ISSN 2148-7197 • EISSN 2149-2530

Turkish Thoracic Journal

Official Journal of the Turkish Thoracic Society

SUPPLEMENT 2 JULY 2015 VOLUME

16

Turkey Asbestos Control Strategic Plan Final Report

Guest Editor

Muzaffer Metintaş

AVES

www.toraks.dergisi.org

Turkish Thoracic Journal

Official journal of the Turkish Thoracic Society

Türk Toraks Derneği adına sahibi / Owner on behalf of the Turkish Thoracic Society: Ayşe Arzu Yorgancıoğlu • Sorumlu Yazı İşleri Müdürü / Responsible Manager: Zuhal Karakurt • Yayın türü / Publication Type: Yerel süreli / Local periodical • Basım yeri / Printed at: ADA Ofset, 2. Matbaacılar Sit. E Blok No: (ZE2) 1. Kat Topkapı, İstanbul, Turkey (+90 212 567 12 42) • Basım tarihi / Printing Date: Haziran 2015 / June 2015 • Türk Toraks Derneği tarafından yayınlanmaktadır / Published by Turkish Thoracic Society, Turan Güneş Bulvarı Koyunlu Sitesi No: 175/19 Oran-Ankara, Turkey (+90 312 490 40 50)

AVES

Publisher
İbrahim KARA

Publication Director
Ali ŞAHİN

Deputy Publication Director
Gökhan ÇİMEN

Publication Coordinators
Esra GÖRGÜLÜ
Ebru MUTLU
Betül ÇİMEN
Saniye İNGİN
Nihan GÜLTAN
İrem Naz GÜVEL
Dilşad GÜNEY

Finance Coordinator
Veysel KARA

Project Coordinators
Hakan ERTEN
Zeynep YAKIŞIRER

Graphics Department
Ünal ÖZER
Neslihan YAMAN
Merve KURT

Contact
Address: Büyükdere Cad. No: 105/9 34394
Mecidiyeköy, Şişli-İstanbul
Phone: +90 212 217 17 00
Fax: +90 212 217 22 92
E-mail: info@avesyayincilik.com

Turkish Thoracic Journal
Official journal of the Turkish Thoracic Society

INTERNATIONAL EDITORIAL BOARD

AIMS AND SCOPE

Turkish Thoracic Journal is the conceptually scientific, open access and official publication of the Turkish Thoracic Society. The publication language is both Turkish and English and it is an international journal based on independent, unbiased, and double-blind peer-review principles.

Turkish Thoracic Journal started its publication life following the mergence of two seperate journals which are published under the titles "Turkish Respiratory Journal" and "Toraks Journal" until 2007. Archives of both journals were passed on to the Turkish Thoracic Journal.

The aim of Turkish Thoracic Journal is to publish pulmonary disease-related clinical, experimental and epidemiologic studies that are scientifically highly qualified. Additionally, reviews, editorials, letters to the editor, and case reports are also accepted. Reports presented in meetings organized by the Turkish Thoracic Society Head Office or national and international consensus reports are published as supplements. The journal is published 4 times annually, in January, April, July and October. The target-groups are chest diseases physicians, thoracic surgeons, internal medicine doctors and practitioners interested in pulmonary diseases.

Turkish Thoracic Journal is indexed in EMBASE, Scopus, EBSCO, CINAHL, Gale/Cengage Learning, ProQuest, Index Copernicus, DOAJ and Tübitak/Ulakbim Turkish Medical Database.

Subscription Procedures, Permissions, Advertisement
Turkish Thoracic Journal is distributed free of charge to chest diseases specialists, academicians and assistants who are working in our country. Abstracts and full texts of the articles published in this journal are issued online at www.toraks.dergisi.org. Applications related to subscriptions, print permissions and advertisements should refer to the Turkish Thoracic Society.

Address: Turan Güneş Bulvarı, Koyunlu Sitesi No: 175/19
Oran-Ankara, Turkey
Phone: +90 312 490 40 50
Fax: +90 312 490 41 42
E-mail: toraks@toraks.org.tr

Instructions for Authors
Instructions for authors are available on journal pages and in the following link: www.toraks.dergisi.org

Material Disclaimer
Any opinion or statement enclosed in the material published by the Turkish Thoracic Journal solely represents the views of the author(s). The Turkish Thoracic Society, Turkish Thoracic Journal, Editor, Editorial Committee and Publisher do not accept any liability.

Acid-free paper is used in our journals.

INFORMATION FOR THE AUTHORS

1. The Turkish Thoracic Journal is a periodical of the Turkish Thoracic Society and 4 issues are published annually.

2. The aim of the journal is to convey scientific developments in thoracic diseases and surgery, and to create a dynamic discussion platform about pulmonary diseases. With this intent, the journal accepts articles from all related scientific areas that address thoracic diseases and cell biology, epidemiology, immunology, pathophysiology, thoracic imaging, pediatric chest diseases, environmental and occupational disorders, intensive care, sleep disorders and thoracic surgery. Clinical and research articles, reviews, statements of agreement or disagreement on controversial issues, national and international consensus reports, abstracts and comments of important international articles, interesting case reports, puzzling cases, writings related to clinical and practical applications, letters to the editor, and editorials are accepted.

Presentations and reports of meetings organized by Turkish Thoracic Society Head Office and its branches can be published as supplements.

3. The publication language of the journal is English.

4. The Editorial Committee has the right of not publishing a manuscript that is not in compliance with the authors' instructions, request revisions from the authors and reediting. Submitted manuscripts are published following the evaluation by at least two reviewers, and approval of the Publication Committee.

5. The submitted manuscripts should not been submitted for publication or published elsewhere. Studies previously announced in the congresses are accepted if this condition is stated. Those who want to withdraw their manuscripts from the journal due to delays or any other reason should submit a written application. No royalties or remuneration will be provided to the author(s) and the author agrees that all publication rights belong to the Turkish Thoracic Society. Scientific and legal responsibilities of the published manuscripts belong to the authors.

6. Reviews have been written only by experts on the subjects, upon invitation since January 2004.

7. The content of the submitted manuscripts should conform to the criteria stated in *ICMJE-Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals (updated in December 2013-http://www.icmje.org/icmje-recommendations.pdf*).

8. Turkish Thoracic Journal requests the authors to comply with research and publication ethics. The principles outlined in the Declaration of Helsinki should be followed in the absence of formal ethics review committees. For human studies, the means by which informed consent was obtained from participants (oral or written) should be stated in the "Material and Methods" section. Declaration of Helsinki can be found at www.wma.net/e/policy/pdf/17c.pdf. In experimental animal studies, ethical considerations within "The guide for the care and use of laboratory animals" (www.nap.edu/catalog/5140.html) should be followed. Copyright information required for the figures, pictures and other visuals should be provided by the authors.

9. The authors are asked to declare any financial relations concerning the study. All authors should state that they scientifically contributed to and took responsibility in the study and declare if there is any conflict of interest. The authors should acknowledge and provide information on grants, contracts or other financial support of the study provided by any foundations and institutions or firms.

10. Research articles should not exceed 3500 words and 35 references. Case reports should not exceed 1500 words and 10 references.

11. Simultaneously with the submission of manuscripts, the "Author Agreement Form" signed by all contributing authors should be sent to the Turkish Thoracic Journal Editorial Office via fax or e-mail. Otherwise, submitted manuscripts will not be taken into consideration.

12. In order to proceed without delay, all submitted manuscripts should comply with the instructions specified below:

a. Articles should be typed double-spaced using Times New Roman style and 12 fonts and should have 3 cm margins on the sides, top and bottom of each page. Page numbers should be placed at the mid-bottom of each page.

b. Articles and reviews should be prepared in accordance with the instructions below:

The first page should include the title of the article in English (should not exceed 90 characters) and the running title in English (should not exceed 45 characters).

The second page should include English abstract that do not exceed 250 words. A structured abstract with Objectives, Material and Methods, Results, and Conclusion sections should contain the aim of the study, main results of the study, and a brief conclusion. The above mentioned structure does not apply to the case reports and reviews; a short abstract of no more than 200 words is required.

At least three key words in English should be placed right after the abstract. Key words should comply with the Medical Subject Headings: MeSH. Medical Subject Headings (MeSH) which can be found at www.nlm.nih.gov/mesh/MBrowser.html.

Third page and the subsequent pages should include the main text.
In review articles, subtitles should be used in order to provide a better understanding on the subject. In a review article, it would be beneficial to provide different sections such as the context of the problem, historical information, basic knowledge, methodology, animal and human experiments, discussion, conclusion, suggestions and future studies.

Research articles should include separate sections for Introduction, Material and Methods, Results, Discussion. Pharmaceutical products can be mentioned either with their generic or commercial names (generic names are preferred). Commercial names should be written with capital letters, followed by the company and its city in parenthesis. Acknowledgements, references, tables and figure legends should follow the main text. Tables should be presented at the end of the text and each on a separate page.

c. The "Acknowledgements" section should be placed at the end of the text before the references and should not exceed one paragraph.

d. References, tables and figures should be placed in the order of appearance in the text. References should be mentioned in brackets and at the end of the sentences. The titles of journals must be abbreviated according to the style used in Index Medicus. Full titles should be used for those that are not cited in Index Medicus. When more than two consecutive references are used, only the first and last reference numbers should be written [such as: 3-9]. When there is more than four authors within the identification of the referred article, only the names of the first three authors should be used followed by "et al.". If an article has four or less authors, all names should be used. Research articles and reviews should not exceed 35 references. Case reports should not exceed 10 references. References should be written according to the Index Medicus and in Vancouver Style as illustrated below.

Journal Articles
Standard Journal Article
Surname of the author(s), first letter of the author's name, title of the article, name of the journal (abbreviated according to Index Medicus), year (;) volume number (:) first and last pages (.)
Vega KJ, Pina I, Krevsky B. Transplantation is associated with an increased risk for pancreatobiliary disease. Ann Intern Med 1996;124:980-3.

Supplementary
QF. Risk assessment of nickel carcinogenicity and occupational lung cancer. Environ Health Perspect 1994;102 (Suppl 1): 2755-82.

Summary Format (Letter, Summary and Editorial)
Ennzensberger W, Fischer PA. Metronume in Parkinson's disease (Letter). Lancet 1996;347:1337.

Books and Other Monographs
Book
Surname of the author(s), first letter of author's name (.), title of the book (.) number of press or volume (.) city that it is published (:) publisher, publication year (:) page (.)

With author
Ringsven MK, Bond D. Gerontology and leadership skills for nurses. 2nd ed. Albany, NY: Delmar, 1996:56.

With editor
Norman IJ, Redfem SJ, eds. Mental Health Care for Elderly People. New York: Churchill Livingstone,1996: 67-9.

Book chapter
Surname of the section author(s), the first letter of authors' name (.) the title of the section (.) In (:) the surname of the author(s) of the book, the first letter of authors' name (.) the title of the book (.) city that it is published (:) publisher, publication year (:) first and last pages (.)
Phillips SJ, Whistant JP. Hypertension and stroke. In: Laragh JH, Brenner BM; eds. Hypertension: Pathophysiology, diagnosis and management. 2nd ed. New York: Raven Pr, 1995:466-78.

Congress Abstract Book
Bengtsson S, Solheim BG. Enforcement of data protection, privacy and security in medical informatics. In: Lun KC, Degoulet P, Piemme TE, Rienhoff O, editors. MEDINFO 92. Proceedings of the 7th World Congress on Medical Informatics; 1992 Sep 6-10; Geneva, Switzerland. Amsterdam: North-Holland; 1992. p. 1561-5.

Unpublished Resources (In Press)
Leshner AI. Molecular mechanisms of cocaine addiction. N Engl J Med. In press 1997.

Congress Presentation
Smith J. New agents for cancer chemotherapy. Presented at the Third Annual Meeting of the American Cancer Society, 13 June 1983, New York.

Thesis
Kaplan SJ. Post-hospital home health care: the elderly's access and utilization [Thesis]. St Louis (MO): Washington Univ; 1995.

Online Reports
World Medical Association. Declaration of Helsinki: ethical principles for medical research involving human subjects. www.wma.net/e/policy/pdf/17c.pdf. Updated September 10, 2004. Accessed July 9, 2008.

For typing of any other type of reference, please go to www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=citmed.TOC&depth=2.

e. Tables: Each table should be typed on a separate page and table's entries should be double-spaced. Tables should be numbered with arabic numeral(s) and cited in the order of appearance in the text. A brief title for the table should be written above the table.

f. Figures: All figures should be high-quality (at least 300 dpi resolutions) in .jpeg or .jpg format, and should be provided in black and white. If providing a better understanding of the topic, colored figures will be accepted in limited number. For each manuscript, six figures at most will be accepted. Figures should be numbered with Arabic numeral(s) in order of appearance in the text. The type of the dye that was used, magnification scales, and internal scale bar should be stated for microscopic photographs. A centimetric template should be added for pathologic specimens. Ethical values should be protected in any patient-related photograph or graphs. If the identity of the patient can be revealed by the provided photographs and graphs, a written consent should be requested from the patient. The figures should be cited in parenthesis with their respective numbers within the main text. All figure legends should be on a separate page after references and tables. A written permission is required for reproduced figures.

g. Video: Videos submitted for online broadcasting purposes, on the internet site of Turkish Thoracic Journal, are accepted. The video dossier should be maximum 3MB in size and in .mpeg or .vmf format.

h. Case reports should contain sections for English title, English running title, English abstract, keywords, Introduction, Case Presentation and Discussion. They should include new cases or imply clear messages. All submitted case reports will be first reviewed by the editorial committee and those that do not include new cases and/or do not imply clear messages could be rejected without sending it for arbitration.

i. In puzzling case reports, a short introduction should be followed by the description of the problem, presentation of clue photos and figures, definite diagnosis, and a discussion section where the diagnosis is discussed and educational messages are emphasized.

j. Disagreement/agreement articles should not exceed three pages, and clinical practice articles should not exceed three pages including text, figures, images and references.

k. The section for the "Letters to the Editor" should be formatted shortly and concisely, without any summary, and should be restricted in the number of references since it is mainly written to provide support or criticism over previously published articles.

l. Abbreviations should be written in the accepted international format and under parenthesis on the first mention and this abbreviation should be used throughout the text.

ONLINE SUBMISSION

Instructions to Authors
Online submission is a two-part and 10-step process.

Part 1
Information such as the type of the article, institutions, authors, title, abstract, keywords, and cover letter is entered in the first eight steps.

Step-1: The language is selected (Turkish or English).

Step-2: The type and category of the article is selected.

Step-3: The institutions of the authors are entered in the relevant fields. If all authors are within the same institution, a single entry is enough. Names of the institutions should be written in full.

Step-4: The names, surnames and e-mail addresses of the authors are entered in the relevant fields. The corresponding institutions are selected from those provided in the preceding step. The corresponding author should also be stated in this step. Entering a valid e-mail address for the corresponding author is mandatory. However, this is not obligatory for the other authors. Authors' names should be written in full.

Step-5: This is the step where the title is entered. If needed, special characters (such as α, β, μ) are available on the table.

Step-6: This is the step where the abstract is entered. Abstract should not exceed 200 words for case reports and reviews, and 250 words for research articles. Abstracts for research articles should include the following sections: Introduction, Material and Methods, Results and Conclusion.

Step-7: This is the step where the keywords are entered. English keywords should be selected by connecting the MeSH link provided in this window.

Step-8: This is the step where information regarding the manuscript's publication in another journal or its presentation in a congress is entered.

Part 2

Step-9: From hereon, the identification of the manuscript has been completed. The main text, video and figures of the article should be submitted in this step. There should be no figures within the text file, except for the tables. For instance, three files should be submitted in this step for a manuscript containing one figure and one graph in the body (a file for text, a file for figure, and a file for graph). Figure and video files should be uploaded first. No figures should be placed in the text file. All images, graphs, and other figures within the manuscript should be uploaded with the names used in the manuscript (such as Fig 1 or Graph 1).

Any of the writing editors can be used for the text file (such as Microsoft Word, Notepad, and WordPad). However, MS Word will be necessary if the text contains a table. **Since all identification details were provided in former steps, the authors' names, institutions, and correspondence address are not required herein.**

Manuscript Checklist:
- Title (English)
- Running title (English)
- Abstract (English)
- Keywords (English)
- Main text
- References
- Tables with titles
- Figure legends (Captions).

The names of the submitted files should not evoke the name of the author(s) or institution. Submitted text files are made visually compatible through conversion to PDF format one minute following the submission. Therefore, there is no access to the file size information and connection within this short period.

Step-10: A control panel, showing the details of the article and including the checklist, appears after submission. It is possible to return to the previous screen by clicking on the "previous" button and make corrections and/or modifications till this step. The submission process can be quitted at any stage and can be resumed. After clicking on the button "Submit manuscript", which appears on the last and 10th step, the manuscript is sent to the journal's management. It is transferred from the section of "Unsubmitted manuscripts" to the section of "Submitted manuscripts". At this stage, there is no possibility of any modification in the manuscript. Authors can view the stage of the submitted manuscript during the editorial review process. If the journal editor requests revision, the manuscript is transferred from the "Submitted manuscripts" section to the "Manuscripts requiring revision" section. In this section, the authors are allowed to make the necessary modifications on the manuscript.

CONTENTS

EDITORIAL

Turkey Asbestos Control Strategic Plan was prepared for the detection and prevention of one of the most important public health problems of our country by excitement, enthusiasm, and effort of many academic members and scientists, friends of mine. I extend my gratitude and appreciation to my dear friends and colleagues who are members of the Turkey Mesothelioma Study Group and to the Turkish Thoracic Society and the Turkish Respiratory Society for their strong support in preparation, implementation, and interpretation stages during the studies. I thank the Chairman of the Public Health Institution of Turkey, the Director of Cancer Control Department, the Head of Environmental Health Department, and their laboring staff for their financial and administrative support with an understanding and effective cooperation and for their great contribution to make the planning studies happen with the efforts of technical staff in 62 cities during the planning studies. I sincerely thank the authorities of TUBITAK Marmara Research Center Materials Institute, particularly to Dear Esin Günay, who meticulously performed analysis of mineral samples, unconditionally fulfilled our additional requests, and provided model cooperation and Dear Rector of Eskişehir Osmangazi University who always provided financial, administrative, and moral support to planning studies. I believe that this important problem will be solved as soon as possible when solutions according to the obtained results are rapidly implemented in real life in related regions. Dear Arzu Yorgancıoğlu who is the President of Turkish Thoracic Society, Dear Members of Executive Committee of Turkish Thoracic Society, and Dear Editors of Turkish Thoracic Journal will have a great part in this solution by publishing the plan result report as an additional issue.

Prof. Dr. Muzaffer Metintaş
Coordinator of Turkey Asbestos Control Strategic Plan

24 September 2012 - 30 December 2014

TURKEY ASBESTOS CONTROL STRATEGIC PLAN
FINAL REPORT

TURKISH MESOTHELIOMA WORKING GROUP
PUBLIC HEALTH INSTITUTE OF TURKEY
ESKİŞEHİR OSMANGAZİ UNIVERSITY

Communication: Dr. Muzaffer Metintaş:
Eskisehir Osmangazi University Lung and Pleural Cancers Research and Clinical Center, Eskisehir, Turkey
Phone: +90 222 2392979 Ex. 7049, 7050.
Fax: +90 222 2394714
E-mail: muzaffermetintas@gmail.com
www.turkiyemezotelyoma.org

Turkish Thoracic Journal
Official journal of the Turkish Thoracic Society

COORDINATION OF THE PLAN, PREPARERS AND EXECUTIVES

Strategic Plan Coordinator
Prof. Dr. Muzaffer Metintaş
Eskişehir Osmangazi University
Lung and Pleural Cancers Research and Clinical Center

Preparer of the Strategic Plan and the Implementation
Prof. Dr. Muzaffer Metintaş
Eskişehir Osmangazi University
Lung and Pleural Cancers Research and Clinical Center

Prof. Dr. Hasan Fevzi Batırel
Department of Chest Surgery, İstanbul Marmara University Faculty of Medicine

Turkish Mesothelioma Working Group

Strategic Plan Executive
Public Health Institution of Turkey (Ministry of Health)
Eskişehir Osmangazi University

Strategic Plan Executive of the Ministry of Health
Head, Public Health Institute of Turkey

Strategic Plan Coordinator of the Ministry of Health
Assoc. Prof. Dr. Murat Gültekin
Head, Department of Cancer in the Public Health Institute of Turkey

Participation of the Ministry of Health to the Plan
Dr. Hüseyin İlter
Head, Department of Environmental Health in the Public Health Institute of Turkey

Dr. Ezgi Hacıkamiloğlu
Department of Cancer in the Public Health Institute of Turkey

Provincial Coordinators of the Plan
Turkish Mesothelioma Working Group
Adana:
Assoc. Prof. Dr. Nazan Şen
Department of Chest Diseases, Adana Başkent University Hospital

Ankara:
Prof. Dr. Toros Selçuk
Department of Chest Diseases, Hacettepe University Faculty of Medicine

Prof. Dr. Şule Akçay
Department of Chest Diseases, Başkent University Faculty of Medicine

Prof. Dr. Gaye Ulubay:
Department of Chest Diseases, Başkent University Faculty of Medicine

Assoc. Prof. Dr. Ülkü Yılmaz:
Ankara Atatürk Chest Diseases and Chest Surgery Training and Research Hospital

Lecturer, Specialist, Dr. Nilgün Yılmaz Demirci:
Department of Chest Diseases, Gazi University Faculty of Medicine

Assist. Prof. Dr. Engin Tutkun:
Ankara Occupational Diseases Hospital

Antalya:
Prof. Dr. Ömer Özbudak
Department of Chest Diseases, Akdeniz University Faculty of Medicine

Bursa:
Prof. Dr. Mehmet Karadağ
Department of Chest Diseases, Uludağ University Faculty of Medicine

Çanakkale:
Prof. Dr. Arzu Mirici
Department of Chest Diseases, Onsekiz Mart University Faculty of Medicine

Denizli:
Prof. Dr. Sibel Özkurt
Department of Chest Diseases, Pamukkale University Faculty of Medicine

Diyarbakır:
Prof. Dr. Abdurrahman Şenyiğit
Department of Chest Diseases, Dicle University Faculty of Medicine

Assoc. Prof. Dr. Abdurrahman Abakay
Department of Chest Diseases, Dicle University Faculty of Medicine

Elazığ:
Prof. Dr. Figen Deveci
Department of Chest Diseases, Fırat University Faculty of Medicine

Prof. Dr. Gamze Kırkıl
Department of Chest Diseases, Fırat University Faculty of Medicine

Eskişehir:
Prof. Dr. Selma Metintaş
Department of Public Health, Eskişehir University Faculty of Medicine

Assoc. Prof. Dr. Güntülü Ak
Eskişehir Osmangazi University, Lung and Pleural Cancers Research and Clinical Center

Gaziantep:
Prof. Dr. Hasan Bayram
Department of Chest Diseases, Gaziantep University Faculty of Medicine

Prof. Dr. Levent Elbeyli
Department of Chest Surgery, Gaziantep University Faculty of Medicine

Hatay:
Assoc. Prof. Dr. Sebahat Genç
Department of Chest Diseases, Mustafa Kemal University Faculty of Medicine

Isparta:
Prof. Dr. Önder Öztürk
Department of Chest Diseases, Süleyman Demirel University Faculty of Medicine

Turkish Thoracic Journal
Official journal of the Turkish Thoracic Society

EXECUTIVE SUMMARY OF THE PLAN

INTRODUCTION AND OBJECTIVE: Asbestos exposure is a significant health problem in Turkey. However, in Turkey, different from the developed countries, asbestos exposure is often observed in the rural areas, and the asbestos-related diseases are more frequent among rural people. The frequency of the mesothelioma, lung cancer, and benign pathologies of the lung and pleura in the population exposed to asbestos in the rural areas is as high as for the people directly exposed to the asbestos in the industry. On the other hand, because there are insufficient records in Turkey with respect to the occupational environment, it is not fully possible to determine the occupational asbestos exposure.

The Turkey Asbestos Control Strategic Plan has been prepared and implemented to detect the incidence and importance of asbestos exposure in the rural areas, which is a serious public health problem and is the main reason for the related diseases in Turkey. Another objective of the Plan is to supply data for the studies aimed at detecting and preventing occupational asbestos exposure and developing a rehabilitation program aimed at avoiding this exposure.

Other objectives of the Plan are to detect the current and future mesothelioma risks for the whole of Turkey, to guide the studies for the elimination of asbestos in the rural areas by the end of 2015, to develop an action plan which will ensure that measures are taken to determine workplaces exposed to asbestos and to remove the use of asbestos by the end of 2015, and to provide the early diagnosis and efficient treatment of the cases detected by the follow-up of the group under risk.

The Turkey Asbestos Control Strategic Plan was prepared and performed by the Turkish Mesothelioma Working Group and the Public Health Institute of Turkey. Thirty-eight faculty members, including 19 professors, 16 associate professors, three assistant professors, two specialist physicians of the Turkish Mesothelioma Working Group, two mineralogist professors, and four foreign consultant scientists, took part in the Turkey Asbestos Control Strategic Plan.

METHOD: In this study, "from case to the field method" has been used. In other words, birth and living places of the cases with mesothelioma diagnosed between 2008 and 2012 to detect regions/villages exposed to asbestos in Turkey were determined; villages under the risk of being exposed to asbestos were identified. Soil samples were collected from these villages; these sampl es were analyzed for minerals and finally the locations exposed to asbestos were determined.

In hospitals of 30 provinces where mesothelioma cases are determined to be diagnosed mostly, the patients diagnosed with "mesothelioma" under the code of C45 between 2008 and 2012 were identified based on their names, ages, genders, diagnosis dates, birth places, villages, districts, provinces, provinces where they were diagnosed, and addresses based on the hospital records. The cases were checked one by one according to their identity, name, age, birth place, and register and address information with their identification numbers from the Central Register System (MERNIS). The deceased cases were identified; their death dates and ages were determined and these were verified by their registers. Following the identification of all deceased cases, the mean and median survivals were identified according to their diagnosis dates.

After obtaining the final records of the cases with mesothelioma, the cases born in villages/rural areas were determined; the villages where these cases were born were identified as "villages required to be examined for asbestos exposure risk." "Villages required to be examined for asbestos exposure risk" were classified according to provinces. The list of provinces was sent to the provincial coordinating researchers and to the provincial directorates of public health. The provincial coordinating researchers and the officials from the provincial directorates of public health combined the local and central information and initiated the work to determine the villages to be visited and collect samples. Therefore, training programs, creating awareness, and survey work were conducted in the provinces. Following the identification of the "villages required to be examined for asbestos exposure risk" on the provincial basis through local surveys, the officials of the provincial directorate of public health went to these villages to collect samples.

The teams of the provincial directorate of public health collected samples from the soil deposits, the walls of the houses, roofs, and other areas under the risk of asbestos exposure with the help of the mukhtar and the villagers. These samples were sent to the Eskişehir Osmangazi University for the classification and the first examination. The soil samples were coded according to their provinces, districts, villages, areas, and individual houses. Those found to have fibrous minerals were regarded as risky soil samples and were sent to the TUBITAK Marmara Research Centre Material Institute for mineral analysis with an x-ray diffractometer (XRD) by shipping.

The existence of the asbestos in the samples was examined in the TUBITAK Marmara Research Centre Material Institute based on the sub-types of asbestos. The samples found to contain asbestos and fibre mixture were listed in codes and were reported, including the formulation of asbestos and fibre type.

Following the evaluation of the mineral analysis results, the coded soil samples were classified based on the provinces, districts, villages, areas, and names of the owners of the houses. Thus, the villages, areas, and houses with asbestos exposure were identified.

The populations of the villages with asbestos exposure for 2012-2013 were determined based on the names of villages, districts, and provinces on the official websites www.yerelnet.org.tr and www.nufusu.com, including the data of the Turkish Statistical Institute (TUIK).

Finally, the "population exposed to asbestos in rural areas for a risky period of time," some of which comprise of mesothelioma cases, was determined. The number of mesothelioma, lung cancer, and benign lung and pleura diseases to develop in both populations for the next 20 years was estimated.

RESULTS: During the study, the demographic information of 5,617 mesothelioma cases out of 7,789 cases with the C45 code, whose data is reliable based on certain analyses, was collected from 2008 to 2012 in Turkey. Out of these cases, 3,718 were born/living in the village. It was found out that 3,495 of these mesothelioma cases died by July 2014. The median survival of the dead cases was found to be 8 months.

Following the analysis of the cases born and living in rural areas, 1,236 villages in 58 provinces were determined as "villages required to be examined for asbestos exposure risk." Trained officials from the provincial directorates of public health visited 1,018 villages and collected 2,447 samples from the walls of houses, roofs, and soil deposits around the villages. It was found that 218 villages were not visited because the statements of the mukhtars and minutes were taken. However, these villages should also be visited because two or more mesothelioma cases were observed in 120 of these villages.

The soil samples (n=2,447) were sent to the Eskişehir Osmangazi University. Of these samples, 1,251 were subjected to mineral analysis at the TUBITAK Marmara Research Centre Material Institute with an XRD. As a result, 379 samples were found to contain fibres. According to the registers for the period of 2012 and 2013, 158,068 people lived in these rural areas/villages. Apart from the settlements with a population of more than 1,000 people, the number of those people living in these areas is 98,453. These populations include the cases with asbestos exposure and who would continue to be exposed to asbestos if no preventive measure is taken. Moreover, the population exposed to asbestos for a risky period of time in terms of related diseases that may lead to 3,718 mesothelioma cases was estimated to be 571,460. Thus, the population exposed to asbestos for a risky period of time and the one who continues to be exposed to asbestos in rural areas was estimated and identified.

It was projected that 15,450 mesothelioma, 5,737 lung cancer, 82,290 pleural plaque, 59,431 diffuse pleural fibrosis, and 2,286 asbestosis cases will emerge in the population exposed to asbestos for a risky period of time in the abovementioned rural areas. Moreover, it was projected that 2,511 mesothelioma, 1,322 lung cancer, 17,344 pleural plaque, 12,526 diffuse pleural fibrosis, and 482 asbestosis cases will emerge in the population who continues to be exposed to asbestos between 2013 and 2033.

OCCUPATIONAL ASBESTOS EXPOSURE: In the Plan, 1,879 cases who were diagnosed with mesothelioma between 2008 and 2012 but were not born and/or living in the village are among the patients with mesothelioma who are under a heavy risk of occupational exposure. These cases should be examined based on occupation and workplace, and in line with the obtained data, the existence of the occupational asbestos exposure should be analyzed.

KEYWORDS: Asbestos exposure, mesothelioma, environmental exposure, public health