

Editorial

Dear Reader,

we are pleased to send you our latest Newsletter No. 28 on Housing and Health!

This edition comprises a summary of current publications regarding indoor air, radon, respiratory diseases, microorganisms and dampness, health risks due to smoking of shisha/water pipes, ageing society, energy, urban planning, noise, and much more.

At the end of the newsletter you will find information on WHO activities (message board) and event announcements.

All the best and kind regards

Dr. Katharina Cibis

WHO Collaborating Centre for Housing and Health
at the State Health Office Baden-Württemberg
Stuttgart, Germany
E-Mail: who.cc@rps.bwl.de

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News on Housing and Health

Indoor Air

In this chapter, you will find literature about indoor air and health. Topics of the publications are polycyclic aromatic compounds, volatile organic compounds, semivolatile organic compounds, particulate matter, poly- and perfluoroalkyl substances in different buildings (e.g. school/preschool, photocopy centers, fitness centres, housings).

[Polycyclic aromatic hydrocarbons \(PAH\) in Portuguese educational settings: A comparison between preschools and elementary schools](#)

Slezakova K, Oliveira M, Madureira J, Fernandes E, Delerue-Matos C, Morais S, Pereira MDC
J Toxicol Environ Health A. 2017; 80:630-640

[Indoor air quality in preschools \(3- to 5-year-old children\) in the northeast of Portugal during spring-summer season: Pollutants and comfort parameters](#)

Oliveira M, Slezakova K, Delerue-Matos C, Pereira MDC, Morais S
J Toxicol Environ Health A. 2017; 80:740-755

[Semi-volatile organic compounds in the air and dust of 30 French schools: A pilot study](#)

Raffy G, Mercier F, Blanchard O, Derbez M, Dassonville C, Bonvallot N, Glorennec P, Le Bot B
Indoor Air. 2017; 27:114-127

[VOC exposures in California early childhood education environments](#)

Hoang T, Castorina R, Gaspar F, Maddalena R, Jenkins PL, Zhang Q, McKone TE, Benfenati E, Shi AY, Bradman A
Indoor Air. 2017; 27:609-621

[Analytical procedure for the determination of very volatile organic compounds \(C3-C6\) in indoor air](#)

Schieweck A, Gunschera J, Varol D, Salthammer T
Anal Bioanal Chem. 2018;
doi: 10.1007/s00216-018-1004-z. [Epub ahead of print]

[Einsatz von Lüftungsampeln zur Verbesserung der Luftqualität in Kindertageseinrichtungen und Schulen](#)

RKI, Epidemiologisches Bulletin 42/2017

[Formaldehyde diffusion within crystalline and amorphous cellulose at different temperatures and electric fields: A molecular dynamics study](#)

Xu B, Chen Z
Indoor and Built Environment 2017;
<https://doi.org/10.1177/1420326X17736908>

[Richtwert für Propan-1,2-diol \(Propylenglykol\) in der Innenraumluft](#)

Bekanntmachung des Umweltbundesamtes
Bundesgesundheitsbl 2017, 60: 1298-1304

[Richtwerte für Tetrachlorethen in der Innenraumluft](#)

Bundesgesundheitsbl 2017, 60: 1305-1315

[Richtwerte für 2-Phenoxyethanol in der Innenraumluft](#)

Bundesgesundheitsbl 2018, 61: 488-493

[Indoor air quality in photocopy centers, nanoparticle exposures at photocopy workstations, and the need for exposure controls](#)

Martin J, Demokritou P, Woskie S, Bello D
Ann Work Expo Health. 2017; 61:110-122

[Indoor particulate pollution in fitness centres with emphasis on ultrafine particles](#)

Slezakova K, Peixoto C, Oliveira M, Delerue-Matos C, Pereira MDC, Morais S
Environ Pollut. 2018; 233:180-193

[Occupational exposure of aldehydes resulting from the storage of wood pellets](#)

Rahman MA, Rossner A, Hopke PK
J Occup Environ Hyg. 2017; 14:417-426

[Efficacy of interventions targeting household air pollution from residential wood stoves](#)

Ward TJ, Semmens EO, Weiler E, Harrar S, Noonan CW
J Expo Sci Environ Epidemiol. 2017; 27:64-71

[Relationships between estimated flame retardant emissions and levels in indoor air and house dust](#)

Liagkouridis I, Cequier E, Lazarov B, Palm Cousins A, Thomsen C, Stranger M, Cousins IT
Indoor Air. 2017; 27:650-657

[Indoors and health: Results of a systematic literature review assessing the potential health effects of living in basements](#)

Mezzoiuso AG, Gola M, Rebecchi A, Riccò M, Capolongo S, Buffoli M, Tirani M, Odone A, Signorelli C
Acta Biomed. 2017; 88:375-382

[Exposure to SVOCs from inhaled particles: Impact of desorption](#)

Liu C, Zhang Y, Weschler CJ
Environ Sci Technol. 2017; 51:6220-6228

[Indoor air quality and health](#)

Cincinelli A, Martellini T
Int J Environ Res Public Health. 2017; 14(11). pii: E1286 [free full text]

Light and Radiation


The effect of **radon** in homes was the topic of our last Newsletter on Housing and Health in December 2017 (see [newsletter no. 27 2017-3 Radon](#)).

There are new interesting publications about radon:

- The Federal Office for Radiation Protection in Germany published evaluations of the German uranium miners' study (Wismut study) on the risk of lung cancer from radon:

[Factors modifying the radon-related lung cancer risk at low exposures and exposure rates among German uranium miners](#)

Kreuzer M, Sobotzki C, Schnelzer M, Fenske N
Radiat Res. 2018; 189:165-176

See also: [Wismut-Studie: erhöhtes Lungenkrebsrisiko durch Radon auch im Niedrigdosisbereich](#) 

BfS, 2018

- The Federal Office of Public Health (Switzerland) published a practical guidance for structural, technical and organizational-operational measures for the reduction of radon pollution and for prevention:

[Radon - Praxis-Handbuch Bau](#) 

Bundesamt für Gesundheit, Bern, 2018

Further literature about radon:[Indoor air quality in energy-efficient dwellings: Levels and sources of pollutants](#)

Derbez M, Wyart G, Le Ponner E, Ramalho O, Ribéron J, Mandin C
Indoor Air. 2018; 28:318-338

[Impacts of weatherization on indoor air quality: A field study of 514 homes](#)

Pigg S, Cautley D, Francisco PW
Indoor Air. 2018; 28:307-317

[Updated database on natural radioactivity in building materials in Europe](#)

Trevisi R, Leonardi F, Risica S, Nuccetelli C
J Environ Radioact. 2018; pii: S0265-931X(17)30969-4

[A preliminary study for conducting a rational assessment of radon exposure levels](#)

Jeon HJ, Kang DR, Go SB, Park TH, Park SH, Kwak JE, Lee CM
Environ Sci Pollut Res Int. 2017; 24:14491-14498

[High radon areas and lung cancer prevalence: Evidence from Ireland](#)

Dempsey S, Lyons S, Nolan A
J Environ Radioact. 2018; 182:12-19

[Analytical method for evaluating \(and correcting\) the impact of outdoor radon concentration on the estimates of percentage of dwellings exceeding reference levels](#)

Antignani S, Venoso G, Carpentieri C, Bochicchio F
J Environ Radioact. 2018; pii: S0265-931X(17)30739-7

[Thoron exposure in Dutch dwellings - An overview](#)

de With G, Smetsers RCGM, Slaper H, de Jong P
J Environ Radioact. 2018; 183:73-81

[A statewide investigation of geographic lung cancer incidence patterns and radon exposure in a low-smoking population](#)

Ou JY, Fowler B, Ding Q, Kirchoff AC, Pappas L, Boucher K, Akerley W, Wu Y, Kaphingst K, Harding G, Kepka D
BMC Cancer. 2018; 18:115 [free full text]

[The effect of laterite density on radon diffusion behavior](#)

Li Y, Tan W, Tan K, Liu Z, Fang Q, Lv J, Duan X, Liu Z, Guo Y
Appl Radiat Isot. 2018; 132:164-169

[Measurement and modeling of indoor radon concentrations in residential buildings](#)

Park JH, Whang S, Lee HY, Lee CM, Kang DR
Environ Health Toxicol. 2018; doi: 10.5620/eht.e2018003

[Aberrant DNA methylation in radon and/or cigarette smoke-induced malignant transformation in BEAS-2B human lung cell line](#)

Huang H, Ji Y, Zhang J, Su Z, Liu M, Tong J, Ge C, Chen T, Li J
J Toxicol Environ Health A. 2017; 80:1321-1330

[Association of radon background and total background ionizing radiation with alzheimer's disease deaths in U.S. States](#)

Lehrer S, Rheinstein PH, Rosenzweig KE
J Alzheimers Dis. 2017; 59:737-741

Allergies and Respiratory Diseases

The literature listed in this section focuses on the influence of birch pollen, radon, asbestos, SVOC, particulate matter, phenol/phthalate, ozone, indoor air pollution or residential greenness to allergies and respiratory diseases.

[Indoor birch pollen concentrations differ with ventilation scheme, room location, and meteorological factors](#)

Menzel A, Matiu M, Michaelis R, Jochner S
Indoor Air. 2017; 27:539-550

[Exposure to SVOCs from inhaled particles: Impact of desorption](#)

Liu C, Zhang Y, Weschler CJ
Environ Sci Technol. 2017; 51:6220-6228
[free full text]

[Lung cancer prevalence associated with radon exposure in Norwegian homes](#)

Hassfjell CS, Grimsrud TK, Standring WJF, Tretli S.
Tidsskr Nor Laegeforen. 2017; 137(14-15)

[Non-occupational exposure to asbestos and risk of pleural mesothelioma: Review and meta-analysis](#)

Marsh GM, Riordan AS, Keeton KA, Benson SM
Occup Environ Med. 2017; 74:838-846

[Investigation on indoor air pollution and childhood allergies in households in six Chinese cities by subjective survey and field measurements](#)

Hu J, Li N, Lv Y, Liu J, Xie J, Zhang H
Int J Environ Res Public Health. 2017; 14(9). pii: E979 [free full text]

[The effects of PM_{2.5} on asthmatic and allergic diseases or symptoms in preschool children of six Chinese cities, based on China, Children, Homes and Health \(CCHH\) project](#)

Chen F, Lin Z, Chen R, Norback D, Liu C, Kan H, Deng Q, Huang C, Hu Y, Zou Z, Liu W, Wang J, Lu C, Qian H, Yang X, Zhang X, Qu F, Sundell J, Zhang Y, Li B, Sun Y, Zhao Z
 Environ Pollut. 2018 Jan;232:329-337

[In utero exposure to select phenols and phthalates and respiratory health in five-year-old boys: A prospective study](#)

Vernet C, Pin I, Giorgis-Allemand L, Philippat C, Benmerad M, Quentin J, Calafat AM, Ye X, Annesi-Maesano I, Siroux V, Slama R; EDEN Mother-Child Cohort Study Group.
 Environ Health Perspect. 2017; 125(9):097006

[Is daily exposure to ozone associated with respiratory morbidity and lung function in a representative sample of schoolchildren? Results from a panel study in Greece](#)

Samoli E, Dimakopoulou K, Evangelopoulos D, Rodopoulou S, Karakatsani A, Veneti L, Sionidou M, Tsolakoglou I, Krasanaki I, Grivas G, Papakosta D, Katsouyanni K
 J Expo Sci Environ Epidemiol. 2017; 27:346-351

[Residential greenness and allergic respiratory diseases in children and adolescents - A systematic review and meta-analysis](#)

Lambert KA, Bowatte G, Tham R, Lodge C, Prendergast L, Heinrich J, Abramson MJ, Dharmage SC, Erbas B
 Environ Res. 2017; 159:212-221

[Predictors and respiratory depositions of airborne endotoxin in homes using biomass fuels and LPG gas for cooking](#)


Padhi BK, Adhikari A, Satapathy P, Patra AK, Chandel D, Panigrahi P
 J Expo Sci Environ Epidemiol. 2017; 27:112-117
 [free full text]

[Urban green and grey space in relation to respiratory health in children](#)

Tischer C, Gascon M, Fernández-Somoano A, Tardón A, Lertxundi Materola A, Ibarluzea J, Ferrero A, Estarlich M, Cirach M, Vrijheid M, Fuertes E, Dalmau-Bueno A, Nieuwenhuijsen MJ, Antó JM, Sunyer J, Dadvand P
 Eur Respir J. 2017; 49(6). pii: 1502112

Bacteria, Mould and Dampness

Mold is still one of the most common indoor problems. The German Environment Agency (UBA) summarized how mold can be detected and how visible and hidden mold damage can be properly and effectively eliminated:

[Leitfaden zur Vorbeugung, Erfassung und Sanierung von Schimmelbefall in Gebäuden](#) 

UBA, 2017 [free full text]

[Discrimination of three genetically close *Aspergillus* species by using high resolution melting analysis applied to indoor air as case study](#)

Libert X, Packeu A, Bureau F, Roosens NH, De Keersmaecker SC
 BMC Microbiol. 2017; 17:84 [free full text]

[High temporal variability in airborne bacterial diversity and abundance inside single-family residences](#)

Emerson JB, Keady PB, Clements N, Morgan EE, Awerbuch J, Miller SL, Fierer N
 Indoor Air. 2017; 27:576-586

[Comparison of indoor air sampling and dust collection methods for fungal exposure assessment using quantitative PCR](#)

Cox J, Indugula R, Vesper S, Zhu Z, Jandarov R, Reponen T
 Environ Sci Process Impacts. 2017; 19:1312-1319

[Volatile organic compounds emitted by filamentous fungi isolated from flooded homes after Hurricane Sandy show toxicity in a *Drosophila* bioassay](#)

Zhao G, Yin G, Inamdar AA, Luo J, Zhang N, Yang I, Buckley B, Bennett JW
Indoor Air. 2017; 27:518-528

[Observation-based metrics for residential dampness and mold with dose-response relationships to health: A review](#)

Mendell MJ, Kumagai K
Indoor Air. 2017; 27:506-517

[Presence of household mold, children's respiratory health, and school absenteeism: Cause for concern](#)

Polyzoi E, Polyzois D
J Environ Health. 2017; 79:28-35

[Bacteria in a water-damaged building: Associations of actinomycetes and non-tuberculous mycobacteria with respiratory health in occupants](#)

Park JH, Cox-Ganser JM, White SK, Laney AS, Caulfield SM, Turner WA, Sumner AD, Kreiss K
Indoor Air. 2017; 27:24-33 [free full text]

[Synergistic proinflammatory interactions of microbial toxins and structural components characteristic to moisture-damaged buildings](#)


Korkalainen M, Täubel M, Naarala J, Kirjavainen P, Koistinen A, Hyvärinen A, Komulainen H, Viluksela M
Indoor Air. 2017; 27:13-23

[Concentrations of *Staphylococcus* species in indoor air as associated with other bacteria, season, relative humidity, air change rate, and *S. aureus*-positive occupants](#)

Madsen AM, Moslehi-Jenabian S, Islam MZ, Frankel M, Spilak M, Frederiksen MW
Environ Res. 2018; 160:282-291 [open access]

[Indoor mold levels and current asthma among school-aged children in Saskatchewan, Canada](#)

Oluwole O, Kirychuk SP, Lawson JA, Karunanayake C, Cockcroft DW, Willson PJ, Senthilselvan A, Rennie DC
Indoor Air. 2017; 27:311-319

[Umweltmedizinische Relevanz von luftgetragenen Mikroorganismen im Außen- und Innenbereich](#) 

Walser SM, Brenner B, Heinze S, Szewzyk R, Wolter E, Herr CEW
Bundesgesundheitsblatt 2017; 60:618-624

[Dampness and moisture problems in Norwegian homes](#)

Becher R, Høie AH, Bakke JV, Holøs SB, Øvrevik J
Int J Environ Res Public Health. 2017; 14(10). pii: E1241

Smoking / Environmental Tobacco Smoke

Recently, smoking of [shisha/hookahs/ water pipes](#) or [e-cigarettes](#) has greatly increased. Users often do not know the health risks. The following studies report this risk and carbon monoxide poisoning.

[Carbon monoxide poisoning from waterpipe smoking: A retrospective cohort study](#)

Eichhorn L, Michaelis D, Kemmerer M, Jüttner B, Tetzlaff K
Clin Toxicol (Phila). 2018; 56:264-272

[Wasserpfeife - Genuss ohne Risiko?](#) 

Bayerisches Landesamt für Gesundheit und Lebensmittelsicherheit, 2017 [free full text]

[State-specific prevalence of tobacco product use among adults - United States, 2014-2015](#)

Odani S, Armour BS, Graffunder CM, Willis G, Hartman AM, Agaku IT
MMWR Morb Mortal Wkly Rep. 2018; 67:97-102 [free full text]

[Secondhand hookah smoke: An occupational hazard for hookah bar employees](#)

Zhou S, Behrooz L, Weitzman M, Pan G, Vilcassim R, Mirowsky JE, Breysee P, Rule A, Gordon T
Tob Control. 2017; 26:40-45


[Kinetics of exhaled carbon monoxide after water-pipe smoking indoors and outdoors](#)

Juhasz A, Pap D, Barta I, Drozdovszky O, Egresi A, Antus B
Chest. 2017; 151:1051-1057

[Metal concentrations in e-Cigarette liquid and aerosol samples: The contribution of metallic coils](#)

Olmedo P, Goessler W, Tanda S, Grau-Perez M, Jarmul S, Aherrera A, Chen R, Hilpert M, Cohen JE, Navas-Acien A, Rule AM
Environ Health Perspect. 2018; 126(2):027010
[free full text]

[Trends in incidence of lung cancer according to histological subtype among men and women in Germany - Analysis of cancer registry data with the application of multiple imputation techniques](#)

[Trends der Lungenkrebsinzidenz nach histologischem Subtyp bei Männern und Frauen in Deutschland](#) 
Twardella D, Geiss K, Radespiel-Tröger M, Benner A, Ficker JH, Meyer M
Bundesgesundheitsbl 2018; 61:20-31

Ageing Society

The topic in this chapter deals with the [ageing society](#): publications describe physical activity of older adults, the influence of weather conditions to physical activity, physical frailty, or relationship between eating together with older people who live alone and for example their subjective health or food behavior.

[Preserving older adults' routine outdoor activities in contrasting neighborhood environments through a physical activity intervention](#)

King AC, Salvo D, Banda JA, Ahn DK, Chapman JE, Gill TM, Fielding RA, Demons J, Tudor-Locke C, Rosso A, Pahor M, Frank LD
Prev Med. 2017; 96:87-93
[free full text]

[Snow and rain modify neighbourhood walkability for older adults](#)

Clarke P, Hirsch JA, Melendez R, Winters M, Sims Gould J, Ashe M, Furst S, McKay H
Can J Aging. 2017; 36:159-169

[Built environmental correlates of older adults' total physical activity and walking: A systematic review and meta-analysis](#)

Barnett DW, Barnett A, Nathan A, Van Cauwenberg J, Cerin E; Council on Environment and Physical Activity (CEPA) – Older Adults working group.
Int J Behav Nutr Phys Act. 2017; 14(1):103
[free full text]

[Variation in older adult characteristics by residence type and use of home- and community-based services](#)

Ewen HH, Washington TR, Emerson KG, Carswell AT, Smith ML
Int J Environ Res Public Health. 2017; 14(3). pii: E330

[Association between physical frailty and quality of life in a representative sample of community-dwelling Swiss older people](#)

Henchoz Y, Büla , Guessous I, Santos-Eggimann B
J Nutr Health Aging. 2017; 21:585-592

["Eating together" is associated with food behaviors and demographic factors of older Japanese people who live alone](#)

Ishikawa M, Takemi Y, Yokoyama T, Kusama K, Fukuda Y, Nakaya T, Nozue M, Yoshiike N, Yoshida K, Hayashi F, Murayama N
J Nutr Health Aging. 2017; 21:662-672

[Association between satisfaction with state of health and meals, physical condition and food diversity, health behavior, and perceptions of shopping difficulty among older people living alone in Japan](#)

Ishikawa M, Yokoyama T, Takemi Y, Fukuda Y, Nakaya T, Kusama K, Yoshiike N, Nozue M, Yoshida K, Murayama N
J Nutr Health Aging. 2017; 21:514-520

Social Inequality and Mental Health

This chapter contains publications regarding social inequality and mental health: inequalities in neighborhood walkability, influence of landscaping at hospitals to patient's recovery and staff's recovery from mental fatigue, or negative well-being of older adults:

[Do inequalities in neighborhood walkability drive disparities in older adults' outdoor walking?](#)

Zandieh R, Flacke J, Martinez J, Jones P, van Maarseveen M
Int J Environ Res Public Health. 2017; 14(7). pii: E740 *[free full text]*

[The influences of landscape features on visitation of hospital green spaces - a choice experiment approach](#)

Chang KG, Chien H
Int J Environ Res Public Health. 2017 Jul 5;14(7). pii: E724 *[free full text]*

[Relative contribution of health-related behaviours and chronic diseases to the socioeconomic patterning of low-grade inflammation](#)

Bonaccio M, Di Castelnuovo A, Pounis G, De Curtis A, Costanzo S, Persichillo M, Cerletti C, Donati MB, de Gaetano G, Iacoviello L; Moli-sani Study Investigators.
Int J Public Health. 2017; 62:551-562

[Illuminating the psychological experience of elderly loneliness from a societal perspective: A qualitative study of alienation between older people and society](#)

Wong A, Chau AKC, Fang Y, Woo J
Int J Environ Res Public Health. 2017; 14(7). pii: E824 *[free full text]*

[Urban residential greenspace and mental health in youth: Different approaches to testing multiple pathways yield different conclusions](#)

Dzhambov A, Hartig T, Markevych I, Tilov B, Dimitrova D
Environ Res. 2018; 160:47-59

Housing Conditions and Home Safety

This chapter contains publications about housing conditions and home safety. For example, there are articles about requirements for ventilation design in buildings (educational facilities), chemical exposures in recently renovated low-income housing, or the influence of exhaust ventilation in attached garages to benzene concentration.

[Bushfires and indoor built environments](#)


Brown SK
Indoor and Built Environment 2018, 27:145-147

[Chemical exposures in recently renovated low-income housing: influence of building materials and occupant activities](#)

Dodson RE, Udesky JO, Colton MD, McCauley M, Camann DE, Yau AY, Adamkiewicz G, Rudel RA
Environ Int. 2017; 109:114-127
[free full text]

[Limits to climate change adaptation](#)

Leal Filho W, Nalau J
Springer, 2018 *[book]*

[Anforderungen an Lüftungskonzeptionen in Gebäuden - Teil I: Bildungseinrichtungen](#) 

Arbeitskreis Lüftung am Umweltbundesamt
Bundesgesundheitsbl 2018; 61:239-248

[Exhaust ventilation in attached garages improves residential indoor air quality](#)

Mallach G, St-Jean M, MacNeill M, Aubin D, Wallace L, Shin T, Van Ryswyk K, Kulka R, You H, Fugler D, Lavigne E, Wheeler AJ
Indoor Air. 2017; 27:487-499

[Holistic research methodology for investigating thermal, visual and IAQ performance in cargo container buildings](#)

Lee S-K, Lau B, Chiang Y-C, Chiang C-M
Indoor and Built Environment 2017; 26:1179-1184

[Social and health outcomes following upgrades to a national housing standard: A multilevel analysis of a five-wave repeated cross-sectional survey](#)


Poortinga W, Jones N, Lannon S, Jenkins H
BMC Public Health. 2017; 17(1):927

[Preventing falls and fall-related injuries at home](#)

Powell-Cope G, Thomason S, Bulat T, Pippins KM, Young HM
Am J Nurs. 2018; 118:58-61

Thermal Comfort /Energy

The Federal Institute for Research on Building, Urban Affairs and Spatial Development, Germany, attended to the topic “energy in the district” with various articles about energetic renovation of residential buildings in the district, energy-efficient renovation of historic quarters and monuments and other themes:

[BBSR Homepage - Informationen zur Raumentwicklung - Energie im Quartier](#) 

Bundesinstitut für Bau-, Stadt- und Raumforschung im Bundesamt für Bauwesen und Raumordnung, 2017

[Indoor air temperature and agitation of nursing home residents with dementia](#)

Tartarini F, Cooper P, Fleming R, Batterham M
Am J Alzheimers Dis Other Demen. 2017 Aug;32(5):272-281

[Indoor human thermal adaptation: Dynamic processes and weighting factors](#)

Luo M, Cao B, Ouyang Q, Zhu Y
Indoor Air. 2017; 27:273-281

Further topics include zero-energy buildings and neighbourhoods, correlation between indoor air temperature and agitation of nursing home residents with dementia, skin temperatures as indicators for predicting thermal sensation or biometeorological assessment of mortality related to extreme temperatures.

[Towards zero-energy buildings and neighbourhoods - A combination of energy-efficiency and local renewable energy production](#)

Wall M
Indoor and Built Environment 2017; 26:1313-1318

[Using upper extremity skin temperatures to assess thermal comfort in office buildings in Changsha, China](#)

Wu Z, Li N, Cui H, Peng J, Chen H, Liu P
Int J Environ Res Public Health. 2017; 14(10). pii: E1092

[Biometeorological assessment of mortality related to extreme temperatures in Helsinki region, Finland, 1972-2014](#)

Ruuhela R, Jylhä K, Lanki T, Tiittanen P, Matzarakis A
Int J Environ Res Public Health. 2017; 14(8). pii: E944 [free full text]

[Seasonal differences in thermal sensation in the outdoor urban environment of Mediterranean climates - the example of Athens, Greece](#)

Tseliou A, Tsiros IX, Nikolopoulou M
Int J Biometeorol. 2017; 61:1191-1208

Urban Planning / Built Environment


The German Environment Agency (Umweltbundesamt UBA) published brochures about “urban environmental protection” and about “environmental and living quality in urban neighborhoods” with recommendations for dealing with density and mixed use as well as new obligation to declare emissions from construction products:

[Urbaner Umweltschutz](#) 

UBA, 2017

[Umwelt- und Aufenthaltsqualität in urbanen Quartieren](#) 

UBA, 2017

[Neue Deklarationspflicht für Emissionen aus Bauprodukten](#) 

UBA; 2018

→ DIN CEN/TR 17105: Bauprodukte - Bewertung der Freisetzung von gefährlichen Stoffen - Leitfaden für die Anwendung von ökotoxikologischen Untersuchungen auf Bauprodukte

→ Construction products - Assessment of release of dangerous substances - Guidance on the use of ecotoxicity tests applied to construction products

Further topics are park use and physical activity, urban health and urban air quality:

[Forschung im Blick](#) 

Bundesinstitut für Bau-, Stadt- und Raumforschung im Bundesamt für Bauwesen und Raumordnung, 2018

[A longitudinal examination of improved access on park use and physical activity in a low-income and majority African American neighborhood park](#)

Schultz CL, Wilhelm Stanis SA, Sayers SP, Thombs LA, Thomas IM
Prev Med. 2017; 95 Suppl:S95-S100

[Built environment and physical activity: Domain- and activity-specific associations among Brazilian adolescents](#)

da Silva ICM, Hino AA, Lopes A, Ekelund U, Brage S, Gonçalves H, Menezes AB, Reis RS, Hallal PC
BMC Public Health. 2017; 17(1):616
[free full text]

[Urban health in Tanzania: questioning the urban advantage](#)

Levira F, Todd G
J Urban Health. 2017; 94:437-449

[Does the health impact of exposure to neighbourhood green space differ between population groups? An explorative study in four European cities](#)

Ruijsbroek A, Droomers M, Kruize H, van Kempen E, Gidlow CJ, Hurst G, Andrusaityte S, Nieuwenhuijsen MJ, Maas J, Hardyns W, Stronks K, Groenewegen PP
Int J Environ Res Public Health. 2017; 14(6). pii: E618

[Urban form, air pollution, and health](#)

Hankey S, Marshall JD
Curr Environ Health Rep. 2017; 4(4):491-503

[Urban air quality management in Xi'an](#)

Cao J, Cheng Y, Yu C
Indoor and Built Environment 2018, 27:3-6

[Factors shaping the human exposome in the built environment: opportunities for engineering control](#)

Dai D, Prussin AJ, Marr LC, Vikesland PJ, Edwards MA, Pruden A
Environ Sci Technol. 2017; 51:7759-7774

[A cross-sectional investigation of the importance of park features for promoting regular physical activity in parks](#)

Costigan SA, Veitch J, Crawford D, Carver A, Timperio A

Int J Environ Res Public Health. 2017; 14(11). pii: E1335 [free full text]

Research projects of the Federal Institute for Research on Building, Urban Affairs and Spatial Development, Germany:

[Green Urban Labs](#)
[Klimaresilienter Stadtumbau](#)

Noise

In this chapter you will find recently published literature on noise and health.

There are three recent systematic reviews regarding environmental noise and its effects on sleep, annoyance, or adverse birth outcomes:

[WHO Environmental Noise Guidelines for the European Region: A systematic review on environmental noise and effects on sleep](#)

Basner M, McGuire S

Int J Environ Res Public Health. 2018; 15(3). pii: E519 [free full text]

[WHO Environmental Noise Guidelines for the European Region: A systematic review on environmental noise and annoyance](#)

Guski R, Schreckenber D, Schuemer R

Int J Environ Res Public Health. 2017; 14(12). pii: E1539 [free full text]

[WHO Environmental Noise Guidelines for the European Region: A systematic review on environmental noise and adverse birth outcomes](#)

Nieuwenhuijsen MJ, Ristovska G, Dadvand P

Int J Environ Res Public Health. 2017; 14(10). pii: E1252 [free full text]

Other literature dealt with noise of wind turbines, the association of community noise and adiposity, noise and child health as well as traffic noise.

[Short-term nighttime wind turbine noise and cardiovascular events: A nationwide case-crossover study from Denmark](#)

Poulsen AH, Raaschou-Nielsen O, Peña A, Hahmann AN, Nordsborg RB, Ketzler M, Brandt J, Sørensen M

Environ Int. 2018; 114:160-166

[Indoor noise annoyance due to 3-5 megawatt wind turbines - an exposure-response relationship](#)

Hongisto V, Oliva D, Keränen J

J Acoust Soc Am. 2017; 142(4):2185

[Association between community noise and adiposity in patients with cardiovascular disease](#)

Dzhambov AM, Gatseva PD, Tokmakova MP, Zdravkov NG, Vladeva SV, Gencheva DG, Ivanova NG, Karastanev KI, Vasileva EV, Donchev AT

Noise Health. 2017; 19:270-277

[Living environment and its relationship to depressive mood: A systematic review](#)

Rautio N, Filatova S, Lehtiniemi H, Miettunen J

Int J Soc Psychiatry. 2018; 64:92-103

[Residential road traffic noise and general mental health in youth: The role of noise annoyance, neighborhood restorative quality, physical activity](#)

Dzhambov A, Tilov B, Markevych I, Dimitrova D

Environ Int. 2017; 109:1-9

[Noise pollution and impact on children health](#)

Gupta A, Gupta A, Jain K, Gupta S

Indian J Pediatr. 2018; 85:300-306

[Urban residential greenspace and mental health in youth: Different approaches to testing multiple pathways yield different conclusions](#)

Dzhambov A, Hartig T, Markevych I, Tilov B, Dimitrova D

Environ Res. 2018; 160:47-59

Miscellaneous

Various topics are summarized in this section: mass spectrometry for environmental chemical monitoring, evaluation of ionic liquid gas chromatography stationary phases for the separation of PCBs, gas/particle partitioning and particle size distribution of PCDD/Fs and PCBs in urban ambient air, long-term health effects of PCBs and related compounds, association between maternal exposure to several chemicals and the neurodevelopmental performances of their children, or emissions of volatile organic compounds from vehicular cabin materials:

[Suspect screening of maternal serum to identify new environmental chemical biomonitoring targets using liquid chromatography-quadrupole time-of-flight mass spectrometry](#)

Gerona RR, Schwartz JM, Pan J, Friesen MM, Lin T, Woodruff TJ

J Expo Sci Environ Epidemiol. 2017; doi: 10.1038/jes.2017.28

[Evaluation of ionic liquid gas chromatography stationary phases for the separation of polychlorinated biphenyls](#)

Ros M, Escobar-Arnanz J, Sanz ML, Ramos L

J Chromatogr A. 2017; pii: S0021-9673(17)31808-3

[Gas/particle partitioning and particle size distribution of PCDD/Fs and PCBs in urban ambient air](#)

Barbas B, de la Torre A, Sanz P, Navarro I, Artíñano B, Martínez MA

Sci Total Environ. 2018; 624:170-179

[Association between maternal exposure to major phthalates, heavy metals, and persistent organic pollutants, and the neurodevelopmental performances of their children at 1 to 2 years of age- CHECK cohort study](#)

Kim S, Eom S, Kim HJ, Lee JJ, Choi G, Choi S, Kim S, Kim SY, Cho G, Kim YD, Suh E, Kim SK, Kim S, Kim GH, Moon HB, Park J, Kim S, Choi K, Eun SH
Sci Total Environ. 2018; 624:377-384

[Long-term health effects of PCBs and related compounds: A comparative analysis of patients suffering from Yusho and the general population](#)

Akahane M, Matsumoto S, Kanagawa Y, Mitoma C, Uchi H, Yoshimura T, Furue M, Imamura T

Arch Environ Contam Toxicol. 2018; 74:203-217

[Association between the emissions of volatile organic compounds from vehicular cabin materials and temperature: Correlation and exposure analysis](#)

Yang T, Zhang P, Xiong J

Indoor and Built Environment 2018;

<https://doi.org/10.1177/1420326X18761114>

[Constancy and change: Key issues in housing and health research, 1987-2017](#)

Lawrence RJ

Int J Environ Res Public Health. 2017; 14(7). pii: E763

Event Announcements

Resilient Cities 2018: 9th Global Forum on Urban Resilience and Adaptation

26th - 28th of April 2018

Bonn, Germany

Further information: [Resilient Cities 2018](#)

ÖGD-Fortbildung: Klimawandel und Gesundheit

16th of May 2018

Stuttgart, Germany

Further information: snezana.jovanovic@rps.bwl.de 

LärmKongress 2018

7th & 8th of June 2018

Stuttgart, Germany

Further information: [LärmKongress 2018](#) 

Grüne Dächer und vertikales Grün - Potenziale, Strategien, Instrumente

18th & 19th of June 2018

Berlin, Germany

Further information: [Grüne Dächer und vertikales Grün, DIFU](#) 

BBSR: Bundeskongress zum Investitionspakt "Soziale Integration im Quartier"

26th of June 2018

Berlin, Germany

Further information: [Bundeskongress "Soziale Integration im Quartier"](#) 

BBSR: Kongress "Kleinstädte in Deutschland - Urbanität. Vielfalt. Perspektiven"

26th & 27th of June 2018

Berlin, Germany

Further information: [BBSR: Kongress Kleinstädte in Deutschland](#) 

INDOOR AIR 2018"

22nd - 27th of July 2018

Philadelphia, PA, USA

Further information: [INDOOR AIR 2018](#)

European Smart Homes 2018

5th & 6th of September 2018

London, United Kingdom

Further information: [European Smart Homes 2018](#)

International Healthy Cities Conference 2018

1st - 4th of October 2018

Belfast, Northern Ireland

Further information: [International Healthy Cities Conference](#)

Healthy Buildings Summit 2018

25th - 27th of October 2018

Seven Springs, PA, USA

Further information: [Healthy Buildings Summit 2018](#)

First WHO Global Conference on Air Quality and Health

30th of October - 1st of November 2018

Geneva, Switzerland

Further information: [WHO's First Global Conference on Air Pollution and Health](#)

For more information, please contact: ambientair@who.int

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Urban Transitions 2018

25th - 27th of November 2018

Sitges, Barcelona, Spain

Further information: [Urban Transitions](#)

15th International Conference on Urban Health

26th - 30th of November 2018

Kampala, Uganda

Further information: [15th International Conference on Urban Health](#)

World Forum on Urban Forests

28th of November - 1st of December 2018

Mantova, Italy

Further information: [Mantova World Forum Urban Forest](#)

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, built and urban environments

Healthy environments for healthier people: the WHO European Centre for Environment and Health

Over the past 20 years, the WHO European Centre for Environment and Health (WHO ECEH) has become a global centre of excellence in the field of environment and health. The Centre's work on evidence and normative guidance on environment and health issues endures to adhere to the highest standards of scientific and ethical integrity. A new publication presenting the office and its work areas outlines the role of the Centre as the main driving force of the WHO Regional Office for Europe in the development of sound policy and technical guidance on environment and health. The publication is available [here](#) in English, French, German and Russian.

WHO's First Global Conference on Air Pollution and Health

WHO's First Global Conference on Air Pollution and Health will bring together global, national and local partners to share knowledge and mobilize action for cleaner air and better health globally. The conference aims to update the evidence on the health impacts of air pollution; methods of monitoring pollution and health exposures; and tools for assessing and implementing effective interventions. It will provide strong support to health sector leadership to bring about change, in partnership with other sectors. Global compliance with WHO Air Quality Guidelines by 2030 would mean several million lives saved every year and significantly reduced noncommunicable disease (NCDs) prevalence.

The conference will take place from 30 October to 1 November 2018 at WHO in Geneva, Switzerland. For further details click [here](#).

For more information on air pollution as a leading obstacle to beat NCDs, click [here](#). To watch the new BreatheLife video on how air pollution impacts our body, click [here](#).

Keeping the vector out: housing improvements for vector control and sustainable development

More than 80% of the world's population is at risk from at least one vector-borne disease, and more than half at risk from two or more. Recognizing the need for implementation of relevant vector control interventions that go beyond the health sector and strengthening multisectoral approaches, WHO has issued a policy brief, [Keeping the vector out: housing improvements for vector control and sustainable development](#).

The evidence shows that poor quality housing and neglected peri-domestic environments are risk factors for the transmission of malaria, arboviral diseases (such as dengue, yellow fever, chikungunya, Zika virus disease), Chagas disease and leishmaniasis.

The policy brief highlights effective housing interventions such as screening windows, doors and eaves of houses, by fitting ceilings, and by reducing the vectors' indoor hiding and breeding places, like cracks and crevices in walls, floors and roofs, prevents vector-borne diseases. These interventions help reduce morbidity, mortality, human suffering and thereby promote economic growth and well-being, and contribute to poverty reduction.

For more on WHO work on housing and health click [here](#).

WHO work on urban green spaces translated into various languages

Over the last years, the WHO European Centre for Environment and Health has carried out intense work on the health relevance of urban green spaces, and how they can help to make cities more healthy and equitable. The project resulted in two main reports on the health impacts of urban green spaces, and the effectiveness of urban green space interventions.

To support practitioners and decision-makers at the local level involved with the design, planning, development and maintenance of urban green spaces, the main conclusion of the green space work have been summarized in an action brief which has been launched in June 2017. This action brief has raised

considerable interest in many countries, and various national actors have committed to translating the brief into their national languages. Next to the original action briefs provided by WHO in English and Russian, various language versions (translated by national entities) are now available as listed below:

- The full WHO reports can be accessed [here](#) and the action brief in Russian and English can be accessed [here](#).
- A French version can be accessed on the website of the [French Healthy City network](#).
- A Portuguese version can be accessed on the website of the [Universidade Fernando Pessoa](#).
- A Finnish version can be accessed on the website of [Viherympäristöliitto ry](#)

World Water Day

World Water Day, marked each year on 22 March, provides an opportunity to advocate for further action to ensure that we reach the Sustainable Development Goals (SDGs) related to water, sanitation and hygiene (WASH). WHO is working at global, regional and national levels towards reducing deaths and illnesses from waterborne diseases and water contamination, and towards achieving universal and equitable access to safe, sustainable and affordable drinking water for all.

Millions of people in the WHO European Region drink contaminated water, often without knowing it. WHO estimates that, every day, 14 people die of diarrhoeal disease due to inadequate water, sanitation and hygiene.

Clean and safe drinking-water at home is frequently unavailable, particularly for those living in rural areas. In the Region, 57 million people do not have piped water at home, and 21 million people still lack access to basic drinking-water services. These people use water from unprotected dug wells and springs, directly consume surface water, or need more than 30 minutes to collect water. About three quarters of people without access to basic drinking-water services live in rural areas.

WHO/Europe, through the European Centre for Environment and Health (ECEH) in Bonn, Germany, works with countries to implement the guidelines. ECEH supports countries to survey and assess their drinking-water supplies, and to prioritize what needs to be done to improve water quality and access to safe services.

For further information on water, sanitation and hygiene, click [here](#).

Summit of Mayors adopts Copenhagen Consensus, committing to build healthier, happier cities

43 mayors and 85 high-level political representatives met in Copenhagen on 13 February 2018 to share experiences and ideas for how to place health and well-being at the heart of urban development. This group – collectively representing nearly 125 million people living in urban centres in the WHO European Region and beyond – adopted a visionary document that presents a transformative approach to creating happier and healthier cities for all.

The “Copenhagen Consensus” can be accessed [here](#) and further information on the event is available [here](#).

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Landesgesundheitsamt Baden-Württemberg
im Regierungspräsidium Stuttgart
Baden-Württemberg State Health Office
WHO Collaborating Centre for Housing and Health
Head: Dr. Karlin Stark
Nordbahnhofstrasse 135
70191 Stuttgart

phone +49 (0)711• 904 35000
fax +49 (0)711• 904 35105

who.cc@rps.bwl.de
www.whocc-housing-and-health.de

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Editors:

Dr. Snezana Jovanovic, Dr. Katharina Gabriela Cibis
Dr. Guido Fischer, Stefan Kluge