



Editorial

Injuries among children and adolescents in the home environment – epidemiological analysis based on the European Injury Data Base

In 2007, the EU Commission pointed out in its council recommendation “On the prevention of injury and the promotion of safety” that injuries in Europe are a considerable burden on the health and social systems. In contrast to other causes of illness, injuries can be effectively prevented. The Commissions call for the Member States to use the available data more efficiently and to observe the efficacy of the preventive measures [1].

Since 2007, the Injury Data Base (IDB) has been implemented in the federal state of Brandenburg as well as in 5 hospitals led by the Brandenburg Public Health Office. The IDB is a hospital based injury surveillance system and collects data (based on 18 core variables) on all injured patients coming through the accident and emergency department [2].

The following epidemiological analysis relates to 5,080 injuries in the home environment of a total of 10,660 injured children under the age of 18 years (N= 81,248) in the cities of Cottbus and Leipzig. The average injury rate in the home environment is 6.3% and a quarter of the injured sustained severe injuries (e.g. head injuries, fractures and scalds among infants).

The following results identify risk groups, injuries by intent and the products involved.

The figure shows that infants and toddlers are most at risk of injuries in the home environment (120.7 and 125.8 per 1,000 respectively) and decrease with age to a rate of 18.2 per 1,000 among adolescents. Differentiating injuries by intent (accidents, violence, self-harm) makes evident that infants and toddlers are most at risk in the home environment (97.9% of all home injuries), whereas adolescents are at

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lowest risk (71.4%). The 15 to 18-year-olds additionally suffer from self-harm. The rate of self-harm among 15 to 17-year-old females is three times as high as among boys (5.9 vs. 1.6 per 1,000) and represents a third of all injuries in the home environment. Violence shows to be a rare event in comparison to accidents. Infants, again, are most at risk (2.5 per 1,000). With respect to infants, parents are identified to be the offenders, whereas interpersonal violence is more common among school children and adolescents [3]. On the basis of a standardized documentation and assessment of the injury event by intent, 5 additional suspicious cases could be identified.

According to international studies showing an age specific injury profile, the following results refer to the age specific injury mechanism and to the products involved.

The major causes of falls are related to baby changing tables, high chairs, seats, beds and stairs. Already in infancy, boys are most at risk of accidents in the home environment. According to doctors’ reports, around 40% of accidents in the home could have been prevented by the use of safety products or an altered behaviour.

Products are less frequently the cause of accidents in adolescents. The most frequent injury mechanisms are: contact with objects, with people and falls on the same level [4].

Conclusions: The IDB is beneficial in giving useful information on risk groups and risk factors. Infants are most at risk of product related accidents in the home environment and of violence from parents.

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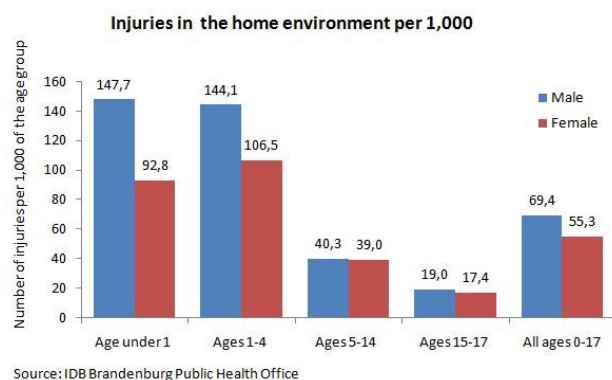


Figure: Rate of injuries in the home environment per 1,000 of the age group.

References

- [1] Council recommendation (2007) On the prevention of injury and the promotion of safety. Official Journal of the European Union C 164/01, Brussels
- [2] Injury Data Base: <https://webgate.ec.europa.eu/idb/>
- [3] Ellsäßer G, Woller Th, Erler Th (2009) Die „Gesichter“ der Opfer – Auswirkungen von Gewalt bei Schulkindern und Jugendlichen erkennen. 105. Deutscher Kongress für Kinder- und Jugendmedizin. Monatsschrift Kinderheilkd 157/Suppl 1:34
- [4] Rivara F (1995) Developmental and behavioral issues in childhood injury prevention. Journal of Developmental and Behavioral Pediatrics 16:362-370

Housing and Children's accidents: Situation in the United Kingdom

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Children's injuries from accidents in the home are a major public health problem throughout Europe, and it is notable that the problem is greater in low to middle income countries showing a very steep social gradient. There is considerable information on the situation in Europe provided by a wide range of publications (see sources of information at the end of this piece), so the information and discussion presented here concentrates on the situation in the UK.

Some figures from the UK - Over 40% of all childhood injuries occur in or around the home. In 2005, 75 children under 15 years old died as a result of a home accident, and 49 (65%) of these were children under 5 years old. Of the 900,000 children under 15 years who attended an Accident and Emergency department with an injury from a home accident in 2002, almost 480,000 (53%) were under 5 years old. That the majorities are children under 5 years old is not that surprising – they spend most of their time in and around the home. In 2002, around 390,000 children under 15 years old required medical attention for injuries resulting from a home accident. Almost 37,000 children attended hospital with burns or scald injuries. Of these, around 450 children are admitted to hospital and another 2,000 attended the Accident and Emergency department suffering hot water scalds.

Home hazards -The ideal would be a safe and healthy environment for all the occupiers and visitors. However, this is impossible. We want and need hazards. We need doors, windows, stairs, steps, cooking facilities, electricity, and perhaps gas. As adults, we tend to take our home environment for granted; we get used to the layout, and all the hazards (necessary or not). Added to the hazards, we create hazardous situations – we use boiling water to make drinks, we cook, we position furniture

carelessly (e.g., chairs in front of windows), we put down loose carpets, we put objects on stairs (to “take them next time we go upstairs”), and we leave medicines and cleaning products in unlocked cupboards. While these are potential hazards for us as adults, they are more so for children, particularly the very young who have no experience to inform their actions and a lack of danger awareness. For children, the home can be an accident black spot.

Enough about the problem – what about solutions? -There is evidence that practical action can reduce the likelihood of accidental injuries. The options include

- identifying the danger (awareness)
- eliminate the danger (avoid by safe design)
- modify (make safe(r))
- isolate (the danger)
- train and instruct (safe behaviour)
- warn (awareness)
- supervise

These options are not mutually exclusion, but complement each other, one leading to another.

Identifying the danger is the responsibility of a whole range of people. Those responsible for the design of housing, equipment, appliances, household goods, as well as the parents/carers. Once those responsible for the design have identified the potential danger they are in a position to eliminate or at least minimise that danger. Once parents and carers are aware they can supervise or at least warn the child. If the danger is present in an existing home, then, once identified, it may be possible to either modify it to make it safer or to isolate it. Warning children of potential dangers and training and instructing them in safe behaviour are important, as many hazards cannot be removed. Finally, for very young children, supervision is important.

Preventative Strategies -These can be divided into five inter-related and complementary categories. First, *awareness campaigns* directed at children, at parents/carers, and at the population generally. The campaigns should be geared to the target audience and should give practical advice on both how to avoid accidents and what to do if one does occurred. *Safety devices* need to be developed and tested. These are often developed by industry, and include cut-off devices for gas appliances, safety locks for windows, and child resistant closures on medicine and cleaning products to reduce the number of poisonings. Such devices should be incorporated into new dwellings and where possible existing dwellings as soon as they have been shown reliable and effective. There is reliable evidence that various *modifications of the home environment* can be effective in reducing certain types of children’s accidents. For example, properly designed guarding to stairs and balconies with no gaps greater than 100mm have been shown to reduce falls, as have restrictors on windows; burns and scalds have been reduced by safe layout of kitchens and the temperature control of hot water; and four sided fencing of pools and ponds reduce drowning and near-drowning. To ensure safety devices are installed, to control the design and construction of new dwellings, and to require modification of existing dwellings will require *legislation*. This could be linked to enforcement provisions, or, in the case of existing dwellings, could trigger financial assistance. Finally, there should be *research and monitoring* to examine and review the effectiveness of strategies and to inform policies.

Legislation - In 2006, England and Wales adopted the Housing Health and Safety Rating System (HHSRS) as the prescribed method for assessing housing conditions. The HHSRS introduced a radical new approach, shifting the focus of assessment from building defects to the potential effects of those defects in terms of threats to the health and/or safety of occupiers. It is a risk-based approach, taking into account the likelihood of an occurrence (such as a fall, or the exposure to hot surfaces) and the severity of the outcome. The HHSRS lists 29 potential housing hazards grouped into four categories one of which is **Protection Against Accidents**.

Conclusions and Perspectives - Much more needs to be done, in the UK and in Europe generally, to reduce the number of children suffering unintentional home injuries. To be effective, there needs to be co-ordinated action, bringing together the health sector, the housing sector, and the research and development sectors from industry. While there has been work to show the cost of children’s injuries to the health sector, the other potential costs to the individual and to society should not be forgotten –

including costs associated with quality of life, educational attainment, pain and suffering. It is hoped that the goals mentioned in the *Parma Declaration of Environment and Health* will lead to further action to reduce children's injuries from home accidents.

References

European references

- [WHO/Europe - European Report on Child Injury Prevention \(2008\)](#)
- [WHO/Europe - Addressing the Socioeconomic Safety Divide \(2009\)](#)
- [A Children's Environment and Health Strategy for the UK \(Health Protection Agency, 2009\)](#)
- [WHO/Europe - Children's Environment and Health Action Plan for Europe \(CEHAPE\)](#)
- [Eurosafes European Child Safety Alliance](#)
- [WHO/Europe - Parma Declaration of Environment and Health](#)

UK references

- [Better safe than sorry - Preventing unintentional injury to children \(Audit Commission 2007\)](#)
- [Child Accident Prevention Trust](#)
- [\(Royal Society for the Prevention of Accidents\)](#)
- [Housing Health and Safety Rating System: Operating Guidance](#)
- [Review of health and safety risk drivers](#)
- [BRE report: The real cost of poor housing](#)
- [English Housing Survey: Headline Report 2008-09\)](#)

Other Information

- [\(Housing Interventions and Health: A Review of Evidence\)](#)

Housing and Children's accidents: Situation in the German Federal State of Baden-Württemberg

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Accidents, injuries and violence still remain the main health hazards in children and adolescents, which according to experts could have been prevented in the majority of cases [1], [2]. A considerable number of children's accidents occur in the home setting [2].

It was the goal of the Baden-Württemberg environmental health surveillance systems to investigate the annual prevalence of home accidents in 10-years-old children and to identify potential health risk factors, as the knowledge about these risks is incomplete due to the lack of relevant research [3].

In winter 2006/2007, more than 2000 fourth-graders from 17 public health department districts were examined. Data on the annual prevalence of children's home accidents like burns, falls, crashes, cuts or thrusts were assessed by means of a parental questionnaire. Children's sex, their body-mass-index, the school-leaving qualification of their father/mother and the administrative district of the residence were considered as possible influencing factors.

Furthermore, mortality due to road and other accidents in children in Baden-Württemberg between 1980-2007 was compared with the relevant data from the Germany. These data are shown for 10 to 15-years-old children in figures 1a and 1b (References: Baden-Württemberg state health office, 2009, unpublished data; Statistisches Landesamt Baden-Württemberg 1980-2007).

As a result, mortality in children due to accidents has generally decreased in Germany and Baden-Württemberg. In 1980-2007, mortality due to accidents in 10 to 15-years-old boys declined from 14 to 2 per 100.000 and in 10 to 15-years-old girls from 8 to 2 per 100.000 within the same period of time.

Analyses of the data from the Baden-Württemberg environmental health surveillance systems show that about one child of three is involved in at least one accident within one year. School-leaving qualifications of the parents had no influence on the prevalence of accidents. Most causes for home accidents were constructive elements like stairs, doors, windows, walls etc. as well as knives/cutlery; toys and knives/cutlery more often injured boys than girls [3].

Conclusions: Although children's mortality due to home accidents has decreased within the past 25 years in Baden-Württemberg as well as in Germany as a whole, accidents still belong to the most frequent causes of death in infancy. Apart from road accidents, the danger of children's accidents still remains being highest in the home. In order to reduce the number of home accidents in the long run, special attention should be paid to the reduction of health hazards in and around the home. Detailed age specific and practicable interventions, however, need profound knowledge on the causes of accidents, their frequency and their magnitude [3].

Figures 1a/b show the decline of mortality in adolescents in Baden-Württemberg from 1980-2007

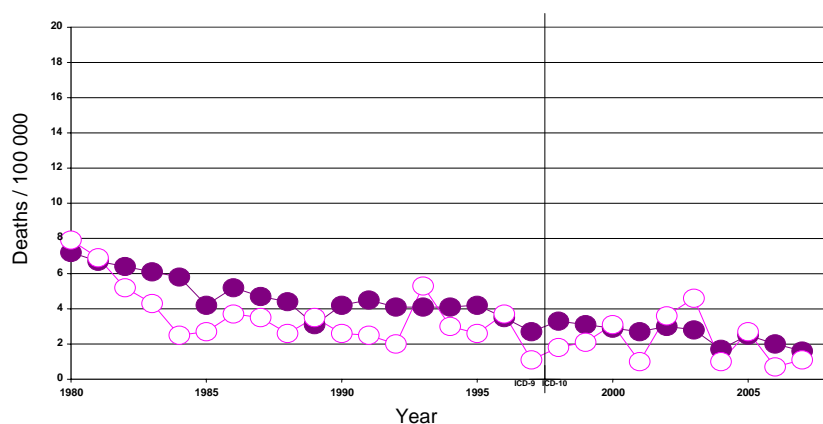


Fig. 1a: Mortality due to accidents, girls aged 10-15 years in Germany (Ger) —◆— and Baden-Württemberg (BW) —◇— 1980-2007

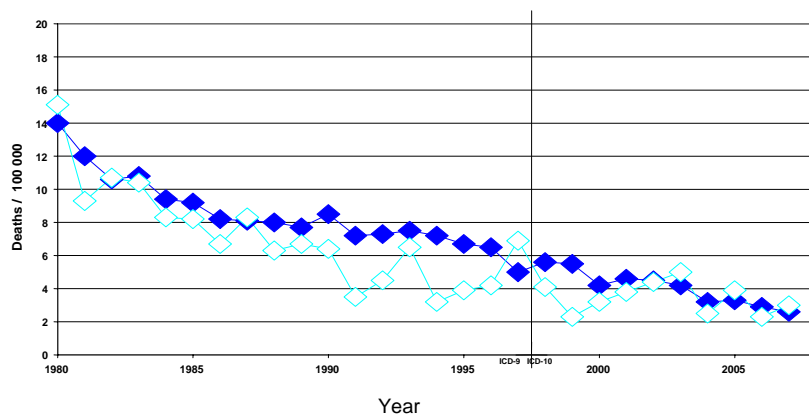




Fig. 1b: Mortality due to accidents, boys aged 10-15 years in Germany (Ger) —◆— and Baden-Württemberg (BW) —◇— 1980-2007

References

- [1] [WHO/Europe - Injuries and violence in Europe. Why they matter and what can be done.](#) Copenhagen 2005.
- [2] [BZgA: Health for Children and Adolescents](#)
Robert Koch-Institut (Hrsg.) (2008) Erkennen - Bewerten – Handeln: Zur Gesundheit von Kindern und Jugendlichen in Deutschland. RKI, Berlin, Dezember 2008. S. 33.
http://www.kindergesundheit-info.de/fileadmin/user_upload/kindergesundheit-info.de/Download/Fachinformationen/KiGGS_GPA.pdf 

[3] [Kinderunfälle im Wohnbereich und mögliche Risikofaktoren](#)

Dreisigacker A, Knebel H, Goisser S, Zöllner I, Link B, Hornberg C.
Umweltmedizin in Forschung und Praxis 2009; 14 (5): 281-182. 

Publications and Resources

[BRE report: The real cost of poor housing](#)

Davidson M, Roys M, Nicol S, Ormandy D, Ambrose P.
IHS BRE Press, Dec 15. 2009. Booklet.

The relationship between poor housing and poor health has been recognised for a long time, but until recently it has not been possible to estimate the cost to society of poor housing. Although the problems of disease associated with slum living have largely been eradicated in England, a significant number of health and safety hazards in the home remain. 'Poor housing' is defined as housing which fails to meet the statutory minimum standard for housing in England, as assessed by the Housing Health and Safety Rating System. This report highlights weaknesses in existing models of the housing stock and proposes a new model which overcomes them. The model uses data from the English House Condition Survey to illustrate the effects of various scenarios and repair options. It allows all the hazards measured in the Survey to be compared, and identifies repair solutions which provide direct benefit to the NHS through reduced injury rates and treatment costs. This model allows the total health cost of poor housing in England to be estimated as over £600 million per year. The total cost to society each year may be greater than £1.5 billion.

[Eurosafe Publications & Resources](#)

The European Child Safety Alliance (ECSA) have launched a new range of fact sheets on child injury prevention. The new fact sheets cover a range of injury topic themes including water, road, home and leisure, and product safety. Each sheet includes European based data and injury facts.

[Global Alliance to Eliminate Lead in Paints](#)

The *Global Alliance to Eliminate Lead in Paints* launched the first *UNEP/WHO Newsletter N°1* in March 2010. The overall goal of this Alliance is to prevent children's exposure to lead via paints containing lead and to minimize occupational exposure to lead in paint, as lead exposure is a well-known source of injury to human health, and particularly to the health of children and to workers in lead industries.


[Information Brochure of BfR of 2010-02-03: Cases of Poisoning - Reported by Physicians 2008](#)

Carbon monoxide poisoning on the increase indoors - The Federal Institute for Risk Assessment ([BfR](#)) observed a slight increase in the number of cases of carbon monoxide poisoning in indoor areas in 2008. Carbon monoxide poisoning is a central theme in the brochure "Cases of Poisoning Reported by Physicians 2008" which has just been published. According to this, a total of eleven cases were notified in which adults and children suffered damage to their health after using a charcoal grill in their homes. The brochure also describes cases of carbon monoxide poisoning that occurred in indoor go-kart centres. It is available free of charge.

[Linking Housing Conditions and Health](#)

This is a report on the findings from a pilot study carried out by **Warwick Law School** working with the **Building Research Establishment (BRE)**. The report is targeted at policy-makers at local, regional and national levels, in particular, those in the housing and the health sectors. The findings from the study will hopefully encourage these sectors to co-operate to remove threats to health and health inequalities.

[Risikofaktor nächtlicher Fluglärm - Abschlussbericht über eine Fall-Kontroll-Studie zu kardiovaskulären und psychischen Erkrankungen im Umfeld des Flughafens Köln-Bonn](#)

Umweltbundesamt (UBA) 1/2010 


[Risk of poisoning accidents involving children](#)

Federal Institute for Risk Assessment (BfR) of 2009-06-10



Along with infectious diseases, malnutrition as well as obesity, accidents are the biggest health risk for children. Falls head the list but poisoning also occurs frequently, mainly at home and surroundings. In fact for small children between seven months and four years, poisoning tends to be the most important group of accidents. The new BfR brochure outlines the risks to children posed by chemical products, toys, medicines, plants and mushrooms. The brochure contains not only tips on the child-proof storage of chemical products but also information that can save lives in an emergency.

[Schadstoffe in Innenräumen und an Gebäuden. Erfassen, bewerten, beseitigen.](#)

Gesamtverband Schadstoffsanierung GbR 2009.

Verlag Rudolf Müller. ISBN 978-3-481-02501-4. Book. 

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!

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Allergies and Respiratory Diseases

[Genetic and environmental risk factors for childhood eczema development and allergic sensitization in the CCAAPS cohort.](#)

Biagini Myers JM, Wang N, LeMasters GK, Bernstein DI, Epstein TG, Lindsey MA, Ericksen MB, Chakraborty R, Ryan PH, Villareal MS, Burkle JW, Lockey JE, Reponen T, Khurana Hershey GK. *J Invest Dermatol.* 2010 Feb;130(2):430-7.

[Impact of a household environmental intervention delivered by lay health workers on asthma symptom control in urban, disadvantaged children with asthma.](#)

Bryant-Stephens T, Kurian C, Guo R, Zhao H. *Am J Public Health.* 2009 Nov;99 Suppl 3:S657-65.

[Asthma severity according to Global Initiative for Asthma and its determinants: an international study.](#)

Cazzoletti L, Marcon A, Corsico A, Janson C, Jarvis D, Pin I, Accordini S, Bugiani M, Cerveri I, Gislason D, Gulsvik A, de Marco R; Therapy and Health Economics Group of the European Community Respiratory Health Survey. *Int Arch Allergy Immunol.* 2010;151(1):70-9.

[Indoor environmental risk factors and seasonal variation of childhood asthma.](#)

Han YY, Lee YL, Guo YL.

Pediatr Allergy Immunol. 2009 Dec;20(8):748-56.

[House dust mite-promoted epithelial-to-mesenchymal transition in human bronchial epithelium.](#)

Heijink IH, Postma DS, Noordhoek JA, Broekema M, Kapus A.

Am J Respir Cell Mol Biol. 2010 Jan;42(1):69-79.

[An association between floor vacuuming and dust-mite and serum eosinophil cationic protein in young asthmatics.](#)

Koh GCH, Shek LP, Kee J, Tai BC, Wee A, Ng V, Koh D.

Indoor Air 2009 Dec; 19(6); 468-73.

[Heat recovery ventilators prevent respiratory disorders in Inuit children.](#)

Kovesi T, Zaloum C, Stocco C, Fugler D, Dales RE, Ni A, Barrowman N, Gilbert NL, Miller JD.

Indoor Air. 2009 Dec;19(6):489-99.

[A randomised trial of home energy efficiency improvement in the homes of elderly COPD patients](#)

Osman LM, Ayres JG, Garden C, Reglitz K, Lyon J, Douglas JG.

Eur Respir J 2010 35: 303-309.

[Home and school environmental assessment and remediation](#)

Lupoli TA, Ciaccio CE, Portnoy JM.

Curr Allergy Asthma Rep. 2009 Nov; 9(6): 419-25. Review.

[Genes, environment, child care, and asthma.](#)

McBride JT.

J Pediatr. 2009 Dec;155(6):771-2.

[The effect of low-cost modification of the home environment on the development of respiratory symptoms in the first year of life.](#)

Persky V, Piorkowski J, Hernandez E, Chavez N, Wagner-Cassanova C, Freels S, Vergara C, Pelzel D, Hayes R, Gutierrez S, Busso A, Coover L, Thorne PS, Ownby D.

Ann Allergy Asthma Immunol. 2009 Dec;103(6):480-7.

[Are Neighborhood-Level Characteristics Associated with Indoor Allergens in the Household?](#)

Rosenfeld L, Rudd R, Chew GL, Emmons K, Acevedo-García D.

J Asthma. 2010 Feb; 47(1): 66-75.

[Air filters and air cleaners: rostrum by the American Academy of Allergy, Asthma & Immunology Indoor Allergen Committee.](#)

Sublett JL, Seltzer J, Burkhead R, Williams PB, Wedner HJ, Phipatanakul W; American Academy of Allergy, Asthma & Immunology Indoor Allergen Committee.

J Allergy Clin Immunol. 2010 Jan;125(1):32-8. Review.

[Modifiable risk factors for asthma morbidity in Bronx versus other inner-city children.](#)

Warman K, Silver EJ, Wood PR.

J Asthma. 2009 Dec;46(10):995-1000.

[Housing and allergens: a pooled analysis of nine US studies.](#)

Wilson J, Dixon SL, Breyse P, Jacobs D, Adamkiewicz G, Chew GL, Dearborn D, Krieger J, Sandel M, Spanier A.

Environ Res. 2010 Feb;110(2):189-98.

Indoor Air

[Organic compound characterization and source apportionment of indoor and outdoor quasi-ultrafine particulate matter in retirement homes of the Los Angeles Basin.](#)

Arhami M, Minguillón MC, Polidori A, Schauer JJ, Delfino RJ, Sioutas C.

Indoor Air 2010 Feb; 20(1):17-30.

[Polybrominated diphenyl ethers \(PBDEs\) contents in house and car dust of Portugal by pressurized liquid extraction \(PLE\) and gas chromatography-mass spectrometry \(GC-MS\).](#)

Cunha SC, Kalachova K, Pulkrabova J, Fernandes JO, Oliveira MB, Alves A, Hajslova J. Chemosphere. 2010 Mar;78(10):1263-71.

[Lung function and indicators of exposure to indoor and outdoor particulate matter among asthma and COPD patients.](#)

de Hartog JJ, Ayres JG, Karakatsani A, Analitis A, Brink HT, Hameri K, Harrison R, Katsouyanni K, Kotronarou A, Kavouras I, Meddings C, Pekkanen J, Hoek G. Occup Environ Med. 2010 Jan;67(1):2-10.

[A new multiple regression model to identify multi-family houses with a high prevalence of sick building symptoms "SBS", within the healthy sustainable house study in Stockholm \(3H\).](#)

Engvall K, Hult M, Corner R, Lampa E, Norbäck D, Emenius G. Int Arch Occup Environ Health. 2010 Jan;83(1):85-94.

[Air pollution and increased levels of fractional exhaled nitric oxide in children with no history of airway damage.](#)

Flamant-Hulin M, Caillaud D, Sacco P, Penard-Morand C, Annesi-Maesano I. J Toxicol Environ Health A. 2010;73(4):272-83.

[Lens opacities in young individuals long after exposure to protracted low-dose-rate gamma radiation in 60Co-contaminated buildings in Taiwan.](#)

Hsieh WA, Lin IF, Chang WP, Chen WL, Hsu YH, Chen MS. Radiat Res. 2010 Feb;173(2):197-204.

[Cancer risk disparities between hispanic and non-hispanic white populations: the role of exposure to indoor air pollution.](#)

Hun DE, Siegel JA, Morandi MT, Stock TH, Corsi RL. Environ Health Perspect. 2009 Dec;117(12):1925-31.

[Household exposures to polybrominated diphenyl ethers \(PBDEs\) in a Wisconsin Cohort.](#)

Imm P, Knobeloch L, Buelow C, Anderson HA. Environ Health Perspect. 2009 Dec;117(12):1890-5.

[Association between indoor exposure to semi-volatile organic compounds and building-related symptoms among the occupants of residential dwellings.](#)

Kanazawa A, Saito I, Araki A, Takeda M, Ma M, Saijo Y, Kishi R. Indoor Air 2010 Feb; 20(1):72-84.

[Prolonged time to pregnancy in residents exposed to ionising radiation in cobalt-60-contaminated buildings](#)

Lin CM, Chang WP, Doyle P, Wang JD, Lee LT, Lee CL, Chen PC. Occup Environ Med 2010;67:187-195


[The effects of indoor particles on blood pressure and heart rate among young adults in Taipei, Taiwan.](#)

Lin LY, Lin CY, Lin YC, Chuang KJ. Indoor Air. 2009 Dec;19(6):482-8.

[Ultrafine particles in indoor air of a school: possible role of secondary organic aerosols.](#)

Morawska L, He C, Johnson G, Guo H, Uhde E, Ayoko G. Environ Sci Technol. 2009 Dec 15;43(24):9103-9.

[Akute und chronische CO-Intoxikationen: Ein unbeachtetes und möglicherweise häufiges Problem. Acute and chronic carbon monoxide intoxications; often unnoticed and possibly not infrequent.](#)

v. Mühlendahl, KE. UFP 2009 14(6): 325-328. 

[Resuspension of indoor aeroallergens and relationship to lung inflammation in asthmatic children.](#)

Raja S, Xu Y, Ferro AR, Jaques PA, Hopke PK. Environ Int. 2010 Jan;36(1):8-14.

[Radon in Indoor Spaces—An Underestimated Risk Factor for Lung Cancer in Environmental Medicine](#)

Schmid K, Kuwert T, Drexler H.

Dtsch Arztebl Int 2010; 107(11): 181-6

Mould and Dampness

[Symptoms after mould exposure including *Stachybotrys chartarum*, and comparison with darkroom disease.](#)

Al-Ahmad M, Manno M, Ng V, Ribeiro M, Liss GM, Tarlo SM.

Allergy 2010; 65(2); 245-55.

[Mold and mycotoxin symposium: towards healthy homes.](#)

Kilburn KH.

Toxicol Ind Health. 2009 Oct-Nov;25(9-10):569.

[Severe Asthma with Fungal Sensitization: A case report and review of literature.](#)

Madani Y, Barlow A, Taher A.

J Asthma, 2010 Feb; Vol. 47 (1):2-6.

[Epidemics of mold poisoning past and present.](#)

Meggs WJ.

Toxicol Ind Health. 2009 Oct-Nov;25(9-10):571-6. **Review.**

[Link between allergic asthma and airway mucosal infection suggested by proteinase-secreting household fungi.](#)

Porter P, Susarla SC, Polikepahad S, Qian Y, Hampton J, Kiss A, Vaidya S, Sur S, Onger V, Yang T, Delclos GL, Abramson S, Kheradmand F, Corry DB.

Mucosal Immunol. 2009 Nov;2(6):504-17.

[Indoor mold concentration in Eastern France.](#)

Reboux G, Bellanger AP, Roussel S, Grenouillet F, Sornin S, Piarroux R, Dalphin JC, Millon L.

Indoor Air 2009 Dec; 19(6); 446-53

[The biocontaminants and complexity of damp indoor spaces: more than what meets the eyes.](#)

Thrasher JD, Crawley S.

Toxicol Ind Health. 2009 Oct-Nov;25(9-10):583-615. **Review.**

Smoking / Environmental Tobacco Smoke

Smoking and Environmental Tobacco Smoke play an important role in housing and health topics. However, it would go beyond the scope of this newsletter to present here all relevant literature on ETS. We therefore decided to list only selected literature. For further information, we wish you to refer to the *WHO Collaborating Centre on Tobacco Control*: www.tabakkontrolle.de.

[From the American Academy of Pediatrics: Technical report--Secondhand and prenatal tobacco smoke exposure.](#)

Best D; Committee on Environmental Health; Committee on Native American Child Health; Committee on Adolescence.

Pediatrics. 2009 Nov;124(5):e1017-44.

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Event Announcements

In this section we will inform you about upcoming events with relevance to housing and health. If you know of any international event, please let us know!

World Health Day 2010 - 1000 cities, 1000 lives

Date: April 7, 2010

Venue: worldwide

Further information: [WHO | World Health Day 2010](#)

Sustainable City 2010 - Sixth International Conference on Urban Regeneration and Sustainability

Date: April 14 - 16, 2010

Venue: La Coruña, Spain

Further information: [The Sustainable City 2010 | 10 Conferences](#)

Environmental Economics and Management International forum on "Greening Real Estate Markets – A Multi-Stakeholder Perspective"

Date: April 26-27, 2010

Venue: Dessau-Roßlau, Germany

Further information: [Federal Environment Agency](#)

Environmental Toxicology 2010 - Third International Conference on Environmental Toxicology

Date: May 4-6, 2010

Venue: Cyprus

Further information: [Environmental Toxicology 2010 | 10 Conferences](#)

Urban Transport 2010 - 16th International Conference on Urban Transport and the Environment

Date: May 5-7, 2010

Venue: Cyprus

Further information: [Urban Transport 2010 | 10 Conferences](#)

Clima 2010 - "Sustainable energy use in buildings" - 10th REHVA World Congress

Federation of European Heating and Air-conditioning Associations

Date: May 9-10, 2010

Venue: Antalya, Turkey

Further information: [Clima 2010](#)

17th WaBoLu-Innenraumtage

(meeting of the German society for water, soil and air hygiene)

Date: May 10-12, 2010

Venue: Berlin, Germany

Further information: [Verein für Wasser-, Boden- und Lufthygiene \(WaBoLu\)](#) 

CIB (International Council for Research and Innovation in building and construction) World Congress 2010

Date: May 10-13, 2010

Venue: Salford Quays, United Kingdom

Further Information: <http://www.cib2010.org/>

29th Congress of the European Academy of Allergy and Clinical Immunology (EAACI)

Date: June 5-9, 2010

Venue: London, United Kingdom


Further information: [EAACI](#)

Symposium "Urbane Strategien zum Klimawandel - Austausch von Praxis und Wissenschaft"

Federal Institute for Research on Building, Urban Affairs and Spatial Development(BBSR)

Date: June 7-8, 2010

Venue: Berlin, Germany

Further information: [BBSR](#) **10th Urban Environment Symposium - Urban Futures for a Sustainable World**

Date: June 9 - 11, 2010

Venue: Göteborg, Sweden

Further information: http://www.hues.se/pdf/HUES_invitation2010_a.pdf**10th National Child Safety Day**

Date: June 10, 2010

Venue: Berlin, Germany

Further information: [Eurosafe European Child Safety Alliance](#)**UEP 2010 - Overcoming Obstacles to Sustainability and Quality of Life**

Date: 20-23 June 2010,

Venue: Boston, USA

Further information: [Urban Environmental Pollution](#)**Air Pollution 2010 - 18th International Conference on Urban Regeneration and Sustainability**

Date: June 21 - 23, 2010

Venue: Kos, Greece

Further information: [Air Pollution 2010 | 10 Conferences](#)**7th International Conference on Indoor Air Quality, Ventilation and Energy Conservation in Buildings**

Date: August 15-18, 2010

Venue: Syracuse, New York, USA

Further information: [IAQVEC](#)**15th International Union of Air Pollution Prevention and Environmental Protection Associations' World Clean Air Congress**

12. - 16. September 2010

Venue: Vancouver, Canada

Further information: [IUAPPA](#)**4th GHUP Annual Meeting 2010 - Society of Hygiene, Environmental and Public Health Sciences (GHUP)**

Date: September 29 - October 02, 2010

Venue: Aachen, Germany

Further information: [GHUP / University Hospital Aachen](#)

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 Fifth Ministerial Conference on Environment and Health

The Fifth Ministerial Conference on Environment and Health (March 2010), organized by WHO/Europe and hosted by Italy, marked a milestone in the European environment and health process. Focused on protecting children's health in a changing environment, the Conference set Europe's agenda on emerging environmental health challenges for the years to come. Key issues considered were especially **environmental inequalities** and **climate change** for which background documents and policy briefs are available.

At the Conference, governments from across Europe signed a **declaration**, pledging to reduce the adverse health impact of environmental threats in the next decade.

The declaration as well as all **details, speeches and background documents** related to the Conference are available at the conference website at <http://www.euro.who.int/parma2010>

WHO work on indoor and built environments

Social inequalities and healthy housing

In preparation of the WHO Fifth Ministerial Conference on Environment and Health (March, 2010, Italy) WHO has undertaken various activities on environmental health inequalities and the overview of activities is available at the **WHO website on social inequalities in environment and health** at http://www.euro.who.int/envhealth/topics/20090706_1. The page also gives access to **full-text articles on environmental inequalities** published in the first 2010 issue of the European Journal of Public Health and dealing with inequalities in relation to **housing; air quality; waste**; and in relation to **children**. A fifth paper describes available **policy options**.

The **report on an expert meeting on socially triggered environmental inequalities** – including housing and residential location - is available at <http://www.euro.who.int/document/E93037.pdf>

Also available is a report by WHO on **housing inequalities** based on the WHO LARES dataset, which shows that income and the socioeconomic status (SES) - as well as other social determinants – are highly associated with quality of housing and housing-related health effects. The report can be accessed at <http://www.euro.who.int/Document/E92729.pdf>

Actions against dampness and mould

Complementing the recently published WHO Indoor Air Quality Guidelines on Dampness and Mould (see last newsletter), WHO has implemented a project on damp and mould – co-funded by the European Commission – to provide technical and policy recommendations on **damp and mould interventions**. The final reports are available at

- <http://www.euro.who.int/Document/E92998.pdf> - (English)
- <http://www.euro.who.int/Document/E92998G.pdf> - (German)
- <http://www.euro.who.int/Document/E92998R.pdf> - (Russian)

Case studies on damp and mould prevention and remediation can be found at http://www.euro.who.int/Housing/support/20080917_1 as well as the Addendum to the WHO expert meeting report on interventions against damp and mould at http://www.gesundheitsamt-bw.de/servlet/PB/show/1306095/Background_paper_LGA_Warm_climate_and_institutional_settings_actions_20091218.pdf. Further products related to this project – a **brochure on damp and mould prevention and remediation** for the public (also in Russian), and a **compilation of**

national or regional damp and mould advice services - have been produced with the Health and Environment Alliance (HEAL) and can be accessed at http://www.euro.who.int/document/HOH/damp_mould_brochure.pdf (english) and http://www.euro.who.int/document/hoh/damp_mould_brochurer.pdf (russian) or at <http://www.env-health.org/r/157>. Institutions and agencies that are active in the field of public information on damp and mould are asked to sign up for this compilation brochure on the same HEAL website.

The most recent statistics on the **exposure of the European population to damp problems** in their homes is provided by a new indicator fact sheet on dampness available at http://www.euro.who.int/document/EHI/enhis_factsheet09_3_5.pdf

Children's health

In December 2009, two further fact sheets have been launched by WHO on children's health with concern to the annual death rate due to respiratory diseases in children and the percentage of children living in homes with solid fuels:

http://www.euro.who.int/document/EHI/enhis_factsheet09_3_2.pdf

http://www.euro.who.int/document/EHI/enhis_factsheet09_3_6.pdf.

Other issues of relevance

World Health Day – 7 April 2010

World Health Day 2010 will focus on urbanization and health. With the campaign "1000 cities - 1000 lives", events will be organized worldwide calling on cities to open up streets for health activities. Stories of urban health champions will be gathered to illustrate what people are doing to improve health in their cities. For further information, please check <http://www.who.int/world-health-day/2010/en/index.html>

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