

lead to neurodevelopmental toxicity. In this study we carried out a regression analysis to assess the relation between exposure to Hg and behaviour problems during childhood and adolescence.

**Methods:** The study population were participating children in the INMA (Infancia y Medio Ambiente) birth cohort of Valencia. Total Hg concentrations were measured in hair samples at 9 (n = 370), 11 (n = 305), and 15 (n = 202) years of age and behaviour was assessed with the CBCL (Child Behavior Checklist) test on the same age period. The CBCL test was answered by the parents and is composed by 3 scales (externalizing, internalizing and total problems). Dietary and sociodemographic data was collected through questionnaires on the same age period. We performed a multi-output Bayesian regression model based on additive Gaussian process effects for the temporal component, associated factors and confounders, and linear random effects for Hg effects to assess the association between the behavioural scales and Hg exposure throughout the study period.

**Results:** Mean and standard deviation of Hg concentrations at 9, 11 and 15 years of age were  $1.27 \pm 1.02$ ,  $1.07 \pm 0.78$ , and  $0.83 \pm 0.79$   $\mu\text{g/g}$ , respectively. Hg exposure was found to be associated with an increase in behaviour problem scale scores in children at 9 years of age, especially in internalizing and total problems with a 10% mean increase in both scales per  $\mu\text{g/g}$  of Hg concentration. However, the model did not detect any significant association at 11 and 15 years of age.

**Conclusions/Recommendations:** Behaviour problems has been found to be associated with Hg exposure at 9 years of age. However, no association has been found at 11 and 15 years of age, probably due to the high and progressive loss of sample size and therefore of statistical power throughout the study period or a decrease in Hg concentrations in the participants. More longitudinal cohort studies with a larger sample size are needed to better detect the potential effects of Hg exposure on behaviour during childhood and adolescence. The use of statistical models with non-linear effects, especially in their temporal component, is essential to obtain reliable estimates of exposure effects in most longitudinal models in epidemiological studies.

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#### 1040. EFFECT OF PRENATAL EXPOSURE TO ORGANOPHOSPHATE AND PYRETHROID PESTICIDES ON ANTHROPOMETRY AT BIRTH AND GESTATIONAL AGE

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**Background/Objectives:** Several studies have examined the association between prenatal exposure to organophosphate and pyrethroid pesticides and their impact on foetal growth and newborn anthropometry; however, the limited evidence available is inconsistent and inconclusive. Objective: The aim of this study was to examine whether prenatal organophosphate and pyrethroid pesticide exposure was associated with anthropometric measures at birth (weight, length, head circumference), weight index, gestational age and prematurity in 537 mother-child pairs.

**Methods:** Five hundred and thirty-seven mother-child pairs were randomly selected from the 800 pairs participating in the prospective

birth cohort GENEIDA (Genetics, early life environmental exposures and infant development in Andalusia). Six non-specific organophosphate metabolites (dialkylphosphates, DAPs), one metabolite relatively specific to chlorpyrifos (3,5,6-trichloro-2-pyridinol and a common metabolite to several pyrethroids (3-phenoxybenzoic acid) were measured in maternal urine from the 1st and 3rd pregnancy trimesters. Information on anthropometric measures at birth, gestational age and prematurity was collected from medical records. The sum on a molar basis of DAPs with methyl ( $\Sigma\text{DMs}$ ) and ethyl ( $\Sigma\text{DEs}$ ) moieties and the sum of the 6 DAPs metabolites ( $\Sigma\text{DAPs}$ ) was calculated for both trimesters of pregnancy.

**Results:** For DAPs, we found that an increase in urinary dimethyl phosphate (DMP) metabolite during the 3<sup>rd</sup> trimester was associated with a decrease in birth weight and birth length. Likewise,  $\Sigma\text{DMs}$  during 3<sup>rd</sup> trimester was associated with a decrease in birth weight. For head circumference, an increase in urinary TCPy metabolite during 1st trimester was associated with a decrease in head circumference. Finally, an increase in 3-PBA metabolite in the 3rd trimester was associated with a decreased gestational age, whereas an increase in 3-PBA from the 1st and 3rd trimester was associated with prematurity.

**Conclusions/Recommendations:** The present results indicate that prenatal exposure to organophosphate and pyrethroids pesticides can affect normal foetal growth, shorten gestational age and alter anthropometric measures at birth.

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#### 41. EXPOSURE TO RESIDENTIAL TRAFFIC AND TRAJECTORIES OF UNHEALTHY AGEING IN OLDER ADULTS

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**Background/Objectives:** Exposure to traffic has been associated with biomarkers of increased biological aging, incidence of chronic morbidities and increased cause-specific and all-cause mortality. However, no previous study has evaluated whether traffic pollution is associated with trajectories of unhealthy ageing. The present study aims to fill some of the gaps in existing research by evaluating the association between residential traffic and unhealthy ageing, as assessed through the accumulation of overall and domain-specific health deficits over a 10-year follow-up of a nationally representative cohort of community-dwelling older adults in Spain.

**Methods:** Population-based prospective study with individuals aged  $\geq 60$  years who contributed 8,291 biannual visits. Unhealthy ageing was estimated with a deficit accumulation index (DAI, range 0 to 100%), calculated with the number and severity of health deficits including 22 objectively-measured impairments in physical and cognitive functioning. Differences in DAI at each follow-up across categories of residential traffic density (RTD) at 500 and 1,000 meters, as well as of quintiles of nearest distance to a petrol station, were estimated using marginal structural models with inverse probability of censoring weights. Models were adjusted for sociodemographic and time-varying lifestyle factors, social deprivation index at the census tract and residential exposure to natural spaces.

**Results:** The average increase in DAI (95% confidence interval) for participants in quintiles 2 to 5 vs. 1 (Q2-Q5 vs. Q1) of RTD at 500 meters was of 0.08 (-0.43, 0.59), 0.25 (-0.28, 0.78), 0.43 (-0.09, 0.95)

and 0.80 (0.30, 1.30), respectively. Similar findings were observed across quintiles of RTD at 1000 meters. Distance to the nearest petrol station showed a linear inverse dose-response with prospective changes in DAI: results in quintiles Q2-Q5 vs. Q1 were -0.57 (-1.14, -0.01), -0.66 (-1.21, -0.11), -0.43 (-0.99, 0.13), and -0.91 (-1.44, -0.39), respectively.

**Conclusions/Recommendations:** Exposure to traffic is associated with accelerated trajectories of unhealthy ageing. Diminishing traffic pollution should become a priority intervention for adding healthy years to life in the old age.

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### 799. EVOLUCIÓN DEL MATERIAL PARTICULADO Y ELEMENTOS TRAZA ANTES Y DESPUÉS DE LA PUESTA EN MARCHA DE LA PLANTA DE VALORIZACIÓN ENERGÉTICA DE GIPUZKOA

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**Antecedentes/Objetivos:** Según Eurostat, cada ciudadano genera 530 kg de residuos urbanos de los cuales el 26% se gestiona a partir del tratamiento térmico, sobre todo vía incineración para posterior aprovechamiento energético. El posible efecto en la salud y en el medio ambiente derivado de la emisión de contaminantes atmosféricos de estos focos es una de las preocupaciones en nuestra sociedad. Es importante realizar un control y seguimiento no solo en los puntos de emisión sino de inmisión también en puntos cercanos donde vive la población. Evaluar la evolución de los niveles de PM2.5 y elementos traza asociados (elementos metales y no metales) durante el periodo previo y posterior a la de la Planta de Valorización Energética (PVE) instalada en la provincia de Gipuzkoa y comparar con una zona control con características similares en cuanto a población, orografía y fuentes de emisión.

**Métodos:** Se colocaron 4 medidores DIGITEL 4 municipios (2 en zona control, ZCo, y 2 zona cercana, ZCe, a la PVE). Se realizó un análisis descriptivo y temporal de la concentración de PM2.5 y su composición mediante el diseño Before-After/Control-Impact (BACI) de la ZCo y ZCe antes y después. Período de estudio 01/01/2018 al 30/09/2022 (obteniendo información del aire del 90% de los días).

**Resultados:** Hay un descenso de los niveles de PM2.5 hasta la puesta en marcha de la PVE y un aumento a partir de este momento en las dos zonas, siendo ligeramente mayor en la ZCe (F1,3193 = 6,9, p-valor = 0,008), y sin superar los niveles del 2018 y la recomendación de la OMS (media; 9,54 µg/m<sup>3</sup> y DE = 5,29 µg/m<sup>3</sup>). En relación a los metales, hay un descenso significativo sobre todo en la ZCo, mientras que en la ZCe no se observan cambios. Este descenso en la ZCo es debido a la intervención en un foco contaminante de la zona. El selenio (Se) es el único elemento traza que aumenta solo en la ZCe de manera significativa, aunque los niveles siguen siendo bajos según ATSDR (media: 1,01 y DE: 1,75 ng/m<sup>3</sup>).

**Conclusiones/Recomendaciones:** Se observa un descenso para todos los contaminantes en ambas zonas, aunque menos acusado en la ZCe. El Se es el único elemento traza que presenta un aumento significativo después de la puesta en marcha de la PVE en la ZCe. Dado que Se también aumentó en la fase previa a la puesta en funcionamiento de la PVE en esa zona, es necesario investigar la posible fuente. El método aplicado para detectar cambios en los niveles de contaminantes en aire es apropiado para este tipo de evaluaciones. Es necesario seguir con la monitorización para prevenir efectos nocivos en la salud derivados de su exposición.

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### 1052. GEORREFERENCIACIÓN Y DETERMINANTES AMBIENTALES EN REGISTROS: UNA EXPERIENCIA INNOVADORA EN ANDALUCÍA

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**Antecedentes/Objetivos:** Los modelos de estratificación de riesgos en población crónica permiten mejorar la evaluación de las necesidades de atención sanitaria de la población con enfermedades crónicas. Estos modelos se basan normalmente en información clínica y, en algunos casos, también en algún indicador sociodemográfico. Sin embargo, a pesar de la conocida influencia de los determinantes ambientales de la salud (DAS), estos no son incorporados en la evaluación. El objetivo es ampliar la información de registros clínicos con parámetros de contaminación atmosférica.

**Métodos:** El registro clínico utilizado fue la Base Poblacional de Salud de Andalucía (BPS, 8,4 M, año 2022), mientras que el ambiental fue la de la Red de Información Ambiental de Andalucía (REDIAM). A partir de las direcciones postales de cada sujeto de la BPS se obtuvieron sus coordenadas de localización geográfica. Estas, junto con las mediciones de contaminantes y metales (2011-2020, 977 estaciones captadoras) de REDIAM, fueron utilizadas en modelos bayesianos jerárquicos espaciotemporales para predecir los parámetros de contaminación atmosférica de PM10, NO2, O3, NO, CO, SO2 y PM2.5.

**Resultados:** La georreferenciación se llevó a cabo con éxito en el 99% de los sujetos de la BPS (domicilio en Andalucía). Se obtuvieron valores negativos en NO (244, 4,65%) y PM2.5 (37, 0,70%) e intervalos de credibilidad con valor 0 en NO (703, 13,30%), PM2.5 (53, 1,08%), PM10 (10, 0,19%), CO (8, 0,15%), O3 (4, 0,08%), NO2 (2, 0,04%) y SO2 (1, 0,02%). El porcentaje de error absoluto medio fue, respectivamente, de: 20.705, 27.220, 4.867, 7.670, 6.978, 8.832 y 1.335.

**Conclusiones/Recomendaciones:** El procedimiento llevado a cabo ha permitido disponer de información ambiental en un registro clínico a excepción de las predicciones de NO y PM2.5 que, según los hallazgos, se sugiere no utilizarlos. Esta información, sumada a la información clínica conocida, permitirá mejorar los modelos de estratificación de riesgos considerando también DAS.

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### CR17. Violencia, sexualidad y género/ Violência, sexualidade e género

#### 729. PERFIL SOCIOECONÔMICO E COMPORTAMENTAL DE VÍTIMAS DE EXPLORAÇÃO SEXUAL NA INFÂNCIA E ADOLESCÊNCIA, BRASIL

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**Antecedentes/Objetivos:** A exploração sexual de crianças e adolescentes envolve, além de trocas financeiras, favores, alimentos, drogas,