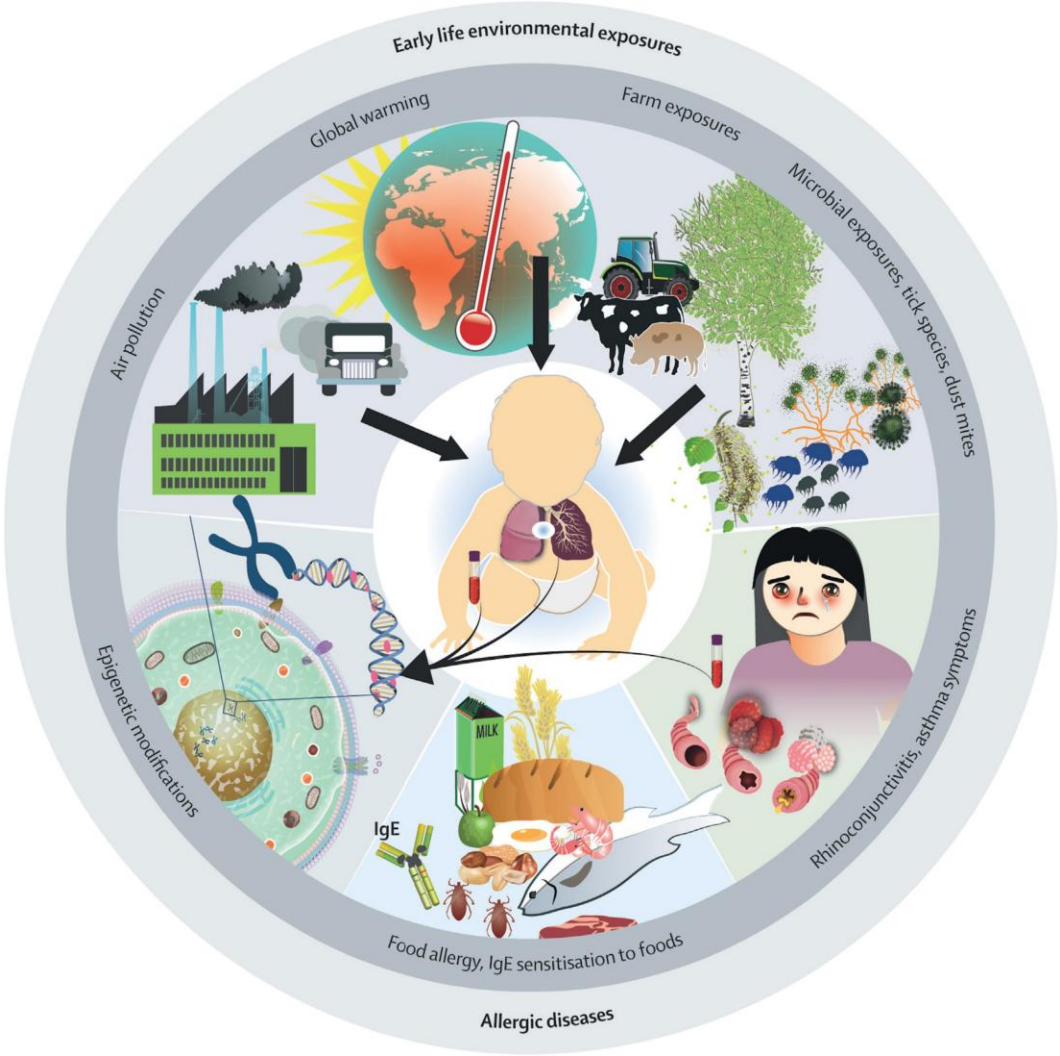
Betydelsen av arv, miljö och klimatförändringar vid allergisjukdomar

Föreläsning CAMM 2025-10-22

Erik Melén
Professor, barnallergolog
Prefekt, Inst för Klinisk forskning och utbildning, Södersjukhuset
Sachsska barnsjukhuset

The life-course perspective

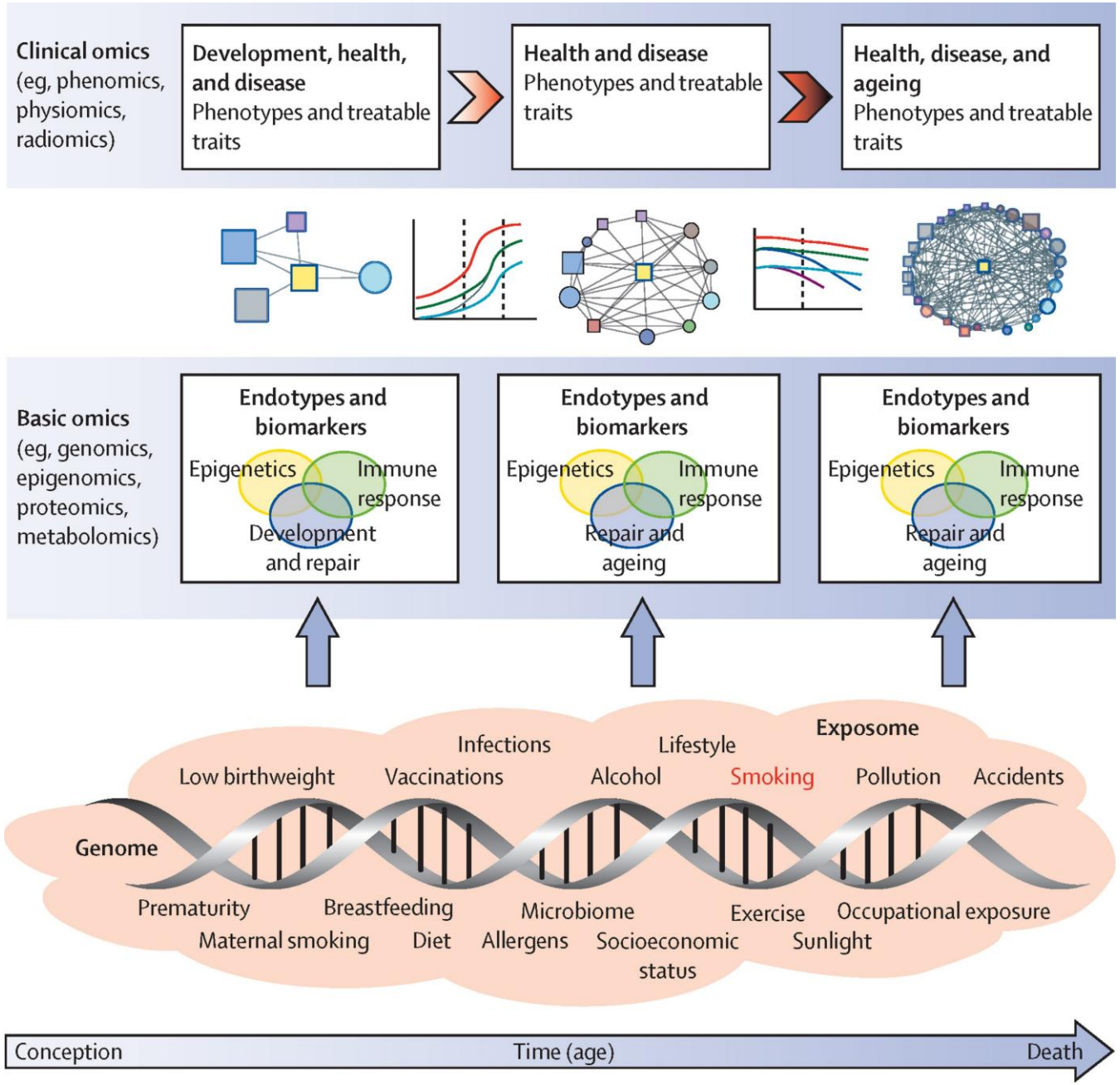


Melén et al. *Lancet Child & Adolescent Health* 2022

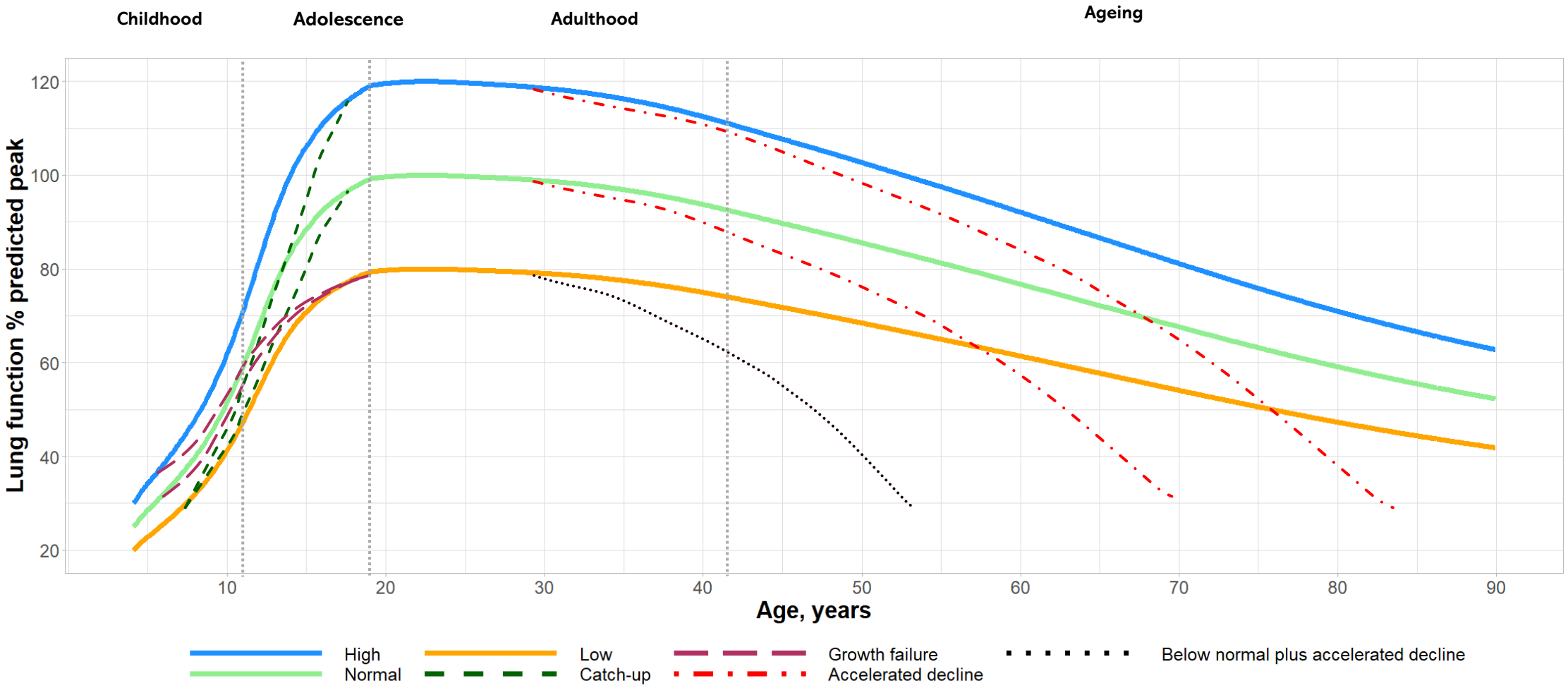
A *GETomics** understanding of chronic airway disease

**Proposed holistic strategy that considers all gene (G) – environment (E) interactions that an individual may encounter through the life span (T) to better understand the pathogenesis of COPD and chronic respiratory disease.*

Agusti, Melén, DeMeo, Breyer-Kohansal, Faner. *Lancet RM* 2022

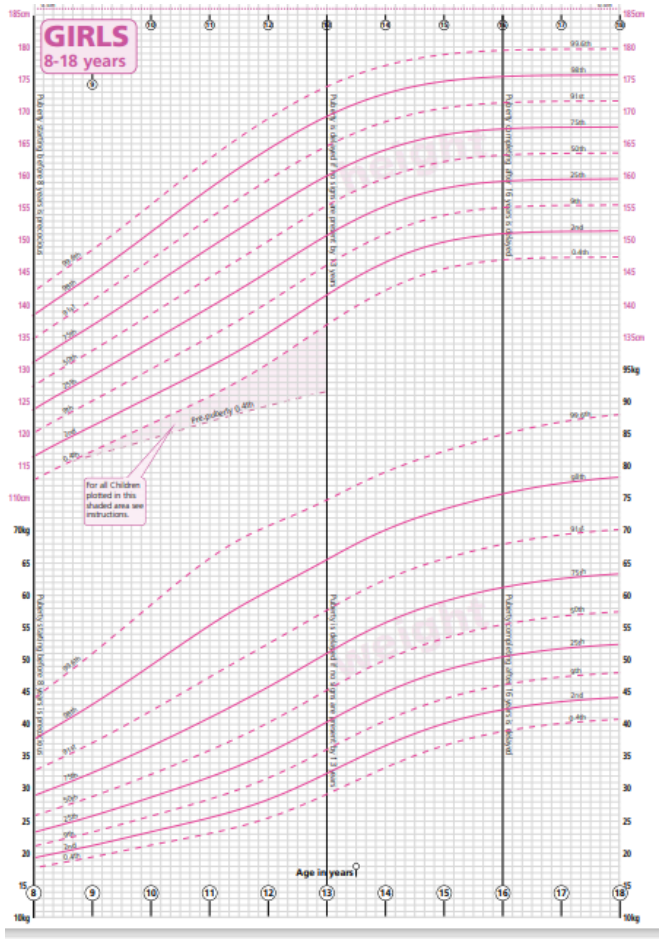


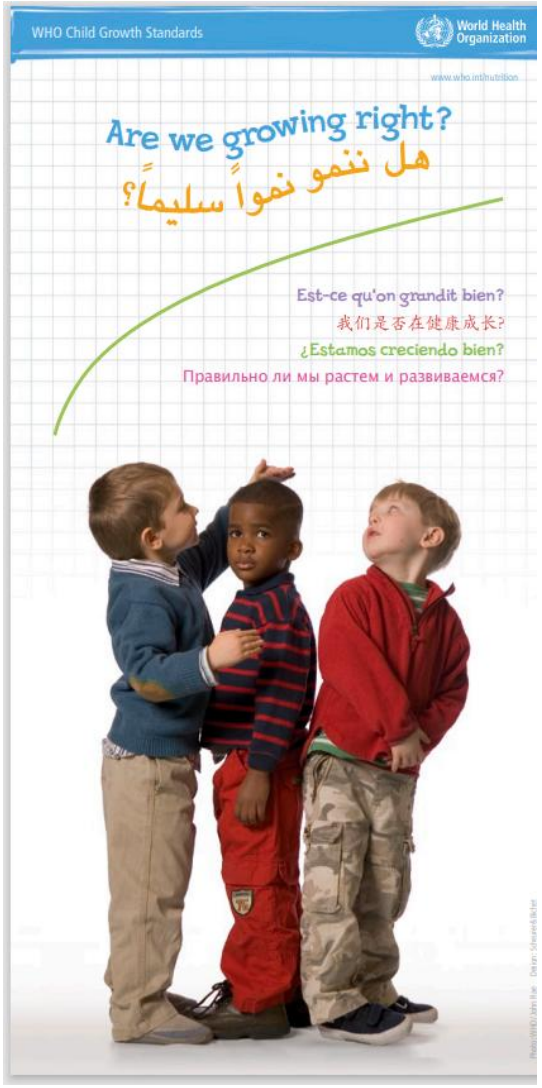
Trajectories from childhood to adulthood

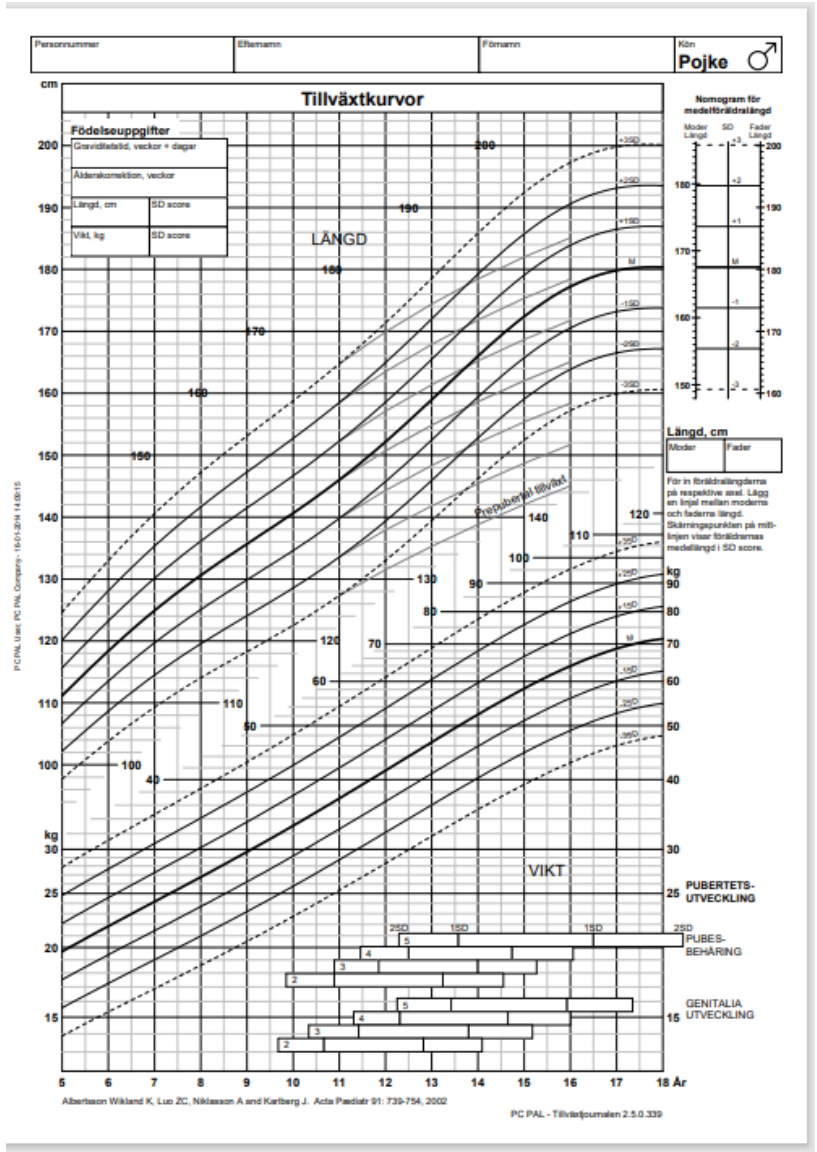


Melén et al and the ERS CADSET project, *The Lancet 2024*
Garcia-Aymerich J et al, *The Lancet Resp Med* 2025

Growth charts……



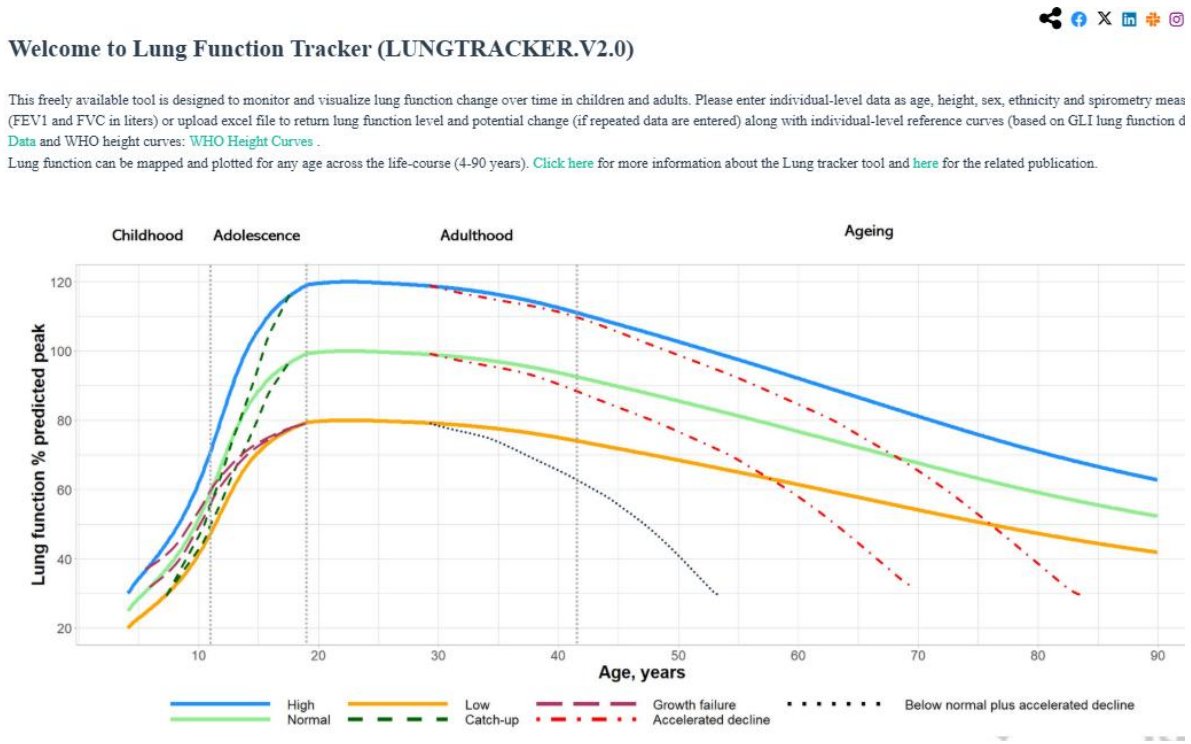




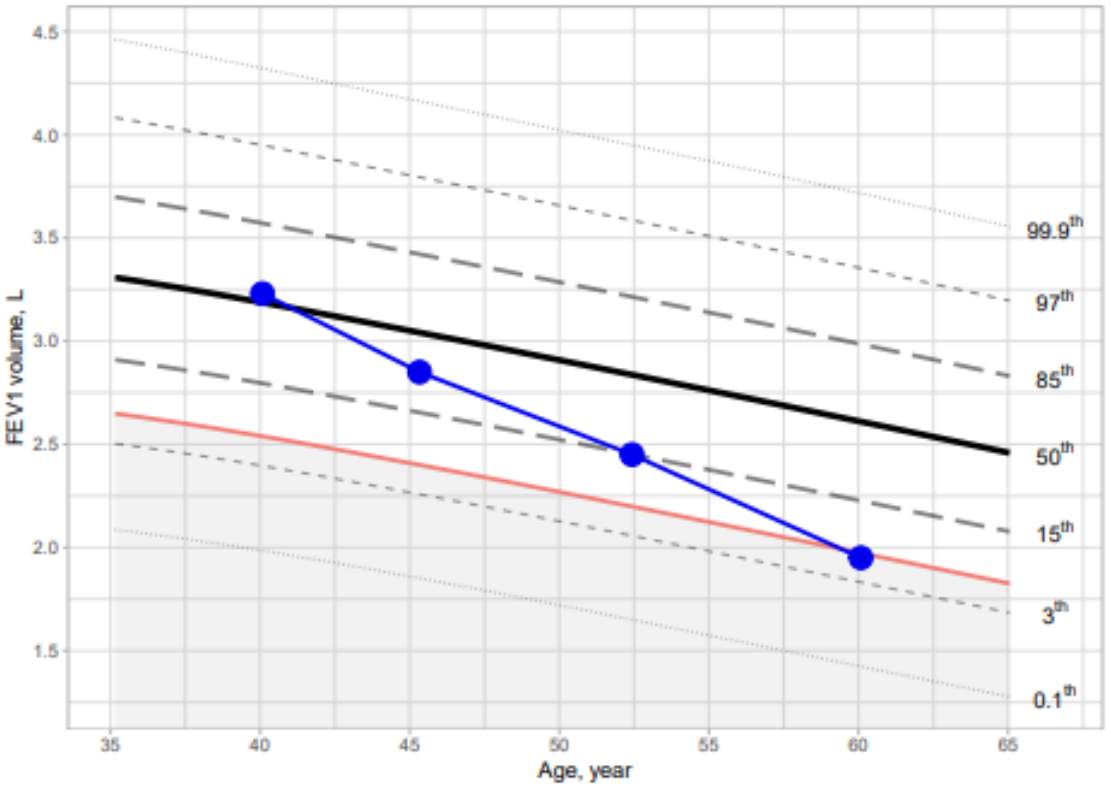
.....for the lungs!

Simon Kebede Merid, PhD

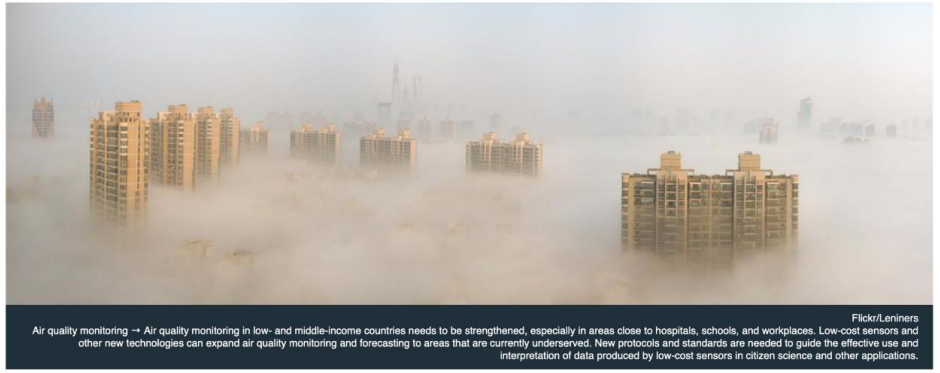
Gang Wang, MD, PhD



Melén et al, *Lancet* 2024



Exponering för luftföroreningar är ohälsosamt, ja



More than 90% of the world's children breathe toxic air every day

العربية 中文 Français Русский Español

29 October 2018 I News Release I Geneva

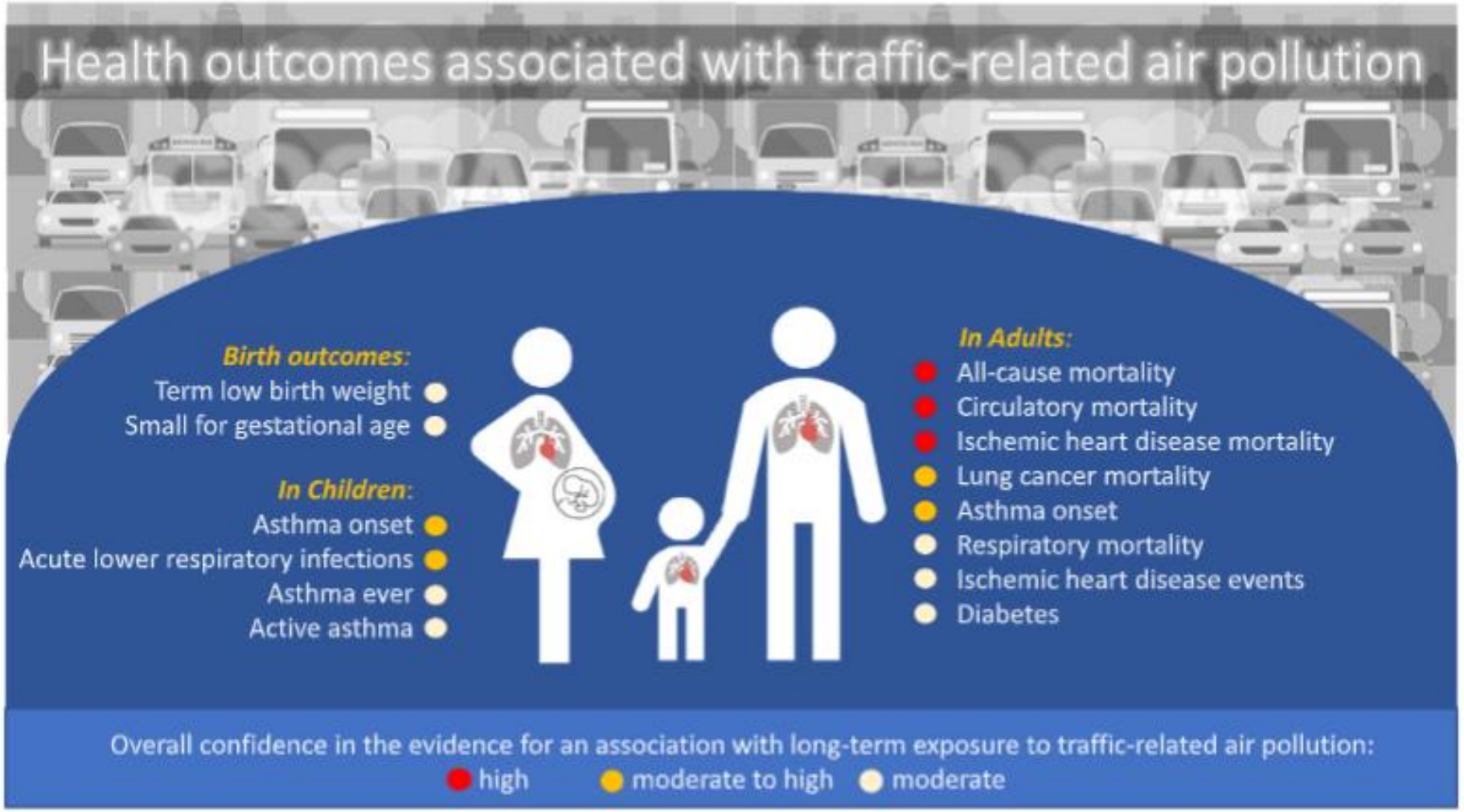
Media Contacts

New WHO Global Air Quality Guidelines aim to save millions of lives from air pollution

العربية 中文 Français Русский Español

Air pollution is one of the biggest environmental threats to human health, alongside climate change.

Välkända (?) samband hos barn



Boogaard et al. *Environ Int* 2022

Ella Kissi-Debrah: how a mother's fight for justice may help prevent other air pollution deaths

Landmark ruling that toxic fumes killed nine-year-old Londoner follows long campaign for truth

Ella Kissi-Debrah died in February 2013 after a severe asthma attack. Photograph: Hollie Adams/AFP/Getty Images

Våra studier i Stockholm; EMIL och BAMSE

ACTA PÆDIATRICA
NURTURING THE CHILD

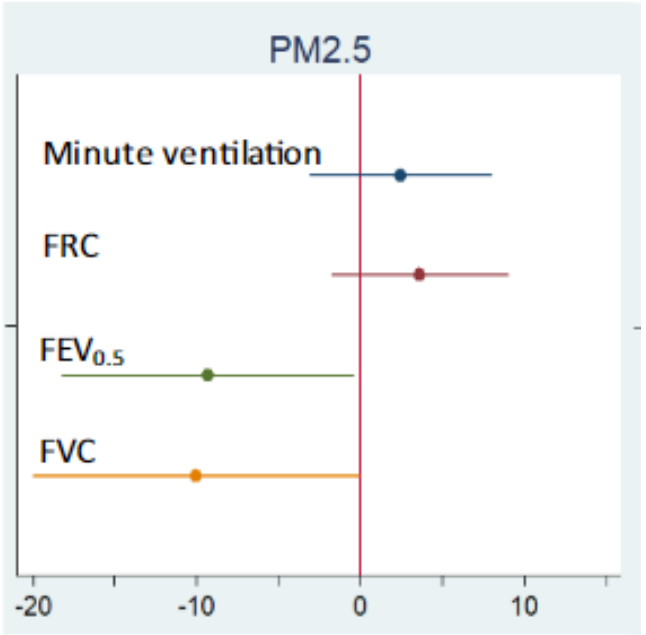
ORIGINAL ARTICLE | Open Access

Air pollution exposure impairs lung function in infants

Björn Lundberg, Olena Gruzieva, Kristina Eneroth, Erik Melén, Åsa Persson, Jenny Hallberg, Göran Pershagen

First published: 17 May 2022 | https://doi.org/10.1111/apa.16412

BAMSE-PROJEKTET
BARN • ALLERGI • MILJÖ • EPIDEMIOLOGI
SEDAN 1994 • STOCKHOLM •



Early life exposure and health in young adults

- **Chronic bronchitis** 5,5%
- **Irreversible airflow limitation** according to COPD-criteria 2%
- Cough, phlegm, recurrent airway infections and respiratory symptoms
- **Air pollution exposure 0-1 y strongly associated (OR 2-3)**

Wang et al, *Eur Resp J* 2021; *Thorax* 2021
Yu et al, *JAMA Open Network* 2022;
Yu etl al, *Lancet Regional Health Europe* 2023

The Washington Post
Democracy Dies in Darkness

Growing evidence links air pollution exposure and covid-19 risks

By Allyson Chiu
May 13, 2022 at 8:00 a.m. EDT

Exponering -> biologiska effekter

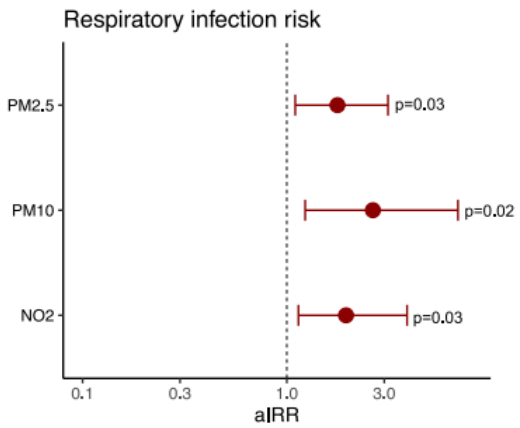
Brustad et al, 2025

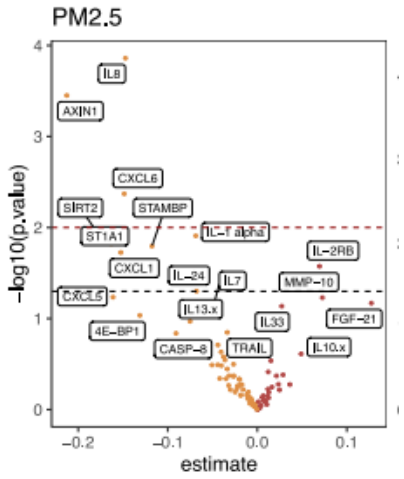
nature communications

Article

https://doi.org/10.1038/s41467-025-61392-y

Air pollution-induced proteomic alterations increase the risk of child respiratory infections





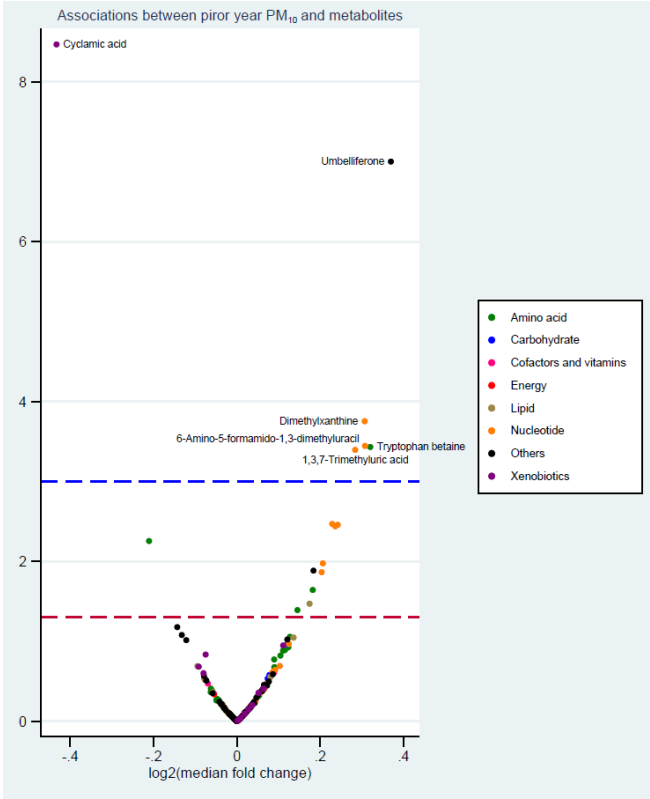
Journal of Exposure Science & Environmental Epidemiology

www.nature.com/jes

ARTICLE OPEN

Long-term exposure to air pollution and metabolites in children and young adults in a Swedish birth cohort

Shizhen He[1,10], Baninia Habchi[2,10], Romanas Chaleckis[2,3], Natalia Hernandez-Pacheco[4], Anna Bergström[1,5], Anne-Sophie Merritt[5], Inger Kull[4,6], Kristina Eneroth[7], Matteo Bottai[8], Göran Pershagen[1], Simon Kebede Merid[4], Sophia Björkander[4], Zhebin Yu[1], Erik Melén[4,6], Olena Gruzieva[1,5], Craig E. Wheelock[2,9,11] and Susanna Klevebro[4,6,11]



European Parliament

Air pollution: MEPs want stricter limits to achieve zero pollution by 2050

Press Releases PLENARY SESSION ENVI 13-09-2023 - 15:00

- Stricter 2035 limits for several pollutants
- Air quality indices across Europe to be harmonised
- EU countries must prepare air quality roadmaps on how to comply

Air pollution is responsible for 300,000 premature deaths annually in the EU ©Nady/Adobe Stock

Further information

- Adopted text (13.09.2023)
- Procedure file
- Video of the plenary debate (12.09.2023)
- Infoclip: Ambient air quality
- How clean is the air in my city? (European Environmental Agency)
- Legislative train
- EP Think Tank: Towards cleaner air for Europe (06.09.2023)
- EP Think Tank: Revision of EU air quality legislation: Setting a zero pollution objective for air

Climate / Environmental / ESG Policy / EU Parliament

EU Parliament Sets Stricter Air Quality Laws for 2030 to Reduce Pollution and Premature Deaths

by ESG News • April 25, 2024 Share:

Better air – bigger lungs

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 SEPTEMBER 9, 2004 VOL. 351 NO. 11

The Effect of Air Pollution on Lung Development from 10 to 18 Years of Age

W. James Gauderman, Ph.D., Edward Avol, M.S., Frank Gilliland, M.D., Ph.D., Hita Vora, M.S., Duncan Thomas, Ph.D., Kiros Berhane, Ph.D., Rob McConnell, M.D., Nino Kuenzli, M.D., Fred Lurmann, M.S., Edward Rappaport, M.S., Helene Margolis, Ph.D., David Bates, M.D., and John Peters, M.D.

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 MARCH 5, 2015 VOL. 372 NO. 10

Association of Improved Air Quality with Lung Development in Children

W. James Gauderman, Ph.D., Robert Urman, M.S., Edward Avol, M.S., Kiros Berhane, Ph.D., Rob McConnell, M.D., Edward Rappaport, M.S., Roger Chang, Ph.D., Fred Lurmann, M.S., and Frank Gilliland, M.D., Ph.D.

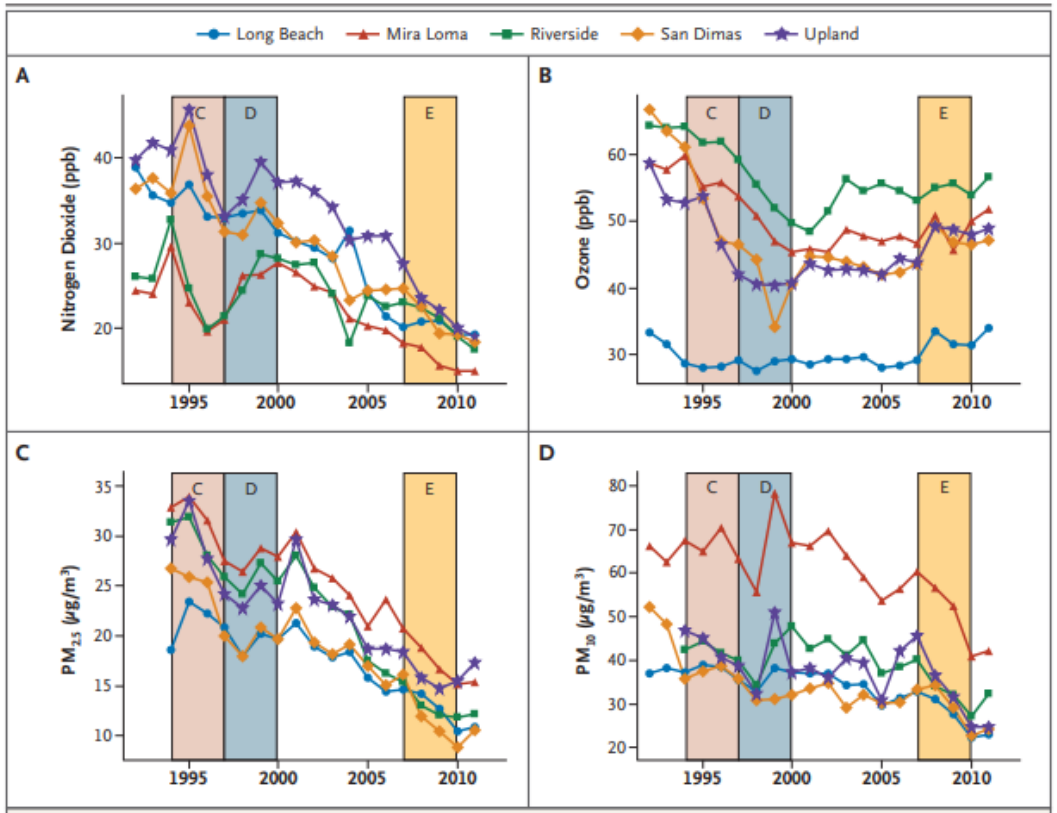


Figure 1. Levels of Four Air Pollutants from 1994 to 2011 in Five Southern California Communities.

Colored bands represent the relevant 4-year averaging period for the analysis of lung-function growth in each of the three cohorts, C, D, and E. $PM_{2.5}$ denotes particulate matter with an aerodynamic diameter of less than 2.5 μm, and PM_{10} particulate matter with an aerodynamic diameter of less than 10 μm.

Även i Stockholm!

2023

EUROPEAN RESPIRATORY JOURNAL
ORIGINAL RESEARCH ARTICLE
Z. YU ET AL.

Associations of improved air quality with lung function growth from childhood to adulthood: the BAMSE study

Zhebin Yu[1], Simon Kebede Merid[2], Tom Bellander[1,3], Anna Bergström[1,3], Kristina Eneroth[4], Antonios Georgelis[1,3], Jenny Hallberg[2,5], Inger Kull[2,5], Petter Ljungman[1,6], Susanna Klevebro[2,5], Massimo Stafoggia[1,7], Gang Wang[1,2], Göran Pershagen[1,3], Olena Gruzieva[1,3] and Erik Melén[2,5]

Karolinska Institutet News from Karolinska Institutet Listen

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Children's lung capacity improved in cleaner air
Publication

Published: 23-02-2023 15:59 | Updated: 23-02-2023 20:15

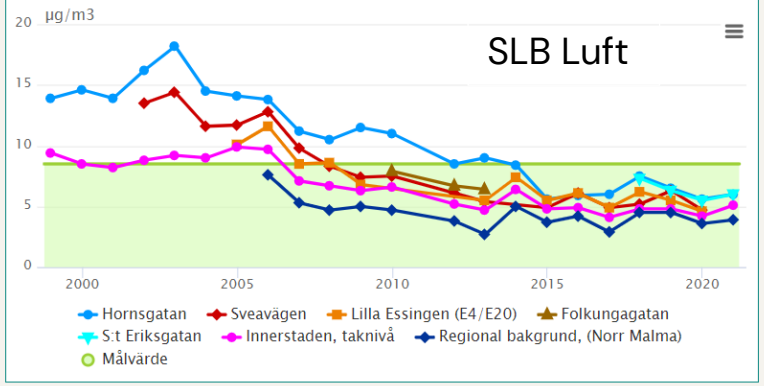
Children's lung capacity improved in cleaner air

Photo: Getty Images

BAMSE-PROJEKTET
BARN • ALLERGI • MILJÖ • STOCKHOLM • EPIDEMIOLOGI
SEDAN 1994

Halterna av PM2,5 i luft, årsmedelvärden.

Välj mätstation: Alla mätområden
Välj tidsperiod: Hela mätserien



sverigesRadio Start Nyheter Poddar & program Kanaler
Vetenskapsradion Nyheter Start Lyssna på nyheterna

Bättre luft utvecklade lungorna hos barn bättre menar Erik Melén, professor i barn
Sandberg/TT, Stefan Zimmerman.

LUFTKVALITET

Förbättrad luft ökade lungkapaciteten hos barn

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Air pollution

Cutting air pollution improves children's lung development, study shows

Conclusions from long-term survey in Sweden come days after 10th anniversary of Ella Kissi-Debrah's death in London

Nicola Davis Science correspondent

The researchers said the results sent 'a strong message to policymakers and city planners'.
Photograph: Fabrizio Bensch/Reuters

TABLE 4 Association between improvement of air quality and differences in lung function growth from age 8 to 24 years

	Unit of improvement in exposure	Raw value		GLI z-score	
		Difference in FEV_1 growth, mL per year (95% CI)[#]	Difference in FVC growth, mL per year (95% CI)[#]	Difference in FEV_1 growth, SD per year (95% CI)	Difference in FVC growth, SD per year (95% CI)
$PM_{2.5}$	2.19 µg·m^{-3}	4.63 (1.64–7.61)	9.38 (4.76–14.00)	0.03 (0.02–0.04)	0.04 (0.03–0.05)
PM_{10}	1.00 µg·m^{-3}	0.72 (−0.91–2.35)	2.77 (0.19–5.35)	0.01 (0.00–0.02)	0.01 (0.01–0.02)
BC	0.28 µg·m^{-3}	2.80 (0.66–4.93)	5.59 (2.30–8.87)	0.02 (0.01–0.03)	0.02 (0.01–0.03)
NO_x	6.17 µg·m^{-3}	1.70 (−0.16–3.57)	3.29 (0.35–6.23)	0.01 (0.01–0.02)	0.01 (0.01–0.02)

Annals ATS 2024

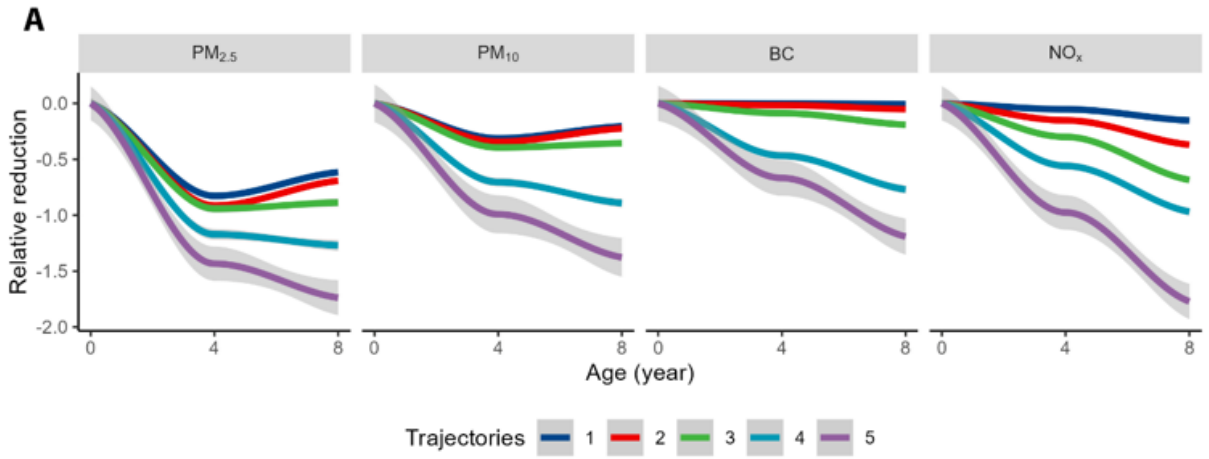
Annals of the American Thoracic Society

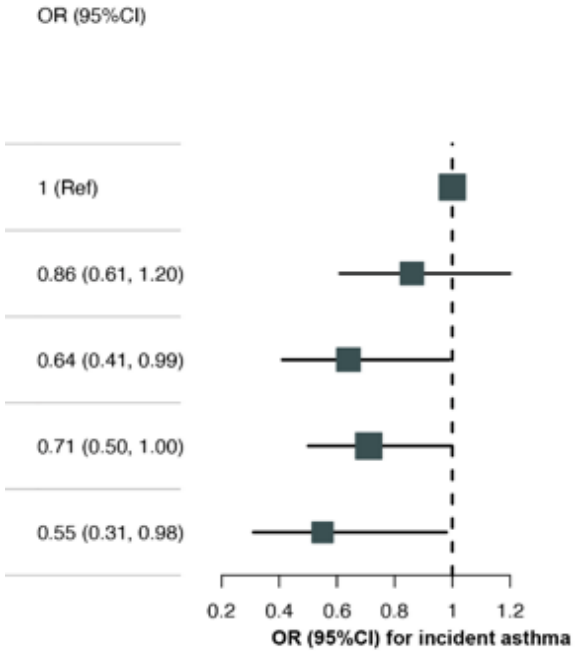
Home > Annals of the American Thoracic Society > List of Issues > Just Accepted

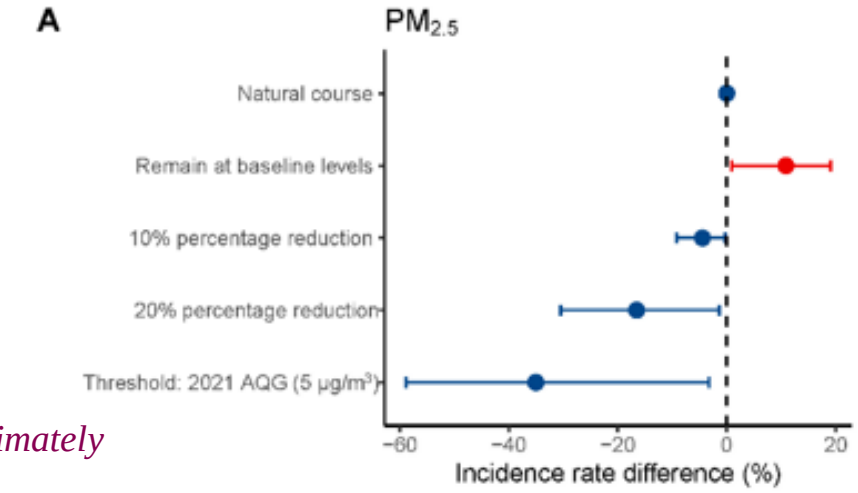
Improved Air Quality and Asthma Incidence from School-Age to Young Adulthood: A Population-based Prospective Cohort Study

Zhebin Yu , Simon Kebede Merid , Tom Bellander ; Anna Bergström , Kristina Eneroth , Anne-Sophie Merritt , Maria Ödling , Inger Kull , Petter Ljungman , Susanna Klevebro , Massimo Stafoggia , Christer Janson , Gang Wang , Göran Pershagen , Erik Melén , and Olena Gruzieva ... Show less

Aim: To evaluate the association of change in individual-level air pollutant exposure from birth to 8-years with asthma incidence from the 8-year until 24-year follow-up.







*"We estimated that the reduction in air pollution during the 1994-2002 period prevented approximately 10.9% new asthma cases (roughly equivalent to **341 asthma cases** per 100,000 person years)."*

- Lågemissionszoner finns i omkring europeiska 200 städer.
- Tysk studie från Berlin
- Lågemissionszoner vs icke-intervention
- 5% lägre partiklar i lågemissionszonerna
- **13 procent mindre astma** vid 5 års ålder (lm-förskrivningar) hos barn födda i lågemissionszoner

Klauber, Hannah, Felix Holub, Nicolas Koch, Nico Pestel, Nolan Ritter and Alexander Rohlf. 2024. "Killing Prescriptions Softly: Low Emission Zones and Child Health from Birth to School." *American Economic Journal: Economic Policy*, 16 (2): 220-48.

EXPANSE

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for healthy living in urban settings

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Stadsmiljön – bra eller dålig?

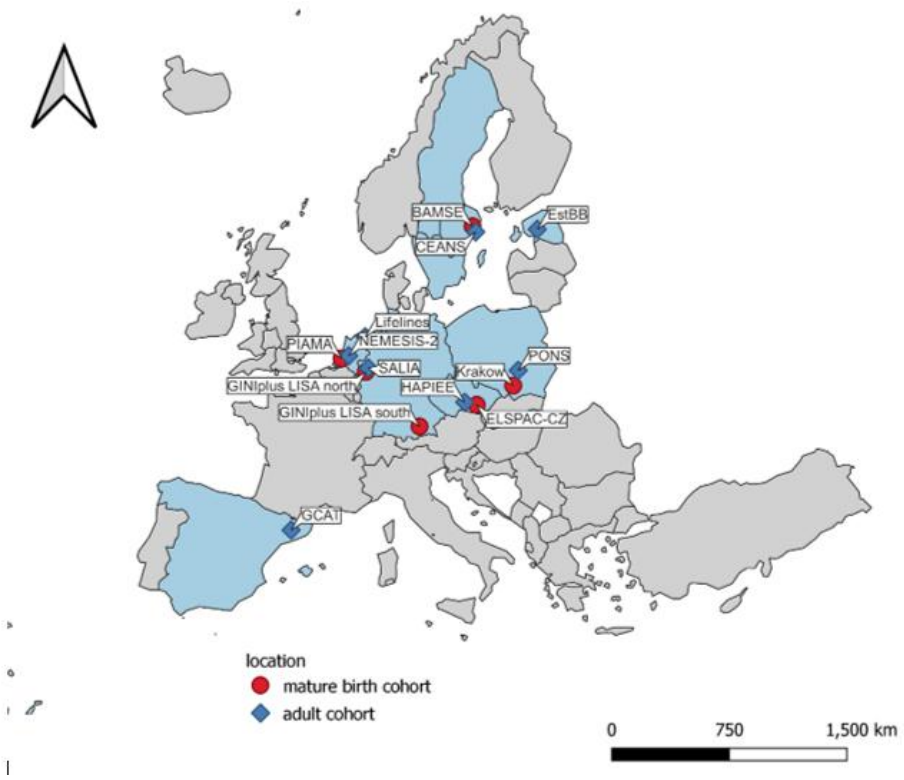
Articles

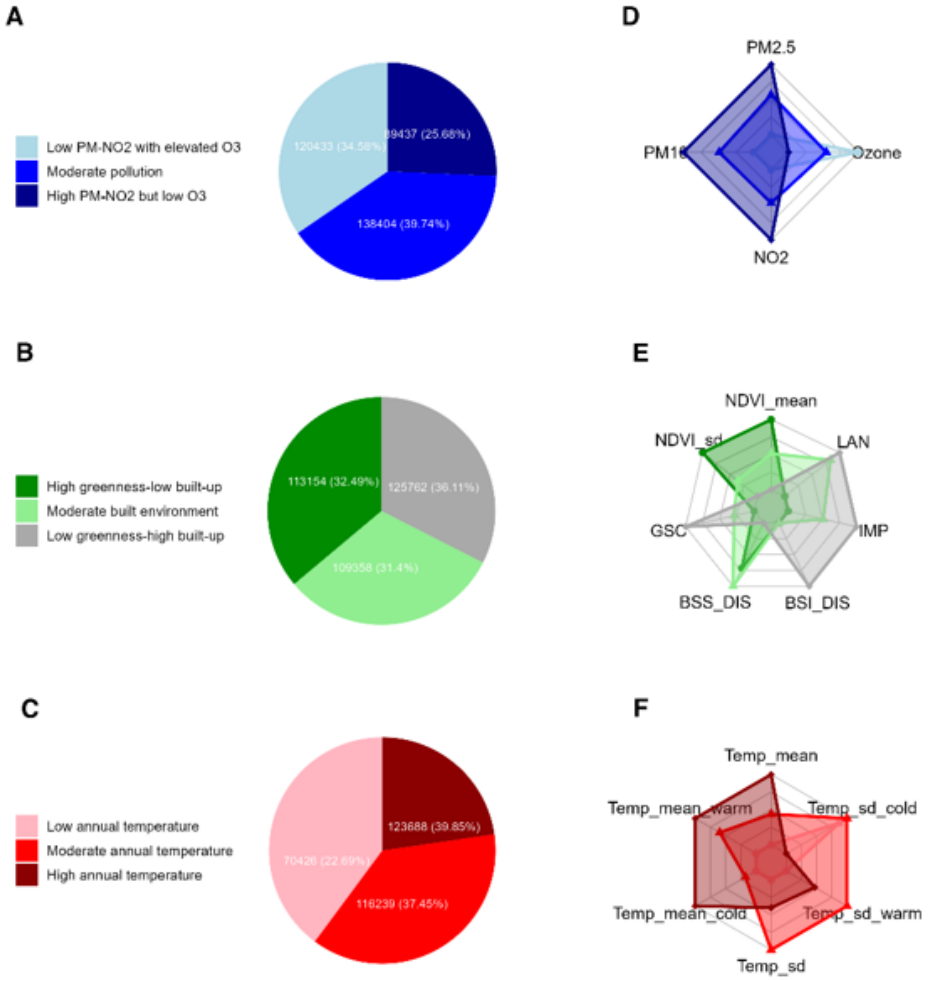
External exposome and incident asthma across the life course in 14 European cohorts: a prospective analysis within the EXPANSE project

Zhebin Yu,[a] Sara Kress,[b] Natalia Blay,[c,d] Petr Gregor,[e] Hanna-Maria Kukk,[f,g] Miriam Leskien,[h,i] Renata Majewska,[j] Max J. Oosterwegel,[k] Daniel Szabó,[e] Margreet ten Have,[l] Jana Klánová,[e] Ondřej Mikeš,[e] Anna Bergström,[m,n] Alonso Bussalleu,[o,p] Rafael de Cid,[c,d] Andrea Dalecka,[e] Payam Dadvand,[p,q,r] Saskia van Dorsselaer,[l] Krista Fischer,[f,g] Kees de Hoogh,[o,p] Gerard H. Koppelman,[s,t] Jaanika Kronberg,[f,g] Estonian Biobank Research Team,[f] Jeroen Lakerveld,[u] Petter Ljungman,[v,w] Simon Kebede Merid,[w] Paweł Macek,[x,y] Marta Marczak,[z] Anne-Sophie Merritt,[a,m] Agnieszka Pac,[z] Priit Palta,[f,g] Göran Pershagen,[a] Annette Peters,[h,m,aa] Hynek Pikhart,[u] Apolline Saucy,[w,v] Tamara Schikowski,[b,ab] Youchen Shen,[a] Marie Standl,[h,ac,ad] Cathryn Tonne,[p,q,r] Roel Vermeulen,[k] Jelle Vlaanderen,[k] Judith M. Vonk,[t,ag] Kathrin Wolf,[h,i] Carl Henrik Ek,[ah,ai] Olena Gruzieva,[a,m] Ulrike Gehring,[k] and Erik Melén,[w,v] on behalf of the EXPANSE project

Yu et al, *Lancet Reg Health Eur* 2025

The urban exposome and asthma



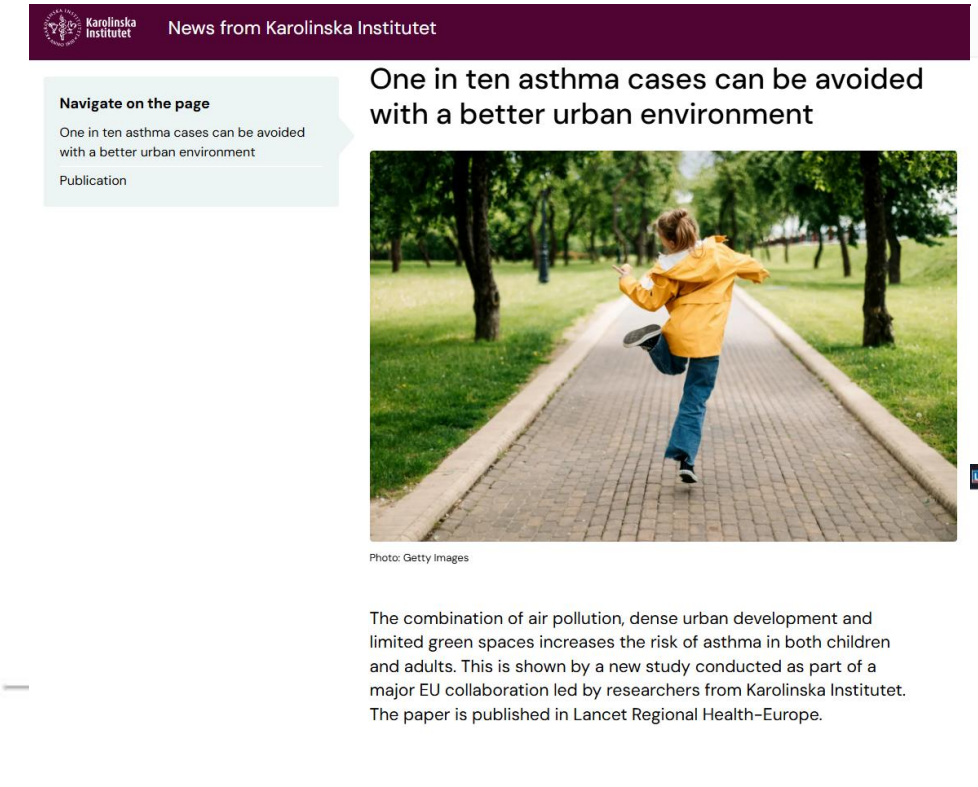


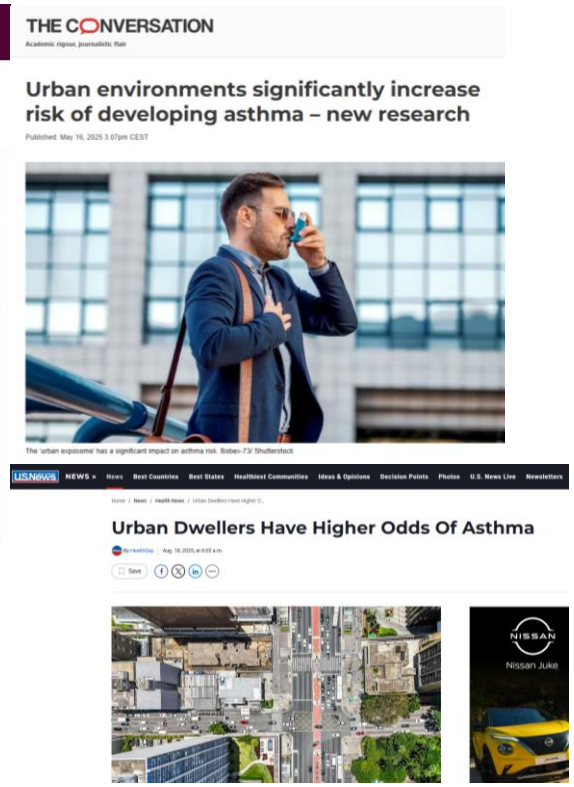
Yu et al, *Lancet Regional Health Europe* 2025

Exposome risk score and asthma

A

Cohort	Estimate (95%CI)	P_value	weight (%)	I²
CEANS	1.18 (1.07 - 1.30)	0.001	8.11	
EstBB_1	1.15 (1.04 - 1.27)	0.007	7.73	
EstBB_2	1.15 (1.04 - 1.27)	0.004	8.14	
GCAT	1.08 (0.93 - 1.27)	0.319	4.31	
HAPIEE	1.20 (1.05 - 1.36)	0.006	5.86	
Lifelines	1.06 (1.02 - 1.10)	0.002	14.9	
NEMESIS-2	1.11 (0.97 - 1.28)	0.131	5.12	
PONS	1.15 (1.00 - 1.33)	0.046	5.14	
SALIA	1.44 (1.03 - 2.02)	0.035	1.17	
Pooled estimate	**1.13 (1.07 - 1.20)**	**<0.001**		**33.18**
BAMSE	1.07 (1.01 - 1.14)	0.016	12.3	
ELSPAC-CZ	1.29 (1.11 - 1.50)	0.001	4.7	
GINIplusLISA_north	1.28 (1.04 - 1.58)	0.019	2.83	
GINIplusLISA_south	1.09 (0.99 - 1.20)	0.071	8.26	
Krakow	1.24 (1.00 - 1.53)	0.051	2.66	
PIAMA	1.17 (1.07 - 1.28)	0.001	8.81	
Pooled estimate	**1.15 (1.10 - 1.20)**	**<0.001**		**45.25**





"Our finding provides evidence that multiple environmental exposures jointly contribute to incident asthma risk across the life course. Integrating these factors into urban planning and policy development may help mitigate asthma onset and promote healthier living environments."

INTE BARA LUNGOR OCH ALLERGI

- KOL och kronisk lungsjd
- Hjärtkärlsjd
- Diabetes

Original Research Article

ISEE Environmental Epidemiology

OPEN

Air pollution, greenspace, and metabolic syndrome in older Czech and Swiss populations

Andrea Dalecká, Ayoung Jeong, Daniel Szabó, Balint Tamasi, Medea Imboden, Emmanuel Schaffner, Dirk Keidel, Youchen Shen, Mark Nieuwenhuijsen, Marta Cirach, Kees de Hoogh, Jelle Vlaanderen, Roel Vermeulen, Annette Peters, Erik Melén, Anne Peasey, Martin Bobák, Hynek Pikhart, Nicole Probst-Hensch

Environment International 196 (2025) 109269

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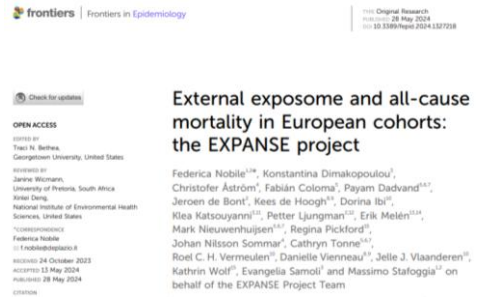
Full length article

Lung function-associated exposome profile in the era of climate change: Pooled analysis of 8 population-based European cohorts within the EXPANSE project

Ayoung Jeong, Gianfranco Lovison, Alonso Bussalleu, Marta Cirach, Payam Dadvand, Kees de Hoogh, Claudia Flexeder, Gerard Hoek, Medea Imboden, Stefan Karrasch, Gerard H. Koppelman, Sara Kress, Petter Ljungman, Renata Majewska, Göran Pershagen, Regina Pickford, Youchen Shen, Roel C.H. Vermeulen, Jelle J. Vlaanderen, Megi Vogli, Kathrin Wolf, Zhebin Yu, Erik Melén, Agnieszka Pac, Annette Peters, Tamara Schikowski, Marie Standl, Ulrike Gehring, Nicole Probst-Hensch



frontiers | Frontiers in Epidemiology

External exposome and all-cause mortality in European cohorts: the EXPANSE project

Federica Nobile, Konstantina Dimakopoulou, Christofer Åström, Fabián Coloma, Payam Dadvand, Jeroen de Bont, Kees de Hoogh, Dorina Ibi, Klea Katsouyanni, Petter Ljungman, Erik Melén, Mark Nieuwenhuijsen, Regina Pickford, Johan Nilsson Sommar, Cathryn Tonne, Roel C. H. Vermeulen, Danielle Vienneau, Jelle J. Vlaanderen, Kathrin Wolf, Evangelia Samoli and Massimo Stafoggia on behalf of the EXPANSE Project Team

Environmental Science & Technology

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Article

Socioeconomic Inequalities in the External Exposome in European Cohorts: The EXPANSE Project

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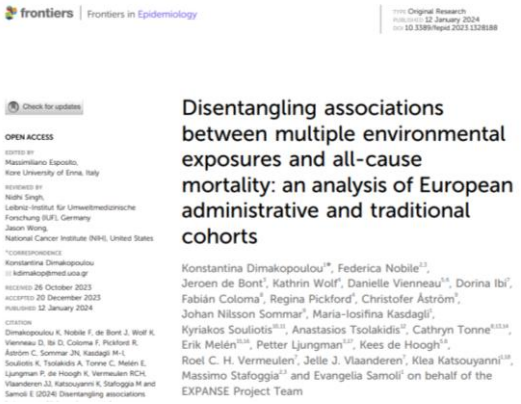

frontiers | Frontiers in Epidemiology

Disentangling associations between multiple environmental exposures and all-cause mortality: an analysis of European administrative and traditional cohorts

Konstantina Dimakopoulou, Federica Nobile, Jeroen de Bont, Kathrin Wolf, Danielle Vienneau, Dorina Ibi, Fabián Coloma, Regina Pickford, Christofer Åström, Johan Nilsson Sommar, Maria-Iosifina Kasdagli, Kyriakos Souliotis, Anastasios Tsolakidis, Cathryn Tonne, Erik Melén, Petter Ljungman, Kees de Hoogh, Roel C. H. Vermeulen, Jelle J. Vlaanderen, Klea Katsouyanni, Massimo Stafoggia and Evangelia Samoli on behalf of the EXPANSE Project Team

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ELSEVIER

Full length article

Mixtures of long-term exposure to ambient air pollution, built environment and temperature and stroke incidence across Europe

Jeroen de Bont, Regina Pickford, Christofer Åström, Fabian Coloma, Konstantina Dimakopoulou, Kees de Hoogh, Dorina Ibi, Klea Katsouyanni, Erik Melén, Federica Nobile, Göran Pershagen, Åsa Persson, Evangelia Samoli, Massimo Stafoggia, Cathryn Tonne, Jelle Vlaanderen, Kathrin Wolf, Roel Vermeulen, Annette Peters, Petter Ljungman

EUROPEAN RESPIRATORY REVIEW
REVIEW
O. GRUZIEVA ET AL.

Air pollution, metabolites and respiratory health across the life-course

Olena Gruzieva, Ayoung Jeong, Shizhen He, Zhebin Yu, Jeroen de Bont, Maria G.M. Pinho, Ikenna C. Eze, Sara Kress, Craig E. Wheelock, Annette Peters, Jelle Vlaanderen, Kees de Hoogh, Augustin Scalbert, Marc Chadeau-Hyam, Roel C.H. Vermeulen, Ulrike Gehring, Nicole Probst-Hensch and Erik Melén

Review

Allergies to food and airborne allergens in children and adolescents: role of epigenetics in a changing environment

Erik Melén, Gerard H Koppelman, Ana Maria Vicedo-Cabrera, Zorana Jovanovic Andersen, Supinda Bunyavanich

*"The **exposome** is a concept used to describe environmental exposures that an individual encounters throughout life, and how these exposures impact biology and health."*

The exposome

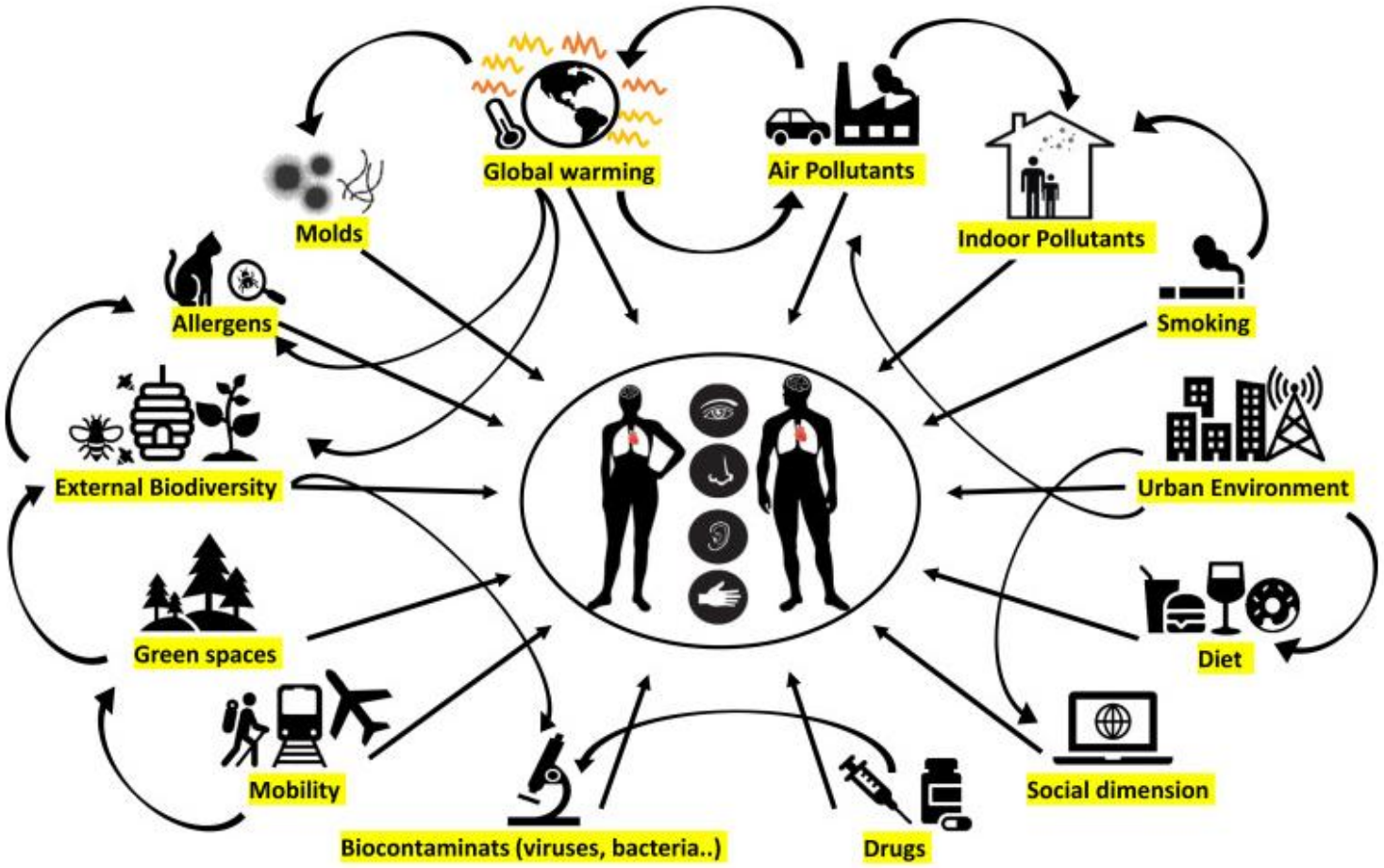


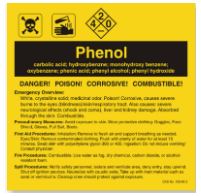
Fig 1 The surrounding environment involved in asthma and allergy.

Annesi-Maesano I. *JACI* 2021

Early-life exposure to a mixture of phenols and respiratory health in preschool children

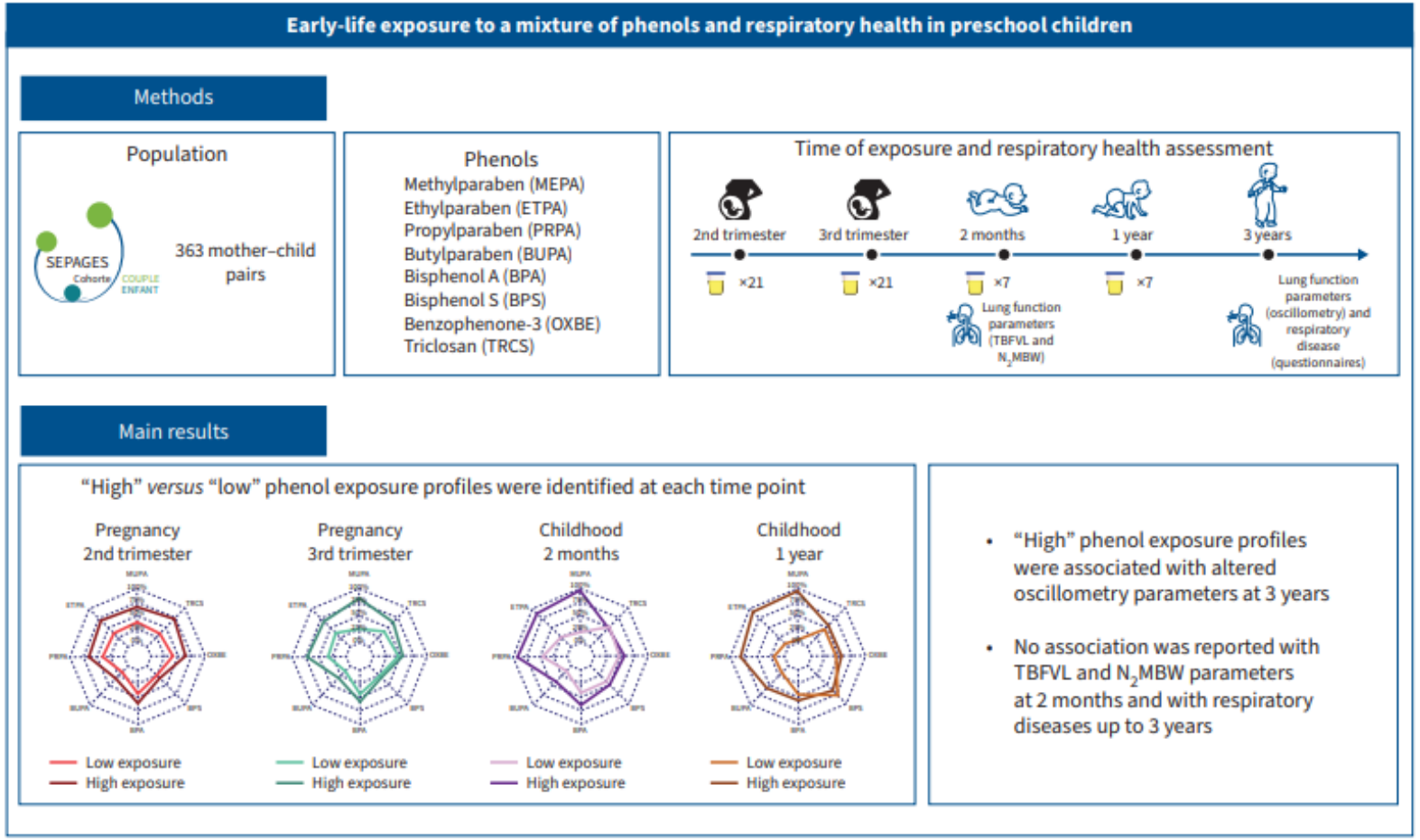
Alicia Guillien, Sam Bayat, Ines Amine, Anne Boudier, Sarah Lyon-Caen, Joane Quentin, Zoltán Hantos, Séverine Valmary-Degano, Amrit K. Sakhi, Cathrine Thomsen, Claire Philippat, Rémy Slama and Valérie Siroux

Fenoler är organiska ämnen som kännetecknas av en eller flera hydroxigrupper (-OH) bundna till en bensenring. De finns naturligt i växter och kan vara livsviktiga, men de kan också vara giftiga och hormon-störande. Fenoler används i många produkter som desinfektionsmedel och plaster, men kan också bildas vid förbränning och förorena miljön.



Conclusion

Using repeated and accurate assessments of phenol exposure, this study provides evidence of the deleterious effects of early-life exposure to a mixture of phenols on lung function in preschool children.



GRAPHICAL ABSTRACT Overview of the study. TBFVL: tidal breathing flow-volume loops; N_2MBW: nitrogen multiple-breath washout.

EUROPEAN RESPIRATORY JOURNAL
EDITORIAL
S. GUERRA ET AL.

No exposure left behind: time to pay attention to children's chemical environment in lung development

Stefano Guerra [1], Erik Melén [2] and Enrico Lombardi [3]

[1]Asthma and Airway Disease Research Center, University of Arizona, Tucson, AZ, USA. [2]Department of Clinical Sciences and Education Södersjukhuset, Karolinska Institutet, Stockholm, Sweden. [3]Pulmonary Unit, Meyer Children's Hospital IRCCS, Florence, Italy.

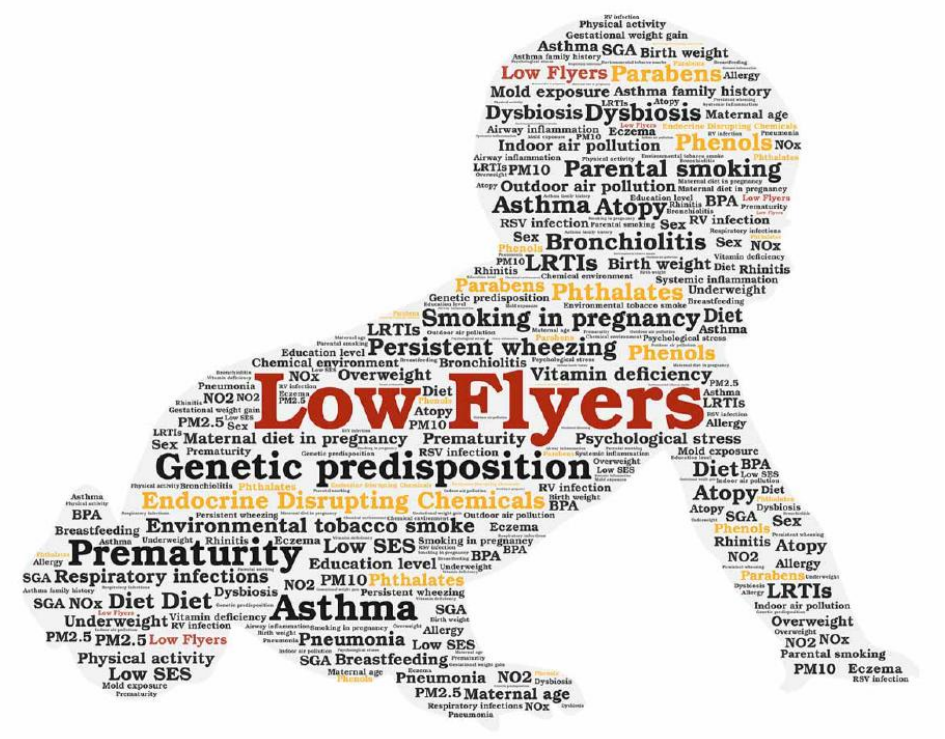
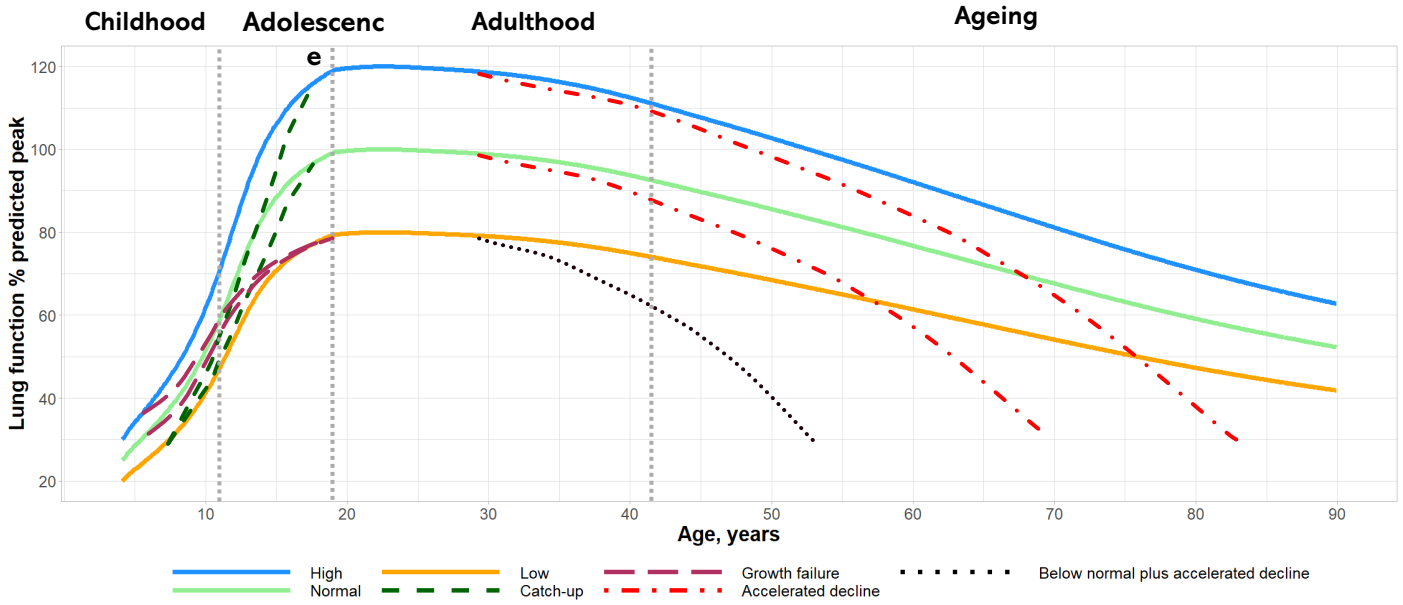


FIGURE 1 A graphical, non-comprehensive representation of possible risk and protective factors for lung function deficits early in life. Phenols and other endocrine-disrupting chemicals are highlighted in yellow.



Melén, Faner and the ERS CADSET project, The Lancet 2024

Lange et al, *NEJM 2015*
Belgrave et al, *Lancet RM 2018*
Bui et al, *Lancet RM 2018*
Ullah et al, *eClinicalMedicine 2024*
McCready et al, *Lancet Child Adolesc Health. 2024*

Lancet Resp Med 2025

Series

Asthma 1

Genetic and environmental risk factors for asthma: towards prevention

Gerard H Koppelman*, Maria Pino-Yanes*, Erik Melén*, Pippa Powell, Ken R Bracke, Juan C Celedón, Guy G Brusselle

Key messages

- Genetic studies have provided important insights into the pathogenesis, biology, and immunology of asthma, fostering drug discovery
- The role of genetic risk scores and epigenetics in the prediction and diagnosis of asthma, beyond a detailed family history, needs further evaluation
- Four modifiable environmental, social, and lifestyle risk factors for asthma are responsible for nearly 30% of the global disability-adjusted life-years asthma burden: high BMI, occupational exposures, NO_2 (as a proxy for traffic-related air pollution), and smoking
- Asthma can be prevented in at least 40% of individuals with asthma by eliminating risk factors at the individual and community level
- Patients with asthma and the general public should be informed about the possibility of preventing asthma and how to contribute to asthma risk reduction

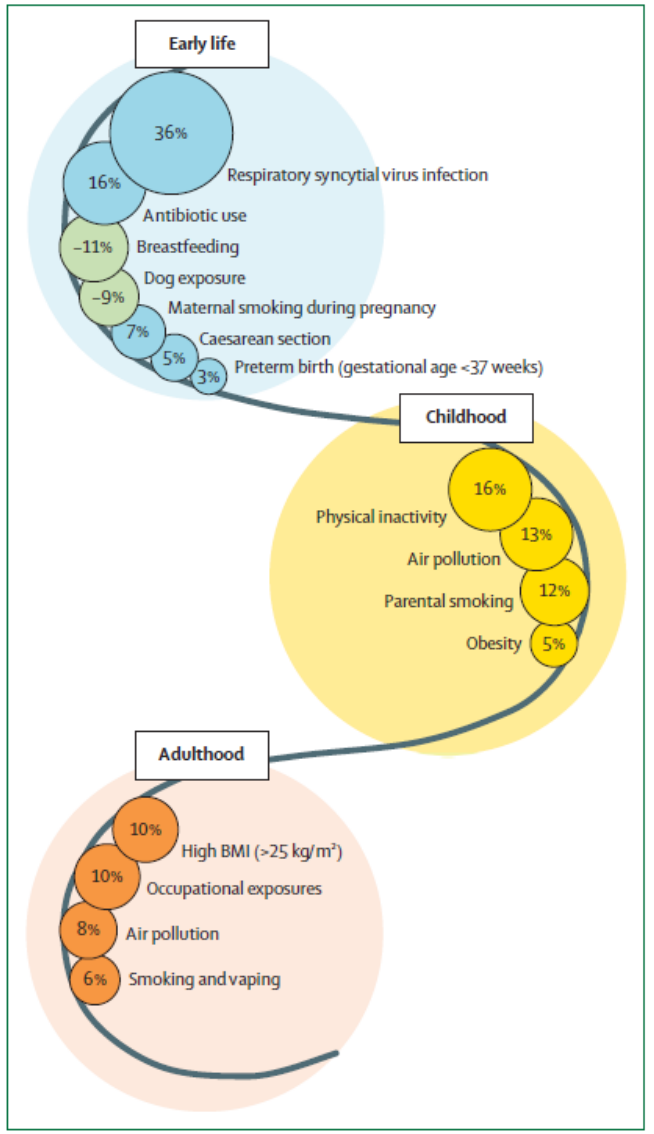


Figure 2: **Population attributable proportion of potentially modifiable risk factors for asthma based on risk estimates**

Göteborgs-Posten

Riktig journalistik gör sk

Nyheter Göteborg Borås Sport Ekonomi Kultur Ledare Debatt E-tidning Tipsa oss

Barn och unga är extra utsatta för dessa hälsorisker, på grund av att deras kroppar är mer sårbara än vuxnas. Dessutom kommer de att leva med följderna av klimatkrisen under hela sin livstid, skriver debattörerna. Bild: Sergei Grits

Om vi värnar våra barns hälsa måste vi växla upp klimatarbetet

Debatt • Sveriges barn- och ungdomsläkare känner en mycket stor oro inför framtiden med anledning av klimatförändringarna och de risker det innebär för barn och ungas hälsa. Om fler inser vilka konsekvenser klimatförändringarna kommer att få för våra barns hälsa kan det bli en viktig drivkraft för klimatomställningen, skriver företrädare för Barnläkarföreningen.

Barnläkaren Nr. 2/2025

TEMA | KLIMATFÖRÄNDRINGAR OCH BARNS HÄLSA

Förändrat klimat ger fler fästingburna infektioner

Så kan du som ST-läkare engagera dig i klimatfrågor

Hur påverkar luftföroreningar barns hälsa?

- *I Sverige ökar medeltemperaturen snabbare än i många andra länder*
- *Värmeböljor ökar risken att barn föds för tidigt och med låg födelsevikt*
- *Temperaturökningen medför att vissa infektionssjukdomar som TBE och borrelia blir vanligare*
- *Vi får längre och intensivare pollensäsonger*
- *Luftföroreningar väntas öka de kommande åren*
- *Klimatkrisen påverkar barn och ungas mentala hälsa genom ökad förekomst av oro, ångest och depression*

Sammanfattning

- Arv och miljö samverkar vid utveckling av astma, allergi och kronisk lungsjukdom
- Exponering för luftföroreningar har negativa hälsoeffekter och det finns inga ”säkra nivåer”
- Luftkvalitén allt bättre senaste åren
- Stadsmiljön kan bra eller mindre bra – koppling till astma ses hos både barn och vuxna
- ”Hela livet” börjar *in utero (t.o.m. prekonceptuellt)* och under barndomen; exponering kan få mycket långsiktiga konsekvenser

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