



تاریخ دریافت ۸۳/۱۰/۱۶ تاریخ پذیرش ۸۴/۰۴/۰۸

) HRCT

(/I)

(% /)

ILO

(% /)

HRCT. (: HRCT (% /)

)

(HRCT)

emamhadi@yahoo.com

()

.()

())

() (

.()

.()

() ...

.()

f/ml / f/ml

.() /

...)

.()

()

()

.()

.() ()

Minitab

(β = /) %

(α = /) %

Version 4

¹² Threshold Limit Value (TLV)

¹³ Fiber per Milliliter

-
- ¹ Asbestos
 - ² Amphiboles
 - ³ Crocidolite
 - ⁴ Anthophyllite
 - ⁵ Amosite
 - ⁶ Actinolite
 - ⁷ Tremolite
 - ⁸ Serpentine
 - ⁹ Chrysotile
 - ¹⁰ Toaster
 - ¹¹ Dryer

:

(HRCT)		
		/
		/
		/
		/
		/

:

	/
	/
	/
	/
	/

:

			/
			/
		/	
		/	

) ()

(

.()

.()

.()

HRCT: •
(% /)
(% /)

² Asbestosis
³ Mesothelimoa
⁴ Pleural Effusion
⁵ Benign Pleural Plaque

¹ Pleural Plaque or Pleural Thickening

TLV= / f/ml¹)
(

()

()

()

()

()

()

()

()

()

()

()

%

)

¹ Threshold Limit Value

² Rod Like

³ Curve

References:

1. Abu-Shams K, Pascal I. Asbestos. Characteristics, properties, pathogenesis and sources of exposure. *An Sist Sanit Navar*, 2005, 28 (Suppl1): 7-11.
2. Bernstein D, Rogers R, Smith P. The biopersistence of Canadian chrysotile asbestos following inhalation: final results through 1 year after cessation of exposure. *Inhal Toxicol*, 2005, Jan; 17(1): 1-14.
3. Liu X. Study on the spectra of granite of asbestos red and sesame white. *Guang Pu Xue Yu Guang Pu Fen Xi*, 1998, Oct; 18(5): 614-616.
4. Perez de Las Casas M, Fernandez Infante B. Occupational lung cancer. *An Sist Sanit Navar*, 2005, 28 (Suppl1): 101-6.
5. Cecchetti G, Fruttero A, Conti ME. Asbestos reclamation at a disused industrial plant, Bagnoli (Naples, Italy). *J Hazard Mater*, 2005, Jun 30; 122(1-2): 65-73.
6. Smith DD. Diagnosis and initial management of nonmalignant diseases related to asbestos.

- Am J Respir Crit Care Med, 2005, Mar 15; 171(6): 665-666.
7. Isidro Montes I, Abu Shams K, Alday E, Carretero Sastre JL, Ferrer Sancho J, Freixa Blanxart A, Monso Molas E, Pascal Martinez I, Rodriguez Becerra E, Rodriguez Panadero F. Guidelines on asbestos-related pleuropulmonary disease. Arch Bronconeumol, 2005, Mar; 41(3): 153-68.
 8. Algranti E, Mendonca EM, DeCapitani EM, Freitas JB, Silva HC, Bussacos MA. Non-malignant asbestos-related diseases in Brazilian asbestos-cement workers. Am J Ind Med., 2001, Sep; 40(3): 240-54.
 9. Schermer TR, Cox AL. Diagnosis of malignant pleural mesothelioma and asbestosis. Ned Tijdschr Geneesk, 1999, Nov 20; 143(47): 2354-60.
 10. Gorini G, De Gregorio G, Silvestri S, Chellini E, Cupelli V, Seniori Costantini A. Survival of malignant pleural mesothelioma cases in the Tuscan Mesothelioma Register, 1988-2000: a population-based study. Eur J Cancer Prev, 2005, Jun; 14(3): 195-9.
 11. Martin L. 2004 asbestos disease guidelines ignore mass screening abuse. Am J Respir Crit Care Med, 2005, Mar 15; 171(6): 665.
 12. Krstev S, Dosemeci M, Lissowska J, Chow WH, Zatonski W, Ward MH. Occupation and risk of cancer in Poland. Occup Environ Med, 2005, May; 62(5): 318-24.
 13. Baas P, Sleeswijk P, Strankinga WF, van Hezik EJ, Burgers JA, Tan KY, Schouwink JH. Problematic cases of mesothelioma reported to the Dutch Institute for Asbestos Victims. Evaluation by the mesothelioma Working Party of the Netherlands Association of Pulmonologists and Specialists in Tuberculosis. Ned Tijdschr Geneesk, 2005, Apr 2; 149(14): 759-63.
 14. Bagatin E, Neder JA, Nery LE, Terra-Filho M, Kavakama J, Castelo A, Capelozzi V, Sette A, Kitamura S, Favero M, Moreira-Filho DC, Tavares R, Peres C, Becklake MR. Non-malignant consequences of decreasing asbestos exposure in the Brazil chrysotile mines and mills. Occup Environ Med, 2005, Jun; 62(6): 381-9.
 15. Lange JH. Airborne exposure during asbestos abatement of floor tile, wall plaster, and pipe insulation. Bull Environ Contam Toxicol, 2005, Jan; 74(1): 70-2.
 16. Beard J D, Rook A. Advancements in Environmental Measurement Methods for Asbestos. 1999; vol 4; 425.
 17. Chaudhuri N. Interventions to improve children's health by improving the housing environment. Rev Environ Health, 2004, Jul-Dec; 19(3-4): 197-222.
 18. American Society for Testing and Materials. Standard Practice for Asbestos Detection Limit Based on Counts. Annual Book of ASTM Standards. American Society For Testing And Materials, Philadelphia, PA. 2004; Volume: 11.03; Section 5. 455-6
 19. American Society for Testing and Materials. Standard Test Method for Microvacuum Sampling and Indirect Analysis of Dust by Transmission Electron Microscopy for Asbestos Structure Number Surface Loading. Annual Book of ASTM Standards. American Society for Testing and Materials. Philadelphia, PA. 2004; Volume: 11.03; Section 4. 437-8
 20. Marin Martinez B, Clavera I. Asbestosis. An Sist Sanit Navar, 2005, 28 (Suppl1): 37-44.
 21. Fernandez Infante B, Michel F. Malign pleural mesothelioma. An Sist Sanit Navar, 2005, 28 (Suppl1): 29-35.
 22. Bandoh S, Fujita J, Fukunaga Y, Ohtsuka S, Susaki K, Yang Y, Kobayashi S, Takahara J. Nodular thickening of interlobar fissures: an early manifestation of malignant mesothelioma: a case report. Jpn J Clin Oncol, 2001, Feb; 31(2): 82-5.
 23. Pylev LN, Vasil'eva LA, Stadnikova NM, Smirnova OV. The role of macrophages in asbestos-induced carcinogenesis. Vopr Onkol, 2004, 50(6): 678-82.
 24. Nagatomo H, Morimoto Y, Oyabu T, Hirohashi M, Ogami A, Yamato H, Kuroda K, Higashi T, Tanaka I. Expression of heme oxygenase-1 in the lungs of rats exposed to crocidolite asbestos. Inhal Toxicol, 2005, May; 17(6): 293-6.
 25. Nam JM, Rice C, Gail MH. Comparison of asbestos exposure assessments by next-of-kin respondents, by an occupational hygienist, and by a job-exposure matrix from the National Occupational Hazard Survey. Am J Ind Med, 2005, May; 47(5): 443-50.
 26. Rogers A. Asbestos lung residue and asbestosis risk. Ann Occup Hyg, 2005, Jun; 49(4): 363-4.
 27. Huetto J, Almudevar E. Analysis and detection of fibres in the pulmonary tissue. An Sist Sanit Navar, 2005, 28 (Suppl1): 13-9.
 28. Cassiola F, Rogers RA, Kiyohara PK, Joekes I. Yeast cells long-term interaction with asbestos fibers. Colloids Surf B Biointerfaces, 2005, Apr 10; 41(4): 277-83.
 29. Cristaudo A, Foddiss R, Vivaldi A, Buselli R, Gattini V, Guglielmi G, Cosentino F, Ottenga F, Ciancia E, Libener R, Filiberti R, Neri M, Betta P, Tognon M, Mutti L, Puntoni R. SV40 enhances the risk of malignant mesothelioma among people exposed to asbestos: a molecular

- epidemiologic case-control study. *Cancer Res*, 2005, Apr 15; 65(8): 3049-52.
30. Kgalamono SM, Rees D, Kielkowski D, Solomon A. Asbestos in the non-mining industry on the Witwatersrand, South Africa. *S Afr Med J*, 2005, Jan; 95(1): 47-51.
 31. McElvenny DM, Darnton AJ, Price MJ, Hodgson JT. Mesothelioma mortality in Great Britain from 1968 to 2001. *Occup Med (Lond)*, 2005, Mar; 55(2): 79-87.
 32. Pascal I, Marin Martinez B. Workers in contact with asbestos: follow-up patterns. *An Sist Sanit Navar*, 2005, 28 (Suppl1): 45-49.
 33. Li L, Sun TD, Zhang X, Lai RN, Li XY, Fan XJ, Morinaga K. Cohort studies on cancer mortality among workers exposed only to chrysotile asbestos: a meta-analysis. *Biomed Environ Sci*, 2004, Dec; 17(4): 459-468.
 34. Muravov OI, Kaye WE, Lewin M, Berkowitz Z, Lybarger JA, Campolucci SS, Parker JE. The usefulness of computed tomography in detecting asbestos-related pleural abnormalities in people who had indeterminate chest radiographs: the Libby, MT, experience. *Int J Hyg Environ Health*, 2005, 208(1-2): 87-99.
 35. Boldu J, Eguia V. Benign pleural diseases induced by asbestos. *An Sist Sanit Navar*, 2005, 28 (Suppl1): 21-28.
 36. Harkin TJ, McGuinness G, Goldring R, Cohen H, Parker JE, Crane M, Naidich DP, Rom WN. Differentiation of the ILO boundary chest roentgenograph (0/1 to 1/0) in asbestosis by high-resolution computed tomography scan, alveolitis, and respiratory impairment. *J Occup Environ Med*, 1996, Jan; 38(1): 46-52.
 37. De Raeve H, Verschakelen JA, Gevenois PA, Mahieu P, Moens G, Nemery B. Observer variation in computed tomography of pleural lesions in subjects exposed to indoor asbestos. *Eur Respir J*, 2001, May; 17(5): 916-921.
 38. Michel JL, Reynier C, Avy G, Bard JJ, Gabrillargues D, Catilina P. An assessment of low-dose high resolution CT in the detection of benign asbestos-related pleural abnormalities. *J Radiol*, 2001, Aug; 82(8): 922-923.
 39. Neri S, Antonelli A, Falaschi F, Boraschi P, Baschieri L. Findings from high resolution computed tomography of the lung and pleura of symptom free workers exposed to amosite who had normal chest radiographs and pulmonary function tests. *Occup Environ Med*, 1994, Apr; 51(4): 239-243.
 40. Piirila P, Lindqvist M, Huuskonen O, Kaleva S, Koskinen H, Lehtola H, Vehmas T, Kivisaari L, Sovijarvi AR. Impairment of lung function in asbestos-exposed workers in relation to high-resolution computed tomography. *Scand J Work Environ Health*, 2005, Feb; 31(1): 44-51.
 41. Lebedova J, Dlouha B, Rychla L, Neuwirth J, Brabec M, Pelclova D, Fenclova Z. Lung function impairment in relation to asbestos-induced pleural lesions with reference to the extent of the lesions and the initial parenchymal fibrosis. *Scand J Work Environ Health*, 2003, Oct; 29(5): 388-395.
 42. Rui F, De Zotti R, Negro C, Bovenzi M. Pleural plaques and ventilatory function: follow-up study. *G Ital Med Lav Ergon*, 2003, Jul-Sep; 25 Suppl (3): 237-238.
 43. Piirila P, Lindqvist M, Huuskonen O, Kaleva S, Koskinen H, Lehtola H, Vehmas T, Kivisaari L, Sovijarvi AR. Impairment of lung function in asbestos-exposed workers in relation to high-resolution computed tomography. *Scand J Work Environ Health*, 2005, Feb; 31(1): 44-51.