NEWSLETTER

INDICE

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 pratice'. Sono qui riportate le referenze considerate rilevanti e pertinenti.

DALLE BANCHE DATI BIBLIOGRAFICHE

   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.

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   BREASTFEEDING AND INFECTIONS IN EARLY CHILDHOOD: A COHORT STUDY.
   Christensen N, Bruun S, Søndergaard J, et al.

   BACKGROUND: Studies on the association between breastfeeding and infections in children beyond the first year of life reveal conflicting results. In a population-based birth cohort, we investigated whether the duration of breastfeeding was associated with the number of hospitalizations due to infection and symptoms of infection at home.
   METHODS: In the Odense Child Cohort, text message questionnaires were used to register information on breastfeeding (weekly until end of weaning) and

symptoms of infection (biweekly; 12-36 months of age). Hospitalization data were obtained from the Danish National Patient Registry.

RESULTS: Of the 1087 invited, 815 mother-infant pairs were included. The median duration of any breastfeeding was 7.6 (interquartile range: 3.5-10.4) months and of exclusive breastfeeding was 2.1 (interquartile range: 0.7-4.4) months. Hospitalization due to infection was seen in 207 (25.4%) infants during the first 3 years of life. The adjusted incidence rate ratio (IRR) for hospitalization due to any infection decreased with a longer duration of any breastfeeding (adjusted IRR: 0.96; 95% confidence interval 0.93-0.99; $P < .001$). The strongest associations between the duration of any breastfeeding and hospitalizations due to infection were found within the first year of life, for lower respiratory tract infections, and other infections ($P \leq .05$). For infants exclusively breastfed, the adjusted IRR for hospitalization was 0.88 (95% confidence interval: 0.80-0.96; $P = .006$). No protective associations were present between breastfeeding and infection symptoms registered at home from ages 12 to 36 months.

CONCLUSIONS: The results suggest that increased duration of breastfeeding, especially exclusive breastfeeding, protects against infections requiring hospitalization in the first year of life but not hospitalizations or symptoms of infection at home beyond the first year.

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3.	Thorax 2020 Nov 11;76(2):116–25. doi: 10.1136/thoraxjnl-2020-215422.
	ASSOCIATION OF ASTHMA SEVERITY AND EDUCATIONAL ATTAINMENT AT AGE 6-7 YEARS IN A BIRTH COHORT: POPULATION-BASED RECORD-LINKAGE STUDY.
	Evans A, Farewell D, Demmler J, et al.

BACKGROUND: There is conflicting research about the association between asthma and poor educational attainment that may be due to asthma definitions. Our study creates seven categories of current chronic and acute asthma to investigate if there is an association for poorer educational attainment at age 6-7 years, and the role of respiratory infections and school absence.

METHODS: This study used a population-based electronic cross-sectional birth cohort 1998-2005, in Wales, UK, using health and education administrative datasets. Current asthma or wheeze categories were developed using clinical management guidelines in general practice (GP) data, acute asthma was inpatient hospital admissions and respiratory infections were the count of GP visits, from birth to age 6-7 years. We used multilevel logistic regression grouped by schools to ascertain if asthma or wheeze was associated with not attaining the expected level in teacher assessment at Key Stage 1 (KS1) adjusting for sociodemographics, perinatal, other respiratory illness and school characteristics. We tested if absence from school was a mediator in this relationship using the difference method.

RESULTS: There were 85 906 children in this population representative cohort with 7-year follow-up. In adjusted multilevel logistic regression, only asthma inpatient hospital admission was associated with increased risk for not attaining

the expected level at KS1 (adjusted OR 1.14 95% CI (1.02 to 1.27)). Lower respiratory tract infection (LRTI) GP contacts remained an independent predictor for not attaining the expected level of education. Absence from school was a potential mediator of the association between hospital admission and educational attainment.

CONCLUSIONS: Clinicians and educators need to be aware that children who have inpatient hospital admissions for asthma or wheeze, or repeated LRTI, may require additional educational support for their educational outcomes.

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4. Clin Exp Allergy 2021 Jan 1. doi: 10.1111/cea.13818.
BLOOD EOSINOPHILS ASSOCIATE WITH REDUCED LUNG FUNCTION GROWTH IN ADOLESCENT ASTHMATICS.
Koefoed HJL, Gehring U, Vonk JM, Koppelman GH.

BACKGROUND AND OBJECTIVE: Some children with asthma have low lung growth, putting them at increased risk for COPD later in life. However, it is currently not clear who will experience this adverse growth pattern. We therefore investigated the predictive role of blood eosinophils as a type 2 inflammation marker in lung growth, focusing on the presence and severity of asthma.

METHODS: We investigated blood eosinophils and lung function growth (percentage of predicted values) using linear mixed models in children and adolescents from two longitudinal cohorts. One cohort was hospital-based and consisted of asthmatic children at their first outpatient clinic visit after referral by the general practitioner (n = 133, mean age 9.8), while the second was a general population-based birth cohort (PIAMA, asthma n = 52 and non-asthma n = 433, mean age 8.1). The hospital-based cohort had not been treated with inhaled corticosteroids (ICS) before referral.

RESULTS: Subjects in the hospital-based asthma cohort had more severe asthma compared with the asthmatic subjects in the population-based cohort, defined by lower lung function levels and a higher prevalence of bronchial hyper-responsiveness. In the asthma cohort, higher blood eosinophil numbers were associated with less growth in FEV1 (estimated change in lung function per 1 unit increase in ln blood eosinophils (B): −0.66%/year (95% confidence interval (CI): −1.11 to −0.20, p <.01) and FVC (B: −0.40%/year (95% CI: −0.75 to −0.05), p =.025) during follow-up in adolescence (min 7, max 17 years). These associations were not observed in the general population-based birth cohort, regardless of asthma status during follow-up (age 8–16).

CONCLUSIONS AND CLINICAL RELEVANCE: Blood eosinophil counts in children with asthma not treated with ICS at referral were predictive of lower growth in FEV1 and FVC during follow-up in adolescence. Our findings indicate that this association is dependent on the degree of asthma severity. Future studies should address whether anti-eosinophilic treatments preserve lung function growth in children with asthma.

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5. Br J Gen Pract. 2021;71(703):e105-e112. doi: 10.3399/bjgp20X714173.
    MATERNAL DEPRESSION AND NON-SPECIFIC HEALTH COMPLAINTS IN THE OFFSPRING: A CROSS-SECTIONAL STUDY IN DANISH PRIMARY CARE.
    Lyngsøe BK, Rytter D, Munk-Olsen T, et al.

Background: Maternal depression has been linked to adverse outcomes in the offspring. Existing literature is mainly based on parental reports, which can be an unreliable source when the parent has depression.
Aim: To explore if maternal depression was associated with daily health complaints and low self-assessed health (SAH) in the offspring.
Design and setting: Participants were 45 727 children from the Danish National Birth Cohort recruited between 1996 and 2002. At 11-year follow-up, mothers and their children were invited to complete a questionnaire. Maternal depression was categorised into: no depression, first-time treatment, continued treatment, post-treatment, and relapse.
Method: Binomial regression was used to estimate the adjusted prevalence proportion ratio (aPPR) of frequent health complaints and low SAH in children of mothers with depression compared to children of mothers without depression.
Results: The prevalence of any daily health complaint was 11.4%, daily somatic complaints 4.1%, daily mental complaints 8.9%, both daily mental and somatic complaints 1.5%, and low SAH 5.3%. Children of mothers with depression (any category) were more likely to report a daily health complaint: first-time treatment aPPR 1.35 (95% confidence interval [CI] = 0.96 to 1.85), continued treatment aPPR 1.59 (95% CI = 1.37 to 1.85), post-treatment aPPR 1.30 (95% CI = 1.20 to 1.41), and relapse aPPR 1.56 (95% CI = 1.35 to 1.79). Children of mothers with depression were also more likely to report low SAH: first-time treatment aPPR 1.58 (95% CI = 0.99 to 2.54), continued treatment aPPR 1.86 (95% CI = 1.51 to 2.28), post-treatment aPPR 1.34 (95% CI = 1.19 to 1.50), and relapse aPPR 1.56 (95% CI = 1.26 to 1.93). Girls had a higher prevalence of mental and somatic health complaints and more often reported low SAH compared to boys.
Conclusion: Treatment of maternal depression was associated with higher prevalence of daily health complaints and low SAH in the offspring at age 11 years. The association was strongest for children of mothers with continued depression or relapse.

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6. Eur J Pain. 2021. doi: 10.1002/ejp.1719.
    A WIDENING GAP BETWEEN BOYS AND GIRLS IN MUSCULOSKELETAL COMPLAINTS, WHILE GROWING UP FROM AGE 11 TO AGE 20 - THE PIAMA BIRTH COHORT STUDY.
    Picavet HSJ, Gehring U, van Haselen A, et al.

INTRODUCTION: The adolescent years represent a key period for the development of musculoskeletal complaints (MSC) and the differences between boys and girls. We evaluated the prevalence and course of MSC and factors associated with MSC while growing up from age 11 to age 20.

METHODS: Questionnaire-based data at age 11 (n = 2,638), age 14 (n = 2,517), age 17 (n = 2,094) and at age 20 (n = 2,206) from the ongoing Prevention and Incidence of Asthma and Mite Allergy (PIAMA) birth cohort were analyzed. MSC refers to pain of lower back, upper- and/or lower extremities. A multivariable logistic regression analysis was used to evaluate a number of factors in relation to persistent pain (pain reported at three out of four measurements).

RESULTS: Prevalence of MSC increased from 14.2% at age 11 to 22.1% at age 20 for boys, and from 17.4% at age 11 to 37.9% at age 20 for girls. Persistent pain was found among 5.1% of the boys and 16.5% of the girls. Being bullied, sleeping problems and tiredness during the day were significantly associated with persistent pain, in both boys and girls, while the latter two were more prevalent among girls. Self-reported (sports-) accidents, and among girls also early onset of puberty, were also significantly associated with persistent pain, but lifestyle factors, such as physical activity and smoking, were not.

CONCLUSION: The prevalence of MSC increases during adolescence, with a widening gap between boys and girls. The factors associated with MSC are similar in boys and girls, though the prevalence of some of these differ by sex.

SIGNIFICANCE: Measuring a group of youngsters 4 times between age 11 and 20 shows an increase in the percentage reporting musculoskeletal complaints (MSC) with a widening gap between girls and boys, with more pain among girls. Boys and girls do hardly differ with respect to factors associated with MSC, being mainly psychosocial factors and (sports) accidents.

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7. J Paediatr Child Health. 2020. doi: 10.1111/jpc.15174.
    BURDEN OF INFECTION IN AUSTRALIAN INFANTS.
    Rowland R, Sass Z, Ponsonby AL, et al.; Barwon Infant Study Investigator Group.

Aim: To determine the incidence, risk factors and health service utilisation for infection in the first 12 months of life in a population-derived Australian pre-birth cohort.

Methods: The Barwon Infant Study is a population-derived pre-birth cohort with antenatal recruitment (n = 1074) based in Geelong, Victoria, Australia. Infection data were collected by parent report, and general practitioner and hospital records at 1, 3, 6, 9 and 12 months of age. We calculated the incidence of infection, attendance at a health service with infection and used multiple negative binomial regression to investigate the effects of a range of exposures on incidence of infection.

Results: In the first 12 months of life, infections of the upper and lower respiratory tract (henceforth 'respiratory infections'), conjunctivitis and gastroenteritis occurred at a rate of 0.35, 0.04 and 0.04 episodes per child-month, respectively. A total of 482 (72.4%) infants attended a general practitioner with an infection and 69 (10.4%) infants attended the emergency department. Maternal antibiotic exposure in pregnancy and having older siblings were associated with respiratory infection. Childcare attendance by 12 months of age was associated with respiratory infections and gastroenteritis. Breastfeeding, even if less than 4 weeks in total, was associated with reduced respiratory infection.

Conclusion: Infection, especially of the respiratory tract, is a common cause of morbidity in Australian infants. Several potentially modifiable risk factors were identified, particularly for respiratory infections. Most infections were managed by general practitioners and 1 in 10 infants attended an emergency department with infection in the first year of life.

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8. Nutrients. 2020;12(12):3680. doi: 10.3390/nu12123680.
MATERNAL INTAKE OF COW'S MILK DURING LACTATION IS ASSOCIATED WITH LOWER PREVALENCE OF FOOD ALLERGY IN OFFSPRING.
Stråvik M, Barman M, Hesselmar B, et al.

Maternal diet during pregnancy and lactation may affect the propensity of the child to develop an allergy. The aim was to assess and compare the dietary intake of pregnant and lactating women, validate it with biomarkers, and to relate these data to physician-diagnosed allergy in the offspring at 12 months of age. Maternal diet during pregnancy and lactation was assessed by repeated semi-quantitative food frequency questionnaires in a prospective Swedish birth cohort (n = 508). Fatty acid proportions were measured in maternal breast milk and erythrocytes. Allergy was diagnosed at 12 months of age by a pediatrician specialized in allergy. An increased maternal intake of cow's milk during lactation, confirmed with biomarkers (fatty acids C15:0 and C17:0) in the maternal blood and breast milk, was associated with a lower prevalence of physician-diagnosed food allergy by 12 months of age. Intake of fruit and berries during lactation was associated with a higher prevalence of atopic eczema at 12 months of age. Our results suggest that maternal diet modulates the infant's immune system, thereby influencing subsequent allergy development.

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9. J Pediatr. 2021;229:147-153.e1. doi: 10.1016/j.jpeds.2020.10.031.
EPIDEMIOLOGY OF SURGICAL PROCEDURES, ANESTHESIA, AND IMAGING STUDIES BY GESTATIONAL AGE DURING THE FIRST YEAR OF LIFE IN MEDICAID-INSURED INFANTS.
Taenzer AH, Baertschiger RM, Cazaban CG, et al.

OBJECTIVES: To evaluate the rate of surgical procedures, anesthetic use, and imaging studies by prematurity status for the first year of life we analyzed data for Texas Medicaid-insured newborns.
STUDY DESIGN: We developed a retrospective population-based live birth cohort of newborn infants insured by Texas Medicaid in 2010-2014 with 4 subcohorts: extremely premature, very premature, moderate/late premature, and term.
RESULTS: In 1 102 958 infants, surgical procedures per 100 infants were 135.9 for extremely premature, 35.4 for very premature, 15.5 for moderate/late premature, and 6.5 for term. Anesthetic use was 62.0 for extremely premature, 20.8 for very premature, 11.1 for moderate/late premature, and 5.6 for the term subcohort. The most common procedures in the extremely premature were neurosurgery, intubations, and procedures that facilitated caloric intake (gastrostomy tubes and fundoplications). The annual rates for the first year of life for chest radiograph ranged from 15.0 per year for the extremely premature cohort to 0.6 for term infants and for magnetic resonance imaging (MRI) from 0.3 to 0.01. MRI was the most common imaging study with anesthesia support in all maturity levels. MRIs were done in extremely premature without anesthesia in over 90% and in term infants in 57.2%.
CONCLUSIONS: Surgical procedures, anesthetic use, and imaging studies in infants are common and more frequent with higher a degree of prematurity while the use of anesthesia is lower in more premature newborns. These findings can provide direction for outcome studies of surgery and anesthesia exposure.

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10. Child Psychiatry Hum Dev. 2020. doi: 10.1007/s10578-020-01084-4.
ASSOCIATIONS BETWEEN MODE OF BIRTH AND NEUROPSYCHOLOGICAL DEVELOPMENT IN CHILDREN AGED 4 YEARS: RESULTS FROM A BIRTH COHORT STUDY.
Takács L, Putnam SP, Monk C, et al.

The aim of this prospective longitudinal study was to examine the association between Cesarean section (CS) and child development and behavior. The sample consisted of 256 children who were born at term without serious perinatal pathologies. Their development and behavior was assessed at the age of four using Ages and Stages Questionnaire (ASQ-3), Children's Behavior Questionnaire and Strength and Difficulties Questionnaire. Multivariate linear regression analyses were conducted to assess the association between CS and child outcomes. CS was associated with better scores in the Problem Solving domain of

the ASQ in the whole sample. After stratifying by child sex, the positive association between CS and the Problem Solving domain was significant in boys, while no association was found in girls. Girls were rated less optimally in the Gross Motor domain of the ASQ when born via CS. Mode of birth was not associated with behavioral outcomes.

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RESPIRATORY HEALTH OF PACIFIC YOUTH: AN OBSERVATIONAL STUDY OF ASSOCIATED RISK AND PROTECTIVE FACTORS THROUGHOUT CHILDHOOD.

Tautolo ES, Wong C, Vandal A, et al.

Background: Respiratory disease is the third most common cause of death in New Zealand, with Pacific people living in New Zealand bearing the greatest burden of this type of disease. Although some epidemiological outcomes are known, we lack the specifics required to formulate targeted and effective public health interventions. The Pacific Islands Families (PIF) birth cohort study is a study that provides a unique source of data to assess lung function and current respiratory health among participants entering early adulthood and to examine associations with early life events during critical periods of growth.
Objective: This paper aims to provide an overview of the design, methods, and scope of the Respiratory Health of Pacific Youth Study, which uses the overall PIF study cohort aged 18-19 years.
Methods: From 2000-2019, the PIF study has followed, from birth, the growth, and the development of 1398 Pacific children born in Auckland, New Zealand. Participants were nested within the overall PIF study (at ages 18-19 years) from June 2018, and assessments were undertaken until mid-November 2019. The assessments included respiratory and general medical histories, a general physical examination, assessment of lung function (forced expiratory volume and forced vital capacity), self-completed questionnaires (St George's Respiratory Questionnaire, European Quality of Life 5 Dimensions-3 Level, Epworth Sleepiness Scale for Children and Adolescents, and Leicester Cough Questionnaire), blood tests (eosinophils, Immunoglobulin E, Immunoglobulin G, Immunoglobulin A, Immunoglobulin M, and C-reactive protein), and chest x-rays. Noninferential analyses will be carried out on dimensionally reduced risk and protective factors and confounders.
Results: Data collection began in June 2018 and ended in November 2019, with a total of 466 participants recruited for submission of the paper. Collection and collation of chest x-ray data is still underway, and data analysis and expected results will be published by November 2020.
Conclusions: This is the first longitudinal observational study to address the burden of respiratory disease among Pacific youth by determining factors in early life that impose long-term detriments in lung function and are associated with the presence of respiratory illness. Identifying risk factors and the magnitude of their

effects will help in adopting preventative measures, establishing whether any avoidable risks can be modified by later resilient behaviors, and provide baseline measurements for the development of respiratory disease in later adult life. The study results can be translated into practice guidelines and inform health strategies with immediate national and international impact.

International registered report identifier (irrid): DERR1-10.2196/18916.

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STRUCTURAL SPINAL ABNORMALITIES ON MRI AND ASSOCIATIONS WITH WEIGHT STATUS IN A GENERAL PEDIATRIC POPULATION.
van den Heuvel MM, Oei EHG, Renkens JJM, et al.

Background context: Several spinal abnormalities have been studied using magnetic resonance imaging (MRI). However, in children these studies were sparsely performed in general populations. Examining young children's spines is important since the shape of the bone is largely determined during the growth spurt. Furthermore, it is so far unknown if associations between weight status and spinal abnormalities, which are known for adolescents and adults, are already present in young children.

Purpose: We aimed to present the prevalence of structural abnormalities in the prepubertal pediatric spine on MRI and their association with measures of the children's body weight and body composition.

Study design: Cross-sectional study embedded in a prospective population-based birth cohort study.

Patient sample: For this study, participants from the Generation R Study were selected based on the availability of MRI data of the lumbar spine and accelerometry data at the age of 9 years.

Outcome measures: The presence of structural abnormalities of intervertebral discs and vertebrae was scored on MRI. The body mass index-standard deviation [BMI-SD] score was calculated from objectively measured weight and height, and body composition measurements were obtained by a dual-energy X-ray absorptiometry scan.

Methods: A semiquantitative scoring tool to assess the intervertebral discs and vertebrae of the lumbar spine on conventional MRI was designed for this purpose. Proportions of children with spinal abnormalities on at least one lumbar vertebral level were presented. Logistic regression was used to analyze associations between abnormalities and weight and body composition. We declare not to have any financial conflicts of interests.

Results: We included 559 children (median age of 9.88 years (interquartile range 6.74-10.02), 48.5% boys). Most frequently observed abnormalities of the intervertebral discs were abnormal signal intensity (24.9%), decreased or collapsed disc height (37.6%), disc bulging (73.3%), and abnormal nuclear shape (29.1%). Vertebral endplate irregularities and lumbosacral transitional vertebrae

were seen in respectively 40% and 9.3% of the participants. Except for disc bulging, all abnormalities were predominantly present at the L5 level. Only the presence of endplate irregularities was associated with a higher body weight (BMI SD score (odds ratio [OR] 1.50 [95% confidence interval [CI] 1.21-1.86]) and BMI SD change (OR 1.48 [95% CI 1.07-2.03])) and increased body mass values in body composition measurements (% body fat (OR 1.05 [95% CI 1.02-1.09), fat mass index (OR 1.23 [95% CI 1.09-1.39]), and fat-free mass index (OR 1.30 [95% CI 1.06-1.59])) in adjusted analyses.

Conclusions: Structural spinal abnormalities, especially disc bulging, endplate irregularities, and an abnormal disc height, are already present in children aged 9 years from a Dutch population-based cohort. Of those abnormalities, endplate irregularities are associated with various weight and body composition measurements.

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13.
DYNAMIC PREDICTION MODEL TO IDENTIFY YOUNG CHILDREN AT HIGH RISK OF FUTURE OVERWEIGHT: DEVELOPMENT AND INTERNAL VALIDATION IN A COHORT STUDY.
Welten M, Wijga AH, Hamoen M, et al.

Background: Primary prevention of overweight is to be preferred above secondary prevention, which has shown moderate effectiveness.
Objective: To develop and internally validate a dynamic prediction model to identify young children in the general population, applicable at every age between birth and age 6, at high risk of future overweight (age 8).
Methods: Data were used from the Prevention and Incidence of Asthma and Mite Allergy birth cohort, born in 1996 to 1997, in the Netherlands. Participants for whom data on the outcome overweight at age 8 and at least three body mass index SD scores (BMI SDS) at the age of ≥3 months and ≤6 years were available, were included (N = 2265). The outcome of the prediction model is overweight (yes/no) at age 8 (range 7.4-10.5 years),
defined according to the sex- and age-specific BMI cut-offs of the International Obesity Task Force.
Results: After backward selection in a Generalized Estimating Equations analysis, the prediction model included the baseline predictors maternal BMI, paternal BMI, paternal education, birthweight, sex, ethnicity and indoor smoke exposure; and the longitudinal predictors BMI SDS, and the linear and quadratic terms of the growth curve describing a child's BMI SDS development over time, as well as the longitudinal predictors' interactions with age. The area under the curve of the model after internal validation was 0.845 and Nagelkerke R^2 was 0.351.
Conclusions: A dynamic prediction model for overweight was developed with a good predictive ability using easily obtainable predictor information. External validation is needed to confirm that the model has potential for use in practice.

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14. Pain. 2020 Nov 18. doi: 10.1097/j.pain.0000000000002141.
HEADACHE IN GIRLS AND BOYS GROWING UP FROM AGE 11 TO 20 YEARS: THE PREVENTION AND INCIDENCE OF ASTHMA AND MITE ALLERGY BIRTH COHORT STUDY.
Wijga AH, Gehring U, van de Putte EM, et al.

The striking difference between men and women in headache prevalence is suggested to develop in adolescence. Although headaches are common and affect quality of life and daily functioning, the evidence needed to develop effective counselling and preventive approaches is still limited. Using data collected at age 11, 14, 17, and 20 years in the Dutch Prevention and Incidence of Asthma and Mite Allergy birth cohort study (n = 3064 with ≥ 1 questionnaire), we assessed headache prevalence and incidence in girls and boys and explored associations with early life, environmental, lifestyle, health, and psychosocial factors. Associations were analysed longitudinally with generalized linear mixed models and discrete time hazard models. From age 11 to 20 years, the prevalence of headache increased from 9.4% to 19.8% in girls and hardly changed in boys (7.6%-6.1%). Headache commonly co-occurred with other unfavorable health and psychosocial conditions. Eighty-eight percent of the girls and 76% of boys with headache also reported at least one of the following at age 17: sleeping problems, asthma, hay fever, musculoskeletal complaints, fatigue, low mental health, or worrying. Results suggest higher headache prevalence in adolescents following lower educational tracks, in those who skip breakfast ≥2 days per week, and in boys exposed to tobacco smoke in infancy. In girls, sleeping problems and musculoskeletal complaints were associated with higher odds of incident headache and residential greenness with lower odds of incident headache. The high prevalence and strong female predominance of headache, already in adolescence and often with comorbidities, deserve recognition by professionals in (preventive) health care settings and schools.

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15. J Atten Disord. 2020 Dec 14:1087054720972790. doi:10.1177/1087054720972790.
EXAMINING THE EDUCATIONAL GAP FOR CHILDREN WITH ADHD AND SUBTHRESHOLD ADHD.
Zendarski N, Guo S, Sciberras E, et al.

Objective: The present study examined the impact of Attention Deficit Hyperactivity Disorder (ADHD) on core educational outcomes in two large community cohorts of Australian school children.
Method: Academic (reading and numeracy) and non-academic (school engagement, attendance, peer victimization, and parental expectations) outcomes

were compared between children with ADHD, subthreshold ADHD, and controls when children were in grade 5 (M age = 10.5). Data were drawn from the Longitudinal Study of Australian Children birth cohort (LSAC; N = 3,540) and the Children's Attention Project (CAP; N = 356).

Results: Both subthreshold ADHD and ADHD groups had poorer outcomes on all measures, with medium effects sizes. Differences were not evident between subthreshold ADHD and ADHD groups.

Conclusions: Educational outcomes examined in this study highlight the educational risk for upperprimary school children with ADHD or subthreshold ADHD, in comparison to their peers. Monitoring these outcomes is necessary to inform policy, practice, and intervention.

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16. Archives of gerontology and geriatrics 2021;94:104348.
doi:10.1016/j.archger.2021.104348
GLUCOSE REGULATION AND GRIP STRENGTH IN ADULTS: FINDINGS FROM THE HELSINKI BIRTH COHORT STUDY.
Åström MJ, von Bonsdorff MB, Salonen MK, et al.

AIM: This study aimed to assess the association between grip strength and glucose regulation in a cross-sectional setting.

METHODS: Using data from the Helsinki Birth Cohort Study, 924 men and 953 women were studied at a mean age of 61.6 years. Grip strength was assessed in the dominant hand using a Newtest Grip Force dynamometer. A standard 2-h 75 g oral glucose tolerance test (OGTT) was used to define glucose regulation. The participants were classified into four groups: normoglycaemia, prediabetes (impaired fasting glucose or impaired glucose tolerance), newly diagnosed diabetes and previously known diabetes. The association between grip strength and glucose regulation was assessed using multiple linear regression models.

RESULTS: Prediabetes was diagnosed in 32.2% and diabetes in 8.4% using the OGTT. A total of 7.8% of the individuals had previously known diabetes. Compared to individuals with normoglycaemia, grip strength was lower for those with newly diagnosed diabetes (-1.8 kg, 95% CI -3.2 to -0.5) as well as those with previously known diabetes (-1.8 kg, 95% CI -3.2 to -0.4) after adjusting for covariates (age, sex, body mass index, physical activity, education and smoking). No difference in grip strength was found when comparing those with prediabetes and normoglycaemia.

CONCLUSION: In adults, grip strength was lower among those with known and newly diagnosed diabetes compared to those with normoglycaemia. Together with previous findings on associations between grip strength and chronic diseases,

these results support the use of grip strength as an overall health marker in adults.

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17. Diabetes Metab. 2021;101219. doi: 10.1016/j.diabet.2020.101219.
   A HIGH LEAN BODY MASS IS NOT PROTECTING FROM TYPE 2 DIABETES IN THE PRESENCE OF A HIGH BODY FAT MASS.
   Rehunen SKJ, Kautiainen H, Korhonen PE, Eriksson JG.

   Aim: Most studies examining the associations between body composition and type 2 diabetes have been cross-sectional with prevalent diabetes diagnosis or they have analyzed only fat or lean body mass. Hence, the combined effect of fat and lean body mass on the risk of developing type 2 diabetes remains unclear. We investigated whether baseline lean and fat body mass taken simultaneously into account are associated with incidence of type 2 diabetes over a 15-year follow-up in older adults.
   Methods: We studied 704 men (n = 297) and women (n = 407) from the Helsinki Birth Cohort Study (mean age 61 years at baseline) without diabetes at baseline. Bioelectrical impedance analysis was used to derive baseline fat mass index (FMI, fat mass/height2) and lean mass index (LMI, lean mass/height2), dichotomized at sex-specific medians. Incident diabetes was defined as the composite of fasting plasma glucose (FPG) ≥ 7.0 mmol/l, haemoglobin A1c (HbA1C) ≥ 6.5% (48 mmol/mol) or physician-based diagnosis.
   Results: After a median 14.8 (range 12.5-16.8) years of follow-up, 110 incident diabetes cases occurred (15.6%). Participants with high FMI and LMI at baseline had higher composite incidence of type 2 diabetes (P < 0.001), and significantly increased risk of type 2 diabetes after adjustment for potential confounding factors (sex, physical activity, education and body mass index) compared to the other participants.
   Conclusion: Contrary to a general belief greater muscle mass is not protective against type 2 diabetes. High LMI accompanied with high FMI seem to predict subsequent development of type 2 diabetes.

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18. BMJ Open Diabetes Res Care. 2020;8(1):e001568. doi: 10.1136/bmjdrc-2020-001568.
   IMPAIRED GLUCOSE REGULATION, DEPRESSIVE SYMPTOMS, AND HEALTH-RELATED QUALITY OF LIFE.
   Selenius JS, Wasenius NS, Kautiainen H, et al.

   INTRODUCTION: This study aims to investigate whether the associations between impaired glucose regulation and health-related quality of life are modified by severity or type of depressive symptoms.

RESEARCH DESIGN AND METHODS: For this cross-sectional study, we included 1939 individuals (mean age 61.5 years) from the Helsinki Birth Cohort Study. Between 2001 and 2004, a standard 2-hour 75 g oral glucose tolerance test was applied to define normoglycemia, pre-diabetes, and newly diagnosed diabetes. Information on previously diagnosed diabetes was collected from national registers and questionnaires. Pre-diabetes was defined as having either impaired fasting glucose or impaired glucose tolerance. The Mental and Physical Component Scores of health-related quality of life were assessed with Short Form-36. Beck's Depression Inventory was employed to investigate the severity of depressive symptoms and to define minimal (depression score <10), non-melancholic, and melancholic types of depression. We analyzed data with general linear models adjusted for sex, age, lifestyle factors, comorbidities, and body mass index.

RESULTS: Glucose regulation subgroups, especially previously known diabetes, were associated with lower Physical Component Score (p=0.001) and higher depression score (p=0.015), but not with the Mental Component Score (p=0.189). Non-melancholic depression was associated with lower Physical and Mental Component Scores compared with those with depression score <10 and melancholic depression (p<0.001), independently of glucose regulation status (p for glucose regulation status by depression type interaction >0.54).

CONCLUSIONS: Non-melancholic type of depression and previously known diabetes are independently associated with lower health-related quality of life. This should be appraised in long-term treatment of diabetes and when treating non-melancholic depressive symptoms to maintain a higher health-related quality of life.

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19. Scand J Med Sci Sports. 2020. doi: 10.1111/sms.13891.
MATERNAL BODY MASS INDEX, CHANGE IN WEIGHT STATUS FROM CHILDHOOD TO LATE ADULTHOOD AND PHYSICAL ACTIVITY IN OLDER AGE.
Westberg AP, Wasenius N, Salonen MK, et al.

This study aimed to examine the longitudinal associations of maternal body mass index (BMI), weight status in childhood and late adulthood and device-measured total physical activity (TPA) in older age. The study involves 552 participants from Helsinki Birth Cohort Study who were born in Helsinki, Finland, in 1934-1944. TPA was measured with a multisensory body monitor at a mean age of 70 years and expressed in metabolic equivalent of task hours/day (METh/d). Childhood overweight (BMI > 85th percentile) was based on school health records at 6-7 years of age, and late adulthood overweight (BMI ≥ 25 kg/m^2) was based on clinical measurements at the mean age of 61 years. Childhood overweight was associated with lower TPA, particularly in older women (mean difference -3.2 METh/d, 95% confidence interval (CI) -4.6 - -1.9), and late adulthood overweight was associated with lower TPA both in older women (mean difference -6.2, 95% CI

(-7.2 - -5.1) and in older men (mean difference -2.6 METh/d, 95% CI -3.7 - -1.5). TPA in older age was highest in participants who were normal weight both in childhood and adulthood and lowest in participants who were overweight in childhood and adulthood. In participants with childhood overweight, TPA was lower in participants who were overweight both in childhood and adulthood compared to those who were overweight only in childhood. There was a U-shaped distribution of TPA according to maternal BMI in older women (P = .002), but not in older men. In conclusion, reaching normal weight after childhood predicted higher physical activity levels in older age.

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