## Editorial

**Physical Activity and Health**

Physical activity and resilience are the two keywords that characterize the new form of comprehension of health and development in children (Zimmer, 2011, p. 36). Physical and motor activity are able to strengthen physical, personal and social health resources and the potential of people (salutogenetic perspective) (Zimmer 2010, p. 56).

Physical resources for children and adolescents based on physical activity include increased physical fitness, reduced body fatness, favourable cardiovascular and metabolic disease risk profiles and enhanced bone health (i.a. Janssen & Leblanc, 2010; Physical Activity Guidelines Advisory Committee (PAGAC), 2008).

In adults and elder people both moderate and vigorous activity provide equal health benefits. There is strong evidence that physically active individuals have lower rates of all-cause mortality, coronary heart disease, high blood pressure, stroke, diabetes, metabolic syndrome, colon cancer, breast cancer, and depression. Active adults have a healthier body mass and constitution, and a biomarker profile that is more favourable for preventing cardiovascular disease and type 2 diabetes and for enhancing bone health (WHO, 2009). It could additionally be shown that adults aged 65 and above which are physically active present higher levels of functional health, a lower risk of falling, and better cognitive functions.

The effects of physical activity on personal health resources are a positive self-image, a healthy body concept, self-efficacy and self-control or personal autonomy. The sense of personal control improves health, first, through enhancing health-related behaviors. People with high personal control are more knowledgeable about health and are more likely to initiate preventive behaviors. Second, through enhancing the psychological stability, which is a condition precedent to deal effective with external and internal risk factors (Zimmer, 2011, p. 37).

Social health resources based on physical activity are family assistance and social support. Joint action and common sports encourage the development of social skills. These skills include empathy, tolerance, compromise, flexibility and fairness (Brodtmann, 1997, p. 39).

**Physical activity – Lifestyle**

Reliable longitudinal studies have shown that physical activity tracks from childhood and adolescence to adulthood (Telama et al., 2005). Physical activity and sport are so much part of the lifestyle of the majority of young people that one can speak about the ‘sportization’ of young people’s lives (Baur, 2004).

For this reason all children and adolescents should be physically active daily as part of play, games, sports, transportation, recreation,

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### Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Editorial</strong></td>
<td>1</td>
</tr>
<tr>
<td>Physical Activity and Health</td>
<td>1</td>
</tr>
<tr>
<td><strong>Children’s Physical Activity in Urban Settings</strong></td>
<td>3</td>
</tr>
<tr>
<td>Quantifying environmental opportunities for physical activity in children: A pilot application</td>
<td>3</td>
</tr>
<tr>
<td>The Düsseldorf Model for the Promotion of Physical Activity, Sport and Talent</td>
<td>5</td>
</tr>
<tr>
<td><strong>Publications and Resources</strong></td>
<td>8</td>
</tr>
<tr>
<td>Literature</td>
<td>10</td>
</tr>
<tr>
<td><strong>Event Announcements</strong></td>
<td>22</td>
</tr>
<tr>
<td><strong>Message Board</strong></td>
<td>23</td>
</tr>
</tbody>
</table>
Physical education, or planned exercise, in the context of family, school, and community activities (WHO, 2009).

**Physical activity - recommendations**

The WHO developed evidence-based national guidelines on physical activity for health, reacting on the Resolution to Prevent and Control Noncommunicable Diseases, which is endorsed by the 61st World Health Assembly (WHO, 2008; 2009).

For children and young people, physical activity comprises play, games, sports, transportation, recreation, physical education, or planned exercise, in the context of family, school and community activities. They should accumulate at least 60 minutes of moderate to vigorous physical activity daily (WHO, 2009).

For adults, physical activity includes recreational or leisure-time physical activity, transportation (walking or cycling), occupational (work), household chores, playing games, sports or planned exercise, in the context of daily, family, and community activities. They should do at least 150 minutes of moderate aerobic physical activity throughout the week, or do at least 75 minutes of vigorous aerobic physical activity throughout the week, or an equivalent combination of moderate and vigorous activity. Aerobic activity and muscle-strengthening activities should be included (WHO, 2009).

**Physical activity - promotion**

Consistent influences on physical activity patterns among adults and young people include confidence in one's ability to engage in regular physical activity, enjoyment of physical activity, support from others, positive beliefs concerning the benefits of physical activity, and lack of perceived barriers of being physically active. (U.S. Department of Health and Human Services, 1996)

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**References**


Quantifying environmental opportunities for physical activity in children: A pilot application.

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Physical activity (PA) of children is mainly influenced by individual factors, although the built environment, especially the transport system and the recreational infrastructure, may additionally influence PA levels in children [1]. However, we have to face some methodological challenges: (1) When investigating the impact of the built environment on the PA of residents it has to be distinguished whether the environment has been assessed by subjective measurements as e.g. resulting from questionnaires or by objective measurements based on geographic information systems (GIS) [1]. (2) Most studies of the physical environment are conducted in the US and Australia with focus on the environmental influence on PA in adults, but rarely in Europe [1]. (3) Children do behave completely different compared to adults which requires a modified approach to capture the influence of the built environment on this PA.

In the IDEFICS (Identification and prevention of dietary- and lifestyle-induced health effects in children and infants) study [2], we investigated the impact of opportunities for PA in the built environment of children on PA levels in Northern Germany. For this purpose, we applied a GIS-based approach to quantify urban forms [3]. We adapted the concept of the so-called walkability index introduced by Frank et al. [4] which is based on intersections to describe the street connectivity, as well as land use and the number of residents to assess the level of urbanity. It could be seen that this index was a good positive predictor of objectively measured PA in adults [4].

To make this index more appropriate for children, we included more detailed information on the street connectivity, i.e. on sidewalks, bikeways, and public transit stations, since these urban forms are known to be positive determinants of active travel in youth [5]. We also considered recreational facilities like playgrounds, sport facilities, and green spaces that offer opportunities for PA in leisure time and influence PA levels of children [1]. We digitalized these urban forms in Delmenhorst, the German intervention region of the IDEFICS study [2], using ArcGIS 9.3 (see Figure 1).

To measure the level of urbanity, we calculated the land use mix and the residential density [4]. The availability of all other urban forms was quantified using the kernel density method [6]. We combined z-score-standardized means of the cell-based measures of urban form to build urban form features from which we eventually derived the moveability index per school catchment area (see Figure 2) [3].
Urban form features and the moveability index were linked with the PA data of 596 school children. Multilevel lognormal regression models were used to investigate the effect of the moveability index on PA levels in these children [2]. Results of the adjusted models showed a small but significant effect of the moveability index on the reported PA in children (β = 0.16, p=0.038). The same effect on reported PA was found using only destination density as environmental variable (β = 0.17, p=0.023). With regard to travel mode, a shorter distance was a significant predictor of walking to school (Odds ratio (OR) = 0.17, 95% Confidence Interval (CI) = [0.12, 0.24]), whereas a longer distance implied cycling to school (OR = 1.56, 95% CI = [1.18, 2.04]) [3].

From our analyses it became obvious that the index has to be improved further to enable it to also capture qualitative aspects of urban forms. The use of specific urban forms like destinations has to be discussed, since the destination density showed the same impact on PA as the moveability index. Moreover, individual pedestrian catchment areas will be implemented to derive the index on a small-scaled level [4]. The final index will be evaluated using IDEFICS data of three participating countries in Europe, namely Germany, Italy, and Sweden [2].

References


The Düsseldorf Model for the Promotion of Physical Activity, Sport and Talent

Stemper, T.¹; Bachmann, C.²; Diehlmann, K.²; Kemper, ³
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Contact: www.check-duesseldorf.de; knut.diehlmann@duesseldorf.de; (DüMo).

In 2002, the Sports Department of the State Capital Düsseldorf conceived the "Düsseldorf Model for the Promotion of Physical Activity, Sport and Talent" (DüMo) – a unique initiative in Germany for the promotion of sport and motor skills among children and teenagers. The Düsseldorf Model consists of three stages, each with a maximum of three special development areas. The three stages are elementary (kindergarten age group), primary (years 1 – 4) and secondary (years 5 – 10). The development areas are the promotion of physical activity (promoting "the basics" at the elementary stage and targeting children and teenagers with motor deficits), the promotion of sport ("basic training" at the primary stage and for children and teenagers with "normal" sporting ability) and the fostering of talent (for children and teenagers who have particularly good motor skills).

Depending on age group and specific development area, practical application of the model varies with regard to the fields of activity "Kindergarten/School", "Club" and "Non-organised leisure time". For each stage, there is a monitoring mechanism (e.g. Check!) which shows whether the measures introduced have "borne fruit". Further information on the testing procedure (Bös et al., 2001) plus an evaluation module can be found under www.check-duesseldorf.de.

Implemented measures (initiated by the Sports Department and its partners at stages 1 to 3)

**Physical education:** Recognised "Bewegungskindergärten" (kindergartens which place particular emphasis on sport as a pedagogical tool) and child-friendly sports clubs (certification by the Landessportbund Nordrhein Westfalen (Sports Federation of the State of North-Rhine Westphalia – LSB NRW); further training and seminars for pre-school teachers in collaboration with the StadtSportBund (Municipal Sports Federation) Düsseldorf and the Jugendamt (Youth Welfare Office) of the State Capital Düsseldorf; swimming programme for day care centres (KiTa) (in cooperation with the Bädergesellschaft Düsseldorf mbH (responsible for public swimming facilities)

**Promotion of physical activity:** Free annual courses to promote physical activity for approx. 200 children, run by specially qualified personnel; linking of courses to the extended half-day schools (offene Ganztagsschule) is currently under way; expansion of the courses to secondary schools; targeted invitation of children to courses in sports clubs (e.g. the "Schwermobil" project run by the LSB NRW)

**Promotion of sport:** Annual sports information fair, "Kids in Action", for all Check! and ReCheck! children

**Talent scouting:** Bringing gifted children spotted at school entry examinations to the major training centres; annual "Talentiade" competition with approx. 200 Check! children participating; establishment...
of a talent centre for the City of Düsseldorf under the guidance of athletica; annual "Talent Day" for the best ReCheck! children

**Fostering of talent:** NRW Sports Schools, athletica Sport Boarding School and the High-Performance Sport Service Centre, Düsseldorf Schools for High-Performance Sport plus the High-Performance Sport Masterplan

### Central measures

1 = Speed (10 m sprint with light barrier)  
2 – 3 = Coordination (ball-legs-wall exercise & obstacle race)  
4 – 6 = Strength (throwing a medicine ball, standing long jump & sit-ups)  
7 = Agility (deep forward bend)  
8 = Endurance (6 min run)

### Principal results and successes of DüMo

- Bewegungs-KiTas in Düsseldorf: At the beginning, none, today there are 13.
- Further training of female pre-school teachers: To date, over 200 female pre-school teachers have received additional training from the StadtSportBund in physical education in Düsseldorf, reaching many KiTas in the process.
- KiTa swimming: To date, 32 groups have been set up.
- The annual tests and direct feedback of results to parents and teachers have generated increased awareness of the subject of sport and physical activity (cf. Stemper et al., 2008).
- Increase in membership numbers of Düsseldorf sports clubs among young people since the start of DüMo: 2003 = 32,701 to 2009 = 36,442. Increase of 11.4%.
- No deterioration in age-related motor capabilities between Check! and ReCheck!. In some cases, in fact, an improvement was recorded, particularly in those who scored poorly in the Check!
- Positive results in the areas of overweight and obesity (see below for more details).
- Increased interest in and heightened awareness of the subjects of high-performance sport/fostering of talent, thanks to the "Talentiade" and "Day of Talent" events, with positive effects on high-performance sport in Düsseldorf.

The successes of the Düsseldorf Model are described in the following, taking the Check! criterion "overweight" as an example:

**Positive effect on the prevalence of overweight and obesity among second-year pupils in Düsseldorf as seen over an eight-year period (2003 to 2010)**

**Academic advisor:** Prof. Theodor Stemper

### Methods

Since 2003, data, such as body weight and height (cm), have been recorded as part of the "Check!" test, carried out annually among second-year pupils under the guidance of the Sports Department of the State Capital Düsseldorf. Participants in the study are all second-year pupils (average age 8.33 ± 0.67 years) between 2003 and 2010 in Düsseldorf (evaluable cases = 29,586, m = 15,055; f = 14,531). Classification as "overweight" (>90th to 97th percentile) and "obese" (>97th percentile) is performed according to the BMI value (kg/m²) in accordance with the reference values recommended by the AGA in 2001 (percentile curves according to Kromeyer-Hauschild et al., 2001).
Results

Taken over the entire test period between 2003 and 2010, the BMI evaluations for Düsseldorf lay on average above the AGA (Study Group for Obesity among Children and Adolescents) reference values for Germany (total 10%; 7% overweight and 3% obese) and also above the values recorded in the recent KiGGS (German Health Interview and Examination Survey for Children and Adolescents, 15%). In contrast to the cited literature, the prevalence of overweight and obesity from 2003 to 2007 did not increase further, but fell slightly (cf. also Stemper & Janzen, 2006). Since 2008, a considerable decline has been recorded, to 15.1% now (Fig. 1). As the current analysis shows, the trend was sustained in 2009 and 2010. The secular trend for all eight survey periods therefore indicates an improvement in results, in particular since 2008. This change over the years is far more marked among boys, namely -6.7% (21.3% to 14.6%) than among girls, that is -2.5% (18.0% to 15.5%). Hence, values for the two sexes are converging. On closer examination of prevalence according to the need for action on a socio-spatial level (Fig. 2) it is apparent that the decline has taken place predominantly (as yet) in social environments with a lower need for action. Therefore, the "social gradient" – evidence of which is also to be found in motor skills testing – is to be considered more closely in future.

![Fig. 1: Prevalence of overweight and obesity in second-year pupils, 2003 – 2010](image1)

![Fig. 2: Prevalence of overweight and obesity in second-year pupils in relation to social burden, 2003 – 2010](image2)
Discussion
The data clearly indicate that the quoted secular trend towards a deterioration in BMI values for Düsseldorf cannot be observed. The same now also applies to the neighbouring towns of Hilden, Ratingen and Dormagen, where the Check! has also been introduced. Alongside a general heightened awareness of this topic, the improvement can also be attributed to the many local promotional activities initiated by the Düsseldorf Model.

References

Publications and Resources
Inadequate housing causes more than 100 000 annual deaths in Europe
Inadequate housing accounts for over 100 000 deaths per year in the WHO European Region and causes, or contributes to, many preventable diseases and injuries, including respiratory, nervous system and cardiovascular diseases and cancer. This is the main conclusion of a report, Environmental burden of disease associated with inadequate housing. For the first time, this quantitatively-based report addresses many of the risk factors associated with housing – such as noise, damp, indoor air quality, cold and home safety – and provides guidance on how to quantify the health effects of inadequate housing for selected risk factors. The lack of home-safety measures such as smoke detectors is associated with 0.9 deaths per 100 000 population annually, equivalent to more than 7000 entirely preventable deaths each year across the region. People die of cold at home: low indoor temperatures cause 12.8 deaths per 100 000 population per year; and exposure to radon causes 2–3 deaths per 100 000 population for selected countries. Exposure to second-hand smoke causes 7.3 deaths per 100 000 population; and the use of solid fuels as a household energy source without proper ventilation is associated with 16.7 deaths per 100 000 children and 1.1 deaths per 100 000 adults annually. Please see WHO/Europe’s website on housing and health for further information.

Guidelines for Indoor Air Hygiene in School Buildings in Germany
In the last years, many German schools have been renovated because of suspected asbestos, PCB or other indoor air pollutants. However, there are still many schools which need to go through renovation on account of inadequate building maintenance. To meet the Energy conservation Regulation in Germany introduced in 2002 and amended in 2007, new challenges came into play. As a consequence, the buildings became almost airtight and therefore ventilation became a bigger issue to maintain the indoor air quality. In 2000, the German Federal Environment Agency (UBA) published the first version of the ‘Guidelines for Indoor Air Hygiene in School Buildings’ to draw attention of teachers, school staff, parents and pupils to the air hygiene problems and the importance of cleaning in schools. This version was updated in 2008 to adjust the guidelines to new challenges such as the problems due to fine and ultra-fine particles, carbon dioxide or the necessity of renovating the buildings to meet the new energy efficiency standards. The guidelines refer primarily to class rooms and recreation rooms in schools in which children regularly have classes as well as child care facilities. Many rec-
Recommendations contained in these guidelines are also valid for indoor spaces in other public buildings. An English version of the guidelines is available now online or can be ordered directly and free of costs from the German Federal Environment Agency. For more information, please contact Heinz-Jörn Moriske (heinz-joern.moriske@uba.de) or Marcia Giacomini (marcia.giacomini@uba.de).

Climate change: protecting health during heat-waves

Every year many people, particularly the elderly, are badly affected by heat. It can trigger exhaustion, heart attacks or confusion and can make existing conditions such as cardiovascular or respiratory diseases worse. Heat-waves of long duration and high intensity have the highest impact on mortality. In nine European cities analyzed by the WHO/Europe’s EuroHEAT project (Athens, Barcelona, Budapest, London, Milan, Munich, Paris, Rome and Valencia), the estimated increase in mortality during heat-waves ranged from 7.6% to 33.6%. The impact of prolonged heat-waves (more than four days) was 1.5–5 times that of short ones. The combined effect of heat-waves and of peaks of ozone or PM10 (particulate matter with diameter under 10 μm) air pollution increases mortality, particularly among elderly people (those aged 75–84 years). The mortality increase due to the combined effect of heat and air pollution can be reduced by decreasing exposure to PM10 and ozone on hot days. Heat-waves are projected to increase due to climate change, but their health effects are largely preventable. WHO/Europe’s information package with public health advice on heat-waves for the general public, medical professionals and health services has just been revised. Updates and additions address working environments and additional extreme events, such as vegetation fires. The package is part of a wider portfolio on prevention, from health system preparedness coordinated with meteorological early warning systems, to timely public and medical advice and improvements to housing and urban planning. These actions can be integrated into a heat–health action plan.

Electromagnetic fields and public health: mobile phones

The electromagnetic fields produced by mobile phones are classified by the International Agency for Research on Cancer as possibly carcinogenic to humans. Studies are ongoing to more fully assess potential long-term effects of mobile phone use. Read the updated fact sheet on the subject that has just been released by WHO.

Klimaschutz in Kommunen
Praxisleitfaden
Hrsg. Deutsches Institut für Urbanistik
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

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allergies and Respiratory Diseases</td>
<td>10</td>
</tr>
<tr>
<td>Indoor Air</td>
<td>11</td>
</tr>
<tr>
<td>Mould and Dampness</td>
<td>14</td>
</tr>
<tr>
<td>Light and Radiation</td>
<td>14</td>
</tr>
<tr>
<td>Smoking / Environmental Tabacco Smoke</td>
<td>15</td>
</tr>
<tr>
<td>Home Safety</td>
<td>16</td>
</tr>
<tr>
<td>Housing and Ageing Society</td>
<td>16</td>
</tr>
<tr>
<td>Housing Conditions</td>
<td>16</td>
</tr>
<tr>
<td>Housing and Mental Health</td>
<td>17</td>
</tr>
<tr>
<td>Thermal Comfort / Energy</td>
<td>18</td>
</tr>
<tr>
<td>Urban Planning / Built Environment</td>
<td>18</td>
</tr>
<tr>
<td>Climate Change</td>
<td>20</td>
</tr>
<tr>
<td>Social Inequality</td>
<td>20</td>
</tr>
<tr>
<td>Noise</td>
<td>21</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>21</td>
</tr>
</tbody>
</table>

Allergies and Respiratory Diseases

The indoor environment and its effects on childhood asthma.  
Ahluwalia SK, Matsui EC.  

An air filter intervention study of endothelial function among healthy adults in a woodsmoke-impacted community.  
Am J Respir Crit Care Med. 2011 May 1;183(9):1222-30.

Effects of distance from a heavily transited avenue on asthma and atopy in a periurban shantytown in Lima, Peru.  

Environmental risk factors in the first year of life and childhood asthma in the Central South of Chile.  
Boneberger A, Haider D, Baer J, Kausel L, Von Kries R, Kabesch M, Radon K, Calvo M.  

Combined exposure to dog and indoor pollution: incident asthma in a high-risk birth cohort.  
Carlsten C, Brauer M, Dimich-Ward H, Dybuncio A, Becker AB, Chan-Yeung M.  

Feather bedding and childhood asthma associated with house dust mite sensitisation: a randomised controlled trial.  
Glasgow NJ, Ponsonby AL, Kemp A, Tovey E, van Asperen P, McKay K, Forbes S.  
Healthy Homes University: a home-based environmental intervention and education program for families with pediatric asthma in Michigan.
Largo TW, Borgialli M, Wisinski CL, Wahl RL, Priem WF.

The Home Environment of Japanese Female University Students - Association with Respiratory Health and Allergy.
Takaoka M, Norback D.

Particulate matter-induced health effects: who is susceptible?
Sacks JD, Stanek LW, Luben TJ, Johns DO, Buckley BJ, Brown JS, Ross M.

Relationships among environmental exposures, cord blood cytokine responses, allergy, and wheeze at 1 year of age in an inner-city birth cohort (Urban Environment and Childhood Asthma study).

Indoor allergen levels in Guangzhou city, southern China.
Zhang C, Gjesing B, Lai X, Li J, Spangfort MD, Zhong N.

Indoor Air

"Novel" brominated flame retardants in Belgian and UK indoor dust: implications for human exposure.
Ali N, Harrad S, Goosey E, Neels H, Covaci A.
Chemosphere. 2011 May;83(10):1360-5.

Evaluation of surface lead migration in pre-1950 homes: an on-site hand-held X-ray fluorescence spectroscopy study.
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Environ Res. 2011 Apr;111(3):425-34.

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Impact of Dermatophagoides pteronyssinus mite body raw material on house dust mite allergy diagnosis in a Serbian population.
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A review of the distribution of particulate trace elements in urban terrestrial environments and its application to considerations of risk.
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Effects of ambient particulate matter and fungal spores on lung function in schoolchildren.
Chen BY, Chao HJ, Chan CC, Lee CT, Wu HP, Cheng TJ, Chen CC, Guo YL.

Human exposure to PBDEs via house dust ingestion in Guangzhou, South China.
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Sources of propylene glycol and glycol ethers in air at home.
Choi H, Schmidbauer N, Spengler J, Bornhag CG.

Contribution of fine particulate matter sources to indoor exposure in bars, restaurants, and cafes.
Daly BJ, Schmid K, Riediker M.
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Comparative assessment of human exposure to phthalate esters from house dust in China and the United States.
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Respiratory effects of indoor particles in young children are size dependent.

Wood smoke exposure, poverty and impaired lung function in Malawian adults.

Genotoxic effects of three selected black toner powders and their dimethyl sulfoxide extracts in cultured human epithelial A549 lung cells in vitro.

Characterisation of human exposure pathways to perfluorinated compounds--comparing exposure estimates with biomarkers of exposure.
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Occurrence of synthetic musks in indoor dust from China and implications for human exposure.
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Predictors of airborne endotoxin concentrations in inner city homes.
Mazique D, Diette GB, Breysses PN, Matsui EC, McCormack MC, Curtin-Brosnan J, Williams DL, Peng RD, Hansel NN.
Indoor particulate matter increases asthma morbidity in children with non-atopic and atopic asthma.

Global burden of disease as a result of indoor air pollution in Shaanxi, Hubei and Zhejiang, China.
Mestl HE, Edwards R.

Indoor air pollution from biomass burning activates Akt in airway cells and peripheral blood lymphocytes: a study among premenopausal women in rural India.
Mondal NK, Roy A, Mukherjee B, Das D, Ray MR.

Wood-burning stoves get help from HEPA filters.
Potera C.

Seasonal evaluation of outdoor/indoor air quality in primary schools in Lisbon.

Pesticides in house dust from urban and farmworker households in California: an observational measurement study.
Quirós-Alcalá L, Bradman A, Nishioka M, Harnly ME, Hubbard A, McKone TE, Ferber J, Eskenazi B.

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Ragas AM, Oldenkamp R, Preeker NL, Wernicke J, Schlink U.

A model to predict radon exhalation from walls to indoor air based on the exhalation from building material samples.
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Evaluation of mass and surface area concentration of particle emissions and development of emissions indices for cookstoves in rural India.
Sahu M, Peipert J, Singhal V, Yadama GN, Biswas P.

Exposure to major volatile organic compounds and carbonyls in European indoor environments and associated health risk.
Sarigiannis DA, Karakitsios SP, Gotti A, Liakos IL, Katsoyiannis A.

Development and in-home testing of the Pretoddler Inhalable Particulate Environmental Robotic (PIPER Mk IV) sampler.

Exposures to high levels of carbon monoxide from wood-fired temazcal (steam bath) use in highland Guatemala.
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Total consumer exposure to polybrominated diphenyl ethers in North America and Europe.
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Concentrations and loadings of polybrominated diphenyl ethers in dust from low-income households in California.
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Material Emissions of Buildings Interior.
Šenitková I, Tomčík T.

Determinants of polycyclic aromatic hydrocarbon levels in house dust.

Distribution and fate of polybrominated diphenyl ethers in indoor environments of elementary schools.
Wu Q, Baek SY, Fang M, Chang YS.

Characterisation of VOC and Formaldehyde Emission from Building Materials in a Static Environmental Chamber: Model Development and Application.
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Zhang X, Diamond ML, Robson M, Harrad S.

A Health Performance Evaluation Model of Apartment Building Indoor Air Quality.
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Reduced clinic, emergency room, and hospital utilization after home environmental assessment and case management.
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Dishwashers – A man-made ecological niche accommodating human opportunistic fungal pathogens.
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Light and Radiation

Residential light and risk for depression and falls: results from the LARES study of eight European cities.
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Implementation of radon barriers, model development and calculation of radon concentration in indoor air.
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Smoking / Environmental Tobacco Smoke

Effect of passive smoking on blood lymphocyte apoptosis in children.
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‘Do it for the kids’: barriers and facilitators to smoke-free homes and vehicles.
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Pediatric respiratory complication after general anesthesia with exposure to environmental tobacco smoke in the home: a case report.
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When smokers move out and non-smokers move in: residential thirdhand smoke pollution and exposure.
Matt GE, Quintana PJ, Zakarian JM, Fortmann AL, Chatfield DA, Hoh E, Uribe AM, Hovell MF.

Moving multiunit housing providers toward adoption of smoke-free policies.

Effects of water-pipe smoking on lung function: a systematic review and meta-analysis.

Passive smoke exposure is associated with perioperative adverse effects in children.
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A randomized trial of parental behavioral counseling and cotinine feedback for lowering environmental tobacco smoke exposure in children with asthma: results of the LET’S Manage Asthma trial.
Wilson SR, Farber HJ, Knowles SB, Lavori PW.

Home Safety

**US Housing Insecurity and the Health of Very Young Children.**

**Does the place of fall influence the time to specialist treatment in patients sustaining hip fractures? A study of 4917 patients falling in four different settings.**
Khan SK, Khanna A, Al-Salahi M, Parker MJ.

**Randomised controlled trial of thermostatic mixer valves in reducing bath hot tap water temperature in families with young children in social housing.**

**Modification of the home environment for the reduction of injuries.**

Housing and Ageing Society

**Heat wave impact on morbidity and mortality in the elderly population: a review of recent studies.**
Åström DO, Forsberg B, Rocklőv J.

**Sleeping Accidents in the Elderly.**
Byard RW, Gilbert JD.

**The urban built environment and mobility in older adults: a comprehensive review.**
Rosso AL, Auchincloss AH, Michael YL.

**What do Potential Residents Need to Know about Assisted Living Facility Type? The Trade-off between Autonomy and Help with More Complex Needs.**
Thomas MD, Guilman M, Mambourg F.

**Barriers and facilitators to walking and physical activity among American Indian elders.**

Housing Conditions

**The impact of housing improvement and socio-environmental factors on common childhood illnesses: a cohort study in Indigenous Australian communities.**
Bailie RS, Stevens M, McDonald EL.

**Health outcomes and green renovation of affordable housing.**
Nurse case management and housing interventions reduce allergen exposures: the Milwaukee randomized controlled trial.
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Zoonoses in the bedroom.
Chomel BB, Sun B.

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Oklahoma Healthy Homes initiative.
Khan F.

Determinants of Neighbourhood Satisfaction and Perception of Neighbourhood Reputation.
Permentier M, Bolt G, van Ham M.

Are building-level characteristics associated with indoor allergens in the household?
Rosenfeld L, Chew GL, Rudd R, Emmons K, Acosta L, Perzanowski M, Acevedo-García D.

The built environment and depression in later life: the health in men study.
Saarloos D, Alfonso H, Giles-Corti B, Middleton N, Almeida OP.

Examining Neighbourhood and School Effects Simultaneously: What Does the Dutch Evidence Show?
Sykes B, Musterd S.

Predictors for abundance of host flea and floor flea in households of villages with endemic commensal rodent plague, Yunnan Province, China.
Yin JX, Geater A, Chongsuvivatwong V, Dong XQ, Du CH, Zhong YH.

Lifetime dog and cat exposure and dog- and cat-specific sensitization at age 18 years.
Wegienka G, Johnson CC, Havstad S, Ownby DR, Nicholas C, Zoratti EM.

Housing and Mental Health

City living and urban upbringing affect neural social stress processing in humans.

Cities have both health risks and benefits, but mental health is negatively affected: mood and anxiety disorders are more prevalent in city dwellers and the incidence of schizophrenia is strongly increased in people born and raised in cities. It has been suggested that social stress plays a part in these effects. The mechanisms involved have now been investigated by the Central Institute of Mental Health.
Health, (ZI) Mannheim. The study of healthy German volunteers using functional magnetic resonance imaging has shown that a key brain structure for negative emotion (the amygdala) is more active during stress in city dwellers, and a regulatory brain area (the cingulate cortex) is more active in people born in cities. These results identify potential mechanisms linking social environment and mental illness, and might contribute to planning healthier urban surroundings.

Housing Quality, Housing Instability, and Maternal Mental Health.
Suglia SF, Duarte CS, Sandel MT.

Thermal Comfort / Energy

The health impacts of cold homes and fuel poverty.
Dear KB, McMichael AJ.
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Improving the microclimate in urban areas: a case study in the centre of Athens.

The impact of housing energy efficiency improvements on reduced exposure to cold — the ‘temperature take back factor’.

A Randomised Controlled Trial of an Energy Efficiency Intervention for Families Living in Fuel Poverty.

Does temperature enhance acute mortality effects of ambient particle pollution in Tianjin City, China.
Li G, Zhou M, Cai Y, Zhang Y, Pan X.

The comfort, energy and health implications of London’s urban heat island.

Temperature, comfort and pollution levels during heat waves and the role of sea breeze.
Papanastasiou DK, Melas D, Bartzanas T, Kittas C.

Number of excess winter deaths is three times as high in coldest homes as in warmest.
Wise J.
BMJ. 2011 May 11;342:d2910.

Household and community poverty, biomass use, and air pollution in Accra, Ghana.

Urban Planning / Built Environment

Neighborhood environment profiles related to physical activity and weight status: a latent profile analysis.
Adams MA, Sallis JF, Kerr J, Conway TL, Saelens BE, Frank LD, Norman GJ, Cain KL.
The influence of the built environment, social environment and health behaviors on body mass index. Results from RESIDE.
Christian H, Giles-Corti B, Knuiman M, Timperio A, Foster S.

Building Environmental Assessment Schemes for Rating of IAQ in Sustainable Buildings.
Yu CWF, Kim JT.
Indoor and Built Environment. 2011 Feb;20:5-15.

A systematic review of built environment factors related to physical activity and obesity risk: implications for smart growth urban planning.
Durand CP, Andalib M, Dunton GF, Wolch J, Pentz MA.

Promoting active transportation as a partnership between urban planning and public health: the columbus healthy places program.
Green CG, Klein EG.

Investigating Environmental Determinants of Diet, Physical Activity, and Overweight among Adults in Sao Paulo, Brazil.
Jaime PC, Duran AC, Sarti FM, Lock K.

The built environment and recreational physical activity among adults in Curitiba, Brazil.
Hino AA, Reis RS, Sarmiento OL, Parra DC, Brownson RC.

Young children in urban areas: links among neighborhood characteristics, weight status, outdoor play, and television watching.
Kimbro RT, Brooks-Gunn J, McLanahan S.

The association between overweight and opportunity structures in the built environment: a multi-level analysis among elementary school youth in the PLAY-ON study.
Leatherdale ST, Pouliou T, Church D, Hobin E.

The health benefits of urban green spaces: a review of the evidence.
Lee AC, Maheswaran R.

The concordance of directly and indirectly measured built environment attributes and physical activity adoption.
McAlexander KM, Mama SK, Medina A, O'Connor DP, Lee RE.

Neighbourhood street connectivity and injury in youth: a national study of built environments in Canada.
Mecredy G, Janssen I, Pickett W.
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Neighborhood walkability, physical activity, and walking behavior: the Swedish Neighborhood and Physical Activity (SNAP) study.
Sundquist K, Eriksson U, Kawakami N, Skog L, Ohlsson H, Arvidsson D.

Using Geographic Information Systems (GIS) to assess the role of the built environment in influencing obesity: a glossary.
Thornton LE, Pearce JR, Kavanagh AM.
Including the urban heat island in spatial heat health risk assessment strategies: a case study for Birmingham, UK.
Tomlinson CJ, Chapman L, Thones JE, Baker CJ.

Exposure to PCBs, through inhalation, dermal contact and dust ingestion at Taizhou, China--a major site for recycling transformers.
Xing GH, Liang Y, Chen LX, Wu SC, Wong MH.

Climate Change

Climate change and health in the urban environment: adaptation opportunities in Australian cities.
Bambrick HJ, Capon AG, Barnett GB, Beaty RM, Burton AJ.

Impacts of climate change on public health in India: future research directions.

Climate change, aeroallergens, natural particulates, and human health in Australia: state of the science and policy.
Beggs PJ, Bennett CM.

How urban societies can adapt to resource shortage and climate change.
Satterthwaite D.

Quantifying the effects of climate change and risk level on peak load design in buildings.
Watkins R, Levermore GJ.

Social Inequality

The Spatial Pattern of Suicide in the US in Relation to Deprivation, Fragmentation and Rurality.
Congdon P.

Greif MJ, Nii-Amoo Dodoo F, Jayaraman A.

Environmental Health Disparities in Housing.
Jacobs D.

Health, hygiene and appropriate sanitation: experiences and perceptions of the urban poor.
Joshi D, Fawcett B, Mannan F.
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Urban planning and health equity.
Northridge ME, Freeman L.

Municipality, space and the social determinants of health.
Llorca I Ibañez E.
Monetary burden of health impacts of air pollution in Mumbai, India: implications for public health policy.
Patankar AM, Trivedi PL.

Biomarker measurements of concurrent exposure to multiple environmental chemicals and chemical classes in children.
Sexton K, Ryan AD, Adgate JL, Barr DB, Needham LL.

Young parents: the role of housing in understanding social inequality.
Smith D, Roberts R.

Revisiting urban health and social inequalities: the devil is in the detail and the solution is in all of us.
Stephens C.

Does exposure to air pollution in urban parks have socioeconomic, racial or ethnic gradients?
Su JG, Jerrett M, de Nazelle A, Wolch J.

Ill-health and poverty: a literature review on health in informal settlements.
Sverdlik A.

Noise

Cardiovascular effects of environmental noise
Babisch W.

In this issue of Noise and Health well-known protagonists of noise effects' research give an overview about the major research that has been carried out in their countries in the field of cardiovascular effects of noise. Most environmental epidemiological noise studies been carried out in The Netherlands, Sweden, The United Kingdom, Serbia, and Germany.

Road traffic noise, annoyance and community health survey - A case study for an Indian city.
Agarwal S, Swami BL.

Effects of noise from non-traffic-related ambient sources on sleep: Review of the literature of 1990-2010.
Omlin S, Bauer GF, Brink M.

Miscellaneous

Environmental home inspection services in Western Europe.

Questionnaire about psychology/disease correlation-I.
Dragoș D, Ojog DG, Pănescu OM, Rusu EC, Tănăsescu MD.
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!

6. Deutscher Allergie Kongress
Date: September 8-10, 2011
Venue: Wiesbaden, Germany
Further Information: Deutscher Allergiekongress

Fachtagung für Biogene Schadstoffe und Gesundheit
Date: September 12-16, 2011
Venue: Berlin, Germany
Further Information: FACHTAGUNG FÜR BIOGENE SCHADSTOFFE UND GESUNDHEIT

23rd International ISEE conference
Date: September 13-16, 2011
Venue: Barcelona, Spain
Further Information: 23th Congress of the ISEE

PROMOTING HEALTHY COMMUNITIES
Developing and Exploring Linkages Between Public Health Indicators, Exposure and Hazard Data
Date: September 26-27, 2011
Venue: Washington, USA
Further Information: PROMOTING HEALTHY COMMUNITIES

Air Pollution 2011
19th Conference on Modelling, Monitoring and Management of Air Pollution
Date: September 19-21, 2011
Venue: Malta
Further Information: Air Pollution 2011 | 11 Conferences

Conference "The Health and Security Perspectives of Climate Change - How to secure our future wellbeing"
Date: October 17, 2011
Venue: London, United Kingdom
Further Information: The Health and Security Perspectives of Climate Change

Air Quality Eight
Date: October 24-27, 2011
Venue: Arlington, Virginia, USA
Further Information: Air Quality VIII

19th International Congress of Biometeorology
Date: December 5-9, 2011
Venue: Auckland, New Zealand
Further Information: ICB 2011

Air Quality 2012
8th International Conference on Air Quality – Science and Application
Date: March 19-23, 2012
Venue: Athens, Greece
Further Information: Air Quality 2012
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

Environmental burden of disease associated with inadequate housing: more than 100 000 annual deaths in Europe

Inadequate housing accounts for over 100 000 deaths per year in the WHO European Region and causes or contributes to many preventable diseases and injuries, including respiratory, nervous system and cardiovascular diseases and cancer. This is the main conclusion of a report, "Environmental burden of disease associated with inadequate housing" released by WHO/Europe.

For the first time, this quantitative report addresses in one document many of the risk factors associated with housing – such as noise, damp, indoor air quality, cold and home safety – each chapter presenting statistical analysis based on sound data and scientific evidence. The report estimates the environmental burden of disease caused by inadequate housing for 11 housing hazards, indicating that poor housing is strongly linked with mortality and disease.

In most societies in the European Region, people spend about 90% of their time in built and artificial environments. Ensuring that the housing stock is as safe and healthy as possible will therefore provide great benefits to public health and society generally and contribute to primary prevention efforts to reduce noncommunicable diseases.

The findings of the report will inform policy-makers at the local, national and global levels and those responsible for setting health-based housing standards and requirements. In addition, the report is relevant for those involved in housing, health and allied fields, including those who design, build, renovate, maintain, finance and otherwise deal with and improve both new and existing housing. For researchers and other academics, this report encourages the collection of relevant data on these and other potential housing-related health risks, providing greater understanding of the health burden that can be attributed to inadequate housing.

The full report providing the evidence compiled for the individual assessments is available on the WHO/Europe web site at http://www.euro.who.int/__data/assets/pdf_file/0003/142077/e95004.pdf along with a summary report presenting the key findings and policy implications at http://www.euro.who.int/__data/assets/pdf_file/0017/145511/e95004sum.pdf.pdf
Housing and health in relation to climate change mitigation

Many strategies to reduce climate change have large, immediate health benefits. Others may pose health risks or tradeoffs. Examined systematically, a powerful new dimension of measures to address climate change emerges. WHO’s *Health in the Green Economy* series is reviewing the evidence about expected health impacts of greenhouse gas mitigation strategies in light of mitigations options for key economic sectors such as housing, transport, household energy and the health sector which are considered in the work towards the *Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007* (IPCC).

The full report, identifying expected health impacts from policies to mitigate climate change in the housing sector, is now available at [http://www.who.int/hia/hgehousing.pdf](http://www.who.int/hia/hgehousing.pdf)

The policy brief on housing can be accessed at [http://www.who.int/hia/hgebrief_housing.pdf](http://www.who.int/hia/hgebrief_housing.pdf)

WHO plan for burn prevention and care published

Burns are a serious health problem globally. Every year more than 300 000 people die from fires alone. More are killed by burns caused by hot liquids, electricity and chemicals. In addition, millions of people are disabled and disfigured by severe burns. In high-income countries, considerable progress has been made in lowering rates of burn death by proven prevention efforts. However, most of these advances in prevention and care have been minimally applied in low- and middle-income countries, where the vast majority (95%) of burn deaths occur. The plan outlines what WHO would like to promote in terms of: advocacy, policy, data and measurement, research, prevention, health-care services for victims and capacity building.
