



ISSN 1001-5914

CN 12-1095/R

# 环境与健康杂志®



## HUANJING YU JIANKANG ZAZHI

2014年5月 第31卷 第5期

May 2014 Vol. 31 No. 5

# JOURNAL OF ENVIRONMENT AND HEALTH

国家卫生和计划生育委员会主管  
中华预防医学会主办  
天津市疾病预防控制中心

# JEH

本刊荣获卫生部2005年首届优秀期刊奖  
 中文核心期刊  
 科技论文统计源期刊(中国科技核心期刊)  
 生物医学核心期刊  
 中国科学引文数据库收录期刊  
 RCCSE中国核心学术期刊  
 美国《化学文摘(光盘版)》(CA on CD) 收录期刊(进入千刊表)  
 美国《剑桥科学文摘(自然科学)》[CSA(NS)中的10个分文摘] 收录期刊  
 俄罗斯《文摘杂志》(AJ, VINITI) 收录期刊  
 英国《Global Health》和《农业与生物科学研究中心文摘》(CABA) 数据库收录期刊  
 《日本科学技术文献数据库》(JST) 收录期刊  
 美国《乌利希期刊指南》(Ulrich Pd) 收录期刊  
 英国《国际农业与生物科学研究中心数据库》(CABI) 收录期刊  
 《西太平洋地区医学索引》(WPRIM) 收录期刊  
 荷兰爱思唯尔公司《斯高帕斯数据库》(Scopus) 收录期刊  
 波兰《哥白尼索引》(IC) 收录期刊

ISSN 1001-5914



### 中华预防医学会系列杂志

SERIAL JOURNAL OF CHINESE PREVENTIVE MEDICINE ASSOCIATION

# 5

# 2014

# 环境与健康杂志

HUANJING YU JIANKANG ZAZHI

月刊 1984年1月创刊 第31卷 第5期(总第227期) 2014年5月20日出版

## 主管

国家卫生和计划生育委员会  
北京市西城区西直门外南路1号,100044

## 主办

中华预防医学会  
北京市西城区鼓楼西大街154号,100009  
天津市疾病预防控制中心  
天津市河东区华越道6号,300011

## 编辑、出版

环境与健康杂志编辑部  
天津市河东区华越道6号,300011  
电话:(022)24333577,24333576  
传真:(022)24333577  
E-mail:hjyjk@263.net  
http://hjyj.chinajournal.net.cn

## 主编 王撷秀

## 编辑部主任 杜宇欣

## 广告经营许可证号

津工商 1201024000023

## 印刷

天津市恒远印刷有限公司  
天津市津南区辛庄镇白塘口村南(瑞宏工贸公司西侧)

## 发行

国内:天津市邮政报刊发行局  
国外:中国国际图书贸易总公司  
北京399信箱,100044  
代号:BM6330

## 订购

全国各地邮局 邮发代号:6-221

## 邮购

环境与健康杂志编辑部  
天津市河东区华越道6号,300011  
电话:(022)24333576

## 定价

每期:12.00元 全年:144.00元

## 中国标准连续出版物号

ISSN 1001-5914  
CN 12-1095/R

2014年版权归中华预防医学会、  
天津市疾病预防控制中心所有

本刊刊出的所有文章不代表本刊  
编委会的观点,除非特别声明

本刊如有印装质量问题,请向本刊  
编辑部调换

注:作者所授版权包括书刊版、光  
盘版及网络版。

## 目次

### 气候与健康研究专题

不同大气温度指标与居民呼吸系统疾病死亡的相关性比较研究

..... 梁凤超,胥美美,金晓滨,等(377)

南京市高温热浪与健康风险早期预警系统试运行效果评估

..... 汪庆庆,李永红,丁震,等(382)

南京市脑血管疾病死亡人数与气象因子的关系研究

..... 张莹,王式功,刘丽伟,等(385)

兰州市日均气温与心血管疾病日入院人次的时间序列研究

..... 陈美池,牛静萍,阮焜,等(391)

1951—2012年北京市气象因素变化特征研究

..... 杨军,欧春泉,陈斌,等(395)

巢湖市温度与居民心血管疾病死亡人数的时间序列分析

..... 周磊磊,丁国永,周玉兰,等(398)

### 基础与应用

氟和砷染毒对子代大鼠海马和大脑皮质组织谷氨酸与 $\gamma$ -氨基丁酸

含量的影响 ..... 曾洋,郑国颖,李明艳,等(402)

牛磺酸对铅染毒大鼠脑组织抗氧化系统的保护作用

..... 乔梦,刘萍,任晓菲,等(406)

钙蛋白酶抑制剂对丙烯酰胺染毒神经干细胞毒性的干预模型

..... 闫凤凤,张秀梅,鄂蒙,等(409)

介孔二氧化硅对人脐静脉血管内皮细胞血管保护因子和细胞黏附因子

表达的影响 ..... 卜德云,牛照地,刘贺荣,等(412)

百草枯致大鼠肺组织Th17细胞相关细胞因子变化及IL-17抗体的

拮抗作用 ..... 宋平平,梁余良,于功昌,等(416)

### 调查研究

焦化工业区及周边地区空气中苯污染特征和健康风险评价

..... 朱媛媛,陈来国,张毅强,等(420)

焦化工业区居民死因回顾调查 ..... 朱媛媛,李继华,何俊,等(424)

3S技术在太湖蓝藻空间分布研究中的应用

..... 庄严,李秋宇,盛翼,等(429)

贵阳市道路降尘中重金属污染特征及其健康风险评价 .....	张春辉,吴永贵,杨少博,等(432)
新乡市街道灰尘重金属污染现状及健康风险评价 .....	张丰泉,赵杉,王守英,等(435)
我国改水与环境卫生组织干预控制腹泻病发病效果的 Meta 分析 .....	李洪兴,陶勇,刘开泰(438)
农村居民钩虫感染及影响因素分析 .....	王卫,夏云婷,林绍雄,等(441)
盐城地区居室环境中尘螨调查 .....	俞黎黎,张承伯,周鹰,等(444)
高铁乘务人员细胞免疫功能调查 .....	王亚斌,秦磊,霍伟,等(446)

## 技术与方法

水中砷和铁的反应池-电感耦合等离子体质谱测定法的改进 .....	刘柳,张岚,王慧彬,等(448)
游泳池水中尿素含量的双乙酰分光光度测定法 .....	史云峰,张强,赵牧秋(450)
阴离子对零价铁修复铬污染水体的影响 .....	李雅,汪葵,吴奇,等(452)

## 实践与分析

小浪底水库鳙鱼体内重金属的富集及健康风险评价 .....	程柳,王海邻,索乾善(454)
淮河流域农村改水工作现状调查 .....	田好亮,樊福成,魏海春(456)
甘肃省部分地区蔬菜中汞污染状况和暴露评估 .....	王义平,刘俊妮,李拥军(458)
蔬菜大棚作业人员氨暴露水平及辐射剂量估算 .....	李万伟,王飞,李晓红,等(459)
海带多糖对超重环境微波辐射大鼠氧化损伤的抑制 .....	姜艳霞,纪朋艳,徐俊杰,等(460)

## 监督监测

2010—2012 年天津市北辰区游泳池水卫生学调查 .....	赵凤仙(405)
----------------------------------	----------

## 工作交流

烤炸食品中苯并(a)芘的高效液相色谱测定法 .....	宁婷婷,韩会菊,陈芳芳,等(390)
-----------------------------	--------------------

## 仪器与设备

小型环境测试舱的建造 .....	何娟(462)
------------------	---------

## 综 述

硼的生物学功能及应用研究进展 .....	姜丽平,仲来福,薛向欣(463)
儿童铅暴露途径及来源研究进展 .....	方秀杰,王慢想,张彬,等(466)

## 读者·作者·编者

本刊关于论著类文章的界定说明 .....	本刊编辑部(394)
----------------------	------------

# JOURNAL OF ENVIRONMENT AND HEALTH

Monthly

Established in January, 1984

Volume 31, Number 5

May 20, 2014

## Responsible Institution

National Health and Family Planning  
Commission of the People's Republic  
of China

## Sponsor

Chinese Preventive Medicine Association  
Tianjin Centers for Disease Control  
and Prevention

## Editing and Publishing

Editorial Board of Journal  
of Environment and Health  
6, Huayue Road, Hedong District,  
Tianjin, China 300011  
Tel: (86-22) 24333577, 24333576  
Fax: (86-22) 24333577  
E-mail: hjyjk@263.net  
http://hjyjk.chinajournal.net.cn

## Editor-in-Chief

WANG Xie-xiu (王赓秀)

## Managing Director

DU Yu-xin (杜宇欣)

## Printing

Tianjin Hengyuan Printing Co.Ltd.  
South of Baitangkou Village, Xinzhuang Town,  
Jinnan District, Tianjin, China

## Overseas Distribution

China International Book  
Trading Corporation  
P.O.Box 399, Beijing, China  
Code No. BM6330

## Mail-Order

Editorial Department of Journal  
of Environment and Health  
6, Huayue Road, Hedong District,  
Tianjin, China 300011  
Tel(Fax): (86-22) 24333576

## CSSN

ISSN 1001-5914  
CN 12-1095/R

Copyright © 2014 by the Chinese  
Preventive Medicine Association,  
Tianjin Centers for Disease Control  
and Prevention

## CONTENTS IN BRIEF

- Comparative study for different air temperature indicators and respiratory mortality of population**  
..... LIANG Feng-chao, XU Mei-mei, JIN Xiao-bin, et al(377)
- Assessment on heat-wave and health risks early warning system in Nanjing**  
..... WANG Qing-qing, LI Yong-hong, DING Zhen, et al(382)
- Association between death toll of cerebrovascular diseases and meteorological factors in Nanjing** ..... ZHANG Ying, WANG Shi-gong, LIU Li-wei, et al(385)
- Relationship between daily mean temperature and number of daily hospitalization of cardiovascular diseases in Lanzhou: a time-series study**  
..... CHEN Mei-chi, NIU Jing-ping, RUAN Ye, et al(391)
- Analysis of meteorological factors in Beijing during 1951-2012**  
..... YANG Jun, OU Chun-quan, CHEN Bin, et al(395)
- Time-series analysis on daily mortality of cardiovascular disease affected by temperature in Chaohu** ..... ZHOU Lei-lei, DING Guo-yong, ZHOU Yu-lan, et al(398)
- Effects of fluoride and arsenic exposure on contents of glutamate and gamma-aminobutyric acid in hippocampus and cortex in offspring rats**  
..... ZENG Yang, ZHENG Guo-ying, LI Ming-yan, et al(402)
- Protective effects of taurine on antioxidant system in brain of rats exposed to aluminum** ..... QIAO Meng, LIU Ping, REN Xiao-fei, et al(406)
- Model of intervention effects of calpain inhibitor on neural stem cells injury induced by acrylamide** ..... YAN Feng-feng, ZHANG Xiu-mei, E Meng, et al(409)
- Effects of mesoporous silica on expression levels of vascular protection factor and cell adhesion molecules in human umbilical vein endothelial cells**  
..... BU De-yun, NIU Zhao-di, LIU He-rong, et al(412)
- Changes of Th17 cells-associated cytokines and antagonistic effect of IL-17 antibody on paraquat-induced lung injury in rats**  
..... SONG Ping-ping, LIANG Yu-liang, YU Gong-chang, et al(416)
- Health risk assessment of benzene in coking plant and its surrounding area**  
..... ZHU Yuan-yuan, CHEN Lai-guo, ZHANG Yi-qiang, et al(420)
- Retrospective survey of population death in a coking industrial area**  
..... ZHU Yuan-yuan, LI Ji-hua, HE Jun, et al(424)
- Application of RS-GIS-GPS analysis on cyanobacteria bloom spatial distribution in Tai Lake** ..... ZHUANG Yan, LI Qiu-yu, SHENG Yi, et al(429)
- Pollution of road dust by heavy metals and health risk assessment in Guiyang**  
..... ZHANG Chun-hui, WU Yong-gui, YANG Shao-bo, et al(432)
- Pollution status and health risk assessment of heavy metals in street dust of Xinxiang**  
..... ZHANG Feng-quan, ZHAO Shan, WANG Shou-ying, et al(435)
- Control effects of water improvements and sanitation interventions on diarrhea incidences in China: a meta-analysis**  
..... LI Hong-xing, TAO Yong, LIU Kai-tai(438)
- Hookworm infection and its influencing factors among residents in rural area**  
..... WANG Wei, XIA Yun-ting, LIN Shao-xiong, et al(441)
- Investigation on domestic mites in human habitat in Yancheng**  
..... YU Li-li, ZHANG Cheng-bo, ZHOU Ying, et al(444)
- Investigation of cellular immune function in high-speed rail crew members**  
..... WANG Ya-bin, QIN Lei, HUO Wei, et al(446)
- Improvement of method for determination of arsenic and ferrum in water by inductively coupled plasma mass spectrometry using DRC system**  
..... LIU Liu, ZHANG Lan, WANG Hui-bin, et al(448)
- Determination of urea in swimming pool water by spectrophotometry with diacetyl**  
..... SHI Yun-feng, ZHANG Qiang, ZHAO Mu-qiu(450)
- Effects of anions on remediation of chromium-polluted water by zero-valent iron**  
..... LI Ya, WANG Kui, WU Qi, et al(452)

# JOURNAL OF ENVIRONMENT AND HEALTH

Monthly

Established in January, 1984

Volume 31, Number 5

May 20, 2014

## Responsible Institution

National Health and Family Planning  
Commission of the People's Republic  
of China

## Sponsor

Chinese Preventive Medicine Association  
Tianjin Centers for Disease Control  
and Prevention

## Editing and Publishing

Editorial Board of Journal  
of Environment and Health  
6, Huayue Road, Hedong District,  
Tianjin, China 300011  
Tel: (86-22) 24333577, 24333576  
Fax: (86-22) 24333577  
E-mail: hjyjk@263.net  
http://hjyjk.chinajournal.net.cn

## Editor-in-Chief

WANG Xie-xiu (王赓秀)

## Managing Director

DU Yu-xin (杜宇欣)

## Printing

Tianjin Hengyuan Printing Co.Ltd.  
South of Baitangkou Village, Xinzhuang Town,  
Jinnan District, Tianjin, China

## Overseas Distribution

China International Book  
Trading Corporation  
P.O.Box 399, Beijing, China  
Code No. BM6330

## Mail-Order

Editorial Department of Journal  
of Environment and Health  
6, Huayue Road, Hedong District,  
Tianjin, China 300011  
Tel(Fax): (86-22) 24333576

## CSSN

ISSN 1001-5914  
CN 12-1095/R

Copyright © 2014 by the Chinese  
Preventive Medicine Association,  
Tianjin Centers for Disease Control  
and Prevention

## CONTENTS IN BRIEF

- Comparative study for different air temperature indicators and respiratory mortality of population**  
..... LIANG Feng-chao, XU Mei-mei, JIN Xiao-bin, et al(377)
- Assessment on heat-wave and health risks early warning system in Nanjing**  
..... WANG Qing-qing, LI Yong-hong, DING Zhen, et al(382)
- Association between death toll of cerebrovascular diseases and meteorological factors in Nanjing** ..... ZHANG Ying, WANG Shi-gong, LIU Li-wei, et al(385)
- Relationship between daily mean temperature and number of daily hospitalization of cardiovascular diseases in Lanzhou: a time-series study**  
..... CHEN Mei-chi, NIU Jing-ping, RUAN Ye, et al(391)
- Analysis of meteorological factors in Beijing during 1951-2012**  
..... YANG Jun, OU Chun-quan, CHEN Bin, et al(395)
- Time-series analysis on daily mortality of cardiovascular disease affected by temperature in Chaohu** ..... ZHOU Lei-lei, DING Guo-yong, ZHOU Yu-lan, et al(398)
- Effects of fluoride and arsenic exposure on contents of glutamate and gamma-aminobutyric acid in hippocampus and cortex in offspring rats**  
..... ZENG Yang, ZHENG Guo-ying, LI Ming-yan, et al(402)
- Protective effects of taurine on antioxidant system in brain of rats exposed to aluminum** ..... QIAO Meng, LIU Ping, REN Xiao-fei, et al(406)
- Model of intervention effects of calpain inhibitor on neural stem cells injury induced by acrylamide** ..... YAN Feng-feng, ZHANG Xiu-mei, E Meng, et al(409)
- Effects of mesoporous silica on expression levels of vascular protection factor and cell adhesion molecules in human umbilical vein endothelial cells**  
..... BU De-yun, NIU Zhao-di, LIU He-rong, et al(412)
- Changes of Th17 cells-associated cytokines and antagonistic effect of IL-17 antibody on paraquat-induced lung injury in rats**  
..... SONG Ping-ping, LIANG Yu-liang, YU Gong-chang, et al(416)
- Health risk assessment of benzene in coking plant and its surrounding area**  
..... ZHU Yuan-yuan, CHEN Lai-guo, ZHANG Yi-qiang, et al(420)
- Retrospective survey of population death in a coking industrial area**  
..... ZHU Yuan-yuan, LI Ji-hua, HE Jun, et al(424)
- Application of RS-GIS-GPS analysis on cyanobacteria bloom spatial distribution in Tai Lake** ..... ZHUANG Yan, LI Qiu-yu, SHENG Yi, et al(429)
- Pollution of road dust by heavy metals and health risk assessment in Guiyang**  
..... ZHANG Chun-hui, WU Yong-gui, YANG Shao-bo, et al(432)
- Pollution status and health risk assessment of heavy metals in street dust of Xinxiang**  
..... ZHANG Feng-quan, ZHAO Shan, WANG Shou-ying, et al(435)
- Control effects of water improvements and sanitation interventions on diarrhea incidences in China: a meta-analysis**  
..... LI Hong-xing, TAO Yong, LIU Kai-tai(438)
- Hookworm infection and its influencing factors among residents in rural area**  
..... WANG Wei, XIA Yun-ting, LIN Shao-xiong, et al(441)
- Investigation on domestic mites in human habitat in Yancheng**  
..... YU Li-li, ZHANG Cheng-bo, ZHOU Ying, et al(444)
- Investigation of cellular immune function in high-speed rail crew members**  
..... WANG Ya-bin, QIN Lei, HUO Wei, et al(446)
- Improvement of method for determination of arsenic and ferrum in water by inductively coupled plasma mass spectrometry using DRC system**  
..... LIU Liu, ZHANG Lan, WANG Hui-bin, et al(448)
- Determination of urea in swimming pool water by spectrophotometry with diacetyl**  
..... SHI Yun-feng, ZHANG Qiang, ZHAO Mu-qiu(450)
- Effects of anions on remediation of chromium-polluted water by zero-valent iron**  
..... LI Ya, WANG Kui, WU Qi, et al(452)