



Qom University of
Medical Sciences

Archives of Hygiene Sciences

A Quarterly Peer- Reviewed Scientific Journal

Publisher: Research Center for Environmental Pollutants, Qom University of Medical Sciences

Chairman: Dr. Seyyed Shamsoddin Hejazi, MD; Assistant Prof., Dept. of Neurology, Qom University of Medical Sciences, Qom, Iran.

Email: hejazi@muq.ac.ir

Editor-in-Chief: Dr. Forouzan Karimi; PharmD, PhD; Associate Prof., Dept. of Immunology, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran. **Email:** fkarimi@sbmu.ac.ir

Editorial Assistant: Dr. Ahmad Reza Yari; PhD; Assistant Prof., Dept. of Environmental Health, School of Health, Qom University of Medical Sciences, Qom, Iran. **Email:** ar.yari@muq.ac.ir

Deputy Editor/Executive Manager: Ms. Khadijeh Alipour, MSc in Medical Information Navigation Engineering, Qom University of Medical Sciences, Qom, Iran. **Email:** alipour@muq.ac.ir

Technical & Language Editor (A-Z)

Bouraima, Stephane Ayoub; MD; **Emails:** s.bouraima@sbmu.ac.ir; stephayoub@yahoo.fr

Kermani Jalilvand, Arezoo; MSc of Immunology; **Email:** arezoukermani@yahoo.com

Editorial Board (A-Z)

Abdolmohammadi, Mohammad Hossein; PhD; Assistant Prof., Dept. of Biochemistry, School of Medicine, Qom University of Medical Sciences, Qom, Iran. **Email:** mh.abdolmohammadi@muq.ac.ir

Astaneh, Behrooz; MD, MSc; Dept. of Medical Journalism, School of Paramedical Sciences, Shiraz University of Medical Sciences, Shiraz, Iran; **Emails:** astanehb@yahoo.com, astanehb@sums.ac.ir

Fallah, Fatemeh; DVM, PhD; Professor, Dept. of Microbiology, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran. **Email:** fallah@pirc.ir

Hayatbakhsh, Mohammad Reza; MD, PhD; Associate Professor, Dept. of Epidemiology, School of Population Health, The University of Queensland, Brisbane, Australia; **Email:** m.hayatbakhsh@sph.uq.edu.au

Hozoori, Mohammad; PhD; Assistant Prof., Dept. of Nutrition, School of Health, Qom University of Medical Sciences, Qom, Iran. **Email:** mhozoori@muq.ac.ir

Irajian, Gholamreza; PhD; Associate Prof., Dept. of Microbiology, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran. **Email:** irajian@yahoo.com

Izanloo, Hasan; PhD; Assistant Prof., Dept. of Environmental Health Engineering, School of Health, Qom University of Medical Sciences, Qom, Iran. **Email:** h-izanloo@muq.ac.ir

Koohpaei, Alireza; PhD; Assistant Prof., Dept. of Occupational Health, School of Health, Qom University of Medical Sciences, Qom, Iran. **Email:** koohpaei@muq.ac.ir

Movahedian, Ahmad; PhD; Associate Prof., Dept. of Biochemistry, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran; **Email:** movahedian@pharm.mui.ac.ir

Rezazadeh Azari, Mansour; PhD; Professor, Dept. of Occupational Toxicology, School of Health, Shahid Beheshti University of Medical Sciences, Tehran, Iran. **Email:** mrzari@hotmail.com

Younesian, Masood; MD, PhD; Associate Prof., Dept. of Environmental Health Engineering, School of Public Health, & Center for Environmental Research, Tehran University of Medical Sciences, Tehran, Iran; **Email:** younesian@sina.tums.ac.ir

Consultant Committee (A-Z)

Asgari, Alireza; MSc, PhD Candidate; Dept. of Environmental Health Engineering Tehran University of Medical Sciences, Iran.

Dehghanifard, Emad; PhD; Dept. of Environmental Health Engineering Alborz University of Medical Sciences, Iran.

Dehghanzadeh Reyhani, Reza; MSc; Dept. of Environmental Health Engineering, School of Health, Tabriz University of Medical Sciences, Tabriz, Iran.

Fahiminia, Mohammad; MSc; Dept. of Environmental Health Engineering, School of Health, Qom University of Medical Sciences, Qom, Iran.

Javid, Allahbakhsh; School of public Health, Shahroud University of Medical Sciences, Shahroud, Iran.

Kargar, Mehdi; MSc, PhD Candidate; Dept. of Environmental Health Engineering, School of Health, Golestan University of Medical Sciences, Golestan, Iran.

Kulivand; Ali; PhD; Dept. of Environmental Health Engineering, School of Health, Arak University of Medical Sciences, Arak, Iran.
Naghizadeh, Ali; PhD; Dept. of Environmental Health Engineering, School of Health, Birjand University of Medical Sciences, Birjand, Iran.
Takdastan, Afshin; PhD; Dept. of Environmental Health Engineering, Ahvaz University of Medical Sciences, Ahvaz, Iran.
Yari, Ahmad Reza; PhD; Research Center for Environmental Pollutants, and Department of Environmental Health Engineering, School of Public Health, Qom University of Medical Sciences, Qom, Iran.

Office

Postal Address: Educational Complex, Qom University of Medical Sciences, Shahid Lavasani St., Qom, Iran.

Postal Code: 37 13 64 93 73; **P.O. Box:** 3756; **Telfax.:** +98 (25) 32 8584 74;

Website: <http://jhygiene.muq.ac.ir>; **Email:** arch.hygiene@muq.ac.ir, arch.hygiene@gmail.com

Circulation: 3000; **Price:** Free of Charge

pISSN: 2251-9203

eISSN: 2322-4916

License Number Issued by “The Iranian Ministry of Culture and Islamic Guidance”: No. 90/25382; **Dated:** Dec 24, 2011

Approval Number Issued by “The Iranian Medical Sciences Journals Commission, Ministry of Health and Medical Education”:
No. 100/1349; **Dated:** Dec 10, 2012

This Journal is indexed in following International Indexes:

- Index Copernicus: <http://www.indexcopernicus.com>
- <http://www.isc.gov.ir>



Qom University of
Medical Sciences

Archives of Hygiene Sciences

A Quarterly Peer- Reviewed Scientific Journal

Author Information Pack

Contents

About the Journal	iii
Description	iii
Website.....	iii
Distribution	iii
Publication Charges	iii
Period of Publishing & Frequency	iv
Abstracting & Indexing.....	iv
Aims and Scope.....	iv
Target groups	iv
Articles Types	iv
Peer Review Policy & Process.....	iv
Author Guidelines	v
Submission	v
How to Prepare the Manuscript Files.....	v
Language	v
The Manuscript Structure.....	v
Tables, Figures, Images, Photographs, and Illustrations.....	vii
Abbreviations and Symbols	vii
Ethical Guidelines	vii
Submission Checklist.....	viii
Proof Reading.....	viii
Providing Printed Copies for Authors.....	viii
Copyright	viii
Disposal of Material.....	viii

About the Journal

Description

The “Archives of Hygiene Sciences” is a peer-reviewed scientific journal.

Website

The articles of the journal are available at: <http://jhygiene.muq.ac.ir>

Distribution

This is an International journal published in print and electronic/online.

Publication Charges

This is an **Open Access** Journal and there are **no charges** for publication in this Journal.

Period of Publishing & Frequency

From June 2012, this journal is published on a quarterly basis (a volume of 4 issues per year).

Abstracting & Indexing

Published articles are accessible via:

- **Google Scholar** (<http://scholar.google.com>)

Aims and Scope

Our objective is to boost and disseminate the findings of applied researches into all aspects of “impact of environment on the human health”. In this regard, all scholarly manuscripts on hygiene, biomedicine, allied health, environmental sciences, and the corresponding fields are welcomed.

Target groups

The journal’s target groups are researchers studying and working in different fields of the hygiene, biomedicine, allied health, and environmental sciences.

Articles Types

Article types (maximum number of words in main text) include:

- Research/Original Articles (3500 words),
- Brief Research/Original Reports (maximums: 1200 words, 2 tables or figures, 20 references)
- Review Articles (4000-4500 words),
- Case Reports,
- Case series,
- Letters/Communications,
- Commentary (1000-1500 words),
- Supplemental Articles,
- Letter to the Editor (maximums: 600 words, 1 table or figure, and 10 references),
- Book Review (1000-1500 words).

Note: Word count ranges do not include author citations within the text.

Peer Review Policy & Process

All manuscripts are considered to be confidential.

Manuscripts are subjected to double-blinded (masked) peer review by at least three experts in the field and Editorial Board.

The corresponding author is notified -as soon as possible- of the editor’s decision to accept, reject, or require modifications.

If the manuscript is completely acceptable according to the criteria set forth in these instructions, it is scheduled for the next available issue.

Submissions should conform to the [Uniform Requirements for Manuscripts Submitted to Medical Journals](http://icmje.org) (URL: <http://icmje.org>).

Manuscripts will be reviewed for publication with the following understanding that:

They represent original and your own work. The paper, including its essential data, tables, and figures, has not been published elsewhere in whole or part (except for their “Abstracts” published in proceedings of congresses), the paper neither was published already nor is being under review elsewhere.

In case the “Abstract of manuscript” had been submitted earlier for a congress, the authors must provide full information of congress including: the title of congress/conference, congress venue (city and country) and date (year, month, and day)”.

Author Guidelines

Submission

Authors should submit their manuscript files through journal's website. When website does not work properly, authors can send their manuscript files via journal's email address.

Address for Online Submission: <http://jhygiene.muq.ac.ir>
Email Address: arch.hygiene@muq.ac.ir, arch.hygiene@gmail.com

How to Prepare the Manuscript Files

Authors can download the "article template" from the journal's website (Online Submission) and type their manuscript in it, or create their own file using the recommended article structure in the "article template". Then submit the file using one of the above mentioned methods.

Note: The submission file should be in OpenOffice, Microsoft Word, RTF, or WordPerfect document file format, and should be submitted in website as an attachment.

Note: The manuscript is a typewritten version of an article (the author's own copy), prepared and submitted by author for publication. In other words, the manuscript is an unpublished article/paper.

Language

The full texts and their abstracts are published in English. So please write your text in good English (American or British usage is accepted, but not a mixture of these).

Researchers who are not native speakers of English who submit manuscripts to international journals often receive negative comments from referees or editors about the English-language usage in their manuscripts, and these problems can contribute to a decision to reject a paper. To help reduce the possibility of such problems, we recommend taking at least one of the following steps:

- Have your manuscript reviewed for clarity by a colleague whose native language is English.
- Use one of the English language editing services that are available.

The Manuscript Structure

The manuscript should include:

1) Title Page:

The title page should include:

- The complete title of the manuscript,
- Authors First & Last Name, with their affiliations (*i.e.*, the department and institution to which they are attached, city and country; where the actual work was done), and if available, the email address of each author.
- If an author has moved since the work described in the article was done, or was visiting at the time, a "Present address" (or "Permanent address") may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main affiliation address. Superscript alphabetical letter are used for such footnotes.
- One author should be designated as the "corresponding author". It is important to clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. His/her contact details should be stated as: Email address (preferably academic email address), full postal address, and phone number (including Country Code+ Area Code+ Phone Number) for emergency calls. Contact details must be kept up to date by the corresponding author.

2) Abstract:

All research articles must accompany a structured abstract up to **500 words**. It should be structured as **Aims of the Study, Materials & Methods, Results, and Conclusions** followed by at least **4 to 6 Keywords**. Keywords will assist indexers in cross indexing the article as they are published with abstract. Use terms from the Medical Subject Headings (MeSH) list of Index Medicus (<http://www.nlm.nih.gov/mesh/MBrowser.html>).

Authors need to be careful that the abstract reflects the content of the article accurately.

3) The Full Text:

The full text should include:

Background:

This should summarize the purpose and the rationale for the study. It should neither review the subject extensively nor should it have data or conclusions of the study.

Materials & Methods:

This should include exact method or observation or experiment. If an apparatus is used, its manufacturer's name and address should be given in parenthesis. If the method is established, give reference but if the method is new, give enough information so that another author is able to perform it. If a drug is used, its generic name, dose and route of administration must be given. For patients, age, sex with mean age \pm standard deviation must be given. Statistical methods must be mentioned and specify any general computer program used. The Info system used should be clearly mentioned.

Results:

It must be presented in the form of text, tables and illustrations. The contents of the tables should not be all repeated in the text. Instead, a reference to the table number may be given. Long articles may need sub-headings within some sections (especially the Results and Discussion parts) to clarify their contents.

Discussion:

This should emphasize the present findings and the variations or similarities with other work done in the field by other workers. The detailed data should not be repeated in the discussion again. Emphasize the new and important aspects of the study and the conclusions that follow from them. It must be mentioned whether the hypothesis mentioned in the article is true, false or no conclusions can be derived.

Footnotes:

Footnotes section includes:

- **Acknowledgements:** All contributors who do not meet the criteria for authorship should be covered in the acknowledgement section. It should include persons who provided technical help, writing assistance and departmental head that only provided general support.
All clinical trials should be submitted in the accredited registry websites and the "registration code" should be declared in the "Acknowledgements" section. Some of websites for clinical trial registration are as follows:
<http://irct.ir/>
<http://clinicaltrials.gov/>
<https://www.clinicaltrialsregister.eu/>
- **Funding/Support:** Financial and material support should be acknowledged.
- **Conflict of Interests:** Authors should declare any conflict of interest. When authors submit a manuscript, whether an article or a letter, they are responsible for disclosing all financial and personal relationships that might bias their work. To prevent ambiguity, authors must state explicitly whether potential conflicts do or do not exist.
Authors must acknowledge and declare any sources of funding and potential conflicting interest, such as receiving funds or fees by, or holding stocks and shares in, an organization that may profit or lose through publication of your paper. Declaring a competing interest will not lead to automatic rejection of the paper, but we would like to be made aware of it.

Note: According to the International Committee of Medical Journal Editors (ICMJE), "Conflict of interest exists when an author (or the author's institution), reviewer, or editor has financial or personal relationships that inappropriately influence (bias) his or her actions (such relationships are also known as dual commitments, competing interests, or competing loyalties)... The potential for conflict of interest can exist whether or not an individual believes that the relationship affects his or her scientific judgment" (URL: http://www.icmje.org/ethical_4conflicts.html)

References: All manuscripts should be accompanied by relevant references. The author should ensure reference to locally published studies by doing proper literature search. It may not be possible for the editor and reviewers to check the accuracy of all reference citations. To minimize such errors author should verify references against the original documents. Only references in Vancouver Style will be accepted for reviewing. For more information on how to cite according the Vancouver Style citation please refer to the following online eBook:

EBook Title:

Citing Medicine: The NLM Style Guide for Authors, Editors, and Publishers; 2nd edition;
Karen Patrias; Dan Wendling, Technical Editor;

Tables, Figures, Images, Photographs, and Illustrations

Tables and figures should be inserted at the end of the text file.

The images, photos and illustrations should be sent separately in an appropriate format which will produce high quality images in the online edition of the journal. Images generated at low resolution for display purposes are not acceptable.

Specific details on Figure, Equation, and Table Image Quality can be found on the following webpage:

<http://www.ncbi.nlm.nih.gov/pmc/pub/filespec-images/>

Tables: In limited numbers should be submitted with the **captions placed above** and mounted at the end of the text file. Do not submit tables as photograph. Place explanatory matters in footnotes, not in the heading.

Figures: Should be in limited numbers, with high quality art work and mounted at the end of the text file. The captions **should be placed below**. The same data should not be presented in tables, figures and text, simultaneously.

Abbreviations and Symbols

Use only standard abbreviations. **Avoid using them in the title and abstract.** Such abbreviations that are unavoidable in the abstract must be defined at their first mention there.

The full term for which an abbreviation stands should precede its first use in the text, unless it is a standard unit of measurement. Ensure consistency of abbreviations throughout the article.

Ethical Guidelines

- The paper should contain sufficient detail and references to permit others to replicate the work. Fraudulent or knowingly inaccurate statements constitute unethical behavior are unacceptable.
- If the work involves chemicals, procedures or equipment that have any unusual hazards inherent in their use, the author must clearly identify these in the manuscript.
- Ethical considerations must be addressed in the “Materials & Methods” section.
- If the work involves the use of animal or human subjects, the author should ensure that the manuscript contains a statement that all procedures were performed in compliance with relevant laws and institutional guidelines and that the appropriate institutional committee(s) (*i.e.*, institutional review board or ethics review committee) has approved them.
- For those investigators who do not have formal ethics review committees, the principles outlined in the Declaration of Helsinki should be followed.
- Authors should include a statement in the manuscript that the written informed consent was obtained for experimentation with human subjects. Please state that written informed consent was obtained from all human adult participants and from the parents or legal guardians of minors. Also, please state the manner in which a written informed consent was obtained from the study participants.
- The privacy rights of human subjects must always be observed.
- Editors may request that authors provide documentation of the formal review and recommendation from the institutional review board or ethics committee responsible for oversight of the study.
- The authors should ensure that they have written entirely original works, and if the authors have used the work and/or words of others, this has been appropriately cited or quoted.
- When an author discovers a significant error or inaccuracy in his/her own published work, it is the author’s obligation to promptly notify the journal editor or publisher and cooperate with the editor to retract or correct the paper. If the editor or the publisher learns from a third party that a published work contains a significant error, it is the obligation of the author to promptly retract or correct the paper or provide evidence to the editor of the correctness of the original paper.

Note: The Journal requirements are in accordance with the uniform requirements for manuscripts submitted to biomedical journals, drawn up by the International Committee of Medical Journal Editors (ICMJE) (URL: <http://icmje.org>).

Submission Checklist

Before submitting the manuscript for publication, the authors must ensure that they have taken care of the following:

- ✓ The submission has not been previously published, nor is it before another journal for consideration (or an explanation has been provided in Comments to the Editor)
- ✓ The submission file is in OpenOffice, Microsoft Word, RTF, or WordPerfect document file format.
- ✓ Where available, URLs for the references have been provided.
- ✓ The text is single-spaced; uses a 12-point font, and all tables and figures are placed at the end of the text.
- ✓ The images, photographs, and illustrations have been prepared according the guideline and are ready to upload as an attachment.
- ✓ The text adheres to the stylistic and bibliographic requirements outlined in the **Author Guidelines**.
- ✓ One author has been designated as the corresponding author with contact details (email address, full postal address, and phone number).
- ✓ All necessary files have been uploaded, and contain All figure captions, All tables (including title, description and footnotes)
- ✓ References are in the correct format for this journal.
- ✓ All references mentioned in the Reference list are cited in the text, and vice versa.
- ✓ Permission has been obtained for use of copyrighted material from other sources (including the Web).
- ✓ Manuscript has been “spell-checked” and “grammar-checked”.

Proof Reading

A computer print-out is sent to the corresponding author for proof reading before publication in order to avoid any mistakes. Corrections should be marked clearly and sent immediately to the Journal Office.

Providing Printed Copies for Authors

The printed journal will be provided “free of charge” to all authors and will be sent to the “**corresponding author’s postal address**”.

Copyright

The entire contents of the “**Archives of Hygiene Sciences**” are protected under international copyrights. This Journal is for your personal noncommercial use. You may not modify copy, distribute, transmit, display, or publish any materials contained on the Journal without the prior written permission of it or the appropriate copyright owner.

Disposal of Material

Once published, all copies of the manuscript, correspondence and artwork will be held for 6 months before disposal.

Forouzan Karimi, PharmD, PhD

**Associate Professor of Immunology
Editor-in-Chief
Archives of Hygiene Sciences**

P.O. Box: 3756, Qom, Iran.

Telfax: +98-25-328 85 474

Email: arch.hygiene@muq.ac.ir, arch.hygiene@gmail.com

Website: <http://jhygiene.muq.ac.ir>



Qom University of
Medical Sciences

Archives of Hygiene Sciences

A Quarterly Peer- Reviewed Scientific Journal

Table of Contents

<i>Research Articles</i>	<i>Page</i>
Concentration of Nitrate in Bottled Drinking Water in Qom, Iran Mohammad Saberi Bidgoli, Ehsan Ahmadi, Ahmad Reza Yari, Sara Hashemi, Gharib Majidi, Shahram Nazari, Mahboubeh Jadidiyan, Ali Azari	122
Survey of Corrosion and Scaling Potential in Drinking Water Resources of the Villages in Qom Province by Use of Four Stability Indexes (with Quantitative and Qualitative Analysis) Roshanak Rezaei Kalantari, Ahmad Reza Yari, Ehsan Ahmadi, Ali Azari, Masoume Tahmasbi Zade, Fateme Gharagazlo	127
Modelling of Disinfection by-products Formation Via UV Irradiation of the Water from Tajan River (Source Water for Sari Drinking Water, Iran) Allahbakhsh Javid, Aliakbar Roudbari, Ahmad Reza Yari	135
Application of Azolla for 2, 4, 6-Trichlorophenol (TCP) Removal from Aqueous Solutions Mohammad Ali Zazouli, Davoud Balarak, Yusef Mahdavi	143
Optimization of Solid Waste Collection and Transportation System by Use of the TransCAD: A Case Study Nasser Talebbeydokhti, Hamid Amiri, Mehdi Hashemi Shahraki, Sama Azadi, Sahar Ghanbari ghahfarokhi	150
Equilibrium and Kinetic Studies on the Adsorption of Acid Yellow 36 Dye by Pinecone Amir Sheikh Mohammadi, Mahdieh Sardar, Amir Mohammadi, Faramarz Azimi, Nafiseh Nurieh	158