

Paolo Vineis

Professor and Chair of Environmental Epidemiology, Imperial College London.

Professor Paolo Vineis is a leading researcher in the fields of molecular epidemiology and NCDs. He is Chair of Environmental Epidemiology at Imperial College, London. His latest research activities focus on investigating biomarkers from omic platforms (including metabolomics and epigenetics) in large epidemiological studies. He has more than 1,000 publications (many as leading author) in journals such as Nature, Science, Lancet, Lancet Oncology. He is a member of various international scientific and ethics committees (including the Committee of the US National Academy of Sciences on 21st Century Risk Assessment) and vice-chair of the Ethics Committee at the International Agency for Research on Cancer (IARC, WHO). Professor Vineis has extensive experience in leading international projects. He has coordinated the European Commission FP7-funded Exposomics project and the Horizon 2020-funded project Lifepath. He is the director of the Unit of Molecular and Genetic Epidemiology, Italian Institute for Genomic Medicine, Torino, Italy and leads the Exposome and Health theme of the MRC-PHE Centre for Environment and Health at Imperial College (<http://www1.imperial.ac.uk/medicine/people/p.vineis>). He has published several books including "Health without borders: epidemics in the era of globalization". Springer, 2017. He is engaged in policy-making as Vice-President of the High Council of Health (Consiglio Superiore di Sanita', advisor to the Health Minister) in Italy, and as a member of Cancer Prevention Europe (affiliated with Cancer Mission Europe). He has been active also in the field of climate change and health, with original research conducted in Bangladesh that demonstrated an increased risk of hypertension in relation to salinity in drinking water due to sea level rise.

Qualifications

1976 - University of Torino, MD

1979 – University of Torino, PhD in Occupational Medicine

Current appointments

2001 - Adjunct Professor of Epidemiology, J Mailman School of Public Health, Columbia University, New York

2004 - Professor and Chair of Environmental Epidemiology, Imperial College London

2010 - Director, Unit of Genetic and Molecular Epidemiology, Italian Institute for Genomic Medicine, Torino Italy

Prizes/ Awards/ Academy memberships

2005 Distinguished lectures in occupational and environmental epidemiology: "The integration of mechanistic data into the evaluation of environmental carcinogens", National Cancer Institute, Bethesda (USA);

2007 -Fellow, Faculty of Public Health, The Royal Colleges of Physicians of the UK

2010 Enrico Fermi Award for best Italian book on public understanding of science;

2018 Knighted by the President of the Italian Republic for scientific merits; Member of the Academy of Science, Torino Italy

Selected Membership of Scientific Committees

2005 - Committee on Carcinogenicity of Chemicals of the UK Department of Health (COC)

2008 – Member, Ethics and Governing Council , UK Biobank, Wellcome Trust

2008 – Member, Scientific Advisory Board, Canceropole Paris Ile-de-France

2010 – Vice-Chair, Ethical Committee, International Agency for Research on Cancer

Research activities June 2009-now

Environmental epidemiology – (a) Air pollution in EPIC and other European cohorts in the ESCAPE project (ICL PI, funded by EU); (b) EnviroGenoMarkers (EU funded, ICL PI): application of omics and epigenetics to lymphomas and breast cancer in several European cohorts in relation to environmental exposures (in collaboration with Hector Keun, SORA); (c) database of biomarkers for environmental epidemiology in the ECNIS consortium (EU-funded, ICL PI); (d) use of epigenetics in longitudinal studies, collaboration with IARC (Z Herceg); (e) Exposomics network: omics in risk assessment for air pollution and water contamination, funded by the European

Commission (PI, 8.9M euros); (f) Lifepath network, Socio-economic status and healthy ageing, funded by the EC (H2020, 6M euros)(PI); (g) effects of climate change in Bangladesh (funded by Grantham Institute, ICL; in collaboration with H Weather, Dept. of Hydrology, ICL).

Nutritional epidemiology – One-carbon metabolism (OCM): (a) study of plasma OCM markers in a nested case-control study on pancreas cancer in EPIC (funded by WCRF); (b) same in lung cancer (funded by WCRF), and application of structural equation models to OCM pathways; (c) development of neuroepidemiological research in the EPIC cohort, in relation to diet and genetic variants (in collaboration with L Middleton, Neurology ICL).

Genetic research – (a) collaboration in GWAS on bladder, lung cancer and lymphomas; (b) Hypergenes: GWAS on hypertension and intermediate phenotypes (EU-funded, ICL PI).

Biostatistical modelling - (a) use of profile regression in prospective and case-control studies on lung cancer (in collaboration with J Molitor and S Richardson and the ILCCO consortium; U19 NIH grant led by C Amos); (b) prediction models for CVD, based on the EPIC cohort.

SELECTED GRANTS (FROM MOST RECENT)

- 2018-2022 *STOP - Science and Technology in childhood Obesity Policy*, European Commission (principal investigator) (£378,305)
- 2019 -2021 *Colt – Are unstable jobs such as the growing "gig economy" associated with biological age acceleration? The Colt Foundation* (principal investigator) (£184,249)
- 2015-2019 *Lifepath – Socio-economic status, omics and ageing*; European Commission (principal investigator) (€ 5,990,000)
- 2014-2016 *Epigenair – methylation and air pollution*; European Commission (principal investigator) (€ 230,000)
- 2012-2016 *Exposomics - Environmental exposures and omics in Europe*; European Commission (principal investigator) (€ 8,740,000)
- 2012-2017 *Towards personalised cancer care: circulating nucleic acids for early detection and monitoring of breast cancer*, Cancer Research UK (co-investigator) (£ 1,314,013)
- 2010-2012 *Molecular Epidemiology of Cancer, including epigenetics*; Compagnia di San Paolo, Torino, HuGeF Foundation (principal investigator) (€ 998,000 over 5 years)
- 2010-2013 *Transphorm - Air pollution mitigation in Europe*; European Commission (co-investigator) (€ 244,000)
- 2009-2012 *EnviroGenoMarkers - Biomarkers in environmental cancer*, European Commission (co-investigator) (€ 437,000)
- 2008-2012 *ESCAPE Burden of air pollution related diseases in Europe*; European Commission (co-investigator) (€ 420,000)

Selected publications :

(H-index 138 (Google scholar), 81,000 citations. Top 20 most cited Imperial College scientists)

Seferidi P, Scrinis G, Huybrechts I, Woods J, Vineis P, Millett C. The neglected environmental impacts of ultra-processed foods. *Lancet Planet Health*. 2020 Oct;4(10):e437-e438. doi: 10.1016/S2542-5196(20)30177-7. PMID: 33038314.

Deschasaux M, Huybrechts I, Julia C, Hercberg S, Egnell M, Srouf B, Kesse-Guyot E, Latino-Martel P, Biessy C, Casagrande C, Murphy N, Jenab M, Ward HA, Weiderpass E, Overvad K, Tjønneland A, Rostgaard-Hansen AL, Boutron-Ruault MC, Mancini FR, Mahamat-Saleh Y, Kühn T, Katzke V, Bergmann MM, Schulze MB, Trichopoulou A, Karakatsani A, Peppas E, Masala G, Agnoli C, De Magistris MS, Tumino R, Sacerdote C, Boer JM, Verschuren WM, van der Schouw YT, Skeie G, Braaten T, Redondo ML, Agudo A, Petrova D, Colorado-Yohar SM, Barricarte A, Amiano P, Sonestedt E, Ericson U, Otten J, Sundström B, Wareham NJ, Forouhi NG, Vineis P, Tsilidis KK, Knuppel A, Papier K, Ferrari P, Riboli E, Gunter MJ, Touvier M. Association between nutritional profiles of foods underlying Nutri-Score front-of-pack labels and mortality: EPIC cohort study in 10 European countries. *BMJ*. 2020 Sep 16;370:m3173. doi: 10.1136/bmj.m3173. PMID: 32938660; PMCID: PMC7491938.

Saltelli A, Bammer G, Bruno I, Charters E, Di Fiore M, Didier E, Nelson Espeland W, Kay J, Lo Piano S, Mayo D, Pielke R Jr, Portaluri T, Porter TM, Puy A, Rafols I, Ravetz JR, Reinert E, Sarewitz D, Stark PB, Stirling A, van der Sluijs J, Vineis P. Five ways to ensure that models serve society: a manifesto. *Nature*. 2020 Jun;582(7813):482-484. doi: 10.1038/d41586-020-01812-9. PMID: 32581374.

Ursin G, Stenbeck M, Chang-Claude J, Gunter M, Kaaks R, Kampman E, Lambe M, van Leeuwen F, Magnusson P, Malila N, Nilbert MC, Romundstad PR, Rööslä M, Ryel AL, Dos-Santos-Silva I, Storm HH, Swerdlow A, Vineis P, Knudsen GPS. Data must be shared-also with researchers outside of Europe. *Lancet*. 2019 Nov 23;394(10212):1902-1903. doi: 10.1016/S0140-6736(19)32633-9. Epub 2019 Nov 7. PMID: 31708191.

Ursin G, Malila N, Chang-Claude J, Gunter M, Kaaks R, Kampman E, Lambe M, van Leeuwen F, Magnusson P, Nilbert MC, Romundstad PR, Rööslä M, Ryel AL, Dos-Santos-Silva I, Stenbeck M, Storm HH, Swerdlow A, Vineis P, Knudsen GPS. Sharing data safely while preserving privacy. *Lancet*. 2019 Nov 23;394(10212):1902. doi: 10.1016/S0140-6736(19)32603-0. Epub 2019 Nov 7. PMID: 31708190.

Berger E, Castagné R, Chadeau-Hyam M, Bochud M, d'Errico A, Gandini M, Karimi M, Kivimäki M, Krogh V, Marmot M, Panico S, Preisig M, Ricceri F, Sacerdote C, Steptoe A, Stringhini S, Tumino R, Vineis P, Delpierre C, Kelly-Irving M. Multi-cohort study identifies social determinants of systemic inflammation over the life course. *Nat Commun*. 2019 Feb 15;10(1):773. doi: 10.1038/s41467-019-08732-x. PMID: 30770820; PMCID: PMC6377676.

McMaster ML, Berndt SI, Zhang J, Slager SL, Li SA, Vajdic CM, Smedby KE, Yan H, Birmann BM, Brown EE, Smith A, Kleinstern G, Fansler MM, Mayr C, Zhu B, Chung CC, Park JH, Burdette L, Hicks BD, Hutchinson A, Teras LR, Adami HO, Bracci PM, McKay J, Monnereau A, Link BK, Vermeulen RCH, Ansell SM, Maria A, Diver WR, Melbye M, Ojesina AI, Kraft P, Boffetta P, Clavel J, Giovannucci E, Besson CM, Canzian F, Travis RC, Vineis P, Weiderpass E, Montalvan R, Wang Z, Yeager M, Becker N, Benavente Y, Brennan P, Foretova L, Maynadie M, Nieters A, de Sanjose S, Staines A, Conde L, Riby J, Glimelius B, Hjalgrim H, Pradhan N, Feldman AL, Novak AJ, Lawrence C, Bassig BA, Lan Q, Zheng T, North KE, Tinker LF, Cozen W, Severson RK, Hofmann JN, Zhang Y, Jackson RD, Morton LM, Purdue MP, Chatterjee N, Offit K, Cerhan JR, Chanock SJ, Rothman N, Vijai J, Goldin LR, Skibola CF, Caporaso NE. Two high-risk susceptibility loci at 6p25.3 and 14q32.13 for Waldenström macroglobulinemia. *Nat Commun*. 2018 Oct 10;9(1):4182. doi: 10.1038/s41467-018-06541-2. PMID: 30305637; PMCID: PMC6180091.

Abelson S, Collord G, Ng SWK, Weissbrod O, Mendelson Cohen N, Niemeyer E, Barda N, Zuzarte PC, Heisler L, Sundaravadanam Y, Luben R, Hayat S, Wang TT, Zhao Z, Grlan I, Pugh TJ, Soave D, Ng K, Latimer C, Hardy C, Raine K, Jones D, Hoult D, Britten A, McPherson JD, Johansson M, Mbabaali F, Eagles J, Miller JK, Pasternack D, Timms L, Krzyzanowski P, Awadalla P, Costa R, Segal E, Bratman SV, Beer P, Behjati S, Martincorena I, Wang JCY, Bowles KM, Quirós JR, Karakatsani A, La Vecchia C, Trichopoulou A, Salamanca-Fernández E, Huerta JM, Barricarte A, Travis RC, Tumino R, Masala G, Boeing H, Panico S, Kaaks R, Krämer A, Sieri S, Riboli E, Vineis P, Foll M, McKay J, Polidoro S, Sala N, Khaw KT, Vermeulen R, Campbell PJ, Papaemmanuil E, Minden MD, Tanay A, Balicer RD, Wareham NJ, Gerstung M, Dick JE, Brennan P, Vassiliou GS, Shlush LI. Prediction of acute myeloid leukaemia risk in healthy individuals. *Nature*. 2018 Jul;559(7714):400-404. doi: 10.1038/s41586-018-0317-6. Epub 2018 Jul 9. PMID: 29988082; PMCID: PMC6485381.

Stringhini S, Carmeli C, Jokela M, Avendaño M, McCrory C, d'Errico A, Bochud M, Barros H, Costa G, Chadeau-Hyam M, Delpierre C, Gandini M, Fraga S, Goldberg M, Giles GG, Lassale C, Kenny RA, Kelly-Irving M, Paccaud F, Layte R, Muennig P, Marmot MG, Ribeiro AI, Severi G, Steptoe A, Shipley MJ, Zins M, Mackenbach JP, Vineis P, Kivimäki M; LIFEPAATH Consortium. Socioeconomic status, non-communicable disease risk factors, and walking speed in older adults: multi-cohort population based study. *BMJ*. 2018 Mar 23;360:k1046. doi: 10.1136/bmj.k1046. PMID: 29572376; PMCID: PMC5865179.

Kivimäki M, Vahtera J, Tabák AG, Halonen JI, Vineis P, Pentti J, Pakkala K, Rovio S, Viikari J, Kähönen M, Juonala M, Ferrie JE, Stringhini S, Raitakari OT. Neighbourhood socioeconomic disadvantage, risk factors, and diabetes from childhood to middle age in the Young Finns Study: a cohort study. *Lancet Public Health*. 2018 Aug;3(8):e365-e373. doi: 10.1016/S2468-2667(18)30111-7. Epub 2018 Jul 18. Erratum in: *Lancet Public Health*. 2018 Nov;3(11):e522. PMID: 30030110; PMCID: PMC6079015.

Vineis P, Wild CP. The science of precision prevention of cancer. *Lancet Oncol*. 2017 Aug;18(8):997-998. doi: 10.1016/S1470-2045(17)30331-5. Epub 2017 Jul 26

Kelly-Irving M, Delpierre C, Vineis P. Beyond bad luck: induced mutations and hallmarks of cancer. *Lancet Oncol*. 2017 Aug;18(8):999-1000. doi: 10.1016/S1470-2045(17)30520-X. Epub 2017 Jul 26

Stringhini S, Carmeli C, Jokela M, Avendaño M, Muennig P, Guida F, Ricceri F, d'Errico A, Barros H, Bochud M, Chadeau-Hyam M, Clavel-Chapelon F, Costa G, Delpierre C, Fraga S, Goldberg M, Giles GG, Krogh V, Kelly-Irving M, Layte R, Lasserre AM, Marmot MG, Preisig M, Shipley MJ, Vollenweider P, Zins M, Kawachi I, Steptoe A, Mackenbach JP, Vineis P, Kivimäki M; LIFEPAATH consortium. Socioeconomic status and the 25 × 25 risk factors as determinants of premature mortality: a multicohort study and meta-analysis of 1·7 million men and women. *Lancet*. 2017 Feb 1. pii: S0140-6736(16)32380-7. doi: 10.1016/S0140-6736(16)32380-7

Gunter MJ, Murphy N, Cross A, Dossus L, Dartois L, Fagherazzi G, Kaaks R, Kuhn T, Boeing H, Aleksandrova K, Tjønneland A, Olsen A, Overvad K, Larsen SC, Redondon Cornejo ML, Agudo A, Sanchez Perez MJ, Altzibar JM, Navarro C, Ardanaz E, Khaw KT, Butterworth A, Bradbury KE, Trichopoulou A, Lagiou P, Trichopoulos D, Palli D, Grioni S, Vineis P, Panico S, Tumino R, Bueno-de-Mesquita B, Siersema P, Landberg R, Weiderpass E, Skeie G, Braaten T, Brennan P, Lica J, Muller DC, Sinha R, Wareham N, Riboli E. Coffee drinking and mortality in 10 European countries: a multinational cohort study. *Annals of Internal Medicine* 11 Jul 2017.

McCrory C, O'Leary N, Fraga S, Ribeiro AI, Barros H, Kartiosuo N, Raitakari O, Kivimäki M, Vineis P, Layte R; Lifepath Consortium. Socioeconomic differences in children's growth trajectories from infancy to early adulthood: evidence from four European countries. *J Epidemiol Community Health*. 2017 Aug 10. pii: jech-2016-208556. doi: 10.1136/jech-2016-208556.

Vineis P, Chatziloannou A, Cunliffe VT, Flanagan JM, Hanson M, Kirsch-Volders M, Kyrtopoulos S. Epigenetic memory in response to environmental stressors. *FASEB J*. 2017 Mar 9. pii: fj.201601059RR. doi: 10.1096/fj.201601059RR.

Vlaanderen J, van Veldhoven K, Font-Ribera L, Villanueva C, Chadeau-Hyam M, Portengen L, Grimalt JO, Zwiener C, Heederik D, Zhang X, Vineis P, Kogevinas M, Vermeulen R. Acute changes in serum immune markers due to swimming in a chlorinated pool. *Env Int* 105:1-11 01 Aug 2017.

Vlaanderen J, Leenders M, Chadeau-Hyam M, Portengen L, Kyrtopoulos S, Bergdahl IA, Johansson A-S, Hebels DDGAJ, de Kok TMCM, Vineis P, Vermeulen RCH. Exploring the nature of prediagnostic blood transcriptome markers of chronic lymphocytic leukemia by assessing their overlap with the transcriptome at the clinical stage. *BMC Genomics* 18:8 pages. Article number ARTN 239 20 Mar 2017.

Raaschou-Nielsen O, (...) Vineis P, Hoek G. Air pollution and lung cancer incidence in 17 European cohorts: prospective analyses from the European Study of Cohorts for Air Pollution Effects (ESCAPE). *Lancet Oncol*. 2013 Aug;14(9):813-22.

Alexandrov LB, et al. Mutational signatures associated with tobacco smoking in human cancer. *Science*. 2016 Nov 4;354(6312):618-622.

Vineis P, Wild CP. Global cancer patterns: causes and prevention. *Lancet*. 2014 Feb 8;383(9916):549-57