

## John Abisheganaden Arputhan



Senior Consultant, Department of Respiratory & Critical Care Medicine, TTSH; Chief and Senior Consultant, Health Services & Outcomes Research, NHG Health; Clinical Associate Professor, YLL School of Medicine, NUS; Professor, LKCMedicine, NTU

### Research Interests:

- Obstructive Airways Disease (Asthma, COPD, Bronchiectasis)
- Pneumonia
- Climate change, Air quality and Respiratory Health
- Respiratory Disease Management
- Value Based Care
- AI & Population Health

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## Biography

Dr Abisheganaden graduated MBBS (NUS) in 1989. He pursued advanced Specialist Training in Respiratory Medicine at Tan Tock Seng Hospital (TTSH), where he is currently a Senior Consultant Respiratory Physician & previous Head of Department. He is active as a clinician-scientist, with special interests in obstructive airway diseases, Pneumonia, Respiratory Disease management, Environmental Sciences and AI & Population Health management. He has more than 120 publications both in local and international peer-reviewed journals with an H-index of 30. He has also co-authored several book chapters on clinical asthma, and another on Radiological Images in Medicine.

## Selected Publications

- Forecasting upper respiratory tract infection burden using high-dimensional time series data and forecast combinations. Lim, J. T., Tan, K. B., **Abisheganaden, J.**, & Dickens, B. L. (2023). *PLOS Computational Biology*, 19(2), e1010892. Impact Factor: 4.8
- Density forecasting of conjunctivitis burden using high-dimensional environmental time series data. Lim, J. T., Choo, E. L. W., Janhavi, A., Tan, K. B., **Abisheganaden, J.**, & Dickens, B. (2023). *Epidemics*, 100694. Impact Factor: 5.3

- Sensitisation to recombinant *Aspergillus fumigatus* allergens and clinical outcomes in COPD. Tiew PY, Narayana JK, Quek MSL, Ang YY, Ko FWS, Poh ME, Jaggi TK, Xu H, Thing KX, Koh MS, Tee A, Hui DSC, **Abisheganaden JA**, Tsanea-Atanasova K, Chew FT, Chorirmall SH. *Eur Respir J*. 2023 Jan 6; 61(1):2200507. PMID: 35926878. Impact Factor: 24.3
- "High-Risk" Clinical and Inflammatory Clusters in COPD of Chinese Descent. Tiew PY, Ko FWS, Narayana JK, Poh ME, Xu H, Neo HY, Loh LC, Ong CK, Mac Aogáin M, Tan JHY, Kamaruddin NH, Sim GJH, Lapperre TS, Koh MS, Hui DSC, **Abisheganaden JA**, Tee A, Tsaneva-Atanasova K, Chotirmall SH. *Chest*. 2020 Jul; 158(1):145-156. Impact Factor: 11.4
- A high-risk airway mycobiome is associated with frequent exacerbation and mortality in COPD. Tiew PY, Dicker AJ, Keir HR, Poh ME, Pang SL, Mac Aogain M, Chua BQY, Tan JL, Xu H, Koh MS, Tee A, **Abisheganaden JA**, Chew FT, Miller BE, Tal-Singer R, Chalmers JD, Chotirmall SH. *Eur Respir J*. 2021 March 11; 57(3):2002050. PMID: 32972986. Impact Factor: 24.3
- Distinct "Immunoallertypes" of Disease and High Frequencies of Sensitization in Non-Cystic Fibrosis Bronchiectasis. Mac Aogáin M, Tiew PY, Lim AYH, Low TB, Tan GL, Hassan T, Ong TH, Pang SL, Lee ZY, Gwee XW, Martinus C, Sio YY, Matta SA, Ong TC, Tiong YS, Wong KN, Narayanan S, Au VB, Marlier D, Keir HR, Tee A, **Abisheganaden JA**, Koh MS, Wang Y, Connolly JE, Chew FT, Chalmers JD, Chotirmall SH. *Am J Respir Crit Care Med*. 2019 Apr 1;199(7):842-853. [IF=17.452]
- Immunological corollary of the pulmonary mycobiome in bronchiectasis: the CAMEB study. Mac Aogáin M, Chandrasekaran R, Lim AYH, Low TB, Tan GL, Hassan T, Ong TH, Hui Qi Ng A, Bertrand D, Koh JY, Pang SL, Lee ZY, Gwee XW, Martinus C, Sio YY, Matta SA, Chew FT, Keir HR, Connolly JE, **Abisheganaden JA**, Koh MS, Nagarajan N, Chalmers JD, Chotirmall SH. *Eur Respir J*. 2018 Jul 27;52(1). [IF=12.339]
- Sputum metagenomics reveals a multidrug resistant *Pseudomonas*-dominant severe asthma phenotype in an Asian population. Ivan FX, Tiew PY, Jaggi TK, Thng KX, Pang PH, Ong TH, **Abisheganaden JA**, Koh MS, Chotirmall SH. *Respirology*. 2024 Dec 2. doi: 10.1111/resp.14863. PMID: 39622769
- Cost-effectiveness and clinical outcomes of artificial intelligence-enhanced screening for diabetic foot ulcers: A simulation study. Sun Y, Ge L, Ang YG, Lo ZJ, Liew H, Tan DM, Chew D, **Abisheganaden JA**. *Ann Acad Med Singap*. 2024 Oct 30;53(10):638-640. doi: 10.47102/annals-acadmedsg.2024220. PMID: 39508698

- Unravelling ChatGPT's potential in summarizing qualitative in-depth interviews. Kon MHA, Pereira MJ, Molina JAC, Yip VCH, **Abisheganaden JA**, Yip W. Eye (Lond). 2025 Feb;39(2):354-358. doi: 10.1038/s41433-024-03419-0. Epub 2024 Nov 5. PMID: 39501005
- Investigating Nonadherence in an Integrated Diabetic Limb Salvage Programme: Reasons, Associated Factors, and Impacts on Care Outcomes. Ge L, Ang YG, Molina J, Sun Y, Tan E, Liew H, Hoe J, Hui Xian Lin J, Koo HY, Low KQ, Choo J, Yap T, Bte Azmi NAS, Tan D, Loh YB, Zhu X, Yong E, Hong Q, Chew T, Chan DYS, Shi C, Law C, Hoi WH, Siow J, Lim JA, **Abisheganaden JA**, Chew D, Lo ZJ. Int J Low Extrem Wounds. 2024 Nov 5;15347346241294178. doi: 10.1177/15347346241294178. PMID: 39497533
- Leveraging artificial intelligence to enhance systematic reviews in health research: advanced tools and challenges. Ge L, Agrawal R, Singer M, Kannapiran P, De Castro Molina JA, Teow KL, Yap CW, **Abisheganaden JA**. Syst Rev. 2024 Oct 25;13(1):269. doi: 10.1186/s13643-024-02682-2. PMID: 39456077
- Residential exposure to *Aspergillus* spp. is associated with exacerbations in COPD. Tiew PY, Leung JM, Mac Aogáin M, Johal P, Jaggi TK, Yuen ACY, Ivan FX, Yang J, Afshar T, Tee A, Koh MS, Lim YH, Wong A, Chandrasekaran L, Dacanay JG, Drautz-Moses DI, Ong TH, **Abisheganaden JA**, Chew FT, Schuster SC, Carlsten C, Chotirmall SH. Eur Respir J. 2024 Nov 28;64(5):2400907. doi: 10.1183/13993003.00907-2024. Print 2024 Nov. PMID: 39362665
- Associations Between Anthropogenic Factors, Meteorological Factors, and Cause-Specific Emergency Department Admissions. Tewari P, Xu B, Pei M, Tan KB, **Abisheganaden J**, Yim SH, Lee Dickens B, Lim JT. Geohealth. 2024 Sep 4;8(9):e2024GH001061. doi: 10.1029/2024GH001061. eCollection 2024 Sep. PMID: 39238531
- Cost-effectiveness analysis of continuous positive airway pressure treatment for obstructive sleep apnea in Singapore from a health system perspective. Meng F, Ang GY, Chang RRY, Lee CP, Tan KB, **Abisheganaden JA**. J Sleep Res. 2024 Sep 3:e14326. doi: 10.1111/jsr.14326. Online ahead of print. PMID: 39228120
- Natural Language Processing in medicine and ophthalmology: A review for the 21st-century clinician. Rojas-Carabali W, Agrawal R, Gutierrez-Sinisterra L, Baxter SL, Cifuentes-González C, Wei YC, **Abisheganaden J**, Kannapiran P, Wong S, Lee B, de-la-Torre A, Agrawal R. Asia Pac J Ophthalmol (Phila). 2024 Jul-Aug;13(4):100084. doi: 10.1016/j.apjo.2024.100084. Epub 2024 Jul 25. PMID: 39059557
- A Nationwide Cohort Study of Delta and Omicron SARS-CoV-2 Outcomes in Vaccinated Individuals With Chronic Lung Disease. Wee LE, Tan JYJ, Chiew CJ, **Abisheganaden JA**, Chotirmall

SH, Lye DCB, Tan KB. Chest. 2024 Oct;166(4):685-696. doi: 10.1016/j.chest.2024.05.017. Epub 2024 Jun 11. PMID: 38871281

- Evaluating the OpenAI's GPT-3.5 Turbo's performance in extracting information from scientific articles on diabetic retinopathy. Gue CCY, Rahim NDA, Rojas-Carabali W, Agrawal R, Rk P, **Abisheganaden J**, Yip WF. Syst Rev. 2024 May 16;13(1):135. doi: 10.1186/s13643-024-02523-2. PMID: 38755704
- A pilot randomized controlled trial exploring the feasibility and efficacy of a human-AI sleep coaching model for improving sleep among university students. Liu J, Ito S, Ngo TM, Lawate A, Ong QC, Fox TE, Chang SY, Phung D, Nair E, Palaiyan M, Joty S, **Abisheganaden J**, Lee CP, Lwin MO, Theng YL, Ho MR, Chia M, Bojic I, Car J. Digit Health. 2024 Apr 17;10: 20552076241241244. doi: 10.1177/20552076241241244. eCollection 2024 Jan-Dec. PMID: 38638406.

#### Notable Research Awards & Grants from Past 5 Years

Name of Awards & Grants	Year Obtained
Ministry of Education (MOE) Academic Research Fund (AcRF) for “Inflammatory, Infectious and Immune perturbation in very early chronic obstructive pulmonary disease (COPD)”. Co-Investigator	2016
National Medical Research Council (NMRC) Covid-19 Grant for “Lung Organoids: A tool of the 4 <sup>th</sup> industrial revolution to study Covid-19 pathogenesis”. Co-investigator	2020
Indoor air microbiomes as a gateway to exposome-guided precision medicine for respiratory disease. National Medical Research Council (NMRC) Clinician-Scientist Award (CSA) grant- Collaborator with PI Dr Sanjay Chotirmall (LKCMedicine, NTU). Funding: SGD 1,410,000. Goal: assesses the exposome as an under-appreciated and key contributor to clinical outcomes in respiratory disease	2022
NMRC 2024 LCG Award (TARIPH). Theme 4 PI for The Academic Respiratory Initiative for Pulmonary Health (TARIPH). Proposal ID: OFLCG23may-0038. Funding: \$1,642,036. Goal: Predicting climatic changes with machine learning / AI to Prevent exacerbations of asthma and COPD.	2024