview and Examination Survey for Adults (DEGS1)].
Laußmann D, Haftenberger M, Lampert T, Scheidt-Nave C.
Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz. 2013 May;56(5-6):822-31.

The association between road traffic noise exposure and blood pressure among children in Germany: the GINIplus and LISAplus studies.
Liu C, Fuertes E, Tiesler CM, Birk M, Babisch W, Bauer CP, Koletzko S, Heinrich J.
Noise Health. 2013 May-Jun;15(64):165-72. doi: 10.4103/1463-1741.112364.

Assessment of annoyance due to wind turbine noise.
Pawlaczyk-Luszczynska M, Dudarewicz A, Zaborowski K, Zamojska M, Waszkowska M.
J Acoust Soc Am. 2013 May;133(5):3450.

Environmental noise and sleep disturbance: research in Central, Eastern and South-Eastern Europe and Newly Independent States.
Ristovska G, Lekaviciute J.
Noise Health. 2013 Jan-Feb;15(62):6-11. *Review. Free Article.*

Wind turbines: is there a human health risk?
Roberts JD, Roberts MA.
J Environ Health. 2013 Apr;75(8):8-13, 16-7.

Can wind-turbine sound that is below the threshold of hearing be heard?
Schomer P.
J Acoust Soc Am. 2013 May;133(5):3419.

Noise and health in vulnerable groups: a review.
van Kamp I, Davies H.
Noise Health. 2013 May-Jun;15(64):153-9. *Review. Free Article*.

Miscellaneous

Particles, air quality, policy and health.
Heal MR, Kumar P, Harrison RM.
Chem Soc Rev. 2012 Oct 7;41(19):6606-30. *Review.*

A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010.
Lim SS, Vos T, Flaxman AD, Danaei G, Shibuya K, Adair-Rohani H, Amann M, Anderson HR, Andrews KG, Aryee M, Atkinson C, Bacchus LJ, Bahalim AN, Balakrishnan K, Balmes J, Barker-Collo S, Baxter A, Bell ML, Blore JD, Blyth F, Bonner C, Borges G, Bourne R, Boussinesq M, Brauer M, Brooks P, Bruce NG, Brunekreef B, Bryan-Hancock C, Bucello C, Buchbinder R, Bull F, Burnett RT, Byers TE, Calabria B, Carapetis J, Carnahan E, Chafe Z, Charlson F, Chen H, Chen JS, Cheng AT, Child JC, Cohen A, Colson KE, Cowie BC, Darby S, Darling S, Davis A, Degenhardt L, Dentener F, Des Jarlais DC, Devries K, Dherani M, Ding EL, Dorsey ER, Driscoll T, Edmond K, Ali SE, Engell RE, Erwin PJ, Fahimi S, Falder G, Farzadfar F, Ferrari A, Finucane MM, Flaxman S, Fowkes FG, Freedman G, Freeman MK, Gakidou E, Ghosh S, Giovannucci E, Gmel G, Graham K, Grainger R, Grant B, Gunnell D, Gutierrez HR, Hall W, Hoek HW, Hogan A, Hosgood HD 3rd, Hoy D, Hu H, Hubbell BJ, Hutchings SJ, Ibeanusi SE, Jacklyn GL, Jasrasaria R, Jonas JB, Kan H, Kanis JA, Kassebaum N, Kawakami N, Khang YH, Khatibzadeh S, Khoo JP, Kok C, Laden F, Lalloo R, Lan Q, Lathlean T, Leasher JL, Leigh J, Li Y, Lin JK, Lipshultz SE, London S, Lozano R, Lu Y, Mak J, Malekzadeh R, Mallinger L, Marcenes W, March L, Marks R, Martin R, McGale P, McGrath J, Mehta S, Mensah GA, Merriman TR, Micha R, Michaud C, Mishra V, Hanafiah KM, Mokdad AA, Morawska L, Mozaffarian D, Murphy T, Naghavi M, Neal B, Nelson PK, Nolla JM, Norman R, Olives C, Omer SB, Orchard J, Osborne R, Ostro B, Page A, Pandey KD, Parry CD, Passmore E, Patra J, Pearce N, Pelizzari PM, Petzold M, Phillips MR, Pope D, Pope CA 3rd, Powles J, Rao M, Razavi H, Rehfuess EA, Rehm JT, Ritz B, Rivara FP, Roberts T, Robinson C, Rodriguez-Portales JA, Romieu I, Room R, Rosenfeld LC, Roy A, Rushton L, Salomon JA, Sampson U, Sanchez-Riera L, Sanman E, Sapkota A, Seedat S, Shi P, Shield K, Shivakoti R, Singh GM, Sleet DA, Smith E, Smith KR, Stapelberg NJ, Steenland K, Stöckl H, Stovner LJ, Straif K, Straney L, Thurston GD, Tran JH, Van Dingenen R, van Donkelaar A, Veerman JL, Vijayakumar L, Weintraub R, Weissman MM, White RA, Whiteford H, Wiersma ST, Wilkinson JD, Williams HC, Williams W, Wilson N, Woolf AD, Yip P, Zielinski JM, Lopez AD, Murray CJ, Ezzati M, AlMazroa MA, Memish ZA.
Lancet. 2012 Dec 15;380(9859):2224-60.

Long-term exposure to traffic-related air pollution and insulin resistance in children: results from the GINIplus and LISAplus birth cohorts.
Thiering E, Cyrys J, Kratzsch J, Meisinger C, Hoffmann B, Berdel D, von Berg A, Koletzko S, Bauer CP, Heinrich J.
Diabetologia. 2013 May 11. [Epub ahead of print]

Events Announcement

Environment and Health 2013
Bridging South, North, East and West
Conference of ISEE, ISES and ISIAQ
Date: August 19-23, 2013
Venue: Basel, Switzerland
Further Information: Environment and Health | Conference of ISEE, ISES and ISIAQ

VOC Seminar 2013
Date: September 16, 2013
Venue: Frankfurt/M, Germany
Further Information: www.eurofins.com/voc2013-de

Der Demografiekongress 2013 - Zukunftsforum langes Leben
Date: September 4 - 5, 2013
Venue: Berlin, Germany
Further Information: DER DEMOGRAFIEKONGRESS 2013

8. Deutscher Allergiekongress
Date: September 5-7, 2013
Venue: Bochum, Germany
Further Information: Deutscher Allergiekongress 2013

20th International Conference on Environmental Indicators ICEI
Date: September 23-26, 2013
Venue: Trier, Germany
Further Information: ICEI 2013

45. Jahrestagung Deutsch-Schweizerischer Fachverband für Strahlenschutz e.V.
45th Annual meeting of the Association for Radiation Protection
Date: September 24-26, 2013
Venue: Essen, Germany
Further Information: Jahrestagung Strahlenschutz

34th AIVC Conference - Air Infiltration and Ventilation
Date: September 25-26, 2013
Venue: Athens, Greece
Further Information: AIVC Conference

IAQ 2013 - Environmental Health in Low Energy Buildings
Date: October 15 - 18, 2013,
Venue: Vancouver, British Columbia, Canada
Further Information: IAQ 2013 | ashrae.org

10. AGÖF-Fachkongress
"Umwelt, Gebäude & Gesundheit: Schadstoffe, Gerüche und Sanierung"
Date: October 24-25, 2013
Venue: Nuremberg, Germany
Further Information: 10. AGÖF-Fachkongress

8th National Housing Conference - Adelaide 2013
Date: October 30 - November 1, 2013
Venue: Adelaide, Australia
Further Information: National Housing Conference 2013, Adelaide - National Housing Conference

Message Board

In this section we will inform you about activities and projects related to housing and health that are being carried out by WHO or the WHO CC. This may relate to ongoing activities and projects, as well as invitations to participate in data collections or case study projects.

WHO work on indoor and built environments

WHO playing an advisory role in European projects on housing, energy, ventilation and urban planning

WHO/Europe plays an advisory role in a variety of European projects related to housing and urban issues.

- Across Europe, housing insulation is being applied as one of the main mechanisms to reduce energy consumption. As little knowledge is available on the potential health impacts of such action, the INSULAtE-project aims to demonstrate how improving energy efficiency in buildings impacts on indoor environmental quality and occupant health. Since the project started in 2010, field studies have been conducted in Finland and Lithuania, targeting apartment buildings undergoing renovations in 2011—2014. The project consortium hopes to find new collaborative partnerships for further testing of the assessment protocol. For more information, see www.insulateproject.eu.
- A new project on energy vulnerability and urban transitions in Europe (EValUaTE) has started in mid-2013, looking into the impact of the economic crises and the increase in energy cost in Central and Eastern European cities and assessing the social and spatial dimensions of energy vulnerability and the related effects on health and wellbeing. The project will be managed by the newly established UK Centre on Urban Energy and Resilience and WHO/Europe will be a member of the Advisory Board. See http://urban-energy.org/evaluate/ for more information.
- WHO/Europe has also been on the advisory panel of the HealthVent project which aimed at establishing guidelines for health-based ventilation in Europe to protect people in places like schools, nurseries, offices and homes against health problems caused by poor indoor air quality. The HealthVent project acknowledged – and tried to implement – the recommendations provided by WHO through its Indoor Air Quality Guidelines. The final HealthVent report is expected to be published by late 2013. For more information, see http://www.healthvent.byg.dtu.dk/

Evidence on health aspects of air pollution

WHO/Europe is coordinating the international projects REVIHAAP (Review of evidence on health aspects of air pollution) and HRAPIE (Health risks of air pollution in Europe), to provide the European Commission (EC) and its stakeholders with evidence-based advice on the health aspects of air pollution. This advice will be grounded on a review of the latest scientific evidence on the health effects of a wide range of air pollutants. Results from these projects will support the comprehensive revision of European Union (EU) air quality policies taking place in 2013.

The final technical report for REVIHAAP is now available on WHO's website at: http://www.euro.who.int/__data/assets/pdf_file/0004/193108/REVIHAAP-Final-technical-report.pdf. Work on project HRAPIE continues until September 2013.

Multiple exposure in indoor built environments

Strong evidence is available on the health impacts of certain building- and indoor-related risk factors. However, in real life, many of these indoor exposures occur in parallel and much less evidence is available on such multiple exposures, their health effects, and the appropriate countermeasures. WHO/Europe is now supporting Member States in tackling the challenge of multiple exposures to environmental risks by hosting a capacity building workshop on multiple exposures in indoor built environments such as homes, day care centers and schools. In parallel, similar workshops will be held on

subjects related to air quality monitoring, chemical mixtures and asbestos. One of the workshop documents will be a review of evidence on multiple exposures in indoor built environments, which will be published after the October workshop on the WHO/Europe website on housing and health at http://www.euro.who.int/en/what-we-do/health-topics/environment-and-health/Housing-and-health

WHO project towards developing housing and health guidelines

In April 2013, the Pan-American Health Organization hosted the first meeting of the Housing and Health Guideline Development Group in Washington. The project is coordinated by WHO Headquarters with the support of WHO/Europe. At the meeting, the guideline development group convened experts from across the world and discussed the format and coverage of WHO guidelines on housing and health, reviewing existing evidence and WHO guidelines to identify the most relevant areas for WHO advice on healthy housing. For the selected topics, systematic evidence reviews will then be carried out to establish health-based guidance on housing criteria and interventions. For further information, please see http://www.who.int/hia/housing/en/index.html

Health effects and guidance on emergencies

The WHO/Europe programme on climate change has published a range of products addressing health effects and prevention measures related to heat, cold and flooding which are of relevance for urban settlements as well as healthy housing.
For further information on heat, please see
http://www.euro.who.int/en/what-we-do/health-topics/environment-and-health/Climate-change/activities/public-health-responses-to-weather-extremes2/heathealth-action-plans
For evidence and guidance on flooding, see
http://www.euro.who.int/en/what-we-do/health-topics/environment-and-health/Climate-change/news/news/2013/05/how-flooding-affects-health
For health effects of cold, see http://www.euro.who.int/en/what-we-do/health-topics/environment-and-health/Climate-change/news/news/2013/02/how-cold-weather-affects-health

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