

Tobacco in Australia

Facts & Issues

Relevant news and research

4.11 Effects of secondhand smoke on the respiratory system in adults

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Research:

Wang, Q, Goracci, C, Sundar, IK, & Rahman, I. (2023). Environmental tobacco smoke exposure exaggerates bleomycin- induced collagen overexpression during pulmonary fibrogenesis. *Res Sq*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37886473>

Chen, P, Li, Y, Wu, D, Liu, F, & Cao, C. (2023). Secondhand Smoke Exposure and the Risk of Chronic Obstructive Pulmonary Disease: A Systematic Review and Meta-Analysis. *Int J Chron Obstruct Pulmon Dis*, 18, 1067-1076. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37309392>

Balan, I, Mahmood, SN, Jaiswal, R, Pleshkova, Y, Manivannan, D, Negit, S et al (2023). Prevalence of active and passive smoking among asthma and asthma-associated emergency admissions: a nationwide prevalence survey study. *J Investig Med*, 10815589231169239. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37199268>

Heydari, G. (2022). Comparison of Urinary Heavy Metals and Pulmonary Function Test in Cafe Workers Based on Exposure to Secondhand Tobacco Smoke, Tehran 2021. *Int J Prev Med*, 13, 154. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/36910994>

Detorakis, EE, Lasithiotaki, I, Dailiani, K, & Raissaki, M. (2022). HRCT findings in secondhand smokers with respiratory symptoms. *Jpn J Radiol*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/36121625>

Zhao, B, Bai, L, Wan, R, Wang, Y, Qin, L, Xiao, Q et al. (2022). Exposure to second-hand smoke is an independent risk factor of small airway dysfunction in non-smokers with chronic cough: A retrospective case-control study. *Front Public Health*, 10, 912100. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/35937207>

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Mustra Rakic, J, Zeng, S, Rohdin-Bibby, L, Van Blarigan, EL, Liu, X, Ma, S et al. (2022). Elastin Degradation and Lung Function Deterioration with Remote Secondhand Tobacco Smoke Exposure in Never-smokers. *Chronic Obstr Pulm Dis*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/35700534>

Becerra, BJ, Arias, D, & Becerra, MB. (2022). Sex-Specific Association between Environmental Tobacco Smoke Exposure and Asthma Severity among Adults with Current Asthma. *Int J Environ Res Public Health*, 19(9). Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/35564431>

Diaz Del Valle, F, Zakrajsek, JK, Min, SJ, Koff, PB, Bell, HW, Kincaid, KA et al. (2022). Impact of Airline Secondhand Tobacco Smoke Exposure on Respiratory Health and Lung Function Decades After Exposure Cessation. *Chest*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/35271841>

Korsbaek, N, Landt, EM, & Dahl, M. (2021). Second-Hand Smoke Exposure Associated with Risk of Respiratory Symptoms, Asthma, and COPD in 20,421 Adults from the General Population. *J Asthma Allergy*, 14, 1277-1284. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34737580>

Tsuzuki, N, Wasano, K, Kawasaki, T, Minami, S, Kurita, A, Hashimoto, Y et al. (2021). The impact of second-hand smoke on ear, nose, and throat diseases and head and neck cancers in Japan: a cross-sectional study using a questionnaire and secondary data from the national health and nutrition survey. *Acta Otolaryngol*, 1-5. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34669563>

Nur Husna, SM, Siti Sarah, CO, Tan, HT, Md Shukri, N, Mohd Ashari, NS, & Wong, KK. (2021). Reduced occludin and claudin-7 expression is associated with urban locations and exposure to second-hand smoke in allergic rhinitis patients. *Sci Rep*, 11(1), 1245. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33441633>

Gaisberger, M, Wass, RE, Dobias, H, Grabcanovic-Musija, F, Weiss, G, Lamprecht, B et al (2020). Acute Exposure to Environmental Tobacco Smoke: A Controlled Study in Adults with Asthma. *Respiration*, 1-8. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33296904>

Bhat, TA, Kalathil, SG, Miller, A, Thatcher, TH, Sime, PJ, & Thanavala, Y. (2020). Specialized Proresolving Mediators Overcome Immune Suppression Induced by Exposure to Secondhand Smoke. *J Immunol*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33115852>

Kilic, O, Yilmaz, AS, & Oysu, C. (2020). The Effect of Passive Smoking on Mucociliary Clearance and Inferior Concha Reactivity. *Am J Rhinol Allergy*, 1945892420967614. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33086858>

Lee, A, Lee, SY, & Lee, KS. (2020). Association of secondhand smoke exposure with allergic multimorbidity in Korean adolescents. *Sci Rep*, 10(1), 16409. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33009485>

Wang, J, Janson, C, Jogi, R, Forsberg, B, Gislason, T, Holm, M et al (2020). A prospective study on the role of smoking, environmental tobacco smoke, indoor painting and living in old or new buildings on asthma, rhinitis and respiratory symptoms. *Environ Res*, 192, 110269. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/32997968>

Obore, N, Kawuki, J, Guan, J, Papabathini, SS, & Wang, L. (2020). Association between indoor air pollution, tobacco smoke and tuberculosis: an updated systematic review and meta-analysis. *Public Health*, 187, 24-35. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/32889229>

Keogan, S, Alonso, T, Sunday, S, Tigova, O, Fernandez, E, Lopez, MJ et al. (2020). Lung function changes in patients with chronic obstructive pulmonary disease (COPD) and asthma exposed to secondhand smoke in outdoor areas. *J Asthma*, 1-7. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/32441557>

Lima, LL, Cruz, CMS, Fernandes, AGO, Pinheiro, GP, Souza-Machado, C, Lima, VB. (2020). Exposure to secondhand smoke among patients with asthma: a cross-sectional study. *Einstein (Sao Paulo)*, 18, eAO4781. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/31994604>

Veronda, AC, Irish, LA, & Delahanty, DL. (2019). Effect of smoke exposure on young adults' sleep quality. *Nurs Health Sci*. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/31424168>

Pelkonen, MK, Laatikainen, TK, & Jousilahti, P. (2019). The relation of environmental tobacco smoke (ETS) to chronic bronchitis and mortality over two decades. *Respir Med*, 154, 34-39. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/31207539>

Yildiz, Y, Onsel, IO, Ciftci, B, & Ugurlucan, M. (2019). The Negative Influence of Cigarette Smoke on Passive Smokers-Deteriorated Pulmonary Function Tests and Increased Urine Cotinine Levels. *Turk J Anaesthesiol Reanim*, 47(3), 242-243. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/31183473>

Flexeder, C, Zock, JP, Jarvis, D, Verlato, G, Olivieri, M, Benke, G et al. Second-hand smoke exposure in adulthood and lower respiratory health during 20 year follow up in the European Community Respiratory Health Survey. *Respir Res*, 2019. 20(1), 33. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/30764884>

Zubair, T, Abbasi, A, Khan, OA, & Amer, E. Role of passive smoking in non-smoking related chronic obstructive pulmonary disease. *J Pak Med Assoc*, 2018. 68(9), 1310-1315. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/30317256>

Maedel, C, Kainz, K, Frischer, T, Reinweber, M, Zacharasiewicz, A. Increased severity of respiratory syncytial virus airway infection due to passive smoke exposure. *Pediatr Pulmonol*. 2018 Sep;53(9):1299-1306. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/30062859>

Fell, AKM, Svendsen, MV, Kim, JL, Abrahamsen, R, Henneberger, PK, Toren, K, Blanc, PD, Kongerud, J. Exposure to second-hand tobacco smoke and respiratory symptoms in non-smoking adults: cross-sectional data from the general population of Telemark, Norway. *BMC Public Health*. 2018 Jul 6;18(1):843. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/29980242>

Arjomandi, M, Zeng, S, Blanc, PD, Gold, WM. Increasing the Resolution of Chronic Obstructive Pulmonary Disease Definition. Lessons from a Cohort with Remote but Extensive Exposure to Secondhand Tobacco Smoke. *Ann Am Thorac Soc*. 2018 Apr;15(Supplement_2):S122-S123. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/29676628>

Bhat, TA, Kalathil, SG, Bogner, PN, Miller, A, Lehmann, PV, Thatcher, TH, Phipps, RP, Sime, PJ, Thanavala, Y. Secondhand Smoke Induces Inflammation and Impairs Immunity to Respiratory Infections. *J Immunol*. 2018. Mar 19, 2018. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/29555783>

Fazlollahi, MR, Souzanch, G, Nourizadeh, M, Sabetkish, N, Tazesh, B, Entezari, A, Pourpak, Z. The Prevalence of Allergic Rhinitis and It's Relationship With Second-Hand Tobacco Smoke Among Adults in Iran. *Acta Med Iran*. 2017 Nov;55(11):712-717. Available from:

<https://www.ncbi.nlm.nih.gov/pubmed/29307161>

Suyama, K, Kozu, R, Tanaka, T, Ishimatsu, Y, Sawai, T. Exposure to environmental tobacco smoke from husband more strongly impacts on the airway obstruction of nonsmoking women. *Int J Chron Obstruct Pulmon Dis*. 2017 Dec 28;13:149-155. Available from:

<https://www.ncbi.nlm.nih.gov/pubmed/29343954>

Farber, HJ. Imbalance in Level of Tobacco Smoke Exposure Between Groups Likely Explains the "Effect" of Palivizumab on Subsequent Wheezing. *Am J Respir Crit Care Med*, 2017. Available from:

<https://www.ncbi.nlm.nih.gov/pubmed/29019703>

Parro, J, Aceituno, P, Droppelmann, A, Mesias, S, Munoz, C, Marchetti, N, Iglesias, V. Secondhand tobacco smoke exposure and pulmonary function: a cross-sectional study among non-smoking employees of bar and restaurants in Santiago, Chile. *BMJ Open*. 2017 Oct 6;7(10):e017811. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/28988182>

Altet, N, Latorre, I, Jimenez-Fuentes, MA, Maldonado, J, Molina, I, Gonzalez-Diaz, Y, Mila, C, Garcia-Garcia, E, Muriel, B, Villar-Hernandez, R, Laabei, M, Gomez, AC, Godoy, P, de Souza-Galvao, ML, Solano, S, Jimenez-Ruiz, C A, Dominguez, J, PII Smoking SEPAR Working Group. Assessment of the influence of direct tobacco smoke on infection and active TB management. *PLoS One*. 2017 Aug 24;12(8):e0182998. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/28837570>

Lewis, JB, Milner, DC, Lewis, AL, Dunaway, TM, Egbert, KM, Albright, SC, Merrell, BJ, Monson, TD, Broberg, DS, Gassman, JR, Thomas, DB, Arroyo, JA, Reynolds, PR. Up-regulation of Claudin-6 in the distal lung impacts secondhand smoke-induced inflammation. *Int J Environ Res Public Health*. 2016 Oct 17;13(10). pii: E1018. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/27763528>

McCormick-Ricket, I, Canterbury, M, Ghaffar, A, Parada, NA, Carton, TW. Measuring the effect of environmental tobacco smoke on lung function: results from a small observational investigation of acute exposure. *J Occup Environ Med*. 2016 Oct;58(10):1028-1033. Available from:

<http://www.ncbi.nlm.nih.gov/pubmed/27753747>

Simsek, E, Karaman, Y, Gonullu, M, Tekgul, Z, Cakmak, M. The effect of passive exposure to tobacco smoke on perioperative respiratory complications and the duration of recovery. *Braz J Anesthesiol*. 2016 Sep-Oct;66(5):492-8. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/27591463>

Piazza, KM, Wactawski-Wende, J, DeBon, MW, Hovey, KM, Rivard, CL, Smith, DM, Hyland, AJ. Inhaled medication usage in post-menopausal women and lifetime tobacco smoke exposure: The Women's Health Initiative Observational Study. *Maturitas*. 2016 Aug;90:42-8. Available from:

<http://www.ncbi.nlm.nih.gov/pubmed/27282793>

Shargorodsky, J. Secondhand smoke and rhinitis. *Curr Opin Otolaryngol Head Neck Surg*, 2016. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/27054622>

Bauer, RN, Chinthrajah, RS, Andorf, S, Hobson, B, Miller, RL, Nadeau, KC. T-Cell immunophenotyping of second-hand smoke-related asthma. *Ann Am Thorac Soc*. 2016 Mar;13(Suppl 1):S95. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/27027962>

Perret, JL, Walters, H, Johns, D, Gurrin, L, Burgess, J, Lowe, A, Thompson, B, Markos, J, Morrison, S, Thomas, P et al. Mother's smoking and complex lung function of offspring in middle age: A cohort study from childhood. *Respirology*, 2016. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26969872>

Putcha, N, Barr, RG, Han, MK, Woodruff, PG, Bleecker, ER, Kanner, RE, Martinez, FJ, Smith, BM, Tashkin, DP et al. Understanding the impact of second-hand smoke exposure on clinical outcomes in participants with COPD in the SPIROMICS cohort. *Thorax*, 2016. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26962015>

Sawalha, L et al. Pulmonary langerhans cell histiocytosis: Radiologic resolution following cessation of second hand smoking. *Clin Respir J*, 2016. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26763169>

Jukosky, J et al. In vivo cigarette smoke exposure decreases CCL20, SLPI, and BD-1 secretion by human primary nasal epithelial cells. *Front Psychiatry*, 2016. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26793127>

Freire, AP et al. Influence of time and frequency of passive smoking exposure on mucociliary clearance and the autonomic nervous system. *Respir Care*, 2015. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26534999>

Khan, R et al. A new variant of combined pulmonary fibrosis and emphysema from second-hand smoke: a case report and review of literature. *J Clin Med Res*, Oct 2015. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26346712>

Calfee, CS et al. Cigarette smoke exposure and the acute respiratory distress syndrome. *Critical Care Medicine*, 2015. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26010690>

Qorbani M, Yunesian M, and Baradaran HR. Indoor smoke exposure and risk of anthracosis. *Iran J Med Sci*, 2014; 39(6):571-6. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25429181>

Simpson JL, Guest M, Boggess MM, and Gibson PG. Occupational exposures, smoking and airway inflammation in refractory asthma. *BMC Pulm Med*, 2014; 14(1):207. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25526871>

Wentzel JL, Mulligan JK, Soler ZM, White DR, and Schlosser RJ. Passive smoke exposure in chronic rhinosinusitis as assessed by hair nicotine. *Am J Rhinol Allergy*, 2014; 28(4):297-301. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25197916>

News reports:

