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## Tackling chronic respiratory disease in low-resource settings

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## LIST OF SCIENTIFIC PUBLICATIONS

### Peer-reviewed

1. Boudewijns EA, van der Kleij RMJJ, Vermond D, Hoffman CM, Chavannes NH, van Schayck OCP, Kirenga B, **Brakema EA**; Facilitators and barriers to the implementation of improved solid fuel cookstoves and clean fuels in low-income and middle-income countries: an umbrella review. *The Lancet Planetary Health - Accepted*. 2022.
2. Anastasaki A, van Bree EM, **Brakema EA**, Tsiligianni I, Sifaki-Pistolla D, Chatzea VE, Crone MC, Karelis A, van der Kleij RMJJ, Poot CC, Reis R, Chavannes NH, Lionis C, on behalf of the FRESH AIR collaborators. Beliefs, Perceptions, and Behaviors Regarding Chronic Respiratory Diseases of Roma in Crete, Greece: A Qualitative FRESH AIR Study. *Frontiers in Public Health*. 2022; 10; B12700
3. Philip KE, Cartwright LL, Westlake D, Nyakoojo G, Kimuli I, Kirenga B, **Brakema EA**, Orme MW, Fancourt D, Hopkinson NS, Jones R and Katagira W. Music and dance in respiratory disease management in Uganda: a qualitative study of patient and healthcare professional perspectives. *BMJ Open* 2021; 11(9): e053189.
4. Tabyshova A, Estesbesova B, Beishenbekova A, Sooronbaev T, **Brakema EA**, Chavannes NH, Postma MJ and van Boven JFM. Clinical Characteristics, Treatment Patterns and Economic Burden of COPD in Kyrgyzstan: A FRESH AIR Study. *Int J Chron Obstruct Pulmon Dis* 2021; 16: 2833-43.
5. Hanafi NS, Agarwal D, Chippagiri S, **Brakema EA**, Pinnock H, Sheikh A, Liew SM, Ng CW, Isaac R, Chinna K, Wong LP, Hussein N, Abu Bakar AI, Pang YK, Juvekar S and Khoo EM; Chronic respiratory disease surveys in adults in low- and middle-income countries: A systematic scoping review of methodological approaches and outcomes. *J Glob Health* 2021; 11: 04026.
6. **Brakema EA**, van der Kleij RMJJ, Poot CC, Chavannes NH, Tsiligianni I, Walusimbi S, An PL, Sooronbaev T, Numans ME, Crone MR, Reis RR and the FRESH AIR collaborators. A systematic approach to context-mapping to prepare for health interventions: development and validation of the SETTING-tool in four countries. *BMJ Glob Health* 2021; 6(1).
7. **Brakema EA**, Vermond D, Pinnock H, Lionis C, Kirenga B, An PL, Sooronbaev T, Chavannes NH, van der Kleij RMJJ and the FRESH AIR collaborators. Implementing lung health interventions in low- and middle-income countries: a FRESH AIR systematic review and meta-synthesis. *Eur Respir J* 2020; 56(1).
8. **Brakema EA**, van der Kleij RMJJ, Vermond D, van Gemert FA, Kirenga B, Chavannes NH and the FRESH AIR collaborators. Let's stop dumping cookstoves in local communities. It's time to get implementation right. *NPJ Prim Care Respir Med* 2020; 30(1): 3.
9. Boudewijns EA, Vermond D, van der Kleij RMJJ, Chavannes NH, van Schayck OCP, Kirenga B and **Brakema EA**. Factors critical to implementation success of cleaner cooking interven-

- tions in low-income and middle-income countries: protocol for an umbrella review. *BMJ Open* 2020; **10**(12): e041821.
10. **Brakema EA**, van Gemert FA, Williams S, Sooronbaev T, Emilov B, Mademilov M, Tabyshova A, An PL, Quynh NN, Hong LHTC, Dang TN, van der Kleij RMJJ, Chavannes NH, de Jong C and the FRESH AIR collaborators. Implementing a context-driven awareness programme addressing household air pollution and tobacco: a FRESH AIR study. *NPJ Prim Care Respir Med* 2020; **30**(1): 42.
  11. van Gemert F, de Jong C, Kirenga B, Musinguzi P, Buteme S, Sooronbaev T, Tabyshova A, Emilov B, Mademilov M, An PL, Quynh NN, Dang TN, Hong LHTC, Chartier R, **Brakema EA**, van Boven JFM and the FRESH AIR Collaborators. Effects and acceptability of implementing improved cookstoves and heaters to reduce household air pollution: a FRESH AIR study. *NPJ Prim Care Respir Med* 2019; **29**(1): 32.
  12. **Brakema EA**, Tabyshova A, Kasteleyn MJ, Molendijk E, van der Kleij RMJJ, van Boven JFM, Emilov B, Akmatolieva M, Mademilov M, Numans ME, Williams S, Sooronbaev T and Chavannes NH. High COPD prevalence at high altitude: does household air pollution play a role? *Eur Respir J* 2019; **53**(2).
  13. **Brakema EA**, Kasteleyn MJ, Molendijk E, Tabyshova A, Van der Kleij, RMJJ, Van Boven JFM, Emilov B, Akmatolieva M, Mademilov M, Numans ME, Williams S, Sooronbaev T, Chavannes NH. 'Frisse' berglucht toch niet altijd gezond? *Huisarts Wet* 2020; **63**(7):70-4.
  14. **Brakema EA**, Tabyshova A, van der Kleij R, Sooronbaev T, Lionis C, Anastasaki M, An PL, Nguyen LT, Kirenga B, Walusimbi S, Postma MJ, Chavannes NH, van Boven JFM and the FRESH AIR collaborators. The socioeconomic burden of chronic lung disease in low-resource settings across the globe - an observational FRESH AIR study. *Respir Res* 2019; **20**(1): 291.
  15. **Brakema EA**, van Gemert FA, van der Kleij R, Salvi S, Puhan M, Chavannes NH and the FRESH AIR collaborators. COPD's early origins in low-and-middle income countries: what are the implications of a false start? *NPJ Prim Care Respir Med* 2019; **29**(1): 6.
  16. Agarwal D, Hanafi NS, Chippagiri S, **Brakema EA**, Pinnock H, Khoo EM, Sheikh A, Liew SM, Ng CW, Isaac R, Chinna K, Ping WL, Hussein NB, Juvekar S and the RESPIRE Collaborators. Systematic scoping review protocol of methodologies of chronic respiratory disease surveys in low/middle-income countries. *NPJ Prim Care Respir Med* 2019; **29**(1): 17.
  17. Poot CC, van der Kleij RM, **Brakema EA**, Vermond D, Williams S, Cragg L, van den Broek JM and Chavannes NH. From research to evidence-informed decision making: a systematic approach. *J Public Health (Oxf)* 2018; **40**(suppl\_1): i3-i12.
  18. Verbiest M, **Brakema E**, van der Kleij R, Sheals K, Allistone G, Williams S, McEwen A and Chavannes N. National guidelines for smoking cessation in primary care: a literature review and evidence analysis. *NPJ Prim Care Respir Med* 2017; **27**(1): 2.
  19. Bahler L, Verberne HJ, **Brakema EA**, Tepaske R, Booij J, Hoekstra JB and Holleman F. Bromocriptine and insulin sensitivity in lean and obese subjects. *Endocr Connect* 2016; **5**(6): 44-52.

**Preprints and research reports:**

1. van Boven JFM, Lucas SJ, Parker G, Kaplan A, Trofor A, Bonevski B, Kirenga B, Ryan D, Pizzichini E, van Ganse E, Wan-Chun Huang E, **Brakema EA**, Gould G, Kocks J, Alison J, Quint JK, Soriano JB, Hurst J, Siddiqi K, Boydell K, Miravittles M, Flores-Valdez MA, Kasteleyn M, FitzGerald M, Boeckmann M, Chaiton M, Roman Rodriguez M, Kulkarni M, Roche N, Chavannes NH, Papadopoulos NC, Behrakis P, Dennis S, Bassi S, Williams S, Maher TB, Siddharthan T, Kamath V, Verhamme KMC on behalf of REG/GACD TORPEDO collaborators. Towards Optimum Reporting of Pulmonary Effectiveness Databases and Outcomes (TORPEDO): identifying a core dataset for asthma and COPD studies. (2021) <https://www.medrxiv.org/content/10.1101/2021.10.14.21264843v1.full.pdf>
2. ten Have P, van Hal PTW, Wichers I, Kooistra J, Hagedoorn P, **Brakema E**, Chavannes N, de Heer P, Ossebaard H. Turning green: the impact of changing to more eco-friendly respiratory healthcare. A carbon and cost analysis of Dutch prescription data. (2022) <https://www.medrxiv.org/content/10.1101/2021.11.20.21266571v3>
3. Visser EH, Wiggers LMC, **Brakema, EA** (2022). Inventarisatie duurzaamheid in universitaire opleidingen in de gezondheidszorg. <https://greenermedischonderwijs.wordpress.com/rapport-inventarisatie-2022/>



## CURRICULUM VITAE

Evelyn Brakema (the Hague, 1989) completed her PhD with the department of Public Health and Primary Care at the Leiden University Medical Centre in the Netherlands.

Her interest in global wellbeing was sparked at age 16 when she travelled as an ambassador of the Rijnlands Lyceum (graduation 2007) to Kenyan slums to see the benefit of educational projects. She subsequently pursued this interest by teaching English to teachers and students in the Peruvian Andes (2007-2008). Later, during her medical studies at the University Medical Centre Utrecht (graduation 2015) she focused further on Global Health with electives in Congo Brazzaville and Nicaragua, and an extra-curricular internship in medical management in Jordan. A year of full-time board membership and several part-time positions with the international student organisation AIESEC showed her the power of international collaboration.

Her passion for global health and international collaboration came together in the Horizon 2020 FRESH AIR project, in which she studied how to implement lung health programmes in low-resource settings, thereby coordinating studies with partners across 14 institutes in nine countries. She was awarded an Erasmus+ Mobility Grant to specialise in implementation science at the University of Edinburgh in Scotland. Her studies have been published in journals such as *The Lancet Global Health*, *The Lancet Planetary Health*, and *the BMJ Global Health*. She has presented her work at over 20 conferences in 14 countries, and served as reviewer for top journals such as *The Lancet*. She was invited to present her findings in the international media, ranging from *the BBC World Services Radio* to a Dutch Podcast for general practitioners. More importantly, her findings were discussed with relevant stakeholders such as the Kyrgyz Minister of Health, the World Bank, and the Clean Cooking Alliance, resulting in hands-on improvements in practice.

Teaching remained an important theme; she co-developed the half minor Global Health Cuba (nominated best half minor 2019), to teach medical students at the Leiden University qualitative research skills in Havana, enabling them to learn from the celebrated Cuban primary care system. She also co-facilitated research courses with the International Primary Care Respiratory Group in Sri Lanka, Romania, and digitally.

Clinically she worked as a medical doctor in a refugee camp in Samos, Greece (Jan/Feb 2017), followed by working in the emergency room of the Flevoziekenhuis, the Netherlands (2020). In 2021 she started the general practitioner training in Leiden, continuing her research concurrently. Throughout her work, she has recognised the need for urgent targeting of the climate crisis as a health crisis, and to mitigate the healthcare sector's contributions to this crisis. This shaped her further career.

She acquired grants for integrating Planetary Health into medical curricula, for supervision of a PhD student (SBOH; lead & Ministry of Health; lead), and for mapping of the ecological impact of certain patient trajectories (ZonMw; co-lead). She co-founded and contributed to several Green Teams and committees before co-founding and chairing the Green Care Alliance (Groene Zorg Alliantie). This alliance unites 30 green committees and over 120 teams across the healthcare sector to catalyse the transition to sustainable healthcare. For these efforts, the alliance won the Best Green Care Idea (Ministry of Health, 2021), and Evelyn was appointed 'Young Talent' by the Dutch *Financieele Dagblad*. She was a panel member of the Dutch launch of the *Lancet Countdown on Health and Climate Change*, and is a regular invited speaker on (inter) national webinars and in the media, such as *Radio 1*, the newspaper *Trouw*, the popular magazine *Libelle*, and the *NOS 8 o'clock news*.

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