

Pollutant	Search terms (Pubmed)
PM	<p>"Particulate Matter"[MeSH Terms:noexp] OR "Smog"[MeSH Terms] OR "Smog"[Title/Abstract] OR "Particle Size"[MeSH Terms] OR "PM10"[Title/Abstract] OR "PM2.5"[Title/Abstract] OR "PM10-2.5"[Title/Abstract] OR "PM2.5-10"[Title/Abstract] OR "PM1"[Title/Abstract] OR "fine particulate"[Title/Abstract] OR "PM10"[Title/Abstract] OR "PM2.5"[Title/Abstract] OR "PM10-2.5"[Title/Abstract] OR "PM2.5-10"[Title/Abstract] OR "PM1"[Title/Abstract] OR "pm 10"[Title/Abstract] OR "pm 2 5"[Title/Abstract] OR "pm 10 2 5"[Title/Abstract] OR "pm 2 5 10"[Title/Abstract] OR "pm 1"[Title/Abstract] OR "Particulate Matter"[Title/Abstract] OR "PMcoarse"[Title/Abstract] OR "PMcoarse"[Title/Abstract] OR "Particulate Matter"[Other Term] OR "submicron"[Title/Abstract] OR "surface area"[Title/Abstract] OR "ultrafine"[Title/Abstract] OR "ultrafine particles"[Title/Abstract] OR "ultrafine particle"[Title/Abstract] OR "UFP"[Title/Abstract] OR "nano particle"[Title/Abstract] OR "nano particles"[Title/Abstract] OR "nanoparticles"[Title/Abstract] OR "nanoparticle"[Title/Abstract] OR "PM0.1"[Title/Abstract] OR "PM0.1"[Title/Abstract] OR "pm 0 1"[Title/Abstract] OR "PM0.25"[Title/Abstract] OR "pm 0 25"[Title/Abstract] OR "PM0.25"[Title/Abstract] OR "quasi-ultrafine"[Title/Abstract] OR "quasi-ultrafine"[Title/Abstract] OR "PNC"[Title/Abstract] OR "accumulation mode"[Title/Abstract] OR "particle number"[Title/Abstract] OR "number of particles"[Title/Abstract] OR "aitken mode"[Title/Abstract] OR "ultrafine particl*"[All Fields] OR "particle number concentration"[All Fields]</p>
Metals in PM	<p>("nickel"[Title/Abstract] OR "Ni"[Title/Abstract] OR "Copper"[Title/Abstract] OR "Cu"[Title/Abstract] OR "zinc"[Title/Abstract] OR "Zn"[Title/Abstract] OR "iron"[Title/Abstract] OR "Fe"[Title/Abstract] OR "trace metals"[Title/Abstract] OR "lead"[Title/Abstract] OR "Pb"[Title/Abstract] OR "Vanadium"[Title/Abstract] OR "Cadmium"[Title/Abstract] OR "Cd"[Title/Abstract] OR "arsenic"[Title/Abstract] OR "As"[Title/Abstract] OR "lead"[Title/Abstract] OR "Pb"[Title/Abstract]) AND ("Particulate Matter"[MeSH Terms:noexp] OR "Smog"[MeSH Terms] OR "Smog"[Title/Abstract] OR "Particle Size"[MeSH Terms] OR "PM10"[Title/Abstract] OR "PM2.5"[Title/Abstract] OR "PM10-2.5"[Title/Abstract] OR "PM2.5-10"[Title/Abstract] OR "PM1"[Title/Abstract] OR "fine particulate"[Title/Abstract] OR "PM10"[Title/Abstract] OR "PM2.5"[Title/Abstract] OR "PM10-2.5"[Title/Abstract] OR "PM2.5-10"[Title/Abstract] OR "PM1"[Title/Abstract] OR "pm 10"[Title/Abstract] OR "pm 2 5"[Title/Abstract] OR "pm 10 2 5"[Title/Abstract] OR "pm 2 5 10"[Title/Abstract] OR "pm 1"[Title/Abstract] OR "Particulate Matter"[Title/Abstract] OR "PMcoarse"[Title/Abstract] OR "PMcoarse"[Title/Abstract] OR "Particulate Matter"[Other Term] OR "submicron"[Title/Abstract] OR "surface area"[Title/Abstract] OR "ultrafine"[Title/Abstract] OR "ultrafine particles"[Title/Abstract] OR "ultrafine particle"[Title/Abstract] OR "UFP"[Title/Abstract] OR "nano particle"[Title/Abstract] OR "nano particles"[Title/Abstract] OR "nanoparticles"[Title/Abstract] OR "nanoparticle"[Title/Abstract] OR "PM0.1"[Title/Abstract] OR "PM0.1"[Title/Abstract] OR "pm 0 1"[Title/Abstract] OR "PM0.25"[Title/Abstract] OR "pm 0 25"[Title/Abstract] OR "PM0.25"[Title/Abstract] OR "quasi-ultrafine"[Title/Abstract] OR "quasi-ultrafine"[Title/Abstract] OR "PNC"[Title/Abstract] OR "accumulation mode"[Title/Abstract] OR "particle number"[Title/Abstract] OR "number of particles"[Title/Abstract] OR "aitken mode"[Title/Abstract])</p>
Nox	<p>"Nitrogen Oxides"[MeSH Terms] OR "Nitrogen dioxide"[Title/Abstract] OR "NO2"[Title/Abstract] OR "no 2"[Title/Abstract] OR "NOx"[Title/Abstract] OR "no x"[Title/Abstract] OR "Nitrogen oxide"[Title/Abstract] OR "Nitrogen Oxides"[Title/Abstract] OR "oxides of nitrogen"[Title/Abstract] OR "NO2"[All Fields] OR "Nitrogen dioxide"[All Fields]</p>
Ozone	<p>"ozone"[Title/Abstract] OR "O3"[Title/Abstract] OR "o 3"[Title/Abstract] OR "ozone"[MeSH Terms]</p>
SO2	<p>"Sulfur Dioxide"[MeSH Terms] OR "SO2"[Title/Abstract] OR "SO 2"[Title/Abstract] OR "SO 2"[Title/Abstract] OR "Sulfur Dioxide"[Title/Abstract]</p>
Black Carbon Benzene	<p>"Soot"[MeSH Terms] OR "Soot"[Title/Abstract] OR "PM2.5 absorbance"[Title/Abstract] OR "PM2.5absorbance"[Title/Abstract] OR "PM2.5abs"[Title/Abstract] OR "black carbon"[Title/Abstract] OR "carbon black"[Title/Abstract] OR "organic carbon"[Title/Abstract] OR "elemental carbon"[Title/Abstract] OR "black smoke"[Title/Abstract] OR "elemental carbon"[Other Term] OR "organic carbon"[Title/Abstract] OR "black carbon"[Other Term]</p> <p>"benzene"[MeSH Terms] OR "benzene"[Title/Abstract] OR "BTEX"[Title/Abstract]</p>
(Traffic) Air pollution in general	<p>"Air Pollutants"[MeSH Terms] OR "Air Pollution"[MeSH Terms] OR "inhalation exposure/adverse effects"[MeSH Terms] OR "traffic-related air pollution"[Title/Abstract] OR "traffic-related air pollution"[Title/Abstract] OR "TRAP"[Title/Abstract] OR "resuspended dust"[Title/Abstract] OR "re-suspended dust"[Title/Abstract] OR "road dust"[Title/Abstract] OR "brake dust"[Title/Abstract] OR "tire dust"[Title/Abstract] OR "brake wear"[Title/Abstract] OR "tire wear"[Title/Abstract] OR "tyre wear"[Title/Abstract] OR "road wear"[Title/Abstract] OR "debris dust"[Title/Abstract] OR "fugitive dust"[Title/Abstract] OR "diffuse dust"[Title/Abstract] OR "non-exhaust"[Title/Abstract] OR "source apportionment"[Title/Abstract] OR "windblown dust"[Title/Abstract] OR "non-tailpipe"[Title/Abstract] OR "mineral dust"[Title/Abstract] OR "traffic intensity"[Title/Abstract] OR "traffic density"[Title/Abstract] OR "traffic load"[Title/Abstract] OR "traffic count"[Title/Abstract] OR "road length"[Title/Abstract] OR ("proximity"[Title/Abstract] OR "near"[Title/Abstract] OR "distance"[Title/Abstract] OR "nearest"[Title/Abstract] OR "next"[Title/Abstract]) AND ("road*"[Title/Abstract] OR "highway*"[Title/Abstract] OR "freeway*"[Title/Abstract] OR "motorway*"[Title/Abstract] OR "interstate"[Title/Abstract] OR "expressway"[Title/Abstract])</p>

Outcomes	Search terms (Pubmed)
Mortality	("Mortality"[MeSH Terms] OR "Mortality"[MeSH Subheading] OR "respiratory tract diseases/mortality"[MeSH Terms] OR "respiratory tract infections/mortality"[MeSH Terms] OR "respiration disorders/mortality"[MeSH Terms] OR "pulmonary disease, chronic obstructive/mortality"[MeSH Terms] OR "cause-specific mortality"[Title/Abstract] OR "all-cause mortality"[Title/Abstract] OR "non-accidental mortality"[Title/Abstract] OR "natural mortality"[Title/Abstract] OR "natural-cause mortality"[Title/Abstract] OR "death"[Title/Abstract] OR "fatal"[Title/Abstract] OR "survival"[Title/Abstract])
ALL RESPIRATORY	"Pulmonary Ventilation"[MeSH Terms] OR "Respiratory Function Tests"[MeSH Terms] OR "spirometry"[Title/Abstract] OR "plethysmography"[Title/Abstract] OR "forced expiratory"[Title/Abstract] OR "FEV"[Title/Abstract] OR "FVC"[Title/Abstract] OR "FEF25-75"[Title/Abstract] OR "MEF"[Title/Abstract] OR "expiratory flow"[Title/Abstract] OR "expiration flow"[Title/Abstract] OR "small airway"[Title/Abstract] OR "impulse oscillometry"[Title/Abstract] OR "FOT"[Title/Abstract] OR "peripheral airway"[Title/Abstract] OR (("pulmonary"[Title/Abstract] OR "respiratory"[Title/Abstract] OR "lung"[Title/Abstract]) AND ("volume"[Title/Abstract] OR "function"[Title/Abstract] OR "ventilation"[Title/Abstract] OR "capacity"[Title/Abstract])) OR ("Asthma"[MeSH Terms] OR "Asthma"[Title/Abstract] OR "wheezing"[Title/Abstract] OR "wheeze"[Title/Abstract] OR "whistle"[Title/Abstract] OR "whistling"[Title/Abstract] OR "Bronchial Hyperreactivity"[Title/Abstract] OR "Bronchial Hyperreactivity"[MeSH Terms] OR "bronchial hyperresponsiveness"[Title/Abstract] OR "airway hyperresponsiveness"[Title/Abstract] OR "ISAAC"[Title/Abstract] OR "respiratory hypersensitivity/chemically induced"[MeSH Terms] OR "metacholine"[Title/Abstract] OR "bronchodilatat"[Title/Abstract] OR "bronchial dilation"[Title/Abstract] OR "bronchial dilatation"[Title/Abstract] OR "bronchioconstrict*"[Title/Abstract] OR "salbutamol"[Title/Abstract] OR ("exacerbation"[Title/Abstract] OR "control"[Title/Abstract] OR "emergency"[Title/Abstract] OR "hospital admission"[Title/Abstract] OR "symptom*"[Title/Abstract] OR "severity"[Title/Abstract]) AND ("Asthma"[MeSH Terms] OR "Asthma"[Title/Abstract] OR "wheezing"[Title/Abstract] OR "wheeze"[Title/Abstract] OR "whistle"[Title/Abstract] OR "whistling"[Title/Abstract] OR "Respiratory Tract Diseases"[MeSH Terms])) OR ("Acute lower respiratory infection"[Title/Abstract] OR "Acute lower respiratory tract infection"[Title/Abstract] OR "ALRI"[Title/Abstract] OR ("respiration tract"[Title/Abstract] AND "infection"[Title/Abstract]) OR "Pneumonia"[MeSH Terms] OR "Pneumonia"[Title/Abstract] OR "Bronchiolitis"[Title/Abstract] OR "Bronchitis"[MeSH Terms] OR "Bronchitis"[Title/Abstract] OR ("Otitis Media"[MeSH Terms] OR "Otitis Media"[Title/Abstract]) OR ("ear"[Title/Abstract] AND "infection"[Title/Abstract])) OR ("Hypersensitivity"[MeSH Terms] OR "Allergy"[Title/Abstract] OR "Allergic Reaction"[Title/Abstract] OR "dermatitis, atopic"[MeSH Terms] OR "Eczema"[MeSH Terms] OR "dermatitis"[Title/Abstract] OR "Eczema"[Title/Abstract])
Cardiometabolic effects: blood pressure, hypertension, obesity, impaired glucose metabolism	("Glucose Metabolism Disorders"[MeSH Terms] OR "Blood Glucose"[MeSH Terms] OR "diabetes"[Title/Abstract] OR "T2DM"[Title/Abstract] OR "type 2 DM"[Title/Abstract] OR "T1DM"[Title/Abstract] OR "type 1 DM"[Title/Abstract] OR "fasting blood glucose"[Title/Abstract] OR "glucose metabolism"[Title/Abstract] OR "glucose homeostasis"[Title/Abstract] OR "Hba1c"[Other Term] OR "IDDM"[Title/Abstract] OR "NIDDM"[Title/Abstract] OR "HOMA-IR"[Title/Abstract] OR "hyperglycemia"[Title/Abstract] OR "diabetic"[Title/Abstract] OR "diabetes"[Text Word] OR "metabolic"[Title/Abstract] OR "Obesity"[MeSH Terms] OR "Obesity"[Title/Abstract] OR "weight"[Title/Abstract] OR "overweight"[Title/Abstract] OR "Blood Pressure"[MeSH Terms] OR "Blood Pressure"[Title/Abstract] OR "Hypertension"[MeSH Terms] OR "Hypertension"[Title/Abstract] OR "intravascular pressure"[Title/Abstract] OR "vascular pressure"[Title/Abstract] OR "blood tension"[Title/Abstract] OR "normotension"[Title/Abstract] OR "hypertensive"[Title/Abstract] OR "vascular diseases"[MeSH Terms] OR "heart rate"[MeSH Terms] OR "vascular diseases"[Title/Abstract] OR "heart rate"[Title/Abstract] OR "pulse"[Title/Abstract])
Birth outcomes	("Fetal Growth Retardation"[MeSH Terms] OR "Birth Weight"[MeSH Terms] OR "infant, low birth weight"[MeSH Terms] OR "Premature Birth"[MeSH Terms] OR "intrauterine growth restriction"[Title/Abstract] OR "Fetal Development"[MeSH Terms] OR "intrauterine growth retardation"[Title/Abstract] OR "low birth weight"[Text Word] OR "small for gestational age"[Text Word] OR "preterm birth"[Text Word] OR "Premature Birth"[Text Word] OR "premature delivery"[Title/Abstract] OR "birth outcome"[Title/Abstract] OR "abortion, spontaneous"[MeSH Terms] OR "Fetal Death"[MeSH Terms] OR "stillbirth"[Title/Abstract] OR "pregnancy loss"[Title/Abstract] OR "spontaneous abortion"[Title/Abstract] OR "Congenital Abnormalities"[MeSH Terms] OR "malformation"[Title/Abstract] OR "birth defect"[Title/Abstract] OR "congenital abnormality"[Title/Abstract])
Neurocognitive effects: neuro development, diseases autism spectrum disorders and attention deficit syndrome (ADHD or ADD)	("Cognition Disorders"[MeSH Terms] OR "cognition"[Title/Abstract] OR "cognitive"[Title/Abstract] OR "neurobehavio*"[Title/Abstract] OR "neuropsych*"[Title/Abstract] OR "Mental Processes"[MeSH Terms] OR "memory"[Title/Abstract] OR "mental recall"[Title/Abstract] OR ("verbal"[Title/Abstract] OR "language"[Title/Abstract] OR "reading"[Title/Abstract]) AND "comprehension"[Title/Abstract] OR "language"[Title/Abstract] OR "learning"[Title/Abstract] OR "perception"[Title/Abstract] OR "perceptual"[Title/Abstract] OR "neurodevelop*"[Title/Abstract] OR "psychomotor*"[Title/Abstract] OR "motor activity"[MeSH Terms] OR "motor activity"[Title/Abstract] OR "locomotor"[Title/Abstract] OR "motor-performance"[Title/Abstract] OR "motor skill*"[Title/Abstract] OR "visual-motor"[Title/Abstract] OR "visuo spatial"[Title/Abstract] OR "visuospatial"[Title/Abstract] OR "processing speed"[Title/Abstract] OR "gait"[Title/Abstract] OR "dyskinesia*"[Title/Abstract] OR "bradykinesia*"[Title/Abstract] OR "perceptual speed"[Title/Abstract] OR "intelligen*"[Title/Abstract] OR "intellect*"[Title/Abstract] OR "IQ"[Title/Abstract] OR "behavior"[MeSH Terms:noexp] OR "child behavior"[MeSH Terms] OR "adolescent behavior"[MeSH Terms] OR "behavioral symptoms"[MeSH Terms] OR "spatial behavior"[MeSH Terms] OR "executive function"[Title/Abstract] OR "academic achievement"[Title/Abstract] OR "academic performance"[Title/Abstract] OR "Neurodevelopmental Disorders"[MeSH Terms] OR "attention"[Title/Abstract] OR "inattenti*"[Title/Abstract] OR "hyperactiv*"[Title/Abstract] OR "impulsive behavior"[MeSH Terms] OR "impulsive"[Title/Abstract] OR "impulse-control"[Title/Abstract] OR "impulsivity"[Title/Abstract] OR "response inhibition"[Title/Abstract] OR "inhibitory control"[Title/Abstract] OR "vigilance"[Title/Abstract] OR "social-behavior"[Title/Abstract] OR "social-behaviour"[Title/Abstract] OR "social skills"[Title/Abstract] OR "aggression"[Title/Abstract] OR "aggressive"[Title/Abstract] OR "ADDH"[Title/Abstract] OR "ADHS"[Title/Abstract] OR "ADHD"[Title/Abstract] OR "ADH"[Title/Abstract] OR "Autism Spectrum Disorder"[MeSH Terms] OR "autistic"[Title/Abstract] OR "autism"[Title/Abstract] OR "Tic-disorder"[Title/Abstract] OR "asperger*"[Title/Abstract] OR "communication disorder*"[Title/Abstract] OR "language"[Title/Abstract] OR "agraphia"[Title/Abstract] OR "dyslexi*"[Title/Abstract] OR "dyscalculia"[Title/Abstract] OR "speech"[Title/Abstract] OR "aphasia"[Title/Abstract] OR "echolalia"[Title/Abstract] OR "stereotyp*"[Title/Abstract] OR "Pervasive Developmental Disorder"[Title/Abstract] OR "social cognition"[Title/Abstract] OR "social communication"[Title/Abstract] OR "social reciprocity"[Title/Abstract] OR "repetitive behavior*"[Title/Abstract] OR "repetitive behaviour"[Title/Abstract] OR "restricted interests"[Title/Abstract] OR "maladaptive behavior"[Title/Abstract] OR "maladaptive behaviour"[Title/Abstract] OR "adaptive behavior"[Title/Abstract] OR "behavioral regulation"[Title/Abstract])
Childhood cancer	("Leukemia"[MeSH Terms] OR "Leukemia"[Text Word] OR "Leukaemia"[Text Word] OR "childhood cancer"[Title/Abstract])

P(E)C(O)S	Inclusion	Exclusion
Population	General human population children and adolescents up to the age of 18, both urban and rural at home or school with a preference to studies focusing on Europe and North America. For some topics pregnant women and their unborn children are considered to be relevant.	Adult only population studies. Populations exposed in occupational settings except pregnant women.
Exposure	Ambient air pollution with particulate matter air pollution including various measures of ultrafine particles, measures for oxides of nitrogen, ozone, SO ₂ , Soot/black carbon, benzene, the metals (in PM) Lead, Nickel, Zinc, Vanadium, Iron, Copper, Cadmium, Arsenic, traffic related air pollution	Indoor settings and pollutants such as tobacco smoke, other outdoor air pollutants which are not of interest
Comparator	No exposure or exposure to lower levels of the risk factor in the same or in a referent population. Studies need to have quantified both, the exposure and the corresponding associations including any measure of statistical precision (standard error, confidence intervals).	Studies reporting qualitative results only without exposure-risk functions
Outcome	Mortality, Respiratory effects (Lung function, Asthma, Emergencies / Exacerbation of respiratory diseases, Respiratory infections), Allergies / Eczema, cardiometabolic effects (blood pressure, hypertension, obesity, impaired glucose metabolism), Birth outcomes, Neurocognitive effects (neuro development, diseases autism spectrum disorders and attention deficit syndrome (ADHD or ADD)), Childhood cancer	
Study	Systematic reviews with and without meta-analysis including human studies: cohort studies, case-cohort, case-control, cross-sectional, time series studies, and intervention studies. Reviews that are published (or accepted for publication i.e., in press) between January 2011 and April 2022, written in English. In case of insufficient evidence from systematic reviews, individual studies from Europe might be considered as specified in the corresponding topic pages.	Narrative reviews, qualitative studies, studies reporting only unadjusted results, and clear evidence of an analytical error. Non-human studies (in vivo, in vitro, other), controlled exposure (chamber) studies as well as studies with focus on exposure only. Conference abstracts, conference papers, notes, editorials, letters and unpublished data. Umbrella or scoping reviews, burden of disease studies as well as grey literature such as HIAs in countries in the EU. However, these studies will be collected and used as background information/material