**Raanan Raz, PhD**

Associate Professor, Braun School of Public Health and Community Medicine

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**Education**

August 2012 – July 2014 Harvard School of Public Health, Dept. of Environmental Health. Post-doctoral research fellow. Supervisor: Prof. Marc Weisskopf.

2009-2011 School of Public Health, Faculty of Medicine, Tel-Aviv University, Israel. MSc., Epidemiology & Preventive Medicine. Thesis: Health services for children with PDD. Supervisors: Dr. Gabriel Chodick, Dr. Lidia Gabis.

2003-2007 Gonda Interdisciplinary Brain Research Center, Bar-Ilan University, Israel. Ph.D. in the Multidisciplinary Program in Brain Sciences. Dissertation: The influence of essential fatty acids on sleep and AD/HD symptoms in children with AD/HD. Supervisors: Professor Shlomo Yehuda, Professor Rafael Carasso.

2002-2003 English Department, Bar-Ilan University, Israel. MA studies, English Linguistics. (The degree was not completed due to a switch to a direct Ph.D.).

1997-2003 The Department for Mathematics & Computer Science, The Open University, Israel. BSc Computer Science (completed with merits).

**Research Grants**

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| **Funding body** | **Topic** | **Role** | **Period** | **Amount** |
| The Israeli Ministry of National Infrastructures | Short-term health effects of air pollution from limestone and dolomite quarries in Israel | Co-PI (with David Broday) | 1/2016 – 12/2017 | $40,000 |
| Environment and Health Fund | Associations between neonatal thyroid hormones and airborne particulate matter | PI | 6/2016 – 5/2020 | $75,000 |
| The National Institute of Environmental Health Sciences | Air Pollution and Autism in Israel: A Population-Wide Study | Sub-PI (with Marc Weisskopf) | 9/2016 – 8/2019 | $396,000 |
| Israel Ministry of Environmental Protection | The association of exposure in adolescence to environmental pollution in the Haifa bay area with health outcomes at age 17 and cancer incidence in adulthood | Co-PI (with Ronit Sinnereich and Gilad Twig) | 4/2018 – 3/2022 | $260,000 |
| Israel Science Foundation | Exposure to Air Pollutants and Early Childhood Growth | PI | 10/2020 -9/2024 | $285,000 |
| Israel Council for Higher Education | Improving projections of local climate change and its public health impact: a testbed for advanced machine learning methods | Co-PI | 6/2021 – 5/2025 | $620,000 |
| Ring fund, The Hebrew University | Associations between Ambient Air Temperature and Pregnancy Outcomes: The Importance of Synoptic Conditions and Additional Environmental Factors | Co-PI | 6/2021 – 5/2022 | $24,000 |
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**Research Interests**

* Health effects of climate change
* The climate footprint of the healthcare sector
* Environmental risk factors of adverse pregnancy outcomes
* Environmental risk factors of child development
* Causal inference in epidemiology

**Appointments**

2021 - Associate Professor, Braun School of Public Health and Community Medicine, The Hebrew University of Jerusalem.

2015 - 2021 Senior Lecturer, Braun School of Public Health and Community Medicine, The Hebrew University of Jerusalem.

2014 – 2020 Visiting Scientist, Dept. of Environmental Health, Harvard School of Public Health.

2014 – 2015 Environmental Epidemiologist, Public Health Services, Ministry of Health, Israel.

2009 – 2012 Researcher, Medical Informatics Dept., Maccabi Healthcare Services, Israel.

2008 – 2011 Researcher, Child Development Center, Safra Children's Hospital, Sheba Medical Center, Israel.

1997 - 2002 Software Engineer (Israeli software companies)

**Prizes and awards**

2019 Faculty of Medicine Prize for teaching methods development.

2019 One of the best ten articles of the year 2018, *American Journal of Epidemiology* (Live-Birth Bias and Observed Associations Between Air Pollution and Autism. Raz R, Kioumourtzoglou MA, Weisskopf MG)

2018 Francesca Benassi Scientific Award (Distinction), Workshop: Risk and Protective Factors Associated with Autism, Rome, October 2018

2015-2018 Returning Young Scientist fellowship, Environment and Health Fund

2015/2016 Golda Meir Fellowship, The Hebrew University of Jerusalem

2012-2014 Post-doctoral fellowship, Environment and Health Fund

2004-2008 The President's Excellence Scholarship, Bar Ilan University

**Publications**

1. Stafoggia M, Michelozzi P, Schneider A…, Raz R, …, de’Donato. *Joint effect of heat and air pollution on mortality in 620 cities of 36 countries*. Environment International 2023 ; 181:108258.
2. Liu C, Chen R, Sera F, …, Raz R, …, Kan H. *Interactive effects of ambient fine particulate matter and ozone on daily mortality in 372 cities: two stage time series analysis*. BMJ 2023 ; 383:e075203.
3. Barasche-Berdah D, Paltiel O, Raz R. *Active Lifestyle and Mobility of Adults with Vision Impairment: A Multiphase Mixed-Methods Study*. International Journal of Environmental Research and Public Health 2023 ; 20(19), 6839.
4. Youssim I, Erez O, Novack L, Nevo D, Kloog I, Raz R. *Ambient Temperature and Preeclampsia: A Historical Cohort Study*. Environmental Research 2023 ; 238(1):117107.
5. Alterman A, Youssim I, Nevo D, Calderon-Margalit R, Yuval, Broday DM, Hauzer M, Raz R. *Prenatal and postnatal exposure to NO2 and rapid infant weight gain – a population-based cohort study*. Paediatric and Perinatal Epidemiology 2023 ; doi: 10.1111/ppe.13000*.*
6. Lev Bar-Or, Yuval, Twig G, Broday DM, Keinan-Boker L, Paltiel O, Sinnreich R, Tsur D, Derazne E, Raz R. *Associations of Adolescence Exposure to Industrial Air Pollution with Cancer in Young Adults.* Environment & Health 2023 ; 1:53-62*.*
7. Krichevski M, Calderon-Margalit R, Carmi S, Raz R. *The Heritability of Weight Gain in Infancy: A Population-Based Twin Study*. Paediatric and Perinatal Epidemiology 2023 ; *10.1111/ppe.12991.*
8. Abbasi, R, Harari-Kremer R, Haim A, Raz R. *Risk Factors of Congenital Hypothyroidism in Israel*. Israel Medical Association Journal 2022 ; 24:808-814*.*
9. Harari-Kremer R, Calderon-Margalit R, Yuval, Broday DM, Kloog I, Raz R. *Exposure Errors due to Inaccurate Residential Addresses and their Impact on Epidemiological Associations: Evidence from a National Neonate Dataset.* International Journal of Hygiene and Environmental Health 2022 ; 246:114032*.*
10. Raz R, Broday DM, Sinnreich R, Keinan-Boker L, Twig G. *Association between Adolescent Exposure to Environmental Pollution in Haifa Bay Area, Health Status at Age 17, and Adult Cancer Incidence.* Final report, Submitted and confirmed by the Israeli Ministry of Environment, 161-2-9, June 2022.
11. Raz R, Oulhote, Y. *Invited Perspective: Air Pollution and Autism Spectrum Disorder: Are We There Yet?* Environmental Health Perspectives 2022 ; 130(1):11303*.*
12. Dionicio López CF, Alterman A, Calderon-Margalit R, Hauzer M, Kloog I, Raz R. *Postnatal exposure to ambient temperature and rapid weight gain among infants delivered at term gestations: a population-based cohort study*. Paediatric and Perinatal Epidemiology 2022 ; 36(1):26-35*.*
13. Lev Bar-Or, Levy I, Twig G, Broday DM, Lyubarsky A, Derazne E, Tsur D, Simon B, Levin N, Gileles-Hillel A, Bentur L, Raz R. *Associations of Exposure to Nitrogen Oxides with Prevalent Asthma and other Atopic Diseases in Israel.* Environments 2021 ; 8(10), 110*.*
14. Harari-Kremer R, Calderon-Margalit R, Korevaar T, Nevo D, Broday DM, Kloog I, Grotto I, Karakis I, Shtein A, Haim A, Raz R. *Associations between Prenatal Exposure to Air Pollution and Congenital Hypothyroidism*. American Journal of Epidemiology 2021 ; 190(12):2630-2638*.*
15. Magen-Molho H, Weisskopf MG, Nevo D, Shtein A, Chen S, Broday DM, Kloog I, Levine H, Pinto OY, Raz R. *Air pollution and autism spectrum disorder in Israel: A negative control analysis*. Epidemiology 2021 ; 32(6), 773-780*.*

(Shortlisted by the ISEE committee for the Best Environmental Epidemiology of the year 2022)

1. Raz R, Yuval, Lev Bar-Or, Kark JD, Sinnreich R, Broday DM, Harari-Kremer R, Bentur L, Gileles-Hillel A, Keinan-Boker L, Lyubarsky A, Tsur D, Afek A, Levin N, Derazne E, Twig G. *Associations between Exposure to Industrial Air Pollution and Prevalence of Asthma and Atopic Diseases in Haifa Bay Area.* Atmoshphere 2021 ; 12(4), 516*.*
2. Leung M, Kioumourtzoglou MA, Raz R, Weisskopf MG. *Bias due to selection on live births in studies of environmental exposures during pregnancy: A simulation study*. Environmental Health Perspectives 2020 ; 129(4):47001.
3. Zhang S, Yuval, Broday DM, Raz R. *Predictors of Indoor-to-Outdoor Ratio of Particle Number Concentrations in Israel*. Atmoshphere 2020 ; 11(10):1074*.*
4. Dinshtein I, Arazi A, Golan HM, Koller J, Elliott E, Gozes I, Shulman C, Shifman S, Raz R et al. *The National Autism Database of Israel: a Resource for Studying Autism Risk Factors, Biomarkers, Outcome Measures, and Treatment Efficacy*. Journal of Molecular Neuroscience 2020 ; *70(9):1303-1312*.
5. Pinto O, Raz R. *Employment Outcomes after a Birth of a Child with a Developmental Disability: A National Nested Case-Control Study*. Journal of Autism and Developmental Disorders 2020 ; doi: 10.1007/s10803-020-04581-6.
6. Magen-Molho H, Harari-Kremer R, Pinto OY, Kloog I, Dorman M, Levine H, Weisskopf MG, Raz R. *Spatiotemporal Distribution of Autism Spectrum Disorder Prevalence among Birth Cohorts 2000-2011 in Israel*. Annals of Epidemiology 2020; 48:1-8.
7. Spolter F, Kloog I, Dorman M, Novack L, Erez O, Raz R. *Prenatal Exposure to Ambient Air Temperature and Risk of Early Delivery*. Environment International 2020 ; 142:105824.
8. Yuval, Tritscher T, Raz R, Levy Y, Levy I, Broday DM. *Emissions vs. turbulence and atmospheric stability: a study of their relative importance in determining air pollutant concentrations*. Science of the Total Environment 2020 ; 733:139300.
9. Talmi Z, Mankuta D, Raz R. *Birth Weight and Autism Spectrum Disorder: A Population-Based Nested Case-Control Study*. Autism Research 2020 ; 13(4):655-665.
10. Yaniv D, Mizrachi A, Raz R, Tzelnick S, Feinmesser R, Hamzany Y, Vaisbuch Y, Hilly O. *Recurrence predictability by various staging systems in 283 patients after thyroidectomy and radioactive iodine treated for papillary thyroid carcinoma*. Clinical Otolaryngology 2019 ; 44(6):1147-1152.
11. Segev A, Weisskopf MG, Levine H, Pinto O, Raz R. *Incidence Time Trends and Socioeconomic Factors in the Observed Incidence of Autism Spectrum Disorder in Israel: A Nationwide Nested Case-Control Study*. Autism Research 2019 ; 12(12):1870-1879.
12. Yuval, Magen Molho H, Zivan O, Broday DM, Raz R. *Application of a Sensor Network of Low Cost Optical Particle Counters for Assessing the Impact of Quarry Emissions on Its Vicinity*. Atmospheric Environment 2019 ; 211:29-37.
13. Gialloreti LE, Mazzone L, Benvenuto A, Fasano A, Alcon AG, Kraneveld A, Moavero R, Raz R, Riccio MP, Siracusano M, Zachor DA, Marini M, Curatolo P. *Risk and Protective Environmental Factors Associated with Autism Spectrum Disorder: Evidence-Based Principles and Recommendations*. Journal of Clinical Medicine 2019 ; 8(2), 217.
14. Kioumourtzoglou MA\*, Raz R\*, Wilson A, Fluss R, Nirel R, Broday DM, Yuval, Hacker MR, McElrath TF, Grotto I, Koutrakis P, Weisskopf MG. *Traffic-Related Air Pollution and Pregnancy Loss*. Epidemiology 2019 ; 30(1):4-10.

\* These authors contributed equally to this paper.

1. Kloog I, Novack L, Erez O, Just AC, Raz R. *Associations between Ambient Air Temperature, Low Birth Weight and Small for Gestational Age in Term Neonates in Southern Israel*. Environmental Health 2018 ; 17(1):76.
2. Shtein A, Karnieli A, Katra I, Raz R, Levi I, Lyapustine A, Dorman M, Broday DM, Kloog I. *Estimating daily and intra-daily PM10 and PM2.5 in Israel using spatio-temporal hybrid modeling approach*. Atmospheric Environment 2018 ; 191:142-152.
3. Raz R, Kioumourtzoglou MA, Weisskopf MG. *Live Birth Bias and Observed Associations between Air Pollution and Autism*. American Journal of Epidemiology 2018 ; 187(11):2292-2296.

\* Selected as one of the ten best articles of 2018 by American Journal of Epidemiology.

1. Raz R, Levine H, Pinto O, Broday DM, Yuval, Weisskopf MG. *Traffic Related Air Pollution and Autism Spectrum Disorder: A Population Based Nested Case-Control Study in Israel*. American Journal of Epidemiology 2018 ; 187(4):717-725.
2. Raz R, Broday DM. *Short term health effect of limestone and dolomite quarries in Israel*. Final report, Submitted and confirmed by the Israeli Ministry of Energy, ES-02-18, April 2018.
3. Hoffman K, Weisskopf MG, Raz R, Roberts AL, Lyall K, Hoffman EM, Vieira V. *Geographic Patterns of Autism Spectrum Disorder Among Children of Participants in Nurses' Health Study II*. American Journal of Epidemiology 2017 ; 186(7):834-842.
4. Beenstock M, Raz R, Levine H. *Birth Spacing and Risk of Autism - The Importance of Birth Order [comment]*. Pediatrics 2016, <http://pediatrics.aappublications.org/content/137/5/e20153482.comments#birth-spacing-and-risk-of-autism---the-importance-of-birth-order>.
5. Dubnov-Raz G, Mashiach-Arazi Y, Arieli R, Raz R, Constantini NW. Eating attitudes and pre-competition rapid weight loss competitions in young Taekwondo *fighters.* Harefuah 2016 ; 155(5):343-7, 387.
6. Weisskopf M, Tchetgen-Tchetgen EJ, Raz R. *Commentary: On the use of imperfect negative control exposures in epidemiological studies*. Epidemiology 2016 ; 27(3):365-367.
7. Dubnov-Raz G, Mashiach-Arazi Y, Nouriel A, Raz R, Constantini NW. *Can height categories replace weight categories in striking martial arts competitions? A pilot study*. Journal of Human Kinetics 2015 ; 47:91-8.
8. Beenstock M, Raz R, Levine H. *Birth Gap and the Recurrence Risk of Autism Spectrum Disorders: A Population-based Cohort Study*. Research in Autism Spectrum Disorders 2015 ; 17:86-94.
9. Raz R, Roberts AL, Lyall K, Hart JE, Just AC, Laden F, Weisskopf MG. *Autism Spectrum Disorder and Particulate Matter Air Pollution before, during, and after Pregnancy: A Nested Case-Control Analysis within the Nurses' Health Study II Cohort*. Environmental Health Perspectives 2015 ; 123(3):264-70.

\* Selected as the article of the month for April 2015, Children's Environmental Health Network (<http://www.cehn.org>), and amongst NIEHS "papers of the year",(<http://www.niehs.nih.gov/news/newsletter/2016/1/papers/2015-papers/index.htm>), and included in EHP's ASD collection as "Highly cited original research" (<https://ehp.niehs.nih.gov/curated-collections/asds>).

1. Dubnov-Raz G, Khouri Z, Wright I, Raz R, Berger I. *The effect of alpha-linolenic acid supplementation on ADHD symptoms in children: a randomized controlled double-blind study*. Frontiers in Human Neuroscience 2014 ; 8:780.
2. Raz R, Weisskopf MG, Pinto O, Levine H. *Differences in Autism Spectrum Disorders Incidence by Sub-Populations in Israel 1992-2009: A Total Population Study*. Journal of Autism and Developmental Disorders 2014 ; 45(4):1062-9.
3. Arbel Y, Wetzman D, Raz R, Steinvil A, Zelster D, Berliner S, Chodick G, Shalev V. *Red blood cell distribution width and the risk of cardiovascular morbidity and all-cause mortality. A population-based study*. Thrombosis and Haemostasis 2014 ; 111(2):300-7.
4. Dubnov-Raz G, Livne N, Raz R, Cohen AH, Constantini NW. *Vitamin D supplementation and physical performance in adolescent swimmers*. International Journal of Sport Nutrition and Exercise Metabolism 2015 ; 25(4):317-25.
5. Shalev V, Weil C, Raz R, Goldshtein I, Weitzman D, Chodick G. *Trends in statin therapy initiation during the period 2000-2010 in Israel*. European Journal of Clinical Pharmacology 2014 ; 70(5):557-64.
6. Dubnov-Raz G, Livne N, Raz R, Rogel D, Cohen AH, Constantini NW. *Vitamin D Concentrations and Physical Performance in Competitive Adolescent Swimmers*. Pediatric Exercise Science 2014 ; 26:64-70.
7. Leshem-Rubinow E, Steinvil A, Rogowsky O, Zeltser D, Berliner S, Raz R, Chodick G, Shalev V. *Hemoglobin Non Recovery Following Acute Myocardial Infarction is a Biomarker of Poor Outcome: A Retrospective Database Study*. International Journal of Cardiology 2013 ; 169(5):349-53.
8. Raz R, Lerner-Geva L, Leon O, Chodick G, Gabis LV. *A Survey of Out-of-Pocket Expenditures for Children with Autism Spectrum Disorder in Israel*. Journal of Autism and Developmental Disorders 2013 ; 43(10):2295-2302.
9. Morag I, Bart O, Raz R, Shayevitz S, Symchen MJ, Strauss T, Zangen S, Quint J, Gabis L. *Developmental Characteristics of Late Preterm Infants at Six and Twelve Months: a Prospective Study*. Infant Behavior and Development 2013 ; 36(3):451-6.
10. Paran Y, Shalev V, Steinvil A, Justo D, Zimmerman O, Finn T, Berliner S, Zeltser D, Weitzman D, Raz R, Chodick G. *Thrombosis following acute Cytomegalovirus infection: a community prospective study*. Ann Hematol 2013 ; 92(7):969-74.
11. Zandman-Goddard G, Amital H, Shamrayevsky N, Raz R, Shalev V , Chodick G. *Rates of adherence and persistence with allopurinol therapy among gout patients in Israel*. Rheumatology 2013 ; 52(6):1126-31.
12. Eshel N, Raz R, Chodick G, Shalev V, Guindy M. *The Invisible Patient: Characteristic of Elderly Patients who do not visit Primary Care Clinics: a retrospective database study*. Israel Journal of Health Policy Research 2013 ; 2:7.
13. Rabinowich L, Steinvil A, Leshem-Rubinow E, Berliner S, Zeltser D, Rogowsky O, Shalev V, Raz R, Chodick G. *Adherence to statins is associated with reduced incidence of idiopathic venous thromboembolism: real-life data from a large healthcare maintenance organisation.* Heart 2012 ; 98(24):1817-21.
14. Steinvil A\*, Raz R\*, Berliner S, Steinberg DM, Zeltser D, Levran D, Shimron O, Sella T, Chodick G, Shalev V, Salomon O. *Association of common thrombophilias and antiphospholipid antibodies with success rate of in vitro fertilisation.*. Thromb aemost 2012 ; 108(6):1192-7.

\* These authors contributed equally to this paper.

1. Leshem-Rubinow E, Steinvil A, Zeltser D, Berliner S, Rogowsky O, Raz R, Chodick G, Shalev V. *Association of Angiotensin-converting enzyme inhibitor therapy Initiation with a reduction in hemoglobin levels in patients without Renal Failure*. Mayo Clin Proc 2012 ; 87(12):1189-95.
2. Cohen R, Senecky Y, Shuper A, Inbar D, Chodick G, Shalev V, Raz R. *Prevalence of Epilepsy and Attention Deficit/Hyperactivity Disorder: A population-based study*. J Child Neurol 2013 ; 28(1):120-3.
3. Hilly O, Koren R, Raz R, Rath-Wolfson L, Mizrahi A, Hamzany Y, Bachar G, Shpitzer T. *The role of S100-positive dendritic cells in the prognosis of papillary thyroid carcinoma*. American journal of clinical pathology 2013 ; 139(1):87-92.
4. Shavit O, Raz R, Stein M, Chodick G, Schejter E, Ben-David Y, Cohen R, Arbel D, Shalev V. *Evaluating the epidemiology and burden associated with Human Papillomavirus in Israel; accounting for CIN1 and Genital Warts in addition to CIN2/3 and Cervical Cancer*. Applied Health Economics and Health Policy 2012 ; 10(2):87-97.
5. Zucker I, Chodick G, Grunhaus L, Raz R, Shalev V. *Adherence to treatment with Selective Serotonin Reuptake Inhibitors and the risk for fractures and bone loss: a population based cohort study*. CNS Drugs 2012; 26(6): 537-547.
6. Milikovsky-Ayalon M, Sofrin R, Raz R, Shilon-Hadas A, Yehuda M, Mukamel M, Gabis LV. *Preschool diagnostic process and changes in diagnosis of autism spectrum disorder.* Harefuah 2012 ; 151(3):150-154.
7. Raz R, Chodick G, Schejter E, Shalev V. *Uptake of Pap smears among women in a large Israeli HMO between 2006 and 2008.* Public Health 2012 ; 126(7):594-9.
8. Hilly O, Raz R, Vaisbuch Y, Strenov Y, Segal K, Koren R, Shvero J. *Thyroid gland involvement in advanced laryngeal cancer – Association with clinical and pathologic characteristics*. Head & Neck 2012 ; 34(11):1586-90.
9. Dubnov-Raz G. Weiss R, Raz R, Arieli R, Constantini N. *Acanthosis nigricans and truncal fat in overweight and obese children*. Journal of Pediatric Endocrinology & Metabolism 2011 ; 24(9-10):697-701).
10. Gabis LV, Kesner Baruch Y, Jokel A, Raz R. *Psychiatric and autistic Comorbidity in fragile X syndrome across ages*. Journal of Child Neurology, 2011; 26:940-948.
11. Hilly O, Raz R, Shvero J, Leikin A, Aod R, Rath-Wolfson L. *Quantitative, computer based image analysis versus manual analysis in the immunohistochemical evaluation of topoisomerase – II alpha expression in laryngeal carcinoma*. Medical Connections 2011; 1(21): 49-55.
12. Gabis L, Raz R. *The Knowledge Base of Israeli Pediatricians in the Area of Child Development*. Harefuah 2010; 149(1):157-160.
13. Gabis L, Raz R, Kesner-Baruch Y. *Paternal Age in Autism Spectrum Disorder, Attention Deficit / Hyperactivity Disorder and the General Population.* Brief communication.Pediatric Neurology, 2010; 43(4):300-302.
14. Raz R, Gabis L. *Essential Fatty Acids and Attention Deficit / Hyperactivity Disorder: a Systematic Review*. Developmental Medicine & Child Neurology, 2009; 51: 580-592.
15. Raz R, Carasso RL, Yehuda S. *The influence of short-chain Essential Fatty Acids on children with Attention Deficit / Hyperactivity Disorder: A double-blind placebo-controlled study*. Journal of Child and Adolescent Psychopharmacology 2009; 19(2): 167-177.
16. Gabis L, Shklar B, Kesner-Baruch Y, Raz R, Gabis E, Geva D. *Pain Reduction using Transcranial Electrostimulation: A Double Blind "Active Placebo" Controlled Trial*. Journal of Rehabilitation Medicine 2009; 41: 256-261.

**Invited Lectures**

* Raz R. Greenhouse gas emissions from the healthcare sector. Amrita Vishwa Vidyapeetham, Armitapuri, India. September 2023.
* Raz R. Effects of climate change on pregnancy outcomes and child development. Amrita Institute of Medical Sciences and Research Centre, Kochi. India, September 2023.
* Raz R. Negative Controls: From Theory to Practice, and Back. A One-Day Environmental Epidemiology and Exposure Science Conference, Be'er Sheva, July 2022.
* Raz R. Critical Windows of Exposure during Pregnancy: Relevant Methodological Issues and Future Directions. EHF workshop on future directions in air pollution and health research, Tel Aviv, July 2019.
* Raz R. Traffic-related air pollution and pregnancy loss: A time series analysis using live births data. EHF Annual Conference, Tel Aviv, December 2018.
* Raz R. Environmental pollution and diabetes – is there an association? The Annual Conference of the Israeli Diabetes Association, Ramat Gan, December 2018.
* Raz R. Challenges in conducting independent research in environmental epidemiology. The Annual Conference for Science and the Environment, Weizmann Institute, June 2018.
* Raz R. Air Pollution and Pregnancy Loss. Conference of RISE, Strasbourg, France, November 2017.
* Raz R, Magan-Molho H, Levi H, Broday D, Yuval. Indoor and Outdoor Particle Number Concentrations in the City of Elad: Initial Results. Conference of EHF, Jerusalem, December 2017.
* Raz R. Air Pollution and Autism: A Review of Epidemiological Studies. Conference of RISE, Strasbourg, France, November 2017.

**Presentations in Scientific Meetings**

* Alterman N, Nevo D, Calderon-Margalit R, Youssim I, Weinstein B, Kloog I, Hauzer M, Raz R. The association between prenatal and postnatal ambient temperature and rapid infant weight gain: a population-based cohort study. International Society for Environmental Epidemiology (ISEE) Annual conference, Taiwan, 2023.
* Nevo D, Weinstein B, Raz R. Implementation of the Negative Control Exposure Method in Environmental Epidemiology: A Simulation Study. International Society for Environmental Epidemiology (ISEE) Annual conference, Taiwan, 2023.
* Magen-Molho H, Weisskopf MG, Nevo D, Shtein A, Chen S, Broday DM, Kloog I, Levine H, Pinto O, Raz R. Air Pollution and Autism Spectrum Disorder in Israel: A Negative Control Analysis. International Society for Environmental Epidemiology (ISEE) virtual conference, 2020.
* Pinto O, Raz R. Employment Outcomes after a Birth of a Child with a Developmental Disability: A National Nested Case-Control Study. Israeli Meeting for Autism Research, Ben-Gurion University, February 2020.
* Raz R. Air Pollution and Autism: A Review of Epidemiological Studies. Israeli Society for Biological Psychiatry annual conference, Kfar Blum, March 2019.
* Kioumourtzoglou MA, Raz R, Wilson A, Liew Z, Weisskopf M. Symposium: Critical exposure windows, selection biases and novel methods: methodological complexities in reproductive environmental epidemiology. International Society for Environmental Epidemiology (ISEE) conference, Ottawa, 2018.
* Kloog I, Novack L, Erez O, Just AJ, Raz R. Associations between Ambient Air Temperature, Low Birth Weight and Small for Gestational Age in Term Neonates in Southern Israel. Israeli Public Health Conference, Ramat-Gan, Israel, June 2018.
* Raz R, Kioumourtzoglou MA, Weisskopf M. Live birth bias may play a role in epidemiological analyses of air pollution and autism spectrum disorder. INSAR, Rotterdam, the Netherlands, May 2018.
* Raz R, Kioumourtzoglou MA, Weisskopf M. Live birth bias may play a role in epidemiological analyses of air pollution and autism spectrum disorder. Conference of ISEE Young (ISEE-Europe), Freisig, Germany, March 2018.
* Raz R. Epidemiology of autism spectrum disorder. The Hebrew University Center of Autism, Jerusalem, February 2018.
* Raz R, Roberts AL, Lyall K, Hart J, Just AC, Laden F, Ascherio A, Weisskopf M. Exposure to Particulate Matter Air Pollution during Pregnancy Is Associated With Increased Risk for Autism Spectrum Disorder. Conference of ISEE, ISES and ISIAQ, Basel, 2013.
* Raz R, Lerner-Geva L, Leon O, Chodick G, Gabis LV. A Survey of Out-of-Pocket Costs for Children with Autism Spectrum Disorder in Israel. International Meeting For Autism Research (IMFAR), Toronto, 2012.
* Raz R, Leshem-Rubinow E, Steinvil A, Berliner S, Chodick G, Shalev V. Association between ACE inhibitors and levels of hemoglobin. The annual meeting of ISPOR Israel, Herzeliya, 2011.
* Raz R, Guindy M, Shalev V, Levtzion-Korach O. The quality of pharmacuetical information during hospital admission: A retrospective study of data from Assaf Harofe hospital and Maccabi Healthcare Services. The annual meeting of the Israeli association for information technology in health, Tel Aviv, 2011.
* Raz R, Shavit O, Cohen R, Chodick G, Shalev V, Stein M. *Burden analysis of HPV in Maccabi Healthcare Services.* The 5th meeting of the forum for research in epidemiology of infectious diseases and bioterror, Tel-Aviv University, 2010.
* Raz R. *Essential Fatty Acids Supplementation for Children with ADHD: A Systematic Review of Clinical Trials*. The annual conference of the Israeli Society for Clinical Pediatrics, Tel-Aviv, 2009.
* Raz R. *Long-Chain Polyunsaturated Fatty Acids for Preterm Infants*. A conference in memorial of Dr. Liana Bartal, Tel Aviv, 2008.
* Raz R. *Essential Fatty Acids Supplementation for children with Attention Deficit / Hyperactivity Disorder (ADHD): A double-blind placebo-controlled trial*. The Bi-annual conference of the Israeli Centers for Child Development, Tel-Aviv, 2008.

**Poster presentations at conferences**

* Harari-Kremer R, Calderon-Margalit R, Yuval, Broday D, Kloog I, Raz R. Exposure Errors due to Inaccurate Residential Addresses and their Impact on Epidemiological Associations: Evidence from a National Neonate Dataset. International Society for Environmental Epidemiology annual conference, Athens, 2022.
* Girgin S, Rostkier-Edelstein D, Kloog I, Novack L, Erez O, Raz R. Association of Weather Regimes and Ambient Temperature with the Timing of Birth in Southern Israel. International Society for Environmental Epidemiology annual conference, Athens, 2022.
* Spolter F, Kloog I, Dorman M, Novack L, Erez O, Raz R. Prenatal Exposure to Ambient Air Temperature and Risk of Early Delivery. International Society for Environmental Epidemiology annual conference (virtual), 2020.
* Harari-Kremer R, Broday DM, Kloog I, Calderon-Margalit R, Grotto I, Karakis I, Shtein A, Nevo D, Korevaar T, Raz R. Associations between Prenatal Exposure to Air Pollution and Congenital Hypothyroidism. International Society for Environmental Epidemiology annual conference (virtual), 2020.
* Zhang S, Yuval, Broday DM, Raz R. Predictors of Indoor-Outdoor Ratio of Particle Number Concentrations in Israel. International Society for Environmental Epidemiology annual conference (virtual), 2020.
* Raz R, Lev Bar-Or R, Gileles-Hillel A, Levy I, Kloog I, Sinnereich R, Lyubarsky A, Twig G. Associations of early-life exposure to particulate matter and nitrogen oxides with prevalent asthma and other atopic diseases at age 17 in Israel: A population-based national study. International Society for Environmental Epidemiology annual conference (virtual), 2020.
* Harari-Kremer R, Broday DM, Kloog I, Calderon-Margalit R, Grotto I, Karakis I, Shtein A, Raz R. Associations Between Exposure to Air Pollution and Congenital Hypothyroidism. Environment and Health Fund annual conference, Tel Aviv, 2019.
* Spolter F, Kloog I, Dorman M, Novack L, Erez O, Raz R. Prenatal Exposure to Ambient Air Temperature and Risk of Early Delivery. Environment and Health Fund annual conference, Tel Aviv, 2019.
* Magen-Molho H, Pinto O, Broday DM, Kloog I, Shtein A, Levine H, Weisskopf MG, Raz R. Air Pollution and Autism Spectrum Disorder in Israel: A Negative Control Analysis. Environment and Health Fund annual conference, Tel Aviv, 2019.
* Magen-Molho H, Harari-Kremer R, Pinto O, Kloog I, Levine H, Weisskopf MG, Raz R. Spatiotemporal distribution of Autism Spectrum Disorder incidence among children born in Israel during 2000-2011. Israeli Public Health Conference, Ramat-Gan, Israel, June 2018.
* Kloog I, Novack L, Erez O, Just AJ, Raz R. Associations between Ambient Air Temperature, Low Birth Weight and Small for Gestational Age in Term Neonates in Southern Israel. International Society for Environmental Epidemiology, Ottawa, 2018.
* Raz R, Kioumourtzoglou MA, Weisskopf M. Live birth bias may play a role in epidemiological analyses of air pollution and autism spectrum disorder. The Israeli Statistical Association, Weizmann Institute, 2018.
* Raz R, Levine H, Broday D, Yuval, Pinto O, Weisskopf M. Associations between Exposure to Ambient Nitrogen Dioxide and Autism Spectrum Disorder in Israel: A Population-Based Nested Case-Control Study. International Society for Environmental Epidemiology, Rome, 2016.
* Raz R, Levine H, Broday D, Yuval, Pinto O, Weisskopf M. Associations between Exposure to Ambient Nitrogen Dioxide and Autism Spectrum Disorder in Israel: A Population-Based Nested Case-Control Study. International Meeting For Autism Research, Baltimore, 2016.
* Eshel N, Raz R, Guindy M. Who are the people we don't see? The characteristics of elderlies that do not visit primary doctors. The annual conference of family doctors in Israel, Tel Aviv, 2011.
* Raz R, Chodick G, Schejter E, Shalev V. *Human Papillomavirus vaccination in a large health maintenance organization in Israel*. The annual meeting of ISPOR Israel, Herzeliya, 2011.
* Zucker I, Chodick G, Goldstein I, Raz R, Shalev V. *SSRI use and the risk of osteoporotic fractures or bone loss*.  The annual meeting of ISPOR Israel, Herzeliya, 2011.
* Hilly O, Raz R, Vaisbuch Y, Strenov Y, Segal K, Shvero J. Thyroid Gland Involvement in Advanced Laryngeal Cancer – Association to Clinical and Pathologic Characteristics. The 9th Research Fair Of Tel Aviv University Faculty of Medicine, Tel-Aviv, 2010.
* Kraus-houminer E, Levy-Shraga Y, Landau H, Pinhas-Hamiel O, Raz R, Dollberg D, Gabis L. Developmental outcomes in children with congenital hyperinsulinism (CHI) disease. The Bi-annual conference of the Israeli Centers for Child Development, Jerusalem, 2010.
* Shavit O, Raz R, Stein M, Chodick G, Shalev V, Schejter E, Cohen R. From cancer to a wart: Evaluating the burden of genital warts caused by HPV. The annual conference of the Israel national institute for health policy research, Tel-Aviv, 2010. Best poster award.
* Hacham K, Bar-Yosef O, Shilon-Hadas A, Raz R, Brat O, Rabinovits G, Gal-on I, Quint J, Gabis L. Influence of a multisensory stimulation program on parental stress in child development in the first year of life. The annual conference of the Israeli Society for Clinical Pediatrics, Tel-Aviv, 2009.
* Gabis L, Raz R, Kesner Y, Reichman B. Paternal Age and Autism Spectrum Disorder (ASD) versus ADHD in the Offspring. The Child Neurology Society (CNS) 38th Annual Meeting, Louisville, 2009.
* Misgav-Tsubary N, Sofrin R, Raz R, Shani S, Gabis L. Testing Psychological Abilities in Children with Cerebral Palsy. The Bi-annual conference of the Israeli Centers for Child Development, Tel-Aviv, 2008. Best poster award.
* Zivotofsky A, Caspi A, Raz R. "Voluntary Nystagmus and slow eye movements are independently controlled". The Association for Research in Vision and Opthalmology, Annual meeting 2006.

**Teaching**

2014/15 Technion, Israel Institute of Technology: Introduction to environmental epidemiology

Hadassah College: Environmental epidemiology

2015/16, 2016/17 Introduction to Public Health for Medical Students (Teaching Assistant)

2015/16 Environmental and Occupational Health for International students (with Dr. Hagai Levine)

2015/16 – Environmental and Occupational Health for Israeli students\*

2016/17 – 2019/20 Epidemiology and Research Methods 1 (with Prof. Ronit Calderon)

2016/17 – Epidemiology and Research Methods 2 (with Prof. Ronit Calderon)

2017/18 Research Meetings (with Prof. Ronit Calderon)

2017/18 - Selected Topics in Epidemiology (Causal Inference)

2020/21 – Epidemiology and Research Methods 1\*\*

2021/22 Integrative Workshop in Public Health (with Ora Paltiel)

2023/24 - Climate Change and Health

\* Converted to a hybrid (flipped classroom) course in 2016/17

\*\* Converted to a hybrid (flipped classroom) course in 2020/21

**Membership in professional societies and research centers**

* International Society for Environmental Epidemiology (ISEE)
* The Israeli Association of Ecology

**Other Activities**

2023 - Research Committee, Faculty of Medicine, The Hebrew University of Jerusalem

2023 Member, the World Health Organization expert panel on “Development of a core outcome set for maternal and perinatal research and surveillance during disease outbreaks, epidemics and pandemics”.

2022 - Bernard L. and Mary T. Sachs Chair in Cancer Studies

2022 - Member, Editorial Board, Ecology & Environment (the journal of the Israeli society for ecology and environment sciences)

2021 Member, Israel Science Foundation professional scientific committee

2021 - Team member, Negev Environmental Health Research Institute, <https://www.nehri.org/>

2021 - Collaborator, Multi-Country Multi-City (MCC) Collaborative Research Network, <https://mccstudy.lshtm.ac.uk/>

2021 - The Autism Center's academic advisory committee, HUJI

2020 - Writing an expert opinion for the Israeli state attorney about the health effects of nitrogen oxides for a lawsuit in the Dieselgate emissions fraud.

2018 - Member of the consulting committee for environmental epidemiology at the Israeli Ministry of Health.

2018 Member of the scientific committee, ISEE-Europe 2018.

Reviewer, Israel Medical Corps grants

2017/18 School seminar coordinator

2017, 2019 Reviewer, Israel Science Foundation

2017 - 2019 Scholarships Committee, Faculty of Medicine, The Hebrew University of Jerusalem

Associate member, Europe chapter council, International Society for Environmental Epidemiology (ISEE)

2017 - 2018 Advanced Teaching Methods Committee, Faculty of Medicine, The Hebrew University of Jerusalem

2019 - Head, environment and health MPH track, Braun School of Public Health and the Advanced School of Environmental Studies (HUJI)

2019 - 2020 Ph.D. committee, Braun School of Public Health

2019 - The Sustainability Center's academic advisory committee, HUJI

2016 - 2021 Teaching committee, Braun School of Public Health; Head of the committee since 2020.

MPH admission committee, Braun School of Public Health; Head of the committee since 2018.

2016 - Pears seed grant review committee, Braun School of Public Health

2015 Academic organization of a 1-day workshop: "Advanced Topics in Environmental Epidemiology", Tzuba, Israel.

**Manuscript reviewer**: New England Journal of Medicine; Environmental Health Perspectives; Environment International; International Journal of Hygiene and Environmental Health; Pediatrics; Epidemiology; Research in Autism Spectrum Disorder; Journal of Autism and Developmental Disorders; Molecular Autism; Journal of Pregnancy & Child Health; American Journal of Public Health; Developmental Medicine & Child Neurology; Environmental Pollution; European Child & Adolescent Psychiatry; Clinical Nutrition; Neuropharmacology; Health Services Insights; Prostaglandins, Leukotrienes & Essential Fatty Acids; Israel Journal of Health Policy Research; Environmental Research; Reproductive Toxicology; Human Reproduction.

**Supervision of students and post-doctoral fellows**

Post-doctoral fellows

1. Neora Alterman

Ph.D. students

1. Hadas Magen-Molho (completed)
2. Ruthie Harari-Kramer (completed)
3. Selin Girgin

MPH students

1. Tehila Mazal (completed)
2. Siyu Zhang (completed)
3. Naomi Assegied (completed)
4. Ziv Talmi (completed)
5. Soe Moe (completed)
6. Deborah Berdah (completed)
7. Faige Spolter (completed)
8. Carlos Dionicio (completed magna cum laude)
9. Reem Abbasi (completed magna cum laude)
10. Selin Girgin (completed summa cum laude)
11. Tzach Ben Menachem (completed)
12. Masha Krichevski (completed magna cum laude)
13. Efrat Goloventitz
14. Danielle Ben-Yehuda
15. Rafaela Chorgin