

# NEWSLETTER



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*Per la ricerca degli articoli pubblicati nella letteratura scientifica nel trimestre in esame sono state consultate le banche dati Medline, Embase, utilizzando le seguenti parole chiave (o i loro sinonimi): 'Birth Cohort', 'Primary Care', 'Infant', 'Child', 'Human', 'Newborn', 'Pediatrician', 'General practice'. Sono qui riportate le referenze considerate rilevanti e pertinenti.*

## DALLE BANCHE DATI BIBLIOGRAFICHE

- ✓ BMC Pediatr 2019;19(1):286.  
**TELEVISION VIEWING AND CHILD COGNITION IN A LONGITUDINAL BIRTH COHORT IN SINGAPORE: THE ROLE OF MATERNAL FACTORS.**  
*Aishworiya R, Cai S, Chen HY, et al.*

**Background:** Although infant media exposure has received attention for its implications on child development, upstream risk factors contributing to media exposure have rarely been explored. The study aim was to examine the relationship between maternal risk factors, infant television (TV) viewing, and later child cognition.

**Methods:** We used a prospective population-based birth cohort study, Growing Up in Singapore Towards healthy Outcomes (GUSTO), with 1247 pregnant mothers recruited in their first trimester. We first explored the relationship of infant TV exposure at 12 months and the composite IQ score at 4.5 years, as measured by the Kaufman Brief Intelligence Test, Second Edition (KBIT-2). Multivariable linear regressions were adjusted for maternal education, maternal mental health, child variables, birth parameters, and other relevant confounders. We then examined the associations of maternal risk factors with the amount of daily TV viewing of 12-month-old infants. Path analysis followed, to test a conceptual model designed a priori to test our hypotheses.

**Results:** The average amount of TV viewing at 12 months was 2.0 h/day (SD 1.9). TV viewing in hours per day was a significant exposure variable for composite IQ ( $+f = -1.55$ ; 95% CI: -2.81 to -0.28) and verbal IQ ( $+f = -1.77$ ; 95% CI: -3.22 to -0.32) at 4.5 years. Our path analysis demonstrated that lower maternal education and worse maternal mood (standardized  $+f = -0.27$  and  $0.14$ , respectively,  $p < 0.01$  for both variables) were both risk factors for more media exposure. This path analysis also showed that maternal mood and infant TV strongly mediated the relationship between maternal education and child cognition, with an exceptional model fit (CFI  $> 0.99$ , AIC 15249.82, RMSEA  $< 0.001$ ).

**Conclusion:** Infant TV exposure has a negative association with later cognition. Lower maternal education and suboptimal maternal mental health are risk factors for greater television viewing. Paediatricians have a role in considering and addressing early risks that may encourage television viewing.



- ✓ JAMA Netw Open 2019;2(6):e196405.  
**PRENATAL RISK FACTORS AND PERINATAL AND POSTNATAL OUTCOMES ASSOCIATED WITH MATERNAL OPIOID EXPOSURE IN AN URBAN, LOW-INCOME, MULTIETHNIC US POPULATION.**  
*Azuine RE, Ji Y, Chang HY, et al.*

**Importance:** The opioid epidemic increasingly affects pregnant women and developing fetuses, resulting in high rates of neonatal abstinence syndrome. However, longitudinal studies that prospectively observe newborns with neonatal abstinence syndrome or with maternal opioid use and examine their long-term physical and neurodevelopmental outcomes are lacking. Objective: To examine prenatal risk factors associated with maternal opioid use during pregnancy and the short-term and long-term health consequences on their children.

**Design, Setting, and Participants:** This cohort study analyzed data from the Boston Birth Cohort, an urban, low-income, multiethnic cohort that enrolled mother-newborn pairs at birth at Boston Medical Center (Boston, Massachusetts) starting in 1998, and a subset of children were prospectively observed at Boston Medical Center pediatric primary care and subspecialty clinics from birth to age 21 years. Data analysis began in June 2018 and was completed in May 2019. Exposures: In utero opioid exposure was defined as maternal self-reported opioid use and/or clinical diagnosis of neonatal abstinence syndrome.

**Main Outcomes and Measures:** Pregnancy outcomes, postnatal child physical health, and major neurodevelopmental disabilities, documented in maternal and child medical records. Results: This study included 8509 Boston Birth Cohort mother-newborn pairs for prenatal and perinatal analyses. Of those, 3153 children continued to receive pediatric care at Boston Medical Center and were included in assessing postnatal outcomes. Overall, 454 of the 8509 children (5.3%) in the Boston Birth Cohort had in utero opioid exposure. At birth, opioid exposure was associated with higher risks of fetal growth restriction (odds ratio [OR], 1.87; 95% CI, 1.41-2.47) and preterm birth (OR, 1.49; 95% CI, 1.19-1.86). Opioid exposure was associated with increased risks of lack of expected physiological development (OR, 1.80; 95% CI, 1.17-2.79) and conduct disorder/emotional disturbance (OR, 2.13; 95% CI, 1.20-3.77) among preschool-aged children. In school-aged children, opioid exposure was associated with a higher risk of attention-deficit/hyperactivity disorder (OR, 2.55; 95% CI, 1.42-4.57).

**Conclusions and Relevance:** In this sample of urban, high-risk, low-income mother-child pairs, in utero opioid exposure was significantly associated with adverse short-term and long-term outcomes across developmental stages, including higher rates of physical and neurodevelopmental disorders in affected children. Efforts to prevent the opioid epidemic and mitigate its health consequences would benefit from more intergenerational research.



J Asthma 2019;1-9.

**ASTHMA, ATOPY AND SERIOUS PSYCHOLOGICAL DISTRESS: PREVALENCE AND RISK FACTORS AMONG YOUNG PEOPLE IN THE MELBOURNE ATOPY COHORT STUDY.**

*Barton CA, Dharmage SC, Lodge CJ, et al.*

**Background:** While atopic conditions are associated with increased risk of mental health problems, the evidence that a range of allergic conditions are associated with psychological distress in young people is less clear.

**Methods:** We recruited a longitudinal birth cohort study of 620 children with a family history of allergic disease. At the 18-year follow up, atopic sensitization was determined by skin prick testing. Surveys were used to determine psychological distress (Kessler 6), quality of life (SF12), respiratory symptoms and management, presence of current eczema and hay fever. Regression models were used to identify predictors of psychological distress and quality of life, while controlling for potential confounders.

**Results:** Prevalence of serious psychological distress was quite low (n = 22, 5.3%), and there were no associations between psychological distress and current atopic sensitization, symptoms of hay fever, eczema or asthma. Smoking status and lower level of maternal education were associated with lower physical quality of life (SF12 PCS subscale). Psychological distress total score, lower maternal education, smoking, female sex, and current eczema were associated with worse mental quality of life (SF12 MCS subscale).

**Conclusion:** We found relatively low levels of psychological distress in this cohort of young adults, despite a high prevalence of allergic diseases. Positive social factors may serve to buffer psychological distress amongst the cohort accounting for the low prevalence of serious psychological distress observed.



✓ Environ Int 2019;131:104991.

**GREEN SPACE, AIR POLLUTION, TRAFFIC NOISE AND CARDIOMETABOLIC HEALTH IN ADOLESCENTS: THE PIAMA BIRTH COHORT.**

*Bloemsma LD, Gehring U, Klompmaaker JO, et al.*

**Background:** Green space has been hypothesized to improve cardiometabolic health of adolescents, whereas air pollution and traffic noise may negatively impact cardiometabolic health.

**Objectives:** To examine the associations of green space, air pollution and traffic noise with cardiometabolic health in adolescents aged 12 and 16years. **METHODS:** Waist circumference, blood pressure, cholesterol and glycated hemoglobin (HbA1c) were measured in subsets of participants of the Dutch PIAMA birth cohort, who participated in medical examinations at ages 12 (n=1505) and/or 16years (n=797). We calculated a combined cardiometabolic risk score for each participant, with a higher score indicating a higher cardiometabolic risk. We estimated exposure to green space (i.e. the average Normalized Difference Vegetation Index (NDVI) and percentages of green space in circular buffers of 300m and 3000m), air pollution (by land-use regression models) and traffic noise (using the Standard Model Instrumentation for Noise Assessments (STAMINA) model) at the adolescents' home addresses at the time of the medical

examinations. We assessed associations of these exposures with cardiometabolic health outcomes at ages 12 and 16 by multiple linear regression, adjusting for potential confounders.

**Results:** We did not observe consistent patterns of associations of green space, air pollution and traffic noise with the cardiometabolic risk score, blood pressure, total cholesterol levels, the total/HDL cholesterol ratio and HbA1c. We found inverse associations of air pollution with waist circumference at both age 12 and 16. These associations weakened after adjustment for region, except for particulate matter with a diameter of <2.5µm (PM2.5) at age 12. The association of PM2.5 with waist circumference at age 12 remained after adjustment for green space and road traffic noise (adjusted difference -1.42cm [95% CI -2.50, -0.35cm] per 1.16µg/m<sup>3</sup> increase in PM2.5).

**Conclusion:** This study does not provide evidence for beneficial effects of green space or adverse effects of air pollution and traffic noise on cardiometabolic health in adolescents.



☑ J Orthod 2019;46(2):118-125.

#### **PLATOON: PREMATURE LOSS OF BABY TEETH AND ITS IMPACT ON ORTHODONTIC NEED - PROTOCOL.**

*Brown LR, Barber S, Benson PE, et al.*

**Objective:** To investigate the impact of premature extraction of primary teeth (PEPT) on orthodontic treatment need in a cohort of children participating in the Born in Bradford (BiB) longitudinal birth cohort. DESIGN: Observational, cross-sectional cohort.

**Participants:** We aim to recruit 1000 children aged 7-11 years: 500 with a history of PEPT and 500 matched non-PEPT controls.

**Methods:** After informed consent/assent, orthodontic records will be collected, including extra and intra-oral photographs and alginate impressions for study models. Participants will also complete a measure of oral health-related quality of life (COHIP-SF 19). The records will be used to quantify space loss, identify other occlusal anomalies and assess orthodontic treatment need using the Index of Orthodontic Treatment Need. For each outcome, summary statistics will be calculated and the data for children with and without PEPT compared. The records of the children identified to be in need of orthodontic treatment will be examined by an expert orthodontic panel to judge if this treatment should be undertaken at the time of the records or delayed until the early permanent dentition. Collecting robust records in the mixed dentition provides the clinical basis to link each stage of the causal chain and enable the impact of PEPT on orthodontic need to be characterised. This study is the first to provide the foundations for future longitudinal data collection allowing the long-term impact of PEPT to be studied.



✓ Environ Int 2019;128:63-69.

### **USE OF CLEANING AGENTS AT HOME AND RESPIRATORY AND ALLERGIC SYMPTOMS IN ADOLESCENTS: THE PIAMA BIRTH COHORT STUDY.**

*Bukalasa JS, Brunekreef B, Koppelman GH, et al.*

**Background:** It has been suggested that adults who use cleaning agents in their homes have a higher risk of asthma and allergic symptoms. The associations of asthma and allergic symptoms with household use of cleaning agents in adolescents have not been investigated yet.

**Objectives:** To examine the associations of household cleaning agents use with the prevalence of asthma, rhinitis and eczema in adolescents.

**Methods:** In this cross-sectional analysis, we included participants of the PIAMA birth cohort study with data on household use of 10 types of cleaning agents and information on asthma, rhinitis and/or eczema from parent-completed questionnaires at age 14 (N=2333). For the cleaning agents, we developed a composite score ranging from 0 (no exposure) to 30 points (household use on 4-7 days per week for all 10 types of cleaning agents). Logistic regression was used to analyse associations between household cleaning agents use (composite score and specific cleaning agents) and outcomes, adjusting for potential confounders.

**Results:** Seven, 13 and 11% of the participants had asthma, rhinitis and eczema, respectively, at age 14. The composite score for household use of cleaning agents was not associated with asthma, rhinitis and eczema. For instance, adjusted odds ratios (95% confidence interval) for the prevalence of asthma, rhinitis and eczema comparing those with the highest use of cleaning agents ( $\geq 10$  points) to those with never/seldom use (0-4 points) were 0.95 (0.56, 1.63), 1.23 (0.82, 1.82) and 0.95 (0.56, 1.63), respectively. For individual cleaning agents, we only found the use of ammonia to be significantly associated with a lower risk of rhinitis [0.60, (0.44, 0.82)].

**Conclusions:** There was no indication of an increased prevalence of asthma, rhinitis or eczema among adolescents living in households within the highest category of cleaning agents use.



✓ Child Abuse Negl 2019;98:104170.

### **CHILD MALTREATMENT AND ATTENTIONAL PROBLEMS: A LONGITUDINAL BIRTH COHORT STUDY.**

*Boyd M, Kisely S, Najman J, et al.*

**Objective:** To examine whether child maltreatment is associated with attentional problems in adolescence (14 years) and young adulthood (21 years), and whether outcomes depend on the type of maltreatment (sexual vs non-sexual).

**Methods:** Data from a population based cohort study involving 3778 mother-child pairs were linked with data from the state child protection agency to examine associations between child abuse and neglect and attention problems, measured using the Achenbach Child Behaviour Checklist (CBCL) and the Achenbach Young Adult Self Report (YASR).

**Results:** 245 (6.5%) participants had been the subject of notification for non-sexual maltreatment (one or more of neglect, emotional or physical abuse) compared with only 54 (1.4%) who had been subject of notification for suspected sexual abuse. After adjusting for potential confounding variables including maternal, participant and sociodemographic factors, we found those exposed to non sexual maltreatment were likely to experience attentional problems at 14 years ( $p < .001$ ) and 21 years of age ( $p = .044$ ), compared with those participants who had not experienced non sexual maltreatment. By contrast, at age 14 years, sexual abuse was associated with attentional problems only as reported by the participant, not their carer. Results at 21 years of age for those exposed to sexual child maltreatment ( $p=.655$ ) were again in contrast to the observed association between attentional problems and non sexual child maltreatment ( $p = .035$ ).

**Conclusion:** In this study, non-sexual maltreatment in childhood is associated with attentional problems at both 14 years and 21 years of age. These findings highlight the need for targeted research to better understand the longer term mental health outcomes for children exposed to non-sexual maltreatment. Potential implications for mental health services include the need for broader screening at presentation and importantly, greater collaboration with schools, general practitioners and paediatricians, given the greatest impact would arguably be within these settings.



✓ Environ Health Perspect 2019;127(8):87001.

**PRENATAL AND CHILDHOOD TRAFFIC-RELATED AIR POLLUTION EXPOSURE AND TELOMERE LENGTH IN EUROPEAN CHILDREN: THE HELIX PROJECT.**

*Clemente DBP, Vrijheid M, Martens DS, et al.*

**Background:** Telomere length is a molecular marker of biological aging. **OBJECTIVE:** Here we investigated whether early-life exposure to residential air pollution was associated with leukocyte telomere length (LTL) at 8 y of age.

**Methods:** In a multicenter European birth cohort study, HELIX (Human Early Life Exposome) ([Formula: see text]), we estimated prenatal and 1-y childhood exposure to nitrogen dioxide ([Formula: see text]), particulate matter with aerodynamic diameter [Formula: see text] ([Formula: see text]), and proximity to major roads. Average relative LTL was measured using quantitative real-time polymerase chain reaction (qPCR). Effect estimates of the association between LTL and prenatal, 1-y childhood air pollution, and proximity to major roads were calculated using multiple linear mixed models with a random cohort effect and adjusted for relevant covariates.

**Results:** LTL was inversely associated with prenatal and 1-y childhood [Formula: see text] and [Formula: see text] exposures levels. Each standard deviation (SD) increase in prenatal [Formula: see text] was associated with a [Formula: see text] (95% CI: [Formula: see text], [Formula: see text]) change in LTL. Prenatal [Formula: see text] was non significantly associated with LTL ([Formula: see text] per SD increase; 95% CI: [Formula: see text], 0.6). For each SD increment in 1-y childhood [Formula: see text] and [Formula: see text] exposure, LTL shortened by [Formula: see text] (95% CI: [Formula: see text], [Formula: see text]) and [Formula: see text] (95% CI: [Formula: see text], 0.1), respectively. Each doubling in residential distance to nearest major road during childhood was associated with a 1.6% (95% CI: 0.02, 3.1) lengthening in LTL.

**Conclusion:** Lower exposures to air pollution during pregnancy and childhood were associated with longer telomeres in European children at 8 y of age. These results suggest that reductions in traffic-related air pollution may promote molecular longevity, as exemplified by telomere length, from early life onward.



✓ [Pediatr Pulmonol 2019. Sep 30. doi: 10.1002/ppul.24531.](#)

#### **PHYSICAL ACTIVITY AND ASTHMA DEVELOPMENT IN CHILDHOOD: PROSPECTIVE BIRTH COHORT STUDY.**

*Eijkemans M, Mommers M, Remmers T, et al.*

**Background:** Sedentary behavior and decreased physical activity are possible risk factors for developing asthma. This longitudinal study investigates the association between physical activity and subsequent asthma. We hypothesize that children with decreased physical activity at early school age, have higher risk of developing asthma.

**Methods:** One thousand eight hundred thirty-eight children from the KOALA Birth Cohort Study were analyzed. Children who were born prematurely or with congenital defects/diseases with possible influence on either physical activity or respiratory symptoms were excluded. Physical activity, sedentary behavior, and screen time were measured at age 4 to 5 years by questionnaire and accelerometry in a subgroup (n = 301). Primary outcome was asthma, assessed by repeated ISAAC questionnaires between age 6 and 10. Secondary outcome was lung function measured by spirometry in a subgroup (n = 485, accelerometry subgroup n = 62) (forced expiratory volume in 1 second [FEV1], forced vital capacity [FVC] and FEV1/FVC ratio) at age 6 to 7 years.

**Results:** Reported physical activity was not associated with reported asthma nor lung function. Accelerometry data showed that daily being 1 hour less physically active was associated with a lower FEV1/FVC (z score beta, -0.65; 95% confidence interval, -1.06 to -0.24).

**Conclusions:** Physical activity at early school age was not associated with reported asthma development later in life. However, lung function results showed that sedentary activity time was associated with lower FEV1/FVC later in childhood. As



this is the first longitudinal study with objectively measured physical activity and lung function, and because the subgroup sample size was small, this result needs replication.



✓ World J Pediatr 2019;15(3):289-296.

**RISK FACTORS FOR RECURRENT MACROSOMIA AND CHILD OUTCOMES.**

*Fang F, Zhang QY, Zhang J, et al.*

**Background:** Women who had delivered a macrosomic newborn will have a higher risk to deliver another macrosomia. We aimed to examine the recurrence risk of macrosomia in the subsequent pregnancy and the implications in long-term child health.

**Methods:** Data from the Collaborative Perinatal Project, a longitudinal birth cohort with 54,371 singleton births, were used. 401 recurrent macrosomic infants (macro-macro) and 1327 normal weight babies with a macrosomia in the last pregnancy (macro-normal) were selected to explore risk factors for recurrent macrosomia. Furthermore, 768 newly onset macrosomia with normal birthweight infant in previous pregnancies (normal-macro) were identified to examine long-term health effects of recurrent macrosomia.

**Results:** The recurrent rate of macrosomia was 23.2% [95% confidence interval (CI) 21.2%, 25.2%]. White race, higher pre-pregnant body mass index (BMI), more gestational weight gain, male infant and more prior macrosomic infants were significant risk factors for recurrent macrosomia. At 4 years of age, recurrent macrosomic infants had a higher BMI (16.7 vs. 16.1 kg/m<sup>2</sup>), adjusted beta: 0.36, 95% CI: 0.12, 0.60) and a higher risk of overweight and obesity (adjusted OR: 1.56, 95% CI: 1.10, 2.23) than infants with normal birthweight after a previous macrosomic sibling. There was no significant difference between recurrent macrosomia and newly onset macrosomia in child outcomes after adjustment for covariates.

**Conclusions:** Fetal macrosomia has a high recurrence rate in the following pregnancy. Higher maternal pre-pregnant BMI and gestational weight gain are still important risk factors for recurrence of macrosomia, which in turn increases the risk for childhood obesity.



✓ Sleep Med 2019;60:13-19.

**EARLY POLYSOMNOGRAPHIC CHARACTERISTICS ASSOCIATED WITH NEUROCOGNITIVE DEVELOPMENT AT 36 MONTHS OF AGE.**

*Franco P, Guyon A, Stagnara C, et al.*

**Background:** Few studies on the relationship between sleep quantity and/or quality and cognition have been conducted among preschoolers from the healthy general population. We aimed to identify, among 3-year-old children, early polysomnography (PSG) sleep factors associated with estimated intelligence quotient (IQ) using the Weschler Preschool and Primary Scale Intelligence-III test (WPPSI-III) and its indicators: full-scale (FISQ), verbal (VIQ), and performance (PIQ) intelligence quotients.

**Methods:** We included full-term children from the French birth-cohort AuBE with PSG recording at term (M0) and/or six months (M6), and available WPPSI-III scores at three years. Sleep and arousal characteristics of these infants were evaluated during day and night sleep periods. Relationships between IQ scores and sleep parameters were estimated using models with the child as a repeated effect adjusted for time (night/day), maturation (M0/M6), tobacco exposure (yes/no), anxiety-depressive scores during pregnancy, maternal age, duration of breastfeeding and child's gender.

**Results:** A total of 118 PSG recordings were obtained, representing a total of 78 unique children (38 with one PSG and 40 with two PSG). No correlations were found between night and day sleep durations at M0 or M6. Mean VIQ, PIQ, and FSIQ scores were within normal ranges. In multivariate models, longer sleep duration and higher sleep efficiency during the day were negatively associated with all IQ scores. More frequent arousals during the night were associated with lower VIQ scores.

**Conclusion:** Early sleep characteristics such as night sleep fragmentation or longer naps could be associated with impaired cognitive function at three years of age.



☑ Environ Pollut 2019;251:538-546.

### **ASSOCIATIONS OF PRENATAL AND CHILDHOOD CHLORPYRIFOS EXPOSURE WITH NEURODEVELOPMENT OF 3-YEAR-OLD CHILDREN.**

*Guo J, Zhang J, Wu C, et al.*

Chlorpyrifos (CPF), an organophosphate insecticide, has been linked to adverse neurodevelopmental effects in animal studies. However, little is known about long-term neurotoxicity of early-life CPF exposure in humans. We aimed to evaluate the associations of both prenatal and early childhood CPF exposure with neurodevelopment of children. In this observational study based on Sheyang Mini Birth Cohort, pregnant women were recruited from an agricultural region between June 2009 and January 2010, and their children were followed up from birth to age three. Urinary 3,5,6-Trichloro-2-pyridinol (TCPy), a specific metabolite of CPF, was quantified using large-volume-injection gas chromatography-tandem mass spectrometry. Developmental quotients (DQs) of children in motor, adaptive, language, and social areas were assessed by trained pediatricians. Data from 377 mother-child pairs were used in the current study. Associations between

CPF exposure and neurodevelopmental indicators were estimated using generalized linear models with adjustment for potential confounders. The median concentrations of TCPy in maternal and children's urine were 5.39µg/L and 5.34µg/L, respectively. No statistically significant association was found between maternal urinary TCPy concentrations and children neurodevelopment. While for postnatal exposure, we found lower motor area DQ score 0.61 [95% confidence interval (CI): -1.13, -0.09; p=0.02] and social area DQ score 0.55 (95% CI: -1.07, -0.03; p=0.04) per one-unit increase in the ln-transformed childhood urinary TCPy concentrations. Further stratification by sex indicated that the inverse associations were only observed in boys, but not in girls. Our findings suggest that adverse neurodevelopmental effects were associated with early childhood CPF exposure, but not prenatal exposure. Additional longitudinal studies are needed to replicate these results and to further understand the toxicological mechanisms of CPF.



✔ Psychiatry Res 2019;279:186-194.

**VITAMIN D STATUS AND CORRELATES OF LOW VITAMIN D IN SCHIZOPHRENIA, OTHER PSYCHOSES AND NON-PSYCHOTIC DEPRESSION - THE NORTHERN FINLAND BIRTH COHORT 1966 STUDY.**

*Ikonen H, Palaniswamy S, Nordstrom T, et al.*

There is limited knowledge available on the association of vitamin D with psychiatric disorders in young adults. We aimed to investigate vitamin D levels and associating factors in schizophrenia, other psychoses and non-psychotic depression. We studied 4,987 participants from the Northern Finland Birth Cohort 1966 (31 years) with available serum 25-hydroxyvitamin D [25(OH)D] measurements. The final sample was divided into four groups: schizophrenia (n=40), other psychoses (n=24), non-psychotic depression (n=264) and control (n=4659). To account for the influence of environmental and technical covariates, we generated a vitamin D score variable with correction for season, sex, batch effect and latitude. We further examined how vitamin D levels correlate with anthropometric, lifestyle, socioeconomic and psychiatric measures. Neither serum 25(OH)D concentration nor vitamin D score differed between schizophrenia, other psychoses, non-psychotic depression and control group. The prevalence of vitamin D deficiency was 3.2%, insufficiency 25.5%, and sufficiency 71.3%. Low vitamin D score correlated with regular smoking in the group with schizophrenia. No difference was observed in other psychiatric conditions. We did not find any difference in vitamin D status between schizophrenia, psychoses, non-psychotic depression and control groups, but future studies are warranted to elucidate the role of vitamin D in psychiatric conditions.



- ✓ Scand J Med Sci Sports 2019; doi: 10.1111/sms.13501.  
**CHANGE IN PHYSICAL ACTIVITY AND HEALTH-RELATED QUALITY OF LIFE IN OLD AGE-A 10-YEAR FOLLOW-UP STUDY.**

*Jantunen H, Wasenius N, Salonen MK, et al.*

The aim of the study was to examine the association between change in leisure-time physical activity (LTPA) and change in health-related quality of life (HRQoL) and symptoms of depression during a 10-year follow-up. This prospective study included 1036 men and women (mean age at baseline = 61.2 years) from the Helsinki Birth Cohort Study. Leisure-time physical activity was measured with a questionnaire, HRQoL with SF36 and depression symptoms with Beck's depression inventory (BDI). The association between the change in LTPA and change in HRQoL and BDI were investigated with sex-stratified general linear models adjusted for age, smoking, educational attainment, comorbidity score, and baseline value of outcomes. One standard deviation (SD) increase in LTPA was associated with increase in physical summary component of HRQoL in women (B = 0.7 unit, 95% CI = 0.1-1.3, P = 0.032) and in men (B = 0.8 unit, 95% CI = 0.2-1.5, P = 0.014). In women, the 1SD increase in LTPA was also associated with an increase in mental summary component score (B = 1.0, 95% CI = 0.3-1.7, P = 0.005) and a reduction in depressive symptoms (B = -0.7, 95% CI = -1.1 to -0.2, P = 0.003). In conclusion, increase in the volume of LTPA over a 10-year period in late adulthood was associated with improved HRQoL in both men and women, and also diminished depressive symptoms in women. The findings support the promotion of physical activity in later years to enhance HRQoL and mental well-being.



- ✓ Community Dent Oral Epidemiol 2019;47(3):193-200.  
**PRESSURE PAIN SENSITIVITY IS ASSOCIATED WITH DENTAL FEAR IN ADULTS IN MIDDLE AGE: FINDINGS FROM THE NORTHERN FINLAND 1966 BIRTH COHORT STUDY.**

*Kankaanpaa R, Auvinen J, Rantavuori K, et al.*

**Introduction:** Dental fear is a prevalent problem leading to severe deterioration of oral health and health-related quality of life. Despite the knowledge that dental fear is closely linked to painful experience, the association between pain sensitivity and dental fear remains unclear. This study was designed to evaluate this association with validated measures of dental fear and pressure pain sensitivity in a cohort population.

**Methods:** The study population consisted of a subpopulation of the Northern Finland Birth Cohort 1966. At the age of 46 years, 1736 participants completed the valid and reliable Modified Dental Anxiety Scale (MDAS) and participated in a clinical examination, where their nonorofacial pressure pain sensitivity was

evaluated by validated pressure pain threshold (PPT) and tolerance (PPTo) measurements. Gender-specific Tobit regressions were performed to analyse this association adjusted for smoking and depressive and anxiety symptoms.

**Results:** Women with moderate dental fear had 5% (31.3 kPa;  $P < 0.05$ ), and women with high dental fear had 7% (42.9 kPa; n.s.) lower pressure pain threshold than women with low dental fear. Women with moderate dental fear had 4% (35.4 kPa;  $P < 0.05$ ) and women with high dental fear had 9% (82.7 kPa;  $P < 0.01$ ) lower pressure pain tolerance than women with low dental fear. Men with moderate and high dental fear had 3% lower pressure pain tolerance (35.4 kPa;  $P < 0.05$  and 29.6 kPa; n.s., respectively) than men with low dental fear, whereas the associations with pain threshold were not statistically significant. Among women, both anticipatory and treatment-related dental fears were associated with pain threshold and pain tolerance. Among men, pain threshold was associated with treatment-related dental fear only and the associations with pain tolerance were not statistically significant.

**Conclusions:** Nonorofacial pressure pain threshold and tolerance appeared to be lower in participants with dental fear, which emphasizes the role of pain sensitivity in dental fear.



☑ Obesity (Silver Spring) 2019;27(6):982-988.

**METABOLIC RISK FACTORS ASSOCIATED WITH VISCERAL AND SUBCUTANEOUS ADIPOSE TISSUE IN A SEX-SPECIFIC MANNER IN SEVEN-YEAR-OLDS.**

*Kjellberg E, Roswall J, Andersson J, et al.*

**Objective:** This study aimed to investigate how visceral adipose tissue (VAT) and subcutaneous adipose tissue (SAT) volumes were associated with metabolic risk factors in 7-year-old children.

**Methods:** A total of 81 children (52% girls) from a Swedish birth cohort were studied. At 6 years of age, anthropometric data, fasting insulin, glucose, cholesterol, and blood pressure were collected on 53 children with normal weight and 28 children with overweight or obesity, and insulin resistance was estimated. At 7 years of age, magnetic resonance imaging quantified VAT and SAT. Sex and regression analyses were conducted.

**Results:** SAT was more strongly associated with metabolic risk factors than VAT. The associations between VAT and metabolic risk factors were stronger in girls ( $P < 0.05$ ). When VAT was adjusted for birth weight and maternal BMI and education, it accounted for 51% of insulin variance (beta = 11.72;  $P = 0.001$ ) but only in girls. The key finding of this study was that adjusted SAT accounted for 63% of the fasting insulin variance in girls (beta = 2.76;  $P < 0.001$ ). Waist circumference was the best anthropometric marker for insulin resistance.

**Conclusions:** Insulin resistance was associated with abdominal adipose tissue and its associated metabolic risk factors in children as young as 7 years old.



✓ J Matern Fetal Neonatal Med 2019;1-9.

**A POPULATION-BASED STUDY TO IDENTIFY THE PREVALENCE AND CORRELATES OF THE DUAL BURDEN OF SEVERE MATERNAL MORBIDITY AND PRETERM BIRTH IN CALIFORNIA.**

*Lyndon A, Baer RJ, Gay CL, et al.*

**Background:** Prior studies have documented associations between preterm birth and severe maternal morbidity (SMM) but the prevalence and correlates of dual burden are not adequately understood, despite significant family implications.

**Purpose:** To describe the prevalence and correlates of the dual burden of SMM and preterm birth and to understand profiles of SMM by dual burden of preterm birth. Approach: This retrospective cohort study included all California live births in 2007-2012 with gestations 20-44 weeks and linked to a birth cohort database maintained by the California Office of Statewide Health Planning and Development (n = 3,059,156). Dual burden was defined as preterm birth (<37 weeks) with severe maternal morbidity (SMM, defined by Centers for Disease Control). Predictors for dual burden were assessed using Poisson logistic regression, accounting for hospital variance.

**Results:** Rates of preterm birth and SMM were 876 and 140 per 10,000 births, respectively. The most common indications of SMM both with and without preterm birth were blood transfusions and a combination of cardiac indications. One-quarter of women with SMM experienced preterm birth with a dual burden rate of 37 per 10,000 births. Risk of dual burden was over threefold higher with cesarean birth (primiparous primary aRR = 3.3, CI = 3.0-3.6; multiparous primary aRR = 8.1, CI = 7.2-9.1; repeat aRR = 3.9, CI = 3.5-4.3). Multiple gestation conferred a six-fold increased risk (aRR = 6.3, CI = 5.8-6.9). Women with preeclampsia superimposed on gestational hypertension (aRR = 7.3, CI = 6.8-7.9) or preexisting hypertension (aRR = 11.1, CI = 9.9-12.5) had significantly higher dual burden risk. Significant independent predictors for dual burden included smoking during pregnancy (aRR = 1.5, CI = 1.4-1.7), preexisting hypertension without preeclampsia (aRR = 3.3, CI = 3.0-3.7), preexisting diabetes (aRR = 2.6, CI = 2.3-3.0), Black race/ethnicity (aRR = 2.0, CI = 1.8-2.2), and prepregnancy body mass index <18.5 (aRR = 1.4, CI = 1.3-1.5).

**Conclusions:** Dual burden affects 1900 California families annually. The strongest predictors of dual burden were hypertensive disorders with preeclampsia and multiparous primary cesarean.



☑ Int J Obes (Lond) 2019;43(6):1181-1192.

**UNDERSTANDING THE COMPLEXITY OF GLYCAEMIC HEALTH: SYSTEMATIC BIO-PSYCHOSOCIAL MODELLING OF FASTING GLUCOSE IN MIDDLE-AGE ADULTS; A DYNAHEALTH STUDY.**

*Lowry E, Rautio N, Karhunen V, et al.*

**Background:** The prevention of the risk of type 2 diabetes (T2D) is complicated by multidimensional interplays between biological and psychosocial factors acting at the individual level. To address the challenge we took a systematic approach, to explore the bio-psychosocial predictors of blood glucose in mid-age. **METHODS:** Based on the 31-year and 46-year follow-ups (5,078 participants, 43% male) of Northern Finland Birth Cohort 1966, we used a systematic strategy to select bio-psychosocial variables at 31 years to enable a data-driven approach. As selection criteria, the variable must be (i) a component of the metabolic syndrome or an indicator of psychosocial health using WHO guidelines, (ii) easily obtainable in general health check-ups and (iii) associated with fasting blood glucose at 46 years ( $P < 0.10$ ). Exploratory and confirmatory factor analysis were used to derive latent factors, and stepwise linear regression allowed exploration of relationships between factors and fasting glucose.

**Results:** Of all 26 variables originally considered, 19 met the selection criteria and were included in an exploratory factor analysis. Two variables were further excluded due to low loading ( $<0.3$ ). We derived four latent factors, which we named as socioeconomic, metabolic, psychosocial and blood pressure status. The combination of metabolic and psychosocial factors, adjusted for sex, provided best prediction of fasting glucose at 46 years (explaining 10.7% of variation in glucose;  $P < 0.001$ ). Regarding different bio-psychosocial pathways and relationships, the importance of psychosocial factors in addition to established metabolic risk factors was highlighted.

**Conclusions:** The present study supports evidence for the bio-psychosocial nature of adult glycemic health and exemplifies an evidence-based approach to model the bio-psychosocial relationships. The factorial model may help further research and public health practice in focusing also on psychosocial aspects in maintaining normoglycaemia in the prevention of cardio-metabolic diseases.



☑ Environ Int 2019;130:104853.

**NEONATAL BLOOD PRESSURE IN ASSOCIATION WITH PRENATAL AIR POLLUTION EXPOSURE, TRAFFIC, AND LAND USE INDICATORS: AN ENVIRONAGE BIRTH COHORT STUDY.**

*Madhloum N, Nawrot TS, Gyselaers W, et al.*

Elevated blood pressure (BP) in early life may lead to cardiovascular morbidity

and mortality in later life. Air pollution exposure has been associated with increased BP in adults and children, but the contribution of prenatal air pollution exposure has rarely been assessed. In addition, we are not aware of any study on neonatal BP and maternal residential traffic and land use indicators during pregnancy. We investigated the association between newborn BP and prenatal air pollution, traffic and land use indicators, using data from 427 term (gestational age >36 weeks) births from the ENVIRONAGE birth cohort. Newborn BP was measured using an automated device within 4 days after birth. Daily maternal residential air pollutants during pregnancy, including particulate matter with an aerodynamic diameter  $\leq 2.5 \mu\text{m}$  (PM<sub>2.5</sub>) and  $\leq 10 \mu\text{m}$  (PM<sub>10</sub>), black carbon (BC), and nitrogen dioxide (NO<sub>2</sub>), were modelled using a high-resolution spatial-temporal model. The association between newborn BP and air pollution during the last 15 weeks of pregnancy was assessed using distributed lag models. Each  $5 \mu\text{g}/\text{m}^3$  increment in prenatal PM<sub>2.5</sub> exposure was associated with a 2.4 mmHg (95% CI, 0.5 to 4.2) higher systolic and a 1.8 mmHg (95% CI, 0.2 to 3.5) higher diastolic BP at birth. Overall estimates for PM<sub>10</sub> were similar but those for NO<sub>2</sub> and BC did not reach significance. Associations between newborn BP and exposures during the last 4 to 5 weeks of pregnancy were significant for all pollutants. An IQR (20.3%) increment in percentage residential greenness in a 5 km radius was associated with a 1.2 mmHg (95% CI, -2.5 to 0.1;  $p=0.07$ ) lower systolic and a 1.2 mmHg (95% CI, -2.4 to -0.0;  $p=0.05$ ) lower diastolic BP. An IQR (4.1%) increment in percentage industrial area in a 5 km radius was associated with a 1.0 mmHg (95% CI, 0.1 to 1.9;  $p=0.03$ ) higher diastolic BP. Residential traffic indicators did not significantly associate with newborn BP. Prenatal air pollution exposure, greenness, and industrial area at maternal residence may affect offspring BP from birth onwards.



✓ Eur J Clin Nutr 2019;73(7):1049-1062.

**MATERNAL GLYCEMIC INDEX AND GLYCEMIC LOAD IN PREGNANCY AND OFFSPRING METABOLIC HEALTH IN CHILDHOOD AND ADOLESCENCE-A COHORT STUDY OF 68,471 MOTHER-OFFSPRING DYADS FROM THE DANISH NATIONAL BIRTH COHORT.**

*Maslova E, Hansen S, Grunnet LG, et al.*

**Background:** High glycemic index (GI) and glycemic load (GL) as indicators of carbohydrate quality and quantity have been found to increase risk of metabolic outcomes in adults. Whether carbohydrate quality may influence metabolic programming already in early life is unknown. We examined the association of maternal GI and GL with offspring body mass index (BMI) in the first 7 years of life among 68,471 mother-offspring dyads from the Danish National Birth Cohort (DNBC). In a sub-cohort of offspring with clinical data ( $n = 1234$ ) that included 608



dyads exposed to gestational diabetes mellitus (GDM), we also examined the relation to metabolic health at 9-16 years.

**Methods:** Maternal GI and GL were quantified using a mid-pregnancy food frequency questionnaire. We used birth weight and length to calculate offspring's ponderal index. Age- and sex-specific BMI z scores at 5 mo, 12 mo, and 7 y were standardized against WHO reference data. In the clinical cohort, we quantified body composition, HOMA-IR, and HOMA-B. We used multivariable mixed linear and Poisson regression to model the associations.

**Results:** Median (IQR) of GI and GL were 83 (63-111) and 241 (180-333) g/day, respectively. We found that GI (Q4 vs. Q1:1.09, 95%CI: 1.03, 1.15) and GL (Q4 vs. Q1:1.10, 95%CI: 1.05, 1.16) modestly increased the relative risk of large-for gestational age (LGA). In the clinical sub-cohort, we observed a potential increase in offspring HOMA-IR, adiposity, and metabolic syndrome z score with higher maternal GI and GL. These associations were stronger among the GDM-exposed offspring, but the CI included the null value.

**Conclusion:** We found associations of GI and GL in pregnancy with offspring LGA. Potential long-term benefits to offspring exposed to GDM need to be confirmed in larger, well-powered studies.



✓ Paediatr Perinat Epidemiol 2019;33(5):384-393.

**MATERNAL SMOKING DURING PREGNANCY AND OFFSPRING UTILISATION OF HEALTH CARE SERVICES: A POPULATION-BASED COHORT STUDY.**

*Narvestad H, Vestergaard CH, Rytter D, et al.*

**Background:** Maternal smoking during pregnancy (MSDP) has been associated with a wide range of adverse effects on offspring health, such as low birthweight, behavioural disorders, and asthma. The number of women that smoke during pregnancy in Denmark is still high, making it relevant to study the long-term health outcomes in offspring exposed to maternal smoking in utero.

**Objective:** We investigated whether exposure to MSDP is associated with more frequent use of health care services during the first 10 years of life.

**Methods:** This population-based cohort study included participants enrolled in the Danish National Birth Cohort between 1996 and 2003. Data on MSDP were obtained from two telephone interviews during pregnancy and one interview after pregnancy. The primary outcome was contacts to the health care system. From Danish national registries, we obtained information on number and type of contacts to the general practitioner (GP), and information on the specific types of services provided. Further, we obtained information on hospital admissions, and redemption of prescribed medicine. We fitted negative binomial regression models and Cox proportional hazards regression models to estimate associations. All analyses were adjusted for socio-economic status, birth year, and various maternal factors.

**Results:** We studied 83,905 liveborn singletons and found that offspring exposed to maternal smoking in utero had more contacts to the GP in the first 10 years of life with an incidence rate ratio of 1.05, 95% confidence interval [CI] 1.04, 1.06. A higher rate of admission to hospital in 9 out of 20 categories was found, as was a higher rate of being prescribed psychoanaleptics (hazard ratio [HR] 1.41, 95% CI 1.25, 1.60), drugs for obstructive pulmonary disease (HR 1.14, 95% CI 1.14, 1.20), and antibiotics (HR 1.03, 95% CI 1.01, 1.05).

**Conclusions:** We found that offspring exposed to MSDP had a higher use of health care services than unexposed offspring.



☑ Nord J Psychiatry 2019;73(6):340-348.

**PROSPECTIVE RELATIONS BETWEEN ALEXITHYMIA, SUBSTANCE USE AND DEPRESSION: FINDINGS FROM A NATIONAL BIRTH COHORT.**

*Patwardhan I, Mason WA, Chmelka MB, et al.*

**Purpose:** This study examined a developmental model that links affect-regulation difficulties in childhood with three dimensions of alexithymia in adolescence (difficulty identifying feelings, difficulty describing feelings, and externally oriented thinking) and substance use and depression in adulthood, while accounting for cumulative contextual risk in childhood, and testing potential gender moderation.

**Methods:** Multiple group path analyses were conducted using data from the Northern Finland Birth Cohort 1986 (N = 6963). Analyses used data collected during prenatal/birth, childhood, adolescence, and young adulthood periods.

**Results:** Our examination of early precursors for alexithymia indicated that the associations of affect-regulation problems in childhood with alexithymia were stronger for girls, potentially putting girls with affect-regulation difficulties in childhood at higher risk for developing alexithymia in adolescence. The associations of cumulative contextual risk in childhood with alexithymia, substance use disorder, and depression diagnosis in adulthood were significant for both girls and boys. Our findings in regard to substance use and depression disorders revealed that alexithymia in adolescence predicted depression diagnosis in adulthood, particularly due to a contribution from the alexithymia domain of 'difficulties identifying feelings.' However, none of the alexithymia domains was directly associated with substance use disorder in adulthood.

**Conclusions:** Our study contributes to research that links alexithymia with difficulties in affect regulation and cumulative contextual risk in childhood, yielding findings that may be relevant for preventive interventions.



✓ Int J Obes (Lond) 2019;43(8):1568-1577.

**BREASTFEEDING AND CARDIOMETABOLIC MARKERS AT AGE 12: A POPULATION-BASED BIRTH COHORT STUDY.**

*Pluymen LPM, Wijga AH, Gehring U, et al.*

**Background:** There is growing evidence for a protective effect of breastfeeding against overweight and diabetes. It is less clear though, whether breastfed infants also have a more favorable cardiometabolic profile in childhood.

**Objective:** We investigated whether children who were breastfed in infancy had more favorable cardiometabolic markers at 12 years of age than children who were never breastfed and received formula milk instead, and whether associations depended on the duration of breastfeeding.

**Methods:** In 1509 participants of the population-based PIAMA birth cohort study, cardiometabolic markers were measured at 12 years of age. Duration of breastfeeding in weeks was assessed through parental questionnaires at 3 months and 1 year of age. Multivariable linear regression analysis was used to investigate associations of breastfeeding (any vs. never breastfeeding and duration of breastfeeding in categories <3 months, 3 to <6 months, and ≥6 months breastfeeding vs. never breastfeeding) with systolic and diastolic blood pressure (SBP and DBP, in Z-scores adjusted for age, sex, and height), total-to-high-density lipoprotein cholesterol (TC/HDL), glycated hemoglobin (HbA1c, in mmol/mol), body mass index (BMI, in Z-scores adjusted for age and sex) and waist circumference (WC, in cm). Multivariable logistic regression was used to investigate the association of breastfeeding with odds of being overweight. **RESULTS:** 1288 of 1509 children (85.3%) received any breastmilk in infancy. Breastfed children had a lower SBP Z-score (-0.21 SD (approximately -2.29 mmHg), 95% CI -0.37, -0.06), a lower DBP Z-score (-0.10 SD (approximately -1.19 mmHg), 95% CI -0.20, -0.00), a smaller WC (-1.12 cm, 95% CI -2.20; -0.04), and lower odds of being overweight (OR 0.61, 95% CI 0.38, 0.97) than never breastfed children. These associations were not different between children with shorter and longer duration of breastfeeding. No statistically significant differences in TC/HDL, HbA1c, and BMI were observed between breastfed and never breastfed children.

**Conclusions:** We observed that breastfeeding was associated with a lower blood pressure, a smaller waist circumference and a lower risk of overweight in 12-year old children. These associations were independent of the duration of breastfeeding. No associations were observed between breastfeeding and other cardiometabolic markers.



✓ J Clin Endocrinol Metab 2019;104(7):2701-2711.

**CLIMACTERIC STATUS AT THE AGE OF 46: IMPACT ON METABOLIC OUTCOMES IN POPULATION-BASED STUDY.**

*Savukoski S, Makela H, Auvinen J, et al.*

**Context:** Menopausal transition is associated with increased cardiovascular risks. Available data on the effect of earlier climacterium on these risks are limited. **OBJECTIVE:** To compare cardiovascular risk-associated parameters at the ages of 14, 31, and 46 in relation to climacteric status at the age of 46.

**Design, Setting, and Participants:** A prospective cohort study including 2685 women from the Northern Finland Birth Cohort 1966.

**Main Outcome Measures:** Follicle-stimulating hormone, body mass index (BMI), waist circumference, waist-to-hip ratio (WHR), blood pressure (BP), body composition, cholesterol levels, testosterone (T) levels, free androgen index (FAI), high-sensitivity C-reactive protein (hs-CRP), and liver enzymes.

**Results:** Women who were climacteric at the age of 46 had lower BMIs ( $P = 0.029$ ), T levels ( $P = 0.018$ ), and FAIs ( $P = 0.009$ ) at the age of 31. At the age of 46, they had less skeletal muscle ( $P < 0.001$ ), a higher fat percentage ( $P = 0.016$ ), higher cholesterol levels [total cholesterol ( $P < 0.001$ ), low-density lipoprotein cholesterol ( $P < 0.001$ ), high-density lipoprotein cholesterol (HDL-C;  $P = 0.022$ ), and triglycerides ( $P = 0.008$ )], and higher alanine aminotransferase ( $P = 0.023$ ) and gamma-glutamyltransferase ( $P < 0.001$ ) levels compared with preclimacteric women. Waist circumference, WHR, BP, and hs-CRP levels did not differ between the groups. Of the climacteric women, 111/381 were using hormone-replacement therapy (HRT). In subanalysis that excluded the HRT users, triglycerides, HDL-C, and body fat percentage did not differ among the groups.

**Conclusions:** Earlier climacterium is associated with mainly unfavorable.



✓ J Med Genet 2019;56(9):607-616.

**GENOME-WIDE ASSOCIATION STUDY IDENTIFIES SEVEN NOVEL LOCI ASSOCIATING WITH CIRCULATING CYTOKINES AND CELL ADHESION MOLECULES IN FINNS.**

*Sliz E, Kalaja M, Ahola-Olli A, et al.*

**Background:** Inflammatory processes contribute to the pathophysiology of multiple chronic conditions. Genetic factors play a crucial role in modulating the inflammatory load, but the exact mechanisms are incompletely understood. **OBJECTIVE:** To assess genetic determinants of 16 circulating cytokines and cell adhesion molecules (inflammatory phenotypes) in Finns.

**Methods:** Genome-wide associations of the inflammatory phenotypes were studied in Northern Finland Birth Cohort 1966 ( $N=5284$ ). A subsequent meta-analysis was completed for 10 phenotypes available in a previous genome-wide association study, adding up to 13 577 individuals in the study. Complementary association tests were performed to study the effect of the ABO blood types on soluble adhesion molecule levels.

**Results:** We identified seven novel and six previously reported genetic associations ( $p < 3.1 \times 10^{-9}$ ). Three loci were associated with soluble vascular cell

adhesion molecule-1 (sVCAM-1) level, one of which was the ABO locus that has been previously associated with soluble E-selectin (sE-selectin) and intercellular adhesion molecule-1 (sICAM-1) levels. Our findings suggest that the blood type B associates primarily with sVCAM-1 level, while the A1 subtype shows a robust effect on sE-selectin and sICAM-1 levels. The genotypes in the ABO locus associating with higher soluble adhesion molecule levels tend to associate with lower circulating cholesterol levels and lower cardiovascular disease risk.

**Conclusion:** The present results extend the knowledge about genetic factors contributing to the inflammatory load. Our findings suggest that two distinct mechanisms contribute to the soluble adhesion molecule levels in the ABO locus and that elevated soluble adhesion molecule levels per se may not increase risk for cardiovascular disease.



✓ Arch Women's Ment Health 2019. doi: 10.1007/s00737-019-00987-z.

**MATERNAL BEHAVIORAL HEALTH SYMPTOM PROFILES IN EARLY FAMILY LIFE: COMPLEXITY AND CONTEXT.**

*Weiss-Laxer NS, Johnson SB, Ghazarian SR, et al.*

Behavioral health problems affect at least 15% of mothers, but few studies have examined how different problems cluster together. Characterizing symptom profiles and their correlates early in the family life cycle can extend existing understanding beyond that provided by studies based on single problems. Mothers in the Fragile Families and Child Wellbeing study, a national birth cohort of racially diverse and mostly unmarried mothers (N = 4205), reported depression, anxiety, and substance dependence symptoms. Latent class analysis (LCA) identified mothers' symptom profiles in their children's third year. We explored associations between symptom profiles and demographics, reproductive health outcomes, functional limitations, and postpartum behavioral health. LCA identified five profiles: (1) Depression only (14.5% of sample), (2) Severe depression and anxiety (5.3%), (3) Anxiety only (2.2%), (4) Depression and substance use (1.4%), and (5) Currently symptom free (76.6%). Depressive symptoms were more moderate when co-occurring with substance dependence and more severe when co-occurring with anxiety. Postpartum depression, postpartum anxiety, and smoking during pregnancy were the most robust correlates of being symptomatic in year 3. Mothers in the "Severe depression and anxiety" group were more likely to be in that profile if they reported functional impairment and/or relationship dissolution. Mothers in the "Depression only" profile were more likely to have higher parity and/or functional impairment. A quarter of mothers of young children had significant behavioral health symptoms, with most reporting depression symptoms. Psychosocial and physical health factors in the pregnancy and postpartum periods were associated with future symptoms, warranting obstetrician and pediatrician attention.

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Il sito nasce dall'esperienza maturata nel corso di un progetto di ricerca finanziato dal Centro nazionale per la prevenzione e il controllo delle malattie (CCM) del Ministero della Salute e coordinato dal Dipartimento di Epidemiologia del SSR del Lazio.

Hanno partecipato al progetto due ospedali pediatrici di rilievo nazionale e due aziende ospedaliere (Ospedale Pediatrico Meyer di Firenze, il Burlo Garofolo di Trieste, l'Azienda Ospedaliera e Universitaria Città della Salute e della Scienza di Torino, la USL12 Versilia), l'Istituto Superiore di Sanità e la Regione Siciliana.

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