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PD001 / #259

E-POSTERS DISCUSSION 01: NEONATAL & PREMATURITY
20-02-2025 16:50 - 17:20

PALMITOLEIC ACIDS IN DIABETIC PREGNANCY: A NOVEL APPROACH TO REDUCING GLYCATION-INDUCED NEURODEVELOPMENTAL DISORDERS

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Background and Aims: In pregnant women with abnormal glucose metabolism, the fetus is exposed to a hyperglycemic environment through the placenta, potentially leading to glycation stress. This may adversely affect fetal development, especially the nervous system. We previously demonstrated that insulin resistance is mediated by advanced glycation end products (AGEs) and their receptor (RAGE) in hyperglycemic conditions. Accumulation of AGEs is linked to an increased risk of Alzheimer's disease and attention deficit hyperactivity disorder (ADHD) in children of mothers with gestational diabetes mellitus. Thus, our focus is on the impact of glycation stress on fetal brain development.
Methods: Using a rat model of diabetic pregnancy and a hyperglycemic cell model, we analyzed glycation stress effects on the cerebrum of pups. Western blotting was employed to assess AGEs, inflammatory markers, and Akt-related signaling. The potential protective effects of palmitoleic acid (CPA) and trans-palmitoleic acid (TPA) were also examined.
Results: Increased AGEs production, worsened inflammatory markers, and abnormal Akt signaling were observed in the brains of diabetic model pups. Importantly, both CPA and TPA supplementation during pregnancy attenuated these abnormalities, suggesting a protective role. Cellular models also demonstrated suppressed AGEs production and improved signaling in the presence of these functional lipids.
Conclusions: Our findings suggest that CPA and TPA alleviate signaling abnormalities caused by glycation stress in the fetal brain. Since CPA can be synthesized but TPA must be ingested, dairy products containing TPA during pregnancy may help reduce glycation stress, highlighting the need for further research on neurodevelopmental outcomes.

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PD002 / #280

E-POSTERS DISCUSSION 01: NEONATAL & PREMATURITY
20-02-2025 16:50 - 17:20

ASSOCIATION BETWEEN PLASMA AMINO ACID LEVELS AND GROWTH IN VERY PRETERM INFANTS

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Background and Aims: Optimal growth after preterm birth is important for organ development. Relations among protein intake, plasma amino acids (AAs) and growth are unclear. We performed a secondary analysis of a human milk fortification trial (ClinicalTrials.gov: NCT03537365, PMID:37004355) to investigate if plasma AA levels associate with growth responses, insulin-like growth factor 1 (IGF-1) levels and clinical variables.
Methods: Human milk to very preterm infants (*n*=182) was fortified from ~1 week of age and AA, IGF-1 and protein levels measured in plasma before (T0) and one or two weeks later (T1, T2). Clinical variables and changes in Z-scores for weight, length and head circumference (HC) were recorded from T0 to 35 weeks postmenstrual age (PMA).
Results: Fortification increased Arg, Ile, Leu, Lys, Met and Thr levels from T0 to T2 (all $p<0.05$). T0-T2 increments in 12 AAs (Ala, Arg, Asn, Cys, Gln, His, Ile, Lys, Met, Thr, Trp, Tyr) were associated with HC increments, but not with body weight or length changes. Increases in Arg, Asp, Glu, Ser and Thr at T0-T2 associated positively with IGF-1 increments. Low gestational age and weight at preterm birth were associated with reduced fortification-induced AA increments for many essential/semi-essential AAs. Fortification-related AA levels did not associate well with plasma protein composition (proteomics) or other clinical variables.
Conclusions: Fortification-induced increases in many AA levels associated positively with HC growth at population level. However, correlations among growth parameters and the plasma AA, protein and IGF-1 levels were weak and variable. This prevents the use of plasma AA levels as biomarkers of growth for individual preterm infants.

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PD003 / #94

E-POSTERS DISCUSSION 01: NEONATAL & PREMATURITY
20-02-2025 16:50 - 17:20

SLOW VERSUS FAST ENTERAL FEED ADVANCEMENTS ON INCIDENCE OF NECROTISING ENTEROCOLITIS AND OTHER CLINICAL OUTCOMES IN EXTREMELY LOW BIRTH WEIGHT PREMATURE INFANTS: A SYSTEMATIC REVIEW

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Background and Aims: Extremely low birth weight (ELBW) infants are at high risk for developing necrotising enterocolitis (NEC). Slower enteral feed (EF) rates (<30ml/kg/day) may not reduce NEC risk in very low birth weight infants (VLBW). However, organ immaturity, delayed gastric emptying and dysregulated intestinal peristalsis associated with ELBW infants', raise the question of potential beneficial effects of slower advancement rates. We aimed to assess the effect of slow versus fast (≥30ml/kg/day) EF advancement rates on NEC incidence and other clinical outcomes in ELBW infants.
Methods: A systematic search was conducted (April 2023), including PubMed, Web of Science, EBSCOhost, ScienceDirect, Google Scholar, PROSPERO, and Cochrane CENTRAL. Two investigators independently screened and extracted data. Risk of bias was assessed with RoB2 and certainty of evidence evaluated with GRADEpro GDT.
Results: Three trials (N=305 infants) were included. EF advancement rates showed little to no effect on NEC incidence (RR 1.27, 95% CI 0.66 to 2.46, p=0.48). Moderate-certainty evidence suggested slower EF rates slightly reduce all-cause mortality (RR 0.87, 95% CI 0.58 to 1.30, p=0.49), while very low certainty evidence suggested an increased risk in late-onset sepsis. Contrarily, faster EF advancements were associated with quicker birthweight regain (MD 3.06 days, 95% CI 2.14 to 3.98, p<0.00001), with little to no effect on time to full EFs or length of stay (very low certainty evidence).
Conclusions: There is insufficient information available to determine the effect of EF advancements rates on NEC incidence in ELBW infants, emphasising the need for further research.

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E-POSTERS DISCUSSION 01: NEONATAL & PREMATURITY
20-02-2025 16:50 - 17:20

BONE MINERALIZATION AT AROUND (CORRECTED) AGE 5 YEARS IN EXTREME PRETERM BORN CHILDREN COMPARED TO TERM-BORN CHILDREN

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Background and Aims: Background and aims: 16-40% of the extremely preterm-born (EPB) children develop metabolic bone disease of prematurity (MBDP). To investigate if MBDP persists into childhood under current neonatal care, our objective was to compare bone mineral density (BMD) around (corrected) age 5 years in EPB children versus term-born children.
Methods: Methods: We included 108 EPB children and 269 healthy term-born children. We prospectively compared BMD and the Standard Deviation Scores (SDS) of the total body less head (TBLH) by Dual-energy X-ray Absorptiometry (DXA). Regression analyses were performed to evaluate which child, maternal and growth characteristics associated with BMD_{TBLH} SDS in EPB children. Analysis of covariance (ANCOVA) was performed to analyze the difference of BMD_{TBLH} SDS between cohorts, while corrected for significant variables found in the regression analyses.
Results: Results: At around 5 years, EPB children had lower mean SDS of BMD_{TBLH} (-0.41 vs. 0.04, $p<0.001$), length, weight-for-height, lean body mass (LBM) and fat mass (FM) compared to term-born children. SDS of length ($\beta=0.57$), weight-for-length ($\beta=0.29$), LBM ($\beta=0.57$) and FM ($\beta=0.25$) were positively associated (all $p<0.001$) with BMD_{TBLH} SDS in EPB children, respectively. ANCOVA analysis found no difference in BMD_{TBLH} SDS between EPB and term-born children (-0.07 vs. -0.09, $p=0.85$).
Conclusions: Conclusions: EPB children have a lower BMD_{TBLH} SDS around (corrected) age 5 years than term-born children. However, this seems not to be caused by the bone itself, but explained by growth characteristics. MBDP generally does not persist into young childhood under current neonatal care.

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E-POSTERS DISCUSSION 01: NEONATAL & PREMATURITY
20-02-2025 16:50 - 17:20

FEEDING PATTERNS IN LATE PRETERM INFANTS: A STUDY ON FORMULA CHANGES IN THE FIRST SIX MONTHS

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Background and Aims: The infant formula industry offers a wide range of products for different developmental stages. Despite this, many healthy infants undergo unnecessary formula changes. This study aimed to understand the reasons behind these changes in late preterm infants during their first six months, focusing on formula choice, breastfeeding supplementation, and the use of thickeners.
Methods: We conducted structured interviews with 340 parents of infants aged 6 to 18 months. The interviews were carried out in maternal and child healthcare centers, using a detailed questionnaire to gather information on feeding practices and formula usage
Results: Forty-seven percent of infants experienced a formula change within the first six months, with 67% of those switching to another cow's milk-based formula. The primary reasons for formula changes were constipation (37%), vomiting or regurgitation (27%), and irritability (17%). Infants with lower birth weight z-scores and those with significant increases in weight (Deltaz2) had more formula changes. Interestingly, healthcare professionals such as pediatricians had minimal influence on parents' formula choices.
Conclusions: Most formula changes were driven by parental concerns about common infant symptoms, which were often perceived as formula intolerance. These decisions were largely made without consulting healthcare providers, highlighting the need for better education and support in managing infant feeding concerns.

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PD006 / #140

E-POSTERS DISCUSSION 01: NEONATAL & PREMATURITY
20-02-2025 16:50 - 17:20

RISK FACTORS FOR EXTRA UTERINE GROWTH RESTRICTION IN HIGH RISK VERY PRETERM NEONATES

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Background and Aims: Sick preterm neonates are at high risk of extrauterine growth restriction (EUGR) if adequate nutrition is not provided postnatally. Aim was to assess the risk factors for EUGR in very preterm neonates.
Methods: This study was conducted in a level III neonatal unit over 16 months. Consecutively born less than 32 weeks of gestation neonates were enrolled. Major congenital malformations, syndromic cases, surgical conditions excluded. At birth , weekly and at discharge anthropometry (weight, length, head circumference) and feeding details recorded. IUGR was defined as abdominal circumference less than 10^{th} centile in intrauterine growth chart, small for gestational age (SGA) as less than 10^{th} centile at birth and EUGR as weight at discharge <10^{th} percentile.
Results: Out of 265 admitted, 173 were enrolled (65 died and 27 excluded). Mean (SD) of birthweight and gestation were 1136 (238) grams and 30.3(1.4) weeks, 59(34%) less than 1000 grams, 43 (25%) less than 28 weeks , 28(16%) had IUGR and 33 (19%) were SGA. At discharge, 145 (83.8%) had EUGR. EUGR cases had significantly lower birth weight (P< 0.001), lower head circumference (P=0.045), higher less than 1 kg (p=0.048), IUGR (P<0.001), birth asphyxia (P=0.036), culture positive sepsis (P=0.055) and intraventricular haemorrhage (P=0.036) than no EUGR cases. EUGR cases attained full feeds later (p=0.028), had more feed intolerance episodes (P=0.018), fortification was delayed (p=0.028), had more TPN (p=0.042) though median age of feed initiation was similar (p=0.107). Discharge weight was significantly lower (p=<0.001) in EUGR.
Conclusions: There are multiple risk factors for EUGR in high risk neonates

PD007 / #481

E-POSTERS DISCUSSION 02: INFANCY
20-02-2025 16:50 - 17:20

MACRONUTRIENT INTAKE IN VERY LOW BIRTH WEIGHT INFANTS WITH NECROTIZING ENTEROCOLITIS OR BRONCHOPULMONARY DISEASE DURING COMPLEMENTARY FEEDING

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Background and Aims: Very low birth weight (VLBW) infants, particularly those with necrotizing enterocolitis (NEC) and bronchopulmonary dysplasia (BPD), may require enhanced nutritional support, even during complementary feeding. However, data on macronutrient intake during this critical stage are limited.
Methods: This secondary analysis of a prospective, observational study investigated nutrient intake in VLBW infants during parent-directed complementary feeding. Nutritional intake was assessed using a 24h recall at 6 weeks CA, and 3-day dietary records at 12 weeks, 6, 9, and 12 months CA.
Results: A total of 218 infants were enrolled in the study, of which 37 had BPD and 11 were diagnosed with NEC (≥ grade II). 52-80% of dietary records were available for analysis at the respective timepoints. Protein intake was comparable between infants with BPD or NEC and those without comorbidities. However, energy intake was lower in infants with BPD and NEC, though the differences were not statistically significant (BPD: 489-784 kcal/d; NEC: 465-706 kcal/d; no comorbidity: 508-821 kcal/d). Additionally, dietary intakes of arachidonic acid (AA) and docosahexaenoic acid (DHA) were similar across all groups but remained below recommended thresholds at all timepoints (AA: 140 mg from 0-6 months, DHA: 100 mg from 0-12 months).

CA	Protein (g/kg/d)				
	Infants without BPD or NEC	BPD	p-adj.	NEC	p-adj.
	Mean ± SE	Mean ± SE		Mean ± SE	
6 weeks	2.36 (±0.08)	2.55 (±0.19)	0.84	2.87 (±0.25)	0.41
12 weeks	1.91 (±0.04)	1.97 (±0.11)	0.93	2.10 (±0.15)	0.51
6 months	2.15 (±0.08)	1.93 (±0.10)	0.51	2.27 (±0.26)	0.84
9 months	2.46 (±0.10)	2.40 (±0.10)	0.91	2.21 (±0.20)	0.84
12 months	2.75 (±0.09)	2.71 (±0.21)	0.84	2.28 (±0.21)	0.41

CA	Energy (kcal/d)				
	Infants without BPD or NEC	BPD	p-adj.	NEC	p-adj.
	Mean ± SE	Mean ± SE		Mean ± SE	
6 weeks	508 (±9)	489 (±24)	0.42	465 (±29)	0.32
12 weeks	546 (±9)	513 (±18)	0.08	470 (±26)	0.08
6 months	646 (±13)	614 (±27)	0.30	634 (±55)	0.70
9 months	753 (±17)	730 (±24)	0.65	682 (±63)	0.30
12 months	821(±18)	784 (±35)	0.41	706 (±45)	0.13

CA	Arachidonic Acid (mg/d)				
	Infants without BPD or NEC	BPD	p-adj.	NEC	p-adj.
	Mean ± SE	Mean ± SE		Mean ± SE	
6 weeks	117 (±4)	102 (±9)	0.43	98 (±14)	0.44
12 weeks	122 (±4)	112 (±7)	0.48	99 (±17)	0.44
6 months	101 (±4)	102 (±9)	0.88	93 (±19)	0.67
9 months	82 (±6)	81 (±9)	0.66	59 (±27)	0.44
12 months	80 (±7)	65 (±10)	0.52	43 (±14)	0.17

CA	Docosahexaenoic Acid (mg/d)				
	Infants without BPD or NEC	BPD	p-adj.	NEC	p-adj.
	Mean ± SE	Mean ± SE		Mean ± SE	
6 weeks	103 (±3)	93 (±6)	0.30	89 (±7)	0.33
12 weeks	110 (±3)	104 (±6)	0.28	98 (±18)	0.28
6 months	105 (±5)	89 (±7)	0.33	95 (±12)	0.65
9 months	90 (±8)	101 (±14)	0.34	53 (±24)	0.26
12 months	82 (±7)	65 (±8)	0.44	44 (±17)	0.14

CA: corrected age; BPD: bronchopulmonary dysplasia; NEC: necrotizing enterocolitis; arachidonic acid; DHA: docosahexaenoic acid; SE: standard error.
To detect differences between infants with NEC or BPD and infants without comorbidities either a Student's t-test or the Mann-Whitney U test was used. P-values for between-group comparisons of the same nutrient at different timepoints were adjusted using the Bonferroni-Holm method (p-adj). p-adj <0.05 were considered statistically significant.

Conclusions: The findings of this study suggest that macronutrient intake is similar between VLBW infants with BPD or NEC and infants without comorbidities. However, it remains uncertain whether these intake levels are sufficient to meet the higher nutritional needs in infants with comorbidities. Furthermore, there is a need to enhance dietary intakes of DHA and AA.

PD008 / #541

E-POSTERS DISCUSSION 02: INFANCY
20-02-2025 16:50 - 17:20

CYTOKINES AND APPETITE-REGULATING HORMONES IN HUMAN MILK FROM FOUR CONTRASTING POPULATIONS OF THE MILQ COHORT

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Background and Aims: In resource-poor settings, mother-infant dyads are exposed to environmental factors, which may influence the cytokine and hormone profile of human milk (HM). The aim was to compare cytokines and appetite-regulating hormone (ARH) concentrations in HM of mothers from four contrasting populations and investigate associations with infant growth.
Methods: HM samples from 825 dyads from four contrasting populations (Bangladesh, Brazil, Denmark and The Gambia) participating in the Mothers, Infants and Lactation Quality (MILQ) Study were collected between 1-3.5 months postpartum and analysed for tumour-necrosis factor-α, interferon (IFN)-γ, interleukin (IL)-1β, IL-4, IL-6, IL-8, IL-10, IL-33, and insulin, leptin and adiponectin. Infant growth was measured twice between 1-5.99 months postpartum, and Z-scores were calculated according to the WHO

Growth Standards. Geometric means of HM markers were compared between the four sites using ANCOVA analysis and associations with infant growth Z-scores were investigated using linear regression analysis.

Results: We found that the geometric means of all HM markers differed among the four sites after adjustment for possible explanatory variables. HM from Bangladesh had lowest levels of most cytokines, whereas highest levels of IFN-γ, IL-4, IL-10 and IL-33 were found in Denmark. In The Gambia, cytokines were inversely associated with weight-for-age and weight-for-length Z-scores.

Conclusions: We showed significant differences in HM composition of cytokines and ARHs among the four sites. Highest levels of cytokines typically related to atopic diseases were found in Denmark. The results may reflect, that different environmental exposures in the four sites affect HM composition, which can possibly affect infant growth in certain populations.

PD009 / #649

E-POSTERS DISCUSSION 02: INFANCY
20-02-2025 16:50 - 17:20

PREVALENCE AND RISK FACTORS FOR ANEMIA AND IRON DEFICIENCY IN 18 MONTHS OLD TODDLERS WITHIN THE NORTHPOP PROSPECTIVE BIRTH COHORT.

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Background and Aims: How common are iron deficiency and anemia in non-low birth weight 18 months-old toddlers? Which are their main risk factors? This substudy of a prospective birth-cohort in northern Sweden (NorthPop) aims to respond those questions.
Methods: A total of 2511 toddlers (birth weight > 2500g) were assessed for iron status at 18 months based on haemoglobin (Hb), mean corpuscular volume (MCV) and mean corpuscular haemoglobin concentration (MCHC). Definitions: anemia (Hb < 110 g/L and MCV ≥ 73 fL), microcytosis (Hb ≥ 110 g/L and MCV < 73 fL) and iron deficiency (Hb < 110 g/L or MCV < 73 fL or MCHC < 323 g/L or iron supplements between 3-18 months of age).
Risk factors included weight at birth and 18 months, gestational age (GA) at birth, gender, breast feeding duration, and intake of iron fortified gruel at 9 and 18 months. Linear regression analysis were conducted.
Results: The prevalence was 4.7% for anemia and 10.2% for iron deficiency. There was a negative association (standardized beta = -0.153, p < 0.001) between anemia and weight at 18 months. Iron deficiency was associated with fortified gruel intake (standardized beta = -0.009, p = 0.011), female gender (standardized beta = 0.078, p = 0.046) and GA when born (standardized beta = -0.125, p = 0.001).
Conclusions: Low weight at 18 months was found to be a risk factor for anemia in non-low birth weight infants; whereas low iron fortified gruel intake, female gender and low gestational age at birth were risk factors for iron deficiency.

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PD010 / #667

E-POSTERS DISCUSSION 02: INFANCY
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BABY FOOD MARKET – ACTUAL TENDENCIES IN ROMANIAN FAMILIES

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Background and Aims: The period from conception until the beginning of the third year of life is a crucial phase for establishing eating behaviors. This time frame includes the initiation of complementary feeding, during which processed versions of infant foods have also been introduced to the population for over 100 years.
Methods: This is a cross-sectional, observational study which includes infants aged between 6 and 12 months. The infants were recruited from the Department of Pediatric Gastroenterology, between July 2024 and December 2024.
Results: Eighty-two patients were included in the study, of which forty-nine were boys (60%), p=0.07. The median (IQR) age at first administration of a commercial product intended for infant diversification was 6 months [4-7]. At inclusion, 64 patients (78%) were found to have a normal nutritional status, assessed by Z-score (weight-for-age according to WHO standards), and were classified as eutrophic infants, p<0.001. Families of fifty-three (65%) patients reported having a positive opinion about baby food marketing. Sixty-eight (83%) infants received a commercial product intended for infants at least once, while families of fourteen infants (17%) chose to prepare their children's meals exclusively at home. Thirty-four infants (41%) received such a commercial product 1-3 times per week, seventeen infants (21%) received commercial baby food 3-5 times per week, and seventeen infants received it more than 5 times per week.
Conclusions: Despite the majority of families have no concerns about this type of nutrition, it has not become a part of their eating routine, as only 21% of infants consume commercial baby food almost daily.

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PD011 / #677

E-POSTERS DISCUSSION 02: INFANCY
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DOES MATERNAL NUTRITION AFFECT BREAST MILK COMPOSITION?

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Background and Aims: Breast milk is a unique biofluid that supports optimal infant growth and development. Its compositional plasticity may play a key role in early growth and long-term health outcomes. In this study, the effect of maternal nutrition on breast milk content was investigated.
Methods: This cross-sectional descriptive study was conducted at Istanbul Medipol University Hospital Pediatric Outpatient Clinic between April and May 2024. The study included mother-infant dyads of exclusively breastfed, term infants aged 1-6 months without congenital anomalies or chronic illnesses, and mothers without chronic diseases or medication use. Maternal 24-hour dietary intake was recorded and analyzed using the BeBis 9 Nutrition Composition System. Breast milk samples were analyzed for macronutrient content (carbohydrates, proteins, fats) and energy levels using the Miris HMA (Miris AB, Sweden)
Results: The study included 27 mother-infant dyads. Infant mean age was 4.4±1.5 months, and mean birth weight was 3276.1±460.7 g. Maternal dietary intake showed no significant relationship with breast milk macronutrient content. However, a positive correlation was observed between maternal pre-pregnancy BMI and breast milk protein content ($r = 0.402$, $p = 0.038$). No significant correlation existed between maternal current BMI and breast milk macronutrients.
Conclusions: Maternal dietary intake was not significantly associated with breast milk composition. Additionally, further studies are needed on the relationship between maternal pre-pregnancy BMI and breast milk content.

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PD012 / #581

E-POSTERS DISCUSSION 02: INFANCY
20-02-2025 16:50 - 17:20

FORMULAS CONTAINING SIX HUMAN MILK OLIGOSACCHARIDES AND TWO PROBIOTICS ARE SAFE, WELL-TOLERATED, AND SUPPORT ADEQUATE GROWTH FROM BIRTH TO 15 MONTHS: A DOUBLE-BLIND, RANDOMIZED TRIAL

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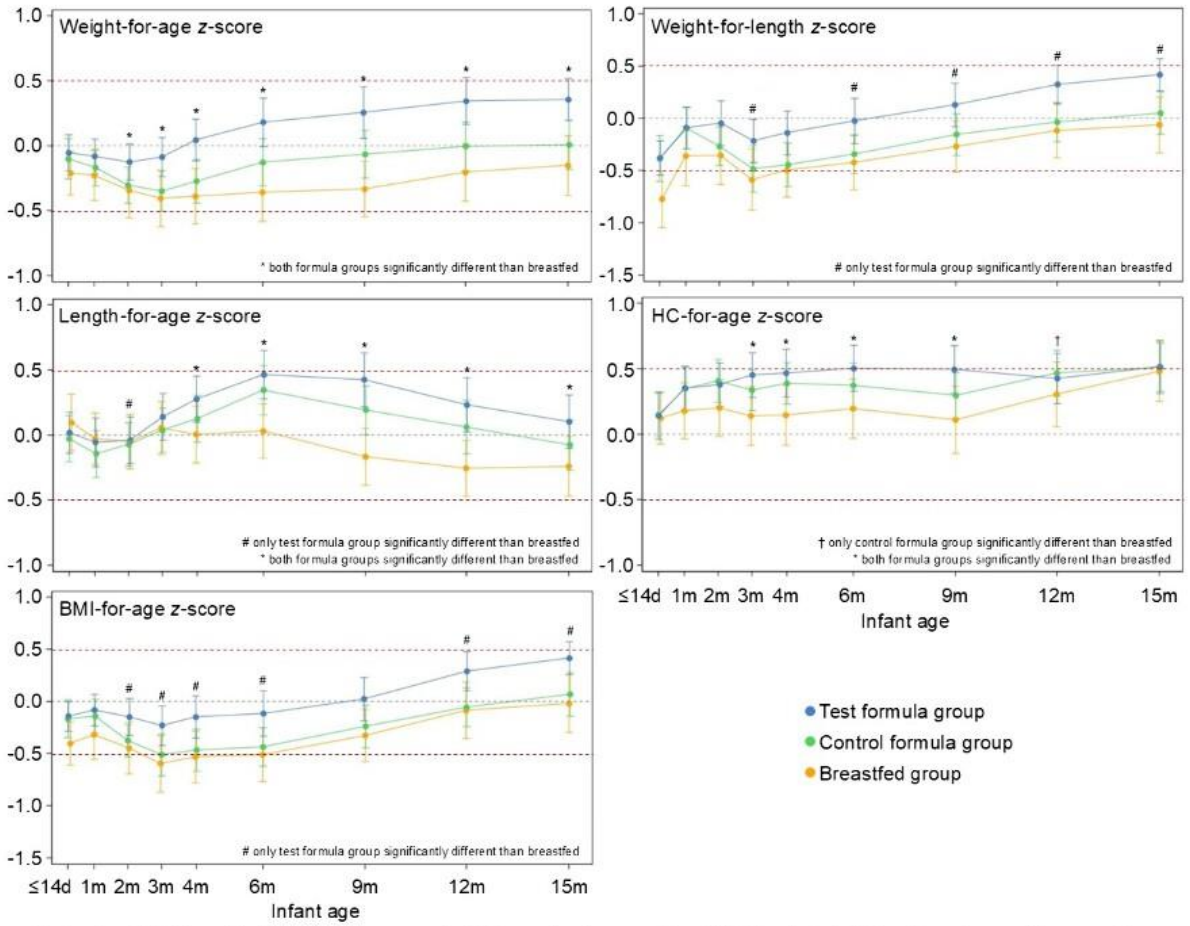
Background and Aims: Formulas supplemented with human milk oligosaccharides (HMOs) and probiotics may promote health-related benefits in formula-fed infants. Here we report growth and gastrointestinal (GI) tolerance in infants fed formulas supplemented with 6 HMOs and two probiotics from birth to age 15 months (m).
Methods: In a multicenter European trial (Clinicaltrials.gov: NCT04962594), formula-fed infants aged ≤14 days were randomized to control formula (*n*=117, partially

hydrolyzed 100% whey-based formula) or test formula (*n*=119, same formula supplemented with HMOs [2'FL, DFL, 3-FL, LNT, 3'SL, 6'SL], *B. infantis* [LMG11588; $5x10^5$ CFU/g], and *B. lactis* [CNCM I-3446; $1x10^6$ CFU/g]). Non-randomized breastfed infants (*n*=82) served as a reference group. Anthropometry, stool consistency, GI tolerance (measured by validated index score), and adverse events (AEs) were assessed through 15m.

Results:

Figure. Mean ± 95% CI anthropometric *z*-scores from enrollment to age 15 months (FAS)



P values from ANCOVA models with baseline value, sex, mode of delivery and center as covariates. FAS, full analysis set; HC, head circumference; d, day; m, month.
*$P \leq 0.036$, # $P < 0.046$, † $P = 0.006$ by Benjamini-Hochberg correction.

There were no significant differences between test and control formula groups in anthropometric *z*-scores at any time point; values in breastfed infants were significantly lower than in formula-fed groups for most scores at most time points (**Figure**). There were no significant differences in stool consistency between test and control formula groups at any time; formula-fed and breastfed infants had similar stool consistency from 9 to 15m. For both formula-fed groups, GI symptom index scores were comparable to those observed in breastfed infants through 12m and significantly lower at 15m, indicating sustained good GI tolerance. AE incidence through 15m was similar in both

formula-fed groups.

Conclusions: An infant formula supplemented with 6 HMOs and two probiotics supports age-appropriate growth through 15m and is well tolerated.

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PD013 / #327

E-POSTERS DISCUSSION 03: CLINICAL NUTRITION
20-02-2025 16:50 - 17:20

"HEALTHY EATING IS MORE THAN THE FOODS YOU EAT": EATING PRACTICES OF MOTHERS WITH AND WITHOUT A HISTORY OF GESTATIONAL DIABETES MELLITUS

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Background and Aims: Canada's Food Guide 2019 includes advice such as "Cook more often" and "Eat meals with others". However, mothers with a history of gestational diabetes mellitus (GDM) may face additional barriers to adopting healthy eating practices, which in turn may influence the food environment of their high-risk offspring. The objectives were to compare eating practices between mothers with (GDM+) and without (GDM-) a history of GDM, and to analyze the associations between eating practices and the anthropometric profile.
Methods: Data from 105 GDM+ and 38 GDM- mothers were analyzed. Eating practices were collected using a self-administered questionnaire. Weight, height, and waist circumference were measured, and body composition was obtained by absorptiometry. Eating practices were compared between GDM+ and GDM- mothers using binomial logistic regression, and ANOVA were computed between eating practices and anthropometric measures.
Results: GDM+ mothers were more likely to prepare a greater proportion of dinners (≥1 per week) using pre-prepared or processed foods than GDM- mothers (49.0% vs. 34.2%, p=0.016). Among GDM+ mothers, those who prepared ≥1 dinners using pre-prepared or processed foods per week had a higher percentage of total body fat (37.5±7.6 vs. 34.0±7.7; p=0.041) and a higher waist circumference (91.6±13.9 vs. 87.1±16.3; p=0.030) than those who prepared a lower proportion.
Conclusions: GDM+ mothers were more likely to prepare dinners using pre-prepared or processed foods, an eating practice associated with an altered anthropometric profile. Considering the higher risk of developing chronic diseases among GDM+ mothers and their offspring, the food environment at home should be further investigated.

PD014 / #396

E-POSTERS DISCUSSION 03: CLINICAL NUTRITION
20-02-2025 16:50 - 17:20

DETERMINATION OF GALLIC ACID IN DIFFERENT HERBAL EXTRACTS VIA ELECTROCHEMICAL LACCASE-BASED BIOSENSOR

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Background and Aims: Gallic acid (GA) is a phenolic acid found in edible plants and has high antioxidant potential. As a dietary supplement, GA has its benefits on human health in correlation with certain diseases such as kidney, lung, liver, cardiovascular and neurological disorders. The aim of the current research is to create a laccase-based biosensor with high sensitivity, for potential application in the food and pharmaceutical industries for qualitative determination of GA, as an additive to improve human health or its inclusion in various pharmaceutical products.
Methods: Laccase from Trametes versicolor (TrV) and Trametes pubescenc (TrP) were used in the current study. The biosensors were constructed using glassy carbon electrodes on the surface of which enzymes are attached under a thin Nafion™ membrane. The studies were carried out at different substrate concentration and various electrochemical techniques were applied, such as cyclic voltammetry (CV), chronoamperometric detection (AD) and differential pulse voltammetry (DPV).
Results: The obtained results show that the sensitivity of both laccase-based biosensor is suitable for determination of GA.
Conclusions: In correlation with the obtained results, the content of GA in different herbal extracts was analyzed using the constructed biosensors. **Acknowledgements:** This study is financed by the European Union-NextGenerationEU, through the National Recovery and Resilience Plan of the Republic of Bulgaria, project № BG-RRP-2.004-0001-C01, DUEcoS.

PD015 / #660

E-POSTERS DISCUSSION 03: CLINICAL NUTRITION
20-02-2025 16:50 - 17:20

IS IRON AND ZINC PREVENTS FEBRILE SEIZURE: MORE THAN NUTRITION

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Background and Aims: Background About 3%-4% of white children, 6%-9% of Japanese children and 5%-10% of Indian children do have febrile seizures. iron and zinc deficiencies are the risk factors as Iron is needed for metabolism of neurotransmitters and for myelination and the deficiency may alter the seizure threshold. Also significantly low level of zinc found in children with simple febrile seizures compared to febrile children without seizures, according to the previous studies. **Aim** To estimate and corelate the serum level of iron and zinc in children with simple febrile seizure.
Methods: An observational study, conducted in the department of Paediatrics at Katihar Medical College & Hospital, Bihar, India. A total 61 patients between 6 months to 60 months of age with Simple Febrile Seizure were enrolled for the study. Children on zinc and iron supplementation for therapeutic purposes were excluded. Estimation of serum iron done by Ferrozine method without deproteinization and serum Zinc by Nitro-PAPS method.
Results: ► Out of 61 participants, 40 (65.5%) had serum iron levels less than 50 mcg/dL, while 21 (34.5%) had serum iron levels greater than or equal to 50 mcg/dL. ► Among the 61 participants, 35 (57.3%) had a Zinc level below 60mcg/dl while 26 (42.7%) had a Zinc level of ≥60 mcg/dl.
Conclusions: Screening for Iron and Zinc deficiencies and timely correction in all children presenting with simple febrile seizures not only improves the overall wellbeing of the child but also increases the seizure threshold.

PD016 / #682

E-POSTERS DISCUSSION 03: CLINICAL NUTRITION
20-02-2025 16:50 - 17:20

MATERNAL NUTRITION AND NEONATAL ANOGENITAL DISTANCE: INSIGHTS FROM A PROSPECTIVE COHORT STUDY

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Background and Aims: Anogenital distance (AGD), the distance from the anus to the genitals, is a sexually dimorphic measurement commonly used in neonatal studies. Animal research has shown AGD to be sensitive to androgen levels in utero, with shorter distances in male offspring indicating lower androgen exposure, and longer distances in females suggesting higher androgen exposure. This study aims to explore potential correlations between maternal dietary patterns and neonatal genital measurements, with a particular focus on AGD.
Methods: In this ongoing prospective study, mothers and their term infants have been recruited since 2023. Mothers completed an online Food Frequency Questionnaire to establish their nutrition profiles. AGD was measured according to the TIDES protocol.
Results: The analysis included 49 male and 56 female infants. AGD correlated with infant birth weight (BW); ano-penile and ano-clitoral distances were significantly shorter in small-for-gestational-age (SGA) infants compared to large-for-gestational-age (LGA) infants ($p < 0.05$). Positive correlations were found between AGD in female neonates and maternal intake of dietary fiber, folate, and iron, although these associations weakened after adjusting for infant BW and maternal energy intake.
Conclusions: Preliminary data suggest that maternal nutrition may influence AGD in female neonates. The link between BW and AGD underscores the importance of maternal nutrition in fetal development, and further analysis is ongoing.

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PD017 / #695

E-POSTERS DISCUSSION 03: CLINICAL NUTRITION
20-02-2025 16:50 - 17:20

ASSESSMENT OF COMPLIANCE TO THE GLUTEN-FREE DIET OF CHILDREN WITH CELIAC DISEASE USING A STANDARDIZED DIETARY QUESTIONNAIRE

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Background and Aims: Celiac disease (CD) is treated by strict gluten-free diet (GFD). We aimed to evaluate the compliance of the pediatric population with CD to the GFD through a standardized dietary questionnaire.
Methods: We interviewed the parents of 64 children diagnosed with CD under GFD for more than one year using a questionnaire in two variants given during the same day, covering habits and attitudes related to the purchase, preparation and consumption of gluten-free products, accidental or intentional ingestion, associated symptoms and perception related to medical supervision. Concomitantly we assessed the anti-transglutaminase antibodies.
Results: The questionnaires identified 82.8%, 76.5% patients, respectively, who strictly comply with GFD, while significant dietary errors were identified in the others (17.1%;18.7%). According to the short questionnaire 4.6% didn't comply with the diet. Most families avoid gluten-containing products and prevent contamination. However, some children eat food that may contain traces of gluten (17.7%;9.3%) or prepared in an environment where it is processed (7.8%;6.2%). 39% of parents reported accidental ingestion of gluten. More than half (57.6%) of the children experience post-ingestion symptoms, the most common being abdominal pain, diarrhea and vomiting. Most parents consider regular follow-up by a doctor/dietician important. 55 questionnaires contained discordant answers to identical questions, 17 showing differences between the final scores. Eight children showed positive antibodies.
Conclusions: One in five children with CD doesn't comply with the diet, the most common errors being the accidental or intentional ingestion of gluten-containing food. The accuracy of the questionnaires may be influenced by the level of understanding of the caregivers.

PD018 / #286

E-POSTERS DISCUSSION 04: OTHER (GUT MICROBIOME AND METABOLOMICS)
21-02-2025 13:05 - 13:35

MACHINE LEARNING INTEGRATION OF BREAST MILK OLIGOSACCHARIDES AND GUT MICROBIOME TO PREDICT GROWTH AND COGNITIVE OUTCOMES IN EXTREMELY LOW BIRTH WEIGHT INFANTS

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Background and Aims: Breast milk oligosaccharides (HMOs) and gut microbiome composition impact growth and cognitive outcomes in extremely low birth weight (ELBW) infants. This study develops a predictive model integrating HMO profiles and microbiome signatures to forecast growth and cognitive development at 24 months, informing personalized neonatal nutrition strategies.
Methods: We utilized data from the Baby Biome Study and Human Milk Project, comprising 4,967 ELBW infants. Daily breast milk samples collected within the first 28 days were analyzed for 35 HMOs using high-performance liquid chromatography (HPLC). Stool samples collected at days 7, 14, and 28 underwent 16S rRNA sequencing to profile microbiome composition. A machine learning pipeline incorporating Random Forest for HMO feature selection, Elastic Net Regression for microbiome analysis, and a Multi-Layer Perceptron model was developed to predict growth patterns and cognitive scores (Bayley-III Scale at 24 months). Confounders, including maternal health, delivery mode, and perinatal factors, were adjusted, and model performance was evaluated using 10-fold cross-validation.
Results: The model achieved an R^2 of 0.85 (95% CI: 0.83–0.88) for cognitive scores and an AUC of 0.91 (95% CI: 0.89–0.94) for optimal growth classification. High 2'-fucosyllactose levels and *Bifidobacterium longum* abundance were key predictors, with adjusted odds ratios of 3.21 (95% CI: 2.45–4.18) and 2.94 (95% CI: 2.19–3.91), respectively. An interaction between lacto-N-tetraose and *Faecalibacterium* was associated with a 44% reduced risk of neurodevelopmental delay (OR: 0.56, 95% CI: 0.42–0.75).
Conclusions: Integrating HMO profiles and microbiome data provides novel

understanding of growth and cognitive outcomes, supporting early risk stratification and personalized nutrition strategies in neonatal care.

PD019 / #242

E-POSTERS DISCUSSION 04: OTHER (GUT MICROBIOME AND METABOLOMICS)
21-02-2025 13:05 - 13:35

FORMULA SUPPLEMENTATION TO BREASTFED INFANTS ALTERS CIRCULATING LIPIDS AND THE GUT MICROBIOTA

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Background and Aims: Breastfeeding has multiple health benefits, including protection against obesity. Exclusive breastfeeding, compared to exclusive formula feeding, in the first months of life is associated with different lipid metabolism and gut microbiota composition. It is not well known if these differences hold in mixed-fed infants, and if they are related to the amount of formula. We examined relationships between feeding practice, circulating lipids and gut microbiota composition.
Methods: Blood and fecal samples of 519 healthy term-born children aged 3 months, from two independent cohort studies were examined. Using random forest models, lipid and microbial biomarkers, predictive for exclusive formula- and breastfeeding pratices, were identified in the Sophia Pluto cohort study and validated in the Cambridge Baby Growth Study. In mixed-fed infants, differences in biomarkers, compared to exclusive feeding, were studied using Mann-Whitney U-test. Correlations with volume of formula and days since introduction were analysed using Kendall-rank correlation coefficient.
Results: Fourty-six lipid biomarkers and 39 microbial species were identified to be highly predictive (above 99% for lipids, and 94% for species) for exclusive formula- or breastfeeding. Data from mixed fed infants showed that the volume of formula supplemented to breastfed infants was correlated with circulating lipids, while gut microbiota diversity was influenced by the time since introduction of formula. Moreover,

formula rich in intact whey protein resulted in increased *S. thermophilus* abundance in the infant gut.

Conclusions: Together, our findings demonstrate that the amount and duration of formula supplementation to breastfed infants differentially influence circulating lipids and the gut microbiota composition, potentially impacting child health.

PD020 / #411

E-POSTERS DISCUSSION 04: OTHER (GUT MICROBIOME AND METABOLOMICS)
21-02-2025 13:05 - 13:35

THE INFANT MICROBIOTA HOPSCOTCHES BETWEEN COMMUNITY STATES TOWARDS MATURATION – LONGITUDINAL STOOL PARAMETERS AND AMPLICON DATA IN A COHORT OF EUROPEAN TODDLERS

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Background and Aims: The development of the gut microbiome is critical during early life and is associated with infant health. Therefore, we investigated the microbial profiles and faecal parameters of 540 European infants on four occasions during the first three years of life. Faecal microbiota profiles of 216 adults were used as a reference for mature communities.
Methods: In this multicentre, double-blind, controlled trial, 460 healthy infants were equally randomised to receive a control or synbiotic infant formula (supplemented with galacto-oligosaccharides and *Limosilactobacillus fermentum* CECT 5716 (average daily dose at least $2x10^8$ cfu/d)) from the age of 1-12 months. Breastfed infants (n=80) were included as a reference group.
Results: The diversity of the microbiota gradually increased, while the heterogeneity between samples decreased towards 3 years of age. Microbial profiles at this age were generally similar to those of young adults. However, the microbiota states represented different stages of maturation. Communities with a decreased proportion of Bacteroidales and Faecalibacterium spp. were characterised by a higher prevalence of caesarean-born infants and are proposed to represent a less mature microbiota. Microbiota profiles at one time point were not predictive; instead, we observed hopscotching of the infant microbiota between different community states. Effects of diet were observed at the level of taxonomy and inferred functions at 4 months of age, but disappeared by 3 years of age.
Conclusions: This work provides new longitudinal data on the infant gut microbiome in relation to early diet and later microbial trajectory and infection incidence.

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PD021 / #417

E-POSTERS DISCUSSION 04: OTHER (GUT MICROBIOME AND METABOLOMICS)
21-02-2025 13:05 - 13:35

EFFECTS OF DIFFERENT TYPES OF INFANT FORMULAS ON THE MICROBIOTA OF INFANTS BORN VIA CAESARIAN SECTION

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Background and Aims: Mode of birth and early life nutrition influence the development of the infant microbiome and immune system. Previous studies have shown that infant formulas (IF) containing prebiotics and/or probiotics may have pronounced effects on the microbiome of infants born by caesarean section (CS). The aim of this study was to show the development of the faecal microbiome in terms of taxonomy and inferred function in infants born by CS and fed different IFs during the first 6 months of life.
Methods: In this multicentre, double-blind, controlled study 318 CS-born infants were randomised at 5 days of age to receive either synbiotic (*Limosilactobacillus fermentum* CECT5716 (≥2x10^8 cfu/day) + galacto-oligosaccharides (GOS)), prebiotic (GOS) or control IF for 6 months. Breastfed (BF) CS- and vaginal-born infants were included as reference-groups (n=168). Faecal microbiota was assessed (shotgun-sequencing) at 5 and 10 days and 3, 6, 16 and 24 weeks of age.
Results: Faecal microbiota at the baseline visit (5 days of age) showed a high inter-individual variance and was largely independent of mode of birth (CS or vaginal). IF consumption resulted in prevalence and abundance of lactobacilli and bifidobacteria comparable to BF reference groups. The number of adverse events was comparable between all groups, and descriptive anthropometric data showed age-appropriate growth.
Conclusions: Overall, consumption of different types of formulas was safe, well tolerated and showed an overall microbiota development regardless of the mode of birth. Ongoing long-term observations up to two years of age are investigating possible protective effects on infection rates and allergy development.

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PD022 / #96

E-POSTERS DISCUSSION 04: OTHER (GUT MICROBIOME AND METABOLOMICS)
21-02-2025 13:05 - 13:35

VARIATIONS IN HUMAN MILK METABOLITES AFTER GESTATIONAL DIABETES: ASSOCIATIONS WITH INFANT GROWTH

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Background and Aims: Gestational diabetes mellitus (GDM) is a condition characterized by hyperglycemia, first diagnosed during pregnancy and is associated with increased risk of obesity and diabetes in children exposed *in utero*. Differences in the composition of human milk from women with (GDM+) compared to women without GDM (GDM-) have been observed. These results suggest that GDM could impact the production and composition of human milk and, downstream, influence child growth. However, the impact of GDM on the composition of human milk remains poorly understood. To study the association between GDM and human milk composition and its influence on infant growth, focusing on metabolites and bioactive molecules involved in energy metabolism.
Methods: Using a cross-sectional design, twenty-four metabolites were measured by GC-MS in human milk obtained at 2 months postpartum from 20 GDM+ women and 29 GDM- women. Anthropometric measures as well as lipid and glycemic profile were collected. Infant weight and length data were obtained from health records which included measured values of weight and length by healthcare providers.
Results: Human milk metabolites significantly differ between GDM+ and GDM- mothers, with higher levels of myristic acid, glycerol, uracil, arachidonic acid, and cholesterol in GDM+ milk ($p<0.05$). These metabolites correlated with maternal glycemic and lipid profiles and infant growth, differently according to the GDM status.
Conclusions: Results of this study suggest that GDM can influence mammary gland biology with effects on the human milk composition beyond delivery. Further, correlations with infant growth suggest that GDM-dependent variations in milk composition potentially influence infant growth and metabolism.

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PD023 / #301

E-POSTERS DISCUSSION 04: OTHER (GUT MICROBIOME AND METABOLOMICS)
21-02-2025 13:05 - 13:35

LONG-TERM METABOLIC IMPLICATIONS OF RAPID CHILDHOOD POST-MALNUTRITION WEIGHT GAIN

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Background and Aims: Treatment strategies for children experiencing severe malnutrition aim to promote rapid weight gain and catch-up growth. However, the long-term metabolic consequences of these anthropometric accelerations are unclear. Here, we explore whether the rate of recovery weight gain following hospitalisation for severe childhood malnutrition imprints on the adolescent metabolome and increases non-communicable disease (NCD) risk.
Methods: Metabolomic profiling was performed on 152 adolescents (aged 15.5-18.9 years) 15 years after hospitalisation for childhood severe malnutrition in Blantyre, Malawi in 2006-2007. This included untargeted ^{1}H NMR spectroscopy-based metabolomics performed on urine samples, and targeted LC-MS-based metabolomics on plasma samples. The effect of post-malnutrition weight gain on the adolescent metabolome was explored using multivariate OPLS models, time series analysis and adjusted linear regression models.
Results: OPLS models identified that faster recovery weight gain significantly altered the plasma and urinary metabolomes later in life, most notably in those who experienced non-oedematous malnutrition. This was characterised by altered muscle function-, lipid-, and energy metabolism-related metabolites. Time-series analysis revealed that individuals with greater post-malnutrition weight gain and reduced excretion of muscle-related metabolites had lower height-for-age z-scores, but trended towards having higher BMI trajectories from hospital admission to adolescence.

Adjusted linear models also demonstrated reduced functional muscle capacity in these individuals.

Conclusions: Our findings present a biochemical mechanism linking rapid post-malnutrition weight gain to elevated NCD risk through functional muscle decline and mitochondrial dysfunction. Elucidating these mechanisms will inform the development of novel interventions to ameliorate these long-term health risks.

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PD024 / #86

E-POSTERS DISCUSSION 05: OBESITY
21-02-2025 13:05 - 13:35

ULTRAPROCESSED FOODS AS MAIN DRIVER OF METABOLICALLY UNHEALTHY PEDIATRIC OBESITY

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Background and Aims: Emerging evidence suggest potential association between ultraprocessed foods (UPFs) exposure and adverse health outcomes, including obesity and metabolic complications. We assessed the cross-sectional associations between UPFs intake and the obese phenotype in pediatric patients.
Methods: We comparatively evaluated intake of UPFs, and of their detrimental compounds advanced glycation end-products (AGEs), in obese pediatric patients, obese pediatric patients complicated by metabolic syndrome (MetS), and sex- and age-matched normal-weight healthy controls. AGEs skin accumulation was also evaluated.
Results: A total of 175 subjects were enrolled: 53 obese patients (52.8% male, mean age 10.7 years ± 3.5SD), 22 obese with MetS (54.5% male, mean age 12.4 years ± 2.6SD), and 100 controls (63% male, mean age 10.3 years ± 3.5SD). UPFs intake resulted positively correlated with Body Mass Index (r=0.35; p=0.01). UPFs intake correlated with the MetS occurrence. UPFs and AGEs exposure resulted higher in MetS patients if compared to obese and controls. MetS patients also reported a higher skin AGEs accumulation.
Conclusions: Our findings support a pivotal role of UPFs in facilitating not only the occurrence of obesity but also in driving the metabolically unhealthy phenotype. These results support the need for dietary strategies limiting UPFs exposure for the prevention and treatment of obesity and its metabolic complications.

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PD025 / #223

E-POSTERS DISCUSSION 05: OBESITY
21-02-2025 13:05 - 13:35

LIPID DROPLET STRUCTURE IN EARLY LIFE IMPACTS LATER LIFE METABOLIC HEALTH IN MURINE MODELS OF NUTRITIONAL PROGRAMMING: A META-ANALYSIS OF PRESENT RESEARCH

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Background and Aims: The marked differences in supramolecular structure between human milk fat globules and lipid droplets in infant milk formula (IMF) may contribute to the observed differences in growth and body composition development of formula-fed and breastfed infants. This hypothesis was investigated in a preclinical nutritional programming model, using a Concept IMF with lipid droplets that more closely mimic the size and surface characteristics of human milk fat globules. This meta-analysis reviews the preclinical evidence-base for the programming impact of this Concept IMF on later life adiposity.
Methods: Ten murine nutritional programming studies that reported effects of the Concept IMF on adult adiposity were included. Despite variations in study design (e.g. physiological stressors, housing conditions, or adulthood diet), all studies involved early life exposure to a Concept vs Control IMF-based diet (from ~15 to 42 days of age) and later life adiposity outcomes. For each relevant comparison (14 in total) the effect size (ES; Hedges' g unbiased standardized mean difference) was calculated.
Results: Our meta-analysis revealed a strong and significant inhibitory effect of early life exposure to Concept vs Control IMF-based diet on adult (excessive) fat mass accumulation (ES=-0.82, 95% CI -1.09, -0.54, P<0.01) with remarkably low heterogeneity (Q=16.89, df=13, I^=23%).
Conclusions: The consistent replication and resilience of the Concept IMF diet effect on adult adiposity across different murine models of nutritional programming provides robust scientific substantiation for the hypothesis that the size and surface characteristics of lipid droplets in the early life diet programs adiposity development.

PD026 / #680

E-POSTERS DISCUSSION 05: OBESITY
21-02-2025 13:05 - 13:35

DIET-INDUCED OBESITY IN THE CHILDREN POPULATION

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Background and Aims: Obesity is the biggest problem among children in the world, including in Georgia. Obesity is a multifactorial disease with several potential causes that are not fully understood. Recent changes in the environment, which is becoming more and more overweight, reflect the interaction with individual factors. The goal of our research is precisely the obesity caused by improper nutrition in the children's population.
Methods: As research material, we used the frequency of children's visits to the clinic. Our study population consisted of 2286 children aged 3 to 17 years. Of these, 1356 were girls and 930 were boys. The role of taste sensitivity and food preference was also taught. Eating sweet and fatty foods. Also taking carbonated drinks.
Results: We divided the children's population into two groups. The first group included 1509 children of the study population from 3 to 9 years old, where 789 were girls and 356 were boys. Candies and drinks (lemonade, kampot juices and others). Also selected excess fatty foods in their diet (beef, veal, pork and others). 29.5% of the population ate very little vegetables and fruits. 21.3% of cases had cardiovascular pathologies, 13.9% respiratory system and 18.9% digestive system pathologies.
Conclusions: High-fat and high-energy foods have been found to be closely related to the prevalence of obesity worldwide. This preference for fatty foods is more a cause than a consequence of obesity, as obese/overweight children have also been found to have a greater preference for fatty foods than normal weight children

PD027 / #184

E-POSTERS DISCUSSION 05: OBESITY
21-02-2025 13:05 - 13:35

DETERMINATION OF SUSTAINABLE HEALTHY NUTRITIONAL BEHAVIORS AND HEDONIC HUNGER STATUS OF INDIVIDUALS WITH OBSTRUCTIVE SLEEP APNEA SYNDROME

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Background and Aims: BMI and neck circumference thickness are risk factors for Obstructive Sleep Apnea Syndrome(OSAS).It is thought that providing sustainable and healthy eating habits and controlling hedonic hunger in individuals with OSAS may be effective in providing body weight loss and reducing the risk of diseases.In this context,this study aimed to determine sustainable,healthy eating behaviors and hedonic hunger states of individuals with OSAS according to gender.
Methods: In this study conducted with patients diagnosed with OSAS,some anthropometric measurements of the participants were taken and the Sustainable and Healthy Nutrition Behaviors Scale,Food Power Scale and Morningness-Eveningness Test were applied face to face.
Results: The majority of the participants were male and 120 patients with OSAS were included in this study.The mean body mass index of the participants was 33.46±7.48 kg/m^2; mean waist circumference was 109.65±14.50;mean hip circumference was 114.45±11.95;and mean neck circumference was 42.23±3.24.While the means BMI and waist circumference did not differ according to gender;mean hip circumference was higher in women, and mean neck circumference was higher in men($p=0.478$;$p=487$;$p=0.014$;$p<0.001$,respectively).When the chronotypes of the participants were evaluated,it was seen that the majority were intermediate type;It was determined that sustainable and healthy nutritional behaviors and hedonic hunger states did not differ according to gender($p=0.813$;$p=0.918$).
Conclusions: The majority of patients with OSAS have high BMI,waist, hip and neck circumferences.It is anticipated that providing sustainable and healthy eating behaviors for both genders and controlling hedonic hunger in order to reduce the risk of OSAS disease may contribute to improvements in measurements such as BMI and waist,hip and neck circumference.

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PD028 / #243

E-POSTERS DISCUSSION 06: MALNUTRITION
21-02-2025 13:05 - 13:35

HYPERCALORIC FORMULA WITH VITAMIN D3 AS AN INTERVENTION FOR ACUTE MALNUTRITION: A REAL-LIFE STUDY

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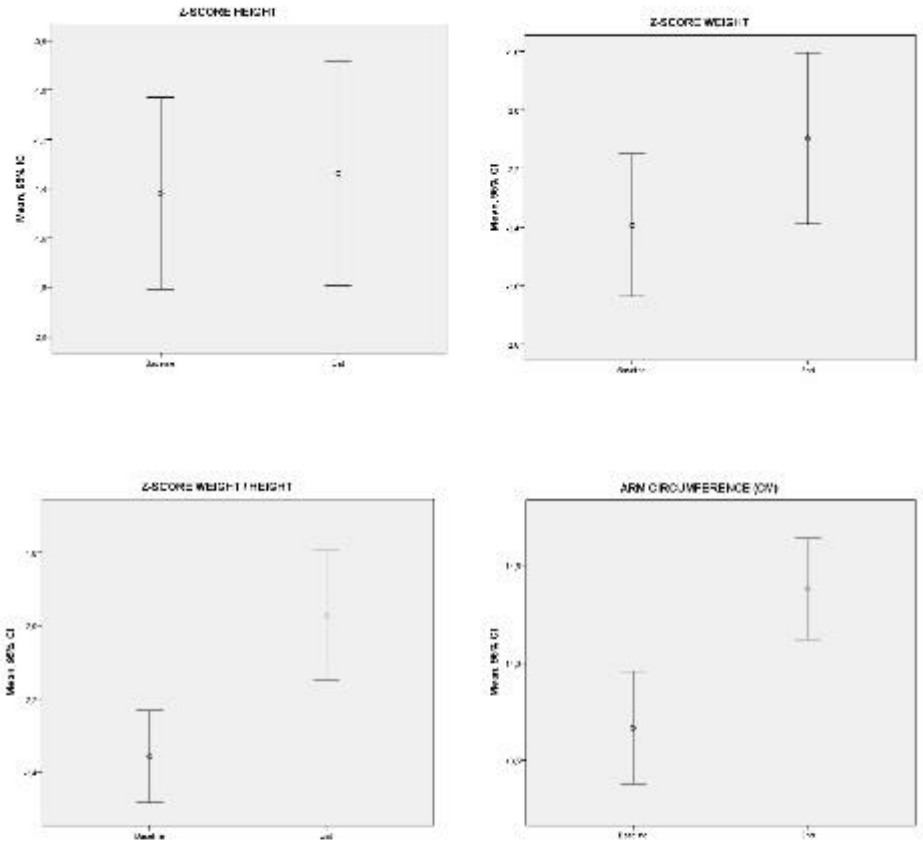
Background and Aims: Malnutrition remains a challenge in low- and middle-income countries, particularly affecting children under five. Foods for Special Medical Purposes (FSMPs) are used to manage malnutrition. This study aims to evaluate the effectiveness of a hypercaloric formula supplemented with active vitamin D3 in the nutritional of children with moderate/severe primary acute malnutrition in Bogotá, Colombia.
Methods: An observational study was conducted between 2022-2023, including 31 patients aged 18-59 months with moderate (weight-for-height z-score between <-2 and ≥-3) or severe (<-3) acute malnutrition. Previously, they failed to respond to Ready-to-Use Therapeutic Food or other FSMP interventions. Nutritional assessments were conducted monthly, and anthropometric data were collected until discharge or for six months. Paired t-tests were used to compare pre- and post-intervention.
Results: Significant improvements in weight-for-height z-scores (mean difference (MD) = 1.02; $p < 0.001$), BMI z-scores (MD = 1.12; $p < 0.001$), and upper arm circumference (MD = 1.5 cm; $p < 0.001$) were observed (Figure 1). Changes in height z-scores, although positive, were not statistically significant (MD = 0.20; $p = 0.075$). All patients improved their nutritional status, with 93.5% recovering from moderate acute malnutrition and 6.5% from severe acute malnutrition over a median treatment duration of 4 months.
Figure 1. Changes in nutritional indicators before and after nutritional intervention



Conclusions: Hypercaloric formula supplemented with active vitamin D3 significantly improved key nutritional indicators in children with moderate/severe acute malnutrition. These findings support it as an option for treating malnourished children in resource-limited settings. Future studies should include larger sample sizes and control groups.

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PD029 / #535

E-POSTERS DISCUSSION 06: MALNUTRITION
21-02-2025 13:05 - 13:35

'REALITY BITES': REALIST-INFORMED PROCESS EVALUATION TO CONTEXTUALISE RCT OF AN INTEGRATED CARE PATHWAY FOR SMALL NUTRTIONALLY AT-RISK INFANTS UNDER 6 MONTHS AND THEIR MOTHERS

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Background and Aims: The MAMI Care Pathway is an integrated approach to manage small, nutritionally at-risk infants under 6 months and their mothers. It was tested in a two-site RCT in outpatient clinics in Ethiopia. A realist-informed process evaluation examined how the intervention worked under trial conditions, to contextualise outcomes and inform transferability and integration potential.
Methods: Interviews were conducted with mothers, fathers, health workers, study nurses at both intervention and control sites (Jan 2023-Jan 2024). We used data to cross-examine initial programme theories and consulted with national stakeholders on early findings to inform analysis (July 2024).
Results: Quantitative RCT data included a marked positive effect on breastfeeding at 6 months but mixed effects on other outcomes (infant growth, morbidity/mortality, maternal mental health). Interviewees, however, reported improved infant growth and development effected through empowered mothers and health workers. Interviewees also reported limitations to breastfeeding counselling and maternal mental health support. High burden of research-specific activities (e.g. consent; data entry; repeat measures) also compromised intervention delivery by clinic nurses. There were numerous contextual differences between study settings. Control clinic routine care improved. Shared vision and purpose, collegiate leadership and mentoring motivated and maximised what was possible. The intervention was valued and may have been a factor in attracting more vulnerable cases (e.g. sicker, low birth weight, severely wasted,

troubled mothers) contributing to worse baseline characteristics, and limited inter-site end-line differences.

Conclusions: Individuals experienced a positive impact that restored lost hope. Implementation modifiers likely limited population effects but reflected real-life constraints; rich hindsight learning can inform implementation research.

PD030 / #544

E-POSTERS DISCUSSION 06: MALNUTRITION
21-02-2025 13:05 - 13:35

EARLY-LIFE GROWTH AND ENVIRONMENT STRONGLY ASSOCIATE WITH SCHOOL-AGE GROWTH, COGNITIVE AND PHYSICAL TRAJECTORIES IN THE SHINE COHORT IN RURAL ZIMBABWE

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Background and Aims: Repeated measurements at school-age of the Zimbabwean SHINE birth cohort provide unique insights into the long-term impact of stunting on development: The School-Age Health, Activity, Resilience, Anthropometry and Neurocognitive (SAHARAN) toolbox characterised school-age growth, cognitive and physical function at age 7 years, as shown at https://www.youtube.com/watch?v=4869Zy90wyg. The Sub-SAHARAN metric, derived from the SAHARAN toolbox, subsequently repeated key measurements in the children 8-9 years to reduce measurement time from 4 hours to 1 hour.
Methods: Repeated growth measures included height, weight, mid-upper arm circumference, waist circumference, bioimpedance analysis and skinfold thicknesses. Repeated cognitive measures included the School Achievement Test (SAT) for literacy and numeracy, combined with a tablet-based Flanker task for executive function. Grip strength measured physical function. A caregiver questionnaire monitored socioeconomic status and food insecurity.
Results: In 939 children (473 girls), unit increases in height-for-age at 18 months (HAZ-at-18-mo) were associated with increases in HAZ at both 7 years and 8-9 years of 0.6 (95% CI 0.6, 0.7). Similarly, unit increases in HAZ-at-18-mo were associated with 0.3

(95%CI 0.3, 0.4) increases in standardised grip strength at both 7 and 8-9 years. For cognition, unit increases in HAZ-at-18-mo were associated with a 0.1 (95%CI 0.0, 0.2) increase in the standardised SAT score at both timepoints.

Conclusions: School-age both reflects early-life and is highly predictive of adult function. SAHARAN and sub-SAHARAN measurements at 7, and 8-9 years exhibit strong associations with early-life growth that remain stable in magnitude. This provides quantitative evidence for a plateau effect of early-life growth in shaping later school-age development.

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PD031 / #697

E-POSTERS DISCUSSION 06: MALNUTRITION
21-02-2025 13:05 - 13:35

EVOLUTION OF IRON DEFICIENCY MARKERS UNDER DIETARY TREATMENT IN ANEMIC VS NON-ANEMIC CELIAC DISEASE CHILDREN

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Background and Aims: Celiac disease (CD) is a cause of both isolated iron deficiency and iron deficiency anemia. We aimed to comparatively investigate the evolution of low iron markers at diagnosis in children presenting with or without anemia after short-term follow-up on gluten-free diet (GFD), as well as of body mass index (BMI) z-score, Mean Corpuscular Volume (MCV), vitamin D and tissue transglutaminase (TTG) antibodies levels.
Methods: The study retrospectively included 60 CD children with low ferritin and/or iron levels at diagnosis, with anemia (n=26) and without anemia (n=34). Laboratory data from their medical charts at diagnosis and after 1 year of GFD were collected and analyzed using SPSS Statistics.
Results: There were no statistically significant differences at diagnosis between the anemia and non-anemia groups regarding age (p=0.889), BMI z-score, ferritin and vitamin D. However, iron and MCV were significantly higher in the non-anemia group. *(Table 1)* Children from both groups (76.9%, 88.2%) presented gastrointestinal symptoms at diagnosis. Iron supplementation at diagnosis was documented more in the anemia group. (38.4% vs 11.7%) After short-term follow-up there were significant improvements in ferritin and iron levels in both anemia (p=0.005, p=0.000) and non-anemia (p=0.000, p=0.000) groups compared to diagnosis, but no statistically significant differences were found between the 2 groups regarding the improvement degree of iron-deficiency and additional
markers.

Table 1. *Comparison between BMI z-score, iron deficiency markers, MCV and vitamin D level in anemic and non-anemic children at diagnosis and follow-up.*

	anemia (n=26) median (quartiles)	non-anemia (n=34) median (quartiles)	**p-value**
BMI (kg/m²) z-score			
at diagnosis	-0.73 (-2.62-0.2)	-1.25 (-2.61- -0.29)	0.621
at follow-up	-0.65 (-1.59-0.8)	-0.7 (-2-0.1)	0.399
ferritin (mcg/L)			
at diagnosis	7.7 (3.28-13.82)	11.4 (5.83-15.75)	0.8
at follow-up	24 (18.75-38.5)	30.5 (17.25-39)	0.540
iron (mmol/L)			
at diagnosis	4 (3-5)	6 (5-8)	**0.045**
at follow-up	13 (8.5-18.5)	13.5 (9-18)	0.956
MCV (fL)			
at diagnosis	68.6 (67.45-72.42)	76.95 (74.9-80.25)	**0.000**
at follow-up	81.2 (77.62-81.82)	78.2 (76.15-80.25)	0.351
vitamin D (nmol/L)			
at diagnosis	73.7 (50-102.7)	63.45 (50.32-96.17)	0.929
at follow-up	84 (62-110.7)	84.85 (75.42-104.15)	0.936

Conclusions: Both anemic and non-anemic iron-deficient celiac disease children present with similar ferritin levels at diagnosis and improve equally their iron markers after short-term dietary treatment. The results may be influenced by the indication of iron supplementation at diagnosis.

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PD032 / #453

E-POSTERS DISCUSSION 07: CHILDHOOD & ADOLESCENCE
22-02-2025 12:50 - 13:20

LONGITUDINAL CHANGES IN BODY COMPOSITION OF CHILDREN AND ADOLESCENTS WITH TYPE 1 DIABETES

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Background and Aims: After a new diagnosis of type 1 diabetes (T1D) and the initiation of insulin therapy, a rapid weight gain is often observed in children and adolescents. Currently, little is known about body composition changes in paediatric age after T1D onset, and we aim to assess longitudinal changes in body composition from onset to 6-month follow up.
Methods: Children and adolescents aged 3-16 years newly diagnosed with T1D were recruited. Patients were evaluated at onset (T0) and at 6 weeks (T1), 3 months (T2) and 6 months (T3) follow up. Weight, height, BMI, waist circumference (WC), mid upper arm circumference (MUAC), tricipital skinfold thickness (TSF) and related z-scores were measured. Fat mass (FM) and fat free mass (FFM), both in kg and %, were measured by means of air plethysmography(BODPOD), and the corresponding FFMI and FMI indices were calculated
Results: Overall 39 patients were enrolled(9.78±3.2 years;23M/16F). BMI z-score increased significantly between baseline and T1($p<0.0001$). During follow-up, WC, MUAC z-score, and TSF z-score also showed significant increases, peaking at 3 months, with a slight, non-significant decrease at 6 months. In line with this, a significant increase is also observed in the FM(kg) at T2. Furthermore, a constant upward significant trend is observed in the FFM(kg) from onset to T3, which is also confirmed by the increase in FFMI observed between T0 and
T1

Table 1: Longitudinal changes in body composition at different timepoints: Onset (T0); 6 weeks (T1); 3 months (T2) and 6 months (T3) follow up

	T0		T1		T2		T3		P value
	mean	sd	mean	sd	mean	sd	mean	sd	
BMIz WHO	0,13 [a]	1,28	0,49 [b]	1,16	0,58 [b]	1,08	0,53 [b]	1,10	**<0,0001**
WC (cm)	64,35 [a]	11,39	66,41 [b]	11,83	67,12 [b]	12,02	66,79 [b]	11,85	**<0,0001**
MUACz	0,03 [a]	1,18	0,25 [a,b]	1,05	0,35 [b]	1,00	0,30 [a,b]	1,10	**0,0081**
TSF (mm)	12,33	5,68	13,19	5,54	13,52	5,41	13,25	5,62	0,13
TSFz	0,26 [a]	0,98	0,27 [a]	0,97	0,56 [b]	0,79	0,46 [a,b]	0,91	**0,006**
FFM %	81,52	10,45	80,82	9,79	80,18	8,97	81,41	9,24	0,6
FFM (kg)	29,09 [a]	11,58	30,23 [a,b]	12,09	30,84 [b]	12,10	31,97 [c]	12,82	**<0,0001**
FFMI	14,18 [a]	2,07	14,65 [b]	2,13	14,76 [b]	2,06	15,01 [b]	2,24	**<0,0001**
FM %	18,48	10,45	19,17	9,79	19,83	8,96	18,59	9,24	0,6
FM (kg)	7,61[a]	7,08	8,06 [a,b]	6,90	8,52 [b]	6,70	8,03 [a,b]	6,48	**0,05**
FMI	3,54	2,70	3,76	2,64	3,92	2,47	3,69	2,50	0,12

Conclusions: After the onset of diabetes in pediatric age, we observed a peak in fat mass accumulation at 3 months, while fat free mass had a constant upward trend during the 6-month follow-up

PD033 / #469

E-POSTERS DISCUSSION 07: CHILDHOOD & ADOLESCENCE
22-02-2025 12:50 - 13:20

INFORMING DEVELOPMENT OF TAILORED ANTENATAL CARE SERVICES FOR PREGNANT ADOLESCENTS: A SYSTEMATIC REVIEW AND STAKEHOLDER SURVEY

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Background and Aims: Pregnant adolescents are at higher risk of adverse birth outcomes including maternal death and infant low birth weight. Tailoring antenatal care (ANC) to pregnant adolescents' unique needs may be a way to reduce adverse maternal and child outcomes in this group. This systematic review aims to evaluate existing ANC services for adolescents and their impact on outcomes.
Methods: Two reviewers independently searched five electronic databases using search terms related to pregnant adolescents and maternal health services. In addition, a survey was disseminated through the Global Adolescent Nutrition Network (GANN) to gain further insights into stakeholder views and experiences of tailored ANC for adolescents.
Results: 11,236 articles were reviewed, with 14 studies included for analysis. Interventions as part of tailored ANC for pregnant adolescents included additional micronutrient supplementation, community-based sessions, group sessions, additional nutrition education, and additional counselling. Outcomes such as birthweight, preterm birth, and gestational age were reported, with most studies demonstrating positive effects. Survey respondents (n=103) agreed that adolescents require tailored ANC, over and above what is provided to other pregnant women, however this is not currently being provided in most settings.
Conclusions: While many of the included interventions positively impacted maternal and infant birth outcomes, only a few addressed the unique barriers adolescents face when accessing antenatal care. Community-based interventions proved effective in enhancing accessibility and group care fostered supportive environments, both leading to improved outcomes. However, there is a need for further research to establish a comprehensive package of tailored ANC services that effectively address the needs of this population.

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PD034 / #542

E-POSTERS DISCUSSION 07: CHILDHOOD & ADOLESCENCE
22-02-2025 12:50 - 13:20

THE RELATIONSHIP BETWEEN MATERNAL PERFECTIONISM AND CHILDREN'S EMOTIONAL EATING BEHAVIORS

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Background and Aims: The literature indicates that perfectionist mothers often employ a strict, highly standardized parenting style, potentially inducing stress in their children. Given that stress is a significant trigger for emotional eating, it is plausible that perfectionist mothers may inadvertently exacerbate this behavior in their offspring.
Methods: This study assessed 112 children (mean age: 9.57 years) and their mothers (mean age: 37.8 years) to explore the impact of maternal perfectionism on children's emotional eating behaviors. Data were collected online from mothers using the Frost Multidimensional Perfectionism Scale and a sociodemographic information form. Children's data were obtained through the Emotional Eating Scale for Children and Adolescents. Parents were instructed not to assist or intervene with their children's responses. To ensure participant engagement, attention-check questions were incorporated.
Results: Pearson correlation analysis revealed a weak, non-significant relationship between overall maternal perfectionism and children's emotional eating ($r = 0.148$, $p = 0.120$). However, a weak yet significant positive correlation was observed between maternal perfectionism and restlessness-related emotional eating ($r = 0.192$, $p = 0.042$), indicating that children of perfectionist mothers are more likely to engage in emotional eating when experiencing restlessness. Furthermore, maternal personal standards correlated significantly with both overall emotional eating ($r = 0.201$, $p = 0.034$) and restlessness-driven emotional eating ($r = 0.200$, $p = 0.035$).
Conclusions: Maternal perfectionism appears to be positively correlated with emotional eating behaviors in children. However the study's correlations were weak, due to limitations related to the small sample size.

PD035 / #685

E-POSTERS DISCUSSION 07: CHILDHOOD & ADOLESCENCE
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DIETARY PATTERNS AND SUSPECTED VITAMIN D SYNTHESIS ALTERATIONS IN TYPE 1 DIABETES

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Background and Aims: While vitamin D (VD) intake is critical for maintaining physiological balance, T1D patients may experience an altered ability to synthesize VD. This study aimed to evaluate dietary patterns contributing to VD intake and its association with T1D.
Methods: A total of 335 T1D patients and age-matched controls (5–19 years) were surveyed across Algeria's northern and Saharan regions. Data were collected via food frequency questionnaires and 24-hour recalls. Associations between specific dietary habits and T1D were analyzed.
Results: T1D patients consuming moderate or low amounts of cooked meals, steamed foods, and low-fat products showed significantly lower VD intake compared to controls ($p < 0.01$). Conversely, VD intake was higher in T1D patients with balanced diets and regular meals ($p < 0.05$). Despite adequate intake in some patients, circulating VD levels remained low, suggesting potential metabolic alterations affecting VD synthesis.
Conclusions: Specific dietary habits influence VD intake in T1D patients, but the persistence of low VD levels suggests an underlying synthesis alteration. These findings emphasize the need for combined dietary and clinical strategies to address VD metabolism dysfunction.

PD036 / #198

E-POSTERS DISCUSSION 07: CHILDHOOD & ADOLESCENCE
22-02-2025 12:50 - 13:20

PLANT-BASED DIET DURING PREGNANCY AND CHILDREN'S ACADEMIC PERFORMANCE IN EARLY CHILDHOOD

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Background and Aims: Reducing the consumption of animal foods is a major environmental, public health and economic challenge. This study aimed to investigate the association between maternal plant-based diet during pregnancy and children's academic performance in early childhood.
Methods: The analyses were based on 5,639 children from the ELFE nationwide cohort. Maternal diet during the 3rd trimester was assessed using a validated food frequency questionnaire. Based on these data, an overall Plant-based Diet Index (PDI), a healthful PDI (hPDI) and an unhealthful PDI (uPDI) were calculated. Academic performance in mathematics and reading was evaluated by teachers at ages 4 and 6 years using standardized school competency scores. Associations between dietary scores and academic performance were assessed using adjusted linear regressions.
Results: The PDI was positively associated with mathematics (β [95% CI] = 0.04 [0.01; 0.08] per 10 points) and reading scores (β [95% CI] = 0.05 [0.02; 0.09] per 10 points) at 6 years but not at 4 years. Similarly, the hPDI was also positively associated with both mathematics and reading (β [95% CI] = 0.05 [0.02; 0.08] and 0.06 [0.03; 0.09], respectively) at 6 years only. In contrast, the uPDI was negatively associated with reading scores at both 4 and 6 years (β [95% CI] = -0.04 [-0.07; -0.02] and -0.04 [-0.07; -0.01], respectively) but not with mathematic scores.
Conclusions: A healthful plant-based diet during pregnancy was associated with improved academic performance in mathematics and reading at age 6, while an unhealthful plant-based diet was linked to poorer reading performance at ages 4 and 6.

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E-POSTERS DISCUSSION 07: CHILDHOOD & ADOLESCENCE
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BOVINE MILK EXOSOME-ENRICHED WHEY PROTEIN CONCENTRATE ENHANCES LONGITUDINAL GROWTH AND BONE HEALTH IN RATS DURING CATCH-UP GROWTH

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Background and Aims: Background: Undernutrition impairs linear growth, while restoring nutritional provisions leads to accelerated growth patterns. However, the composition of the nutrition provided is crucial to facilitate effective catch-up growth without compromising bone quantity, quality, and long-term health. **Aim:** To assess the potential of a novel Bovine Milk Exosome-Enriched Whey Protein Concentrate (BME) as a cutting-edge nutritional factor in promoting bone growth.
Methods: Methods: Initially, we evaluated the role of BME in modulating the proliferative properties of human chondrocytes *in vitro*. To validate the *in vitro* findings, a stunting rat model was employed to study the impact of BME on bone quantity and quality, measured by longitudinal tibia growth, bone mineral content (BMC) and density (BMD), and trabecular micro-CT parameters.
Results: Results: BME promoted proliferation in C28/I2 human chondrocytes via mTOR-Akt signaling. In the stunting rat model, two-week BME supplementation during refeeding was associated with improved tibia BMD, enhanced trabecular microstructure (increased trabecular number (Tb.N.) and reduced trabecular space (Tb.Sp.), and a more active growth plate (greater volume, surface area, and thickness) compared to non-supplemented stunted rats. Extending the refeeding period for an additional two weeks resulted in significantly longer tibias without compromising bone quality.
Conclusions: Conclusions: BME supplementation positively influenced longitudinal bone growth and improved bone quantity and quality during catch-up growth. These findings could be relevant for improving diets aimed at addressing the nutritional needs of children experiencing undernutrition during early life.

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PD038 / #347

E-POSTERS DISCUSSION 08: NEONATAL & PREMATURITY / INFANCY
22-02-2025 12:50 - 13:20

A TWO-STAGE FORMULA WITH HUMAN MILK OLIGOSACCHARIDES AND PARTIALLY HYDROLYZED PROTEIN SUPPORTS GROWTH AND SAFETY OF PRETERM INFANTS: A MULTI-CENTER, OPEN LABEL, INTERVENTIONAL CLINICAL TRIAL

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Background and Aims: Human milk is the gold standard in preterm nutrition. Human milk oligosaccharides (HMOs) are an important component of human milk that can provide unique benefits to preterm infants. Our objective was to assess the growth and safety of the first 2-stage partially hydrolyzed protein-based preterm formulas with HMOs (PTF-HMO).
Methods: In a multi-center open-label trial, clinically stable preterm infants (birthweight ≤1500g) received Stage1 PTF-HMO (3.6g protein/100kcal) until a weight of 1800g, then Stage2 PTF-HMO (2.8g protein/100kcal) until 60 days post-discharge, both formulas contained 1.5 g/L HMOs (2'FL, LNnT). The primary outcome was the weight-adjusted weight gain from the first day of full enteral feeding with Stage1 PTF-HMO until the infant reached 1800g. Secondary outcomes included feeding tolerance, adverse events (AE), bone health and protein status markers until 60 days post-discharge.
Results: Twenty-six infants [mean (range) gestational age 29 weeks (27-34), mean (range) birthweight 1245g (940-1600)] were enrolled. The adjusted mean weight gain was non-inferior to Fenton median growth velocity (of 17.3g/kg/day) in the intention-to-treat and per-protocol populations (20.3 g/kg/day, 95% CI [18.6, 22.1], $p<0.001$; 21 g/kg/day, [19.5, 22.6], $p<0.001$ respectively). Fifty-three AEs were reported in 21 infants. No AEs were related to PTF-HMO or were fatal. There was no report of necrotizing enterocolitis, gastrointestinal intolerance or formula discontinuation. Biomarkers of bone health and protein status were within normal limits.
Conclusions: The first 'in-hospital' and 'post-discharge' preterm hydrolyzed formulas

containing HMOs were safe and well tolerated. The Stage1 PTF-HMO supports age-appropriate weight gain as per recommended goals.

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E-POSTERS DISCUSSION 08: NEONATAL & PREMATURITY / INFANCY
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EXPLORING THE IMPACT OF LXA4, RVD1, AND RVE3 ON INTESTINAL INFLAMMATORY RESPONSE: INSIGHTS FROM A HUMAN INTESTINAL ORGANOID MODEL

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Background and Aims: Damage to the intestinal epithelial barrier is a hallmark of inflammatory diseases such as necrotizing enterocolitis (NEC). Specialized pro-resolving mediators (SPMs), such as Lipoxin A4 (LxA4), Resolvin D1 (RvD1), and Resolvin E3 (RvE3), have been shown to resolve inflammation and promote mucosal healing. This study aimed to explore the effects of SPMs on intestinal inflammatory response with a human organoid model.
Methods: In 3D fetal and neonatal organoid cultures , bacterial stimuli, lipopolysaccharide (LPS) and flagellin, and cytokine stimulation with TNFα and IFNγ, were used to induce inflammation. SPMs were applied to assess their effects on epithelial maturation and inflammatory response. In 2D monolayers, TNFα and IFNγ were used to evaluate the effect of SPMs on barrier function. Additionally, a repetitive wounding and recovery assay was performed to examine the protective effects of SPMs on barrier integrity.
Results: In 3D organoid cultures, SPMs had limited effects on epithelial maturation, but modulated the inflammatory response, reducing IL-8 upregulation and attenuating the expression of pro-inflammatory markers induced by bacterial stimuli. In 2D monolayers, SPMs failed to restore transepithelial electrical resistance (TEER) values after cytokine stimulation with TNFα and IFNγ. However, in the repetitive wounding assay, SPM pre-treatment accelerated TEER recovery and maintained barrier integrity for 10-24 hours after repeated injuries.
Conclusions: Our findings suggest that SPMs have protective benefits for epithelial barrier recovery in mechanically wounded monolayers, though their ability to reverse cytokine-induced damage is limited. These results provide valuable insights into the therapeutic potential of SPMs in neonatal intestinal inflammation.

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PD040 / #475

E-POSTERS DISCUSSION 08: NEONATAL & PREMATURITY / INFANCY
22-02-2025 12:50 - 13:20

ASSOCIATION BETWEEN CHILDREN'S FIBER INTAKE AND NEURODEVELOPMENT AT 18 MONTHS OF AGE

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Background and Aims: 338 children {participants in the PREOBE (n=119) and COGNIS (n=106) studies}, were evaluated to study the effect of dietary fiber intake on children's neurodevelopment at 18 months
Methods: 24-hour food diary questionnaire and Bayley-III test were performed.
Results: Children born to Overweight/Obese (OW/OB) mothers consumed less soluble fiber (SF) and insoluble fiber (IF) than those born to Normal-weight (N) mothers (p=0.007; p=0.036). Among children of N mothers, ***SF intake*** was positively correlated with cognitive direct scores (DS), receptive + expressive communication scalar scores (SS), fine motricity (DS), but negatively correlated with gross motricity (DS & SS). ***IF intake*** was positively correlated with receptive + expressive communication SS, fine motricity DS, but negatively correlated with gross motricity DS & SS. Among children of OW/OB mothers, ***SF intake*** was positively correlated with self-direction (DS) and self-care (SS), as well as with communication scores (receptive & expressive SS). ***IF intake*** was positively correlated with leisure activities, social skills, self-care, self-direction, and communication (SS).
Conclusions: The intake of both SF and IF at 18 months has a clear impact on children's neurodevelopment. Children born to OW/OB mothers consumed less fiber than those born to N mothers. Among children of N mothers, fiber intake is associated with cognitive, language, and motor development. In contrast, among children of OW/OB mothers, fiber intake is associated with language development, socio-emotional and adaptive behaviors. Funding: *Andalusian Government, Economy, Science & Innovation Ministry (PREOBE Excellence Project-P06-CTS-02341), DynaHEALTH H2020 EU Project, GA nº:633595 and SMARTFOODS (CIEN Project*-IDI-20141206*), (CDTI)*

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E-POSTERS DISCUSSION 08: NEONATAL & PREMATURITY / INFANCY
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SYNERGISTIC EFFECT OF BETAINE AND FOLATE IN PROMOTING NEURONAL CELL PROLIFERATION AND NEURITE OUTGROWTH IN MURINE N2A CELLS

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Background and Aims: Methyl donors are a group of nutrients that include Folate, Betaine, and others. They are involved in methylation, a critical mechanism for many important physiological processes. While Folate is widely known for its role in neural development, the effect of other methyl donors on neurodevelopment is not well-studied. This study, by utilizing an in vitro neuronal cell model, aimed to investigate the effects of Betaine and Folate supplementation on neuronal development.
Methods: The neural-crest-derived N2a cell line (ATCC CCL-131) is commonly used to investigate various aspects of neuronal development, including neurite outgrowth, neuronal differentiation, and synaptogenesis. Different aspects of neuronal development were assessed following treatments with Betaine and Folate, individually and in combination.
Results: When treated individually, both Betaine and Folate promoted neuronal proliferation and neurite outgrowth at 50 µM. An unexpected synergistic effect was observed when cells were treated with a combination of both ingredients at 50 µM each. These two methyl donors, Betaine and Folate, synergistically promoted neuronal cell proliferation and neurite outgrowth.
Conclusions: Our in vitro model demonstrated that Folate and Betaine could promote neuronal proliferation and neurite outgrowth. When combined (at 50 µM), these ingredients exhibited a synergistic effect, emphasizing the potential of methyl donors in promoting brain development. This study lays the groundwork for future research on the impact of such supplementation strategies.

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PD042 / #671

E-POSTERS DISCUSSION 08: NEONATAL & PREMATURITY / INFANCY
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EVALUATION OF THE DEVELOPMENT OF FUNCTIONAL GASTROINTESTINAL DISEASES IN CHILDREN BETWEEN 4-18 YEARS OF AGE DIAGNOSED WITH COW'S MILK PROTEIN ALLERGY

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Background and Aims: Cow's milk protein allergy (CMPA) is one of the most common food allergies that occurs in early childhood. It is thought that CMPA may play a role in the pathophysiology of functional gastrointestinal diseases (FGIH) in the long term. In this study, our aim is to question the gastrointestinal symptoms in the long-term follow-up of patients with CMPA diagnosis, to recognize and gain awareness of frequently encountered FGIH
Methods: Our study includes patients diagnosed with CMPA, whose treatments were finalized and whose current ages were between 4 and 18.The control group consisted of 250 healthy children of similar age group who were not diagnosed with CMPA. The patients were administered the Pediatric Gastrointestinal Symptoms Questionnaire including Rome IV criteria. Laboratory findings of the children (skin prick test, total IgE, complete blood count) were obtained from hospital system records.
Results: The mean age of the CMPA patient group was 5.6 ± 2.0 (age±SD) years, Functional GIS disease was observed in 70 (28%) of the patients with CMPA and in 76 (30.4%) of those without CMPA (p=0.623). FGIH was observed in 36 (33.6%) patients with IgE-mediated CMPA and in 34 (23.8%) patients with non-IgE-mediated CMPA. Functional abdominal pain, irritable bowel syndrome and encopresis were significantly more common in patients without CMPA (p=0.009, p=0.016, p=0.01, respectively).
Conclusions: Although the frequency of FGID development does not increase significantly in the long term in patients diagnosed with CMPA, functional dyspepsia, functional abdominal pain, and irritable bowel syndrome are considerably higher, especially in those with IgE-mediated ones.

PD043 / #192

E-POSTERS DISCUSSION 08: NEONATAL & PREMATURITY / INFANCY
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EARLY GROWTH TRAJECTORIES OF SGA AND AGA VERY LOW BIRTH WEIGHT INFANTS: A COMPARATIVE ANALYSIS FROM BIRTH TO TWO YEARS

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Background and Aims: Very low birth weight (VLBW) infants, weighing less than 1500 grams at birth, are at risk for growth and developmental complications. Small for Gestational Age (SGA) and Appropriate for Gestational Age (AGA) VLBW infants show distinct growth patterns due to different intrauterine and postnatal conditions. SGA infants often exhibit prenatal growth restriction, while AGA infants face fewer prenatal challenges, leading to better catch-up growth after birth. This study compares the growth trajectories of SGA and AGA VLBW infants from birth to two years of age.
Methods: A total of 129 VLBW infants admitted to Kaohsiung Medical University Hospital NICU from 2018 to 2020 were included, with 47 in the SGA group and 82 in the AGA group. Body weight (BW) and body length (BL) were measured at birth, discharge, and corrected ages (CA) of 6, 12, 18, and 24 months. T-tests, Chi-square tests, and two-way ANOVA were used to compare BW and BL between groups.
Results: SGA infants had lower birth weight and higher rates of cesarean delivery, preeclampsia, and gestational diabetes in their mothers. Significant BW differences were observed between groups at all time points, but no significant differences in BL. Growth rates for BW and BL between time periods were not significantly different, nor were cognitive and motor scores.
Conclusions: Despite having lower birth weight, SGA VLBW infants showed comparable growth rates in body weight, body length, and developmental outcomes, including cognitive and motor scores, to those of AGA VLBW infants throughout the follow-up period till 2 years old.

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PD044 / #645

E-POSTERS DISCUSSION 09: OTHER
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FOOD ALLERGIES AND IMMUNODEFICIENCY STATES IN THE PEDIATRIC POPULATION

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Background and Aims: A significant increase in the share of allergic diseases is observed in many countries of the world. Today, the prevalence of allergic diseases in the entire population of the world reaches from 25% to 40%. In the world, diseases caused by food allergies are a global problem. That is why the purpose of our research is to detect food allergies in the children's population.
Methods: The research population consisted of 2000 children aged 1 months to 18 years. Of these, there were 1250 girls and 750 boys. Allergen-specific IgE was determined by the immunoenzymatic method in each case. Mathematical analysis of the results of epidemiological research was carried out using Microsoft Excel 2010 and SPSS/V16.5 software package.
Results: At the next stage of epidemiological research,The study was conducted on a randomly selected contingent of identified patients. According to the research results, 20% of children who ate fish, nuts, citrus, and honey had severe allergies, and 1.8% had allergies to eggs and milk.1.5% of children had an immunodeficiency disease and had a severe allergic reaction
Conclusions: As a result of the epidemiological study, the diagnosis of food allergy from allergic diseases in the children population was based on the clinical picture of the disease and also on the symptoms for which there is practically no laboratory test. Thus, the significance of the impact of each factor and the association with morbidity in the population were analyzed.

PD045 / #656

E-POSTERS DISCUSSION 09: OTHER
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RELATION BETWEEN BREAST MILK AND STOOL MICROBIOTA IN A TERTIARY NEONATAL INTENSIVE CARE UNIT

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Background and Aims: The journey of the human gut microbiotal inhabitance starts from the mother intrauterine and is influenced by different factors .The main source for the establishment and development of the gut microbiota is through feeding,.Breast milk microbiota is vertically transmitted and shared with the infant gut, meanwhile breast milk is the main source of prebiotics that ensure proper intestinal microbiota establishment The purpose of this study was to examine the microbiota of Bifidobacillus and Lactobacillus in neonates admitted to the neonatal intensive care unit (NICU), how they are related to breast milk microbiota and how they are affected by the hospital environment.
Methods: This cross-sectional study, enrolled 36 samples of paired mother breast milk and their neonates' stools (20 preterms and 16 full terms). They were exclusively breastfed. Bifidobacillus and Lactobacillus were exposed to partial sequence analysis of the 16S Ribosomal ribonucleic acid (rRNA) gene for identification by prim targeting polymerase chain reaction (PCR)
Results: This study revealed significant existence of bifidobacillus more than lactobacillus in the breast milk samples, however lactobacilli were significantly more abundant in infant's stool samples than bifidobacilli. Although breast milk samples of mothers who delivered vaginally contained more bifidobacilli than those who delivered by cesarean section, there was no significant difference in the neonates gut microbiota. Moreover, no significant differences were found between full-term and preterm neonates either in breast milk or infant stools
Conclusions: Infant gut and breast milk microbiota are dynamic and changeable. Hospitalization and antibiotics can distort and affect gut microbiota

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E-POSTERS DISCUSSION 09: OTHER
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ORAL NUTRITIONAL SUPPLEMENTATION ON GROWTH, BODY COMPOSITION AND BONE MINERALIZATION IN UNDERNOURISHED CHILDREN AGED 2 TO 7 YEARS OLD: A META-ANALYSIS OF INDIVIDUAL PARTICIPANT DATA

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Background and Aims: Childhood undernutrition is associated with lower bone mineralization and fat-free mass. This study evaluates the efficacy of oral nutrition supplementation (ONS) added to dietary counselling (DC) on growth, body composition and bone mineralization in children with or at risk of undernutrition, using data from two randomized controlled trials (RCTs) in Vietnam and India.
Methods: A 1-stage individual participant data (IPD) meta-analysis from two RCTs was conducted to compare ONS+DC to DC alone. Study endpoints were change in height, weight, height-, weight- and BMI-for-age z-scores*, and dual-energy X-ray absorptiometry (DXA)-assessed lean mass, fat mass, and bone mineral content and density (BMC/D) at the longest follow-up visit of each study (6 and 8 months).
Results: A total of 542 participants [50.9% girls; baseline mean (SEM), age: 4.30(0.04) years; HAZ: -1.72(0.02); WAZ: -1.89(0.02); BMIAZ: -1.16(0.03)] were included. Compared to DC-only, height and weight gain were significantly greater with ONS+DC [LSM difference (SEM), height: +1.744(0.106) cm; $p<0.0001$], weight: +0.794(0.069) kg; $p<0.0001$] and HAZ, WAZ, and BMIAZ were also higher (all $p<0.001$). Lean mass gain was larger [+0.22(0.06) kg; $p=0.0002$], while changes in fat mass were not significantly different ($p=0.70$). Increases in BMC [+9.92(1.92) g; $p<0.0001$)] and BMD [+0.009(0.002) g/cm^2; $p=0.0003$] were also larger in the ONS+DC group.
Conclusions: Based on pooled data of children aged 2-7 years old with or at risk of undernutrition from two different populations, ONS+DC compared to DC-only improved growth, increased lean but not fat mass accretion, and increased BMC and BMD.

PD047 / #679

E-POSTERS DISCUSSION 09: OTHER
22-02-2025 12:50 - 13:20

THE ASSOCIATION OF MATERNAL PRENATAL MOOD AND MEDITERRANEAN DIET ADHERENCE WITH MECONIUM MICROBIOTA

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Background and Aims: Maternal mood and diet during pregnancy play a crucial role in neonatal health. This study investigates the association between maternal depressive symptoms and dietary patterns during pregnancy with neonatal meconium microbiota diversity in the Arab population in Israel.
Methods: A cohort of 78 mother–neonate pairs provided data on maternal diet and mood, assessed using the IMEDAS and Beck Depression Inventory (BDI) questionnaires at gestational weeks 24–32 and two days postpartum, reflecting maternal status during the week before delivery. Neonatal meconium microbiota was profiled using 16S rRNA sequencing. Mothers were categorized by Mediterranean diet adherence (low, medium, high) and depressive symptoms (normal, mild).
Results: High adherence to the Mediterranean diet was correlated with increased levels of *Lactobacillaceae*, *Sphingobacteriaceae*, and *Aerococcaceae* in neonatal meconium compared to medium adherence, and with increased *Peptostreptococcaceae* compared to low adherence. Neonates of mothers with medium-to-high diet adherence near to delivery exhibited elevated levels of *Parabacteroides* and *Bacteroides* along with a trend toward higher alpha diversity, indicating a more favorable microbiota composition. Neonates of mothers with mild mood disorders during pregnancy had higher levels of *Streptococcaceae*, *Aerococcaceae*, and *Eggerthellaceae* in their meconium compared to mothers with no symptoms.
Conclusions: These findings emphasize the critical role of maternal nutrition and mood in shaping neonatal gut microbiota. Diets enriched with health-promoting genera such as *Lactobacillus*, *Bacteroides*, and *Parabacteroides* support neonatal gut health, potentially through beneficial metabolites production such as short-chain fatty acids.

However, increased *Aerococcaceae* in neonates of mothers with mood disorders warrants further investigation into potential links to long-term health risks.

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PD048 / #681

E-POSTERS DISCUSSION 09: OTHER
22-02-2025 12:50 - 13:20

VITAMIN D INTAKE AND TYPE 1 DIABETES: REGIONAL DISPARITIES IN DRY AND SUNNY AREAS

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Background and Aims: Type 1 diabetes (T1D) has been associated with vitamin D (VD) deficiency. However, the impact of geographic factors such as sun exposure and dietary patterns in dry and sunny areas remains unclear, particularly in Algeria
Methods: This study assessed dietary VD intake in 335 T1D and healthy controls aged 5–19 years from Algeria's dry Saharan region and less sunny Northern regions. VD consumption was measured using a food frequency questionnaire and a 24-hour food recall (Ciqual table 2016).
Results: VD intake was significantly lower in T1D patients compared to healthy controls in dry and sunny areas ($p < 0.05$), particularly in regions such as Adrar. Moreover, patients consuming low-fat foods and fewer eggs exhibited significantly reduced VD intake compared to controls ($p < 0.05$). These results highlight that even in sun-rich areas, dietary VD intake is insufficient in T1D patients.
Conclusions: Regional disparities in dietary vitamin D intake may contribute to the metabolic imbalance seen in T1D patients in dry, sunny environments. This underscores the need for targeted nutritional interventions.

PD049 / #684

E-POSTERS DISCUSSION 09: OTHER
22-02-2025 12:50 - 13:20

GENDER-SPECIFIC TRENDS IN VITAMIN D INTAKE AMONG TYPE 1 DIABETIC CHILDREN: A DIETARY PERSPECTIVE

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Background and Aims: Vitamin D (VD) levels and intake are influenced by multiple factors, including gender and dietary habits. This study explored VD intake among Algerian children and adolescents with T1D, with a focus on gender-specific differences.
Methods: Dietary VD intake was evaluated in 335 T1D and age-matched healthy controls using a food frequency questionnaire and a 24-hour recall. Subgroup analyses focused on gender and dietary preferences.
Results: VD intake was significantly lower in T1D boys compared to healthy boys (p = 0.038). This discrepancy was particularly marked in boys consuming fewer eggs, low-fat foods, and cooked meals. In contrast, T1D boys with balanced diets or moderate protein consumption showed higher VD intake levels ($p < 0.05$). Despite these dietary differences, circulating VD levels were consistently lower in T1D boys across all groups.
Conclusions: T1D boys are particularly vulnerable to lower dietary VD intake, highlighting gender as a key factor in managing VD deficiency. Specific dietary interventions targeting protein-rich and VD-enriched foods may be essential for this group.

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PV001 / #587

E-POSTER VIEWING: BIG DATA & ARTIFICIAL INTELLIGENCE (AI)

ASSESSING THE NUTRITIONAL VALUE OF PRESCHOOL BREAKFAST MENUS: HUMAN VS. AI APPROACHES

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Background and Aims: Artificial intelligence (AI)-based software is increasingly being applied within the healthcare sector, particularly through large language models that have the capability to generate meal and diet plans. School meals, typically formulated by qualified professionals, are primarily designed to positively influence children's growth and development. This study aims to compare the nutritional content of school menus prepared by a human expert with those generated by AI.
Methods: This study focused on the preschool age group (ages 4 to 6) and compared the content of five-day breakfast menus from five schools in Istanbul with those generated by five different AI applications, resulting in a total of ten distinct menus. Nutritional components including energy, carbohydrates, proteins, fats, vitamins, and minerals were analyzed, alongside glycemic index and ORAC values. The nutritional content of these menus was assessed using BEBIS software. Given that the data did not conform to a normal distribution, the Mann-Whitney U test was utilized to evaluate differences between independent groups.
Results: Comparative analyses of breakfast menus prepared by humans versus those generated by AI for preschoolers revealed no statistically significant differences in macronutrients, micronutrients, ORAC value (p=0.917), glycemic index (p=0.047), or energy content (p=0.465). However, menus curated by human planners exhibited a greater variety of food options.
Conclusions: Although the analysis did not reveal statistically significant differences in nutrient composition, menus created by human experts demonstrated greater food variety. Future research should refine AI meal planning by incorporating specific characteristics relevant to target populations into language models, thereby improving the applicability of AI-generated menus.

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PV002 / #239

E-POSTER VIEWING: BIG DATA & ARTIFICIAL INTELLIGENCE (AI)

ANTEK - MOM, DAD CHECK IF I AM DEVELOPING HEALTHILY?! MOBILE APP FOR MONITORING CHILDREN'S PHYSICAL DEVELOPMENT

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Background and Aims: ANTEK is a mobile application dedicated to parents. It allows monitoring the development and health of children by comparing the child's measurement data with medically recognized standards. The application was created by experts from the Anthropology Laboratory of the Children's Memorial Health Institute in Poland. **The aim** of this study was to create a tool for parents to monitor the growth and nutritional status of their children. With particular emphasis on detecting the first symptoms of overweight and obesity
Methods: We use OLA/OLAF standards developed by the Children's Memorial Health Institute for Polish Children and WHO standards. For babies born before 37 weeks of gestation, we used Dr. Tanis Fenton's preterm growth charts. In the application, we paid special attention to the growth charts for waist circumference, which is taken into account in the diagnosis of abdominal obesity
Results: The mobile app allows monitoring of growing of weight and height (also for preterm children), calculate BMI to assess nutrition status. Prediction of the adult body height is based on the parents' and child's current height and plotting percentile charts. Parents also receive an interpretation of the results.
Conclusions: The clear and intuitive application helps monitor the child's development. It allows for detecting possible disorders and quick taking of further diagnostic steps.

PV003 / #665

E-POSTER VIEWING: BIG DATA & ARTIFICIAL INTELLIGENCE (AI)

USING ELECTRONIC HEALTH RECORDS TO PREDICT SEASONAL DISEASE PREVALENCE

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Background and Aims: Background Seasonal diseases such as influenza, respiratory tract infections, and gastrointestinal illnesses pose significant public health challenges, leading to increased healthcare demands and economic burdens. Predicting the prevalence of these diseases is critical for optimizing resource allocation, improving patient care, and implementing timely public health interventions. Aims To leverage EHR data to identify and analyze temporal patterns in seasonal disease prevalence, such as influenza and respiratory infections.
Methods: Study Design A retrospective cohort study conducted using de-identified Electronic Health Record (EHR) data from multiple healthcare providers.
Results: Disease Prevalence Patterns • Temporal Trends: • Influenza and respiratory infections showed consistent peaks during monsoon months, while gastrointestinal illnesses peaked in summer. • Geographic Variation: • Disease prevalence varied significantly by region, with urban areas experiencing higher peaks due to population density. Impact of External Factors • Environmental Factors: • Temperature and humidity were significant predictors of respiratory infections, with lower temperatures correlating strongly with higher incidence. • Social Determinants: • Higher population density and reduced vaccination rates were associated with greater seasonal disease prevalence.
Conclusions: Conclusion This study highlights the transformative potential of leveraging Electronic Health Records (EHRs) and advanced analytics to predict seasonal disease prevalence. By integrating structured and unstructured EHR data with external factors such as environmental conditions and social determinants, the predictive models achieved high accuracy in forecasting disease trends.The study also underscores the practical applications of such models, including early detection of disease surges, optimized resource allocation, and improved healthcare system preparedness.

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PV004 / #513

E-POSTER VIEWING: CHILDHOOD & ADOLESCENCE

HAS UNDERWEIGHT INCREASED AMONG CHILDREN AND ADOLESCENTS DURING 2012-2019 AND DOES THE PREVALENCE DEPEND ON SOCIOECONOMIC CIRCUMSTANCES? A NATIONWIDE REGISTER-BASED STUDY FROM DENMARK

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Background and Aims: Childhood underweight, indicated by low body mass index for age and sex, is associated with undernutrition, morbidity, mortality and poverty in low-income settings, but is often overlooked in high-income countries, due to unequivocal focus on overweight. This study examined the development and socioeconomic characteristics of underweight among children and adolescents in Denmark during 2012-2019.
Methods: We used nationwide register data on height and weight measured objectively in 461,041 6-7-year-olds and 365,312 14-15-year-olds during 2012-2019, covering 89.4% and 67.2% of all schoolchildren in these age groups. We calculated BMI z-scores and classified underweight using the International Obesity Task Force age- and sex-specific BMI cut-offs and linked with register data on parental education and household income.
Results: The prevalence of underweight remained relatively stable at ~8.5% among 6-7-year-old girls during 2012-2019. Among 14-15-year-old girls, it was initially higher but decreased slightly (<1%-point) to 8.6% in 2019. Among boys, the prevalence increased from ~7% to just above 8% in both age groups during the period. Across all years, underweight was more common among 14-15-year-olds whose parents had long higher education (girls: 10.4%-12.1%; boys: 8.7%-10.2%) compared to primary school (girls: 5.6%-7.5%; boys: 6.1%-7.8%), with the most pronounced differences among girls. Similar, although smaller, differences were seen among 6-7-year-olds. Less distinct but comparable differences were found for income.
Conclusions: Underweight is prevalent, but has remained relatively stable during the 2010s among Danish children and adolescents. Unlike the pattern reported in low-income settings, and that seen for overweight, underweight is associated with socioeconomic advantage in this high-income setting.

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PV005 / #21

E-POSTER VIEWING: CHILDHOOD & ADOLESCENCE

FORMULATION OF CHILDREN'S NUTRIENT-DENSE RECIPES FROM ADANSONIA DIGITATA PULP AND OCIMUM GRATISSIMUM LEAVES IN NORTH BENIN

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Background and Aims: Neglected and underutilized species (NUS) can play an important role in nutrition and food security. This study aimed to promote the consumption of two NUS, *Ocimum gratissimum* and *Adansonia digitata*, by improving recipes that are traditionally consumed by children aged 6–23 months in the Atacora department. Two (02) improved recipes were formulated: baobab pulp-enriched porridge (BPP) and *egusi* sauce with african basil leaves and red palm oil (ESBR).
Methods: Formulation was initially carried out using *MINITAB 19* mixing software. For each recipe, two factors (two main ingredients of the recipe) were considered for the formulation. The optimized recipes were then tested through a hedonic test with a sample of 66 children in three (03) communes. The nutritional densities of accepted recipes were then determined.
Results: Results showed that most of the children liked both recipes formulated. The energy densities of both recipes (1.24 ± 0.03 kcal and 1.89 ± 0.05 kcal/g respectively for BPP and ESBR) met the recommended standards. As for nutritional densities, only iron recommended density was achieved for BPP (4.86 ± 0.12 mg/100 kcal) while for ESBR, in addition to iron density, zinc and vitamin A densities were also achieved. The BPP recipe covered good levels of daily nutritional requirements for one single feed for iron (46.42%) and energy (13.49%) considering the amount consumed by children, whereas the ESBR recipe covered levels of 26.61% for energy, 399.32% for vitamin A, 94.11% for iron and 17.44% for zinc.
Conclusions: A better valorization of these species through cooking demonstration sessions addressed to mothers is necessary to ensure the consumption of recipes formulated by communities in general and children in particular

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E-POSTER VIEWING: CHILDHOOD & ADOLESCENCE

CHILD FOOD POVERTY REPORT FROM ETHIOPIAN NATIONAL FOOD AND NUTRITION STRATEGY BASELINE SURVEY

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Background and Aims: Child food poverty is inability of children to access and consume a nutritious and diverse diet in early childhood. Understanding impacts of the child food poverty is necessary to design early appropriate responses to protect children from negative impact of nutrition outcome. The objective of this research was to understand the prevalence of child food poverty at national and regional level and identify its driver factors.
Methods: A population based cross-sectional food and nutrition strategy baseline survey was conducted in three phases (from July 2021 to February 2024). A 24-hr recall questionnaire was used to assess dietary intakes for children aged 6-23 months (n=2969). The drivers of child food poverty (age, sex, educational status, size of child during delivery, Antenatal care visit, wealth quintile, residence, water-source and sanitation) among children were modelled using Multivariable logistic regression analyses to explore the driver factors for child severe food poverty and the absolute number of children aged 6 to 59 months experienced with food poverty were estimated with extrapolation.
Results: In total, 92% of children living either in severe or moderate food poverty. The extrapolation data revealed that 12 million under five children are living with severe or moderate food poverty. Educational status of mother, ANC visit, and wealth quintile were significant predictors of severe child food poverty in Ethiopia.
Conclusions: The findings of this study suggest the need for urgent designing a multi-sectorial approach to address need for enhanced public health responses and emergency preparedness measures that protect child food and nutrition security.

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PV007 / #651

E-POSTER VIEWING: CHILDHOOD & ADOLESCENCE

PROMOTING HEALTHY EATING HABITS IN SCHOOLS: OUTCOMES OF THE MOVIMENTO IN 3S: EDUCAZIONE ALIMENTARE PILOT PROGRAM IN FRIULI VENEZIA GIULIA REGION

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Background and Aims: Childhood obesity is a growing global public health issue, with significant impacts on long-term health and healthcare costs. In Friuli Venezia Giulia, Italy, there is a noticeable increase in the prevalence of overnutrition among children. Implementing nutrition education within schools is an effective approach to educating children about proper nutrition. The “Educazione Alimentare” program aimed to promote healthy eating habits among school-aged children through a gamified educational program involving schools and teachers.
Methods: “Educazione Alimentare” was designed to impart basic food education and nutrition to children through playful activities. It involved over 15,000 children from 87 schools during the school year 2023-2024. Activities utilized a playful educational approach supported by teacher training and classroom materials. Pre- and post-program surveys were administered to evaluate the program's effectiveness.
Results: Survey responses revealed increased awareness of the importance of healthy eating among children and teachers. Teachers rated the program useful for fostering healthier habits, though family participation was limited. Suggestions for improvement included providing individual kits for students, developing multimedia resources, and enhancing family involvement. The analysis showed that gamified activities-maintained children's interest but required age-appropriate adjustments for sustained engagement.
Conclusions: This educational approach helps children develop skills for healthy choices and highlights schools as important settings for malnutrition prevention. The pilot program demonstrated logistical feasibility and positive outcomes in promoting healthy behaviors in schools. Enhancing family engagement, diversifying materials, and customizing activities by age group will be essential for future iterations to amplify its impact and sustainability.

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PV008 / #328

E-POSTER VIEWING: CHILDHOOD & ADOLESCENCE

SOCIAL HEALTH PROGRAMMING DURING ADOLESCENCE IMPROVES ANTIOXIDANT NUTRIENT LEVELS

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Background and Aims: Social Health Programming (SHP) is a holistic intervention that addresses modifiable risk factors for poor health, including suboptimal nutrition. Carotenoids and retinol are nutrients that serve as antioxidants and play a crucial role in the growth and development of multiple organs. However, little is known about how SHP participation during adolescence affects nutritional status.
Methods: Adolescent and young adult women (ages 12–29) were enrolled in this observational cohort study. Serum samples were collected from current/previous participants of a local organization providing SHP (Girls Inc., Omaha; n=16) and study participants with no SHP exposure (n=42). Nutrient levels were analyzed using HPLC. Average daily intake was estimated using three 24-hour dietary recalls (ASA24®). Mann-Whitney U tests compared nutrient intake and serum levels between groups. Relevant confounders were adjusted for using linear regression.
Results: SHP participants had significantly higher median serum concentrations of multiple nutrients compared to the control group (**Table 1**). After adjustment for age and race/ethnicity, SHP participation predicted significantly higher serum concentrations of α-carotene, lutein+zeaxanthin, lycopene, and β-cryptoxanthin. **Table 1. Serum Nutrient Levels**

Nutrient	SHP Group Median µg/L (IQR)	Control Group Median µg/L (IQR)	P-Value
α-carotene	39.7 (22.0-74.4)	24.4 (2.3-43.0)	0.08

β-carotene	124.1 (96.0-219.3)	79.5 (59.2-170.8)	0.13
Lutein+Zeaxanthin	194.5 (140.5-237.1)	134.6 (87.3-216.4)	0.03*
Lycopene	446.7 (207.0-754.7)	175.4 (106.9-348.5)	0.003*
Retinol	506.2 (393.7-560.2)	306.2 (162.2-529.0)	0.03*

*Significant p-value.

Conclusions: SHP participation during adolescence positively impacted serum nutrient levels in adolescent girls and young adult women. Future studies should determine whether maternal SHP participation during adolescence has a long-term, intergenerational impact on nutritional status.

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E-POSTER VIEWING: CHILDHOOD & ADOLESCENCE

SOCIAL HEALTH PROGRAMMING DURING ADOLESCENCE LOWERS SERUM LEVELS OF CHOLESTEROL PRECURSORS

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Background and Aims: Social Health Programming (SHP) is a multifaceted community-driven intervention that empowers communities to improve long-term health outcomes. Dyslipidemia during adolescence is increasingly recognized as a modifiable nutritional disorder that places children at increased risk for developing cardiovascular disease. However, little is known about how SHP participation affects sterol serum levels in adolescent girls.
Methods: Participants of Girls Inc., Omaha (local organization providing SHP; n=13) and adolescent girls (age 12-18) without SHP exposure (n=16) were enrolled. Serum was analyzed for non-esterified sterols using LC-MS/MS. Average daily fat intake per 1,000 kcal was estimated using three 24-hour dietary recalls (ASA24®). Mann-Whitney U tests were used to compare serum sterol levels between groups.
Results: SHP participants had significantly lower serum levels of multiple sterols (**Table 1**) including zymosterol, 24-dehydrolathosterol, desmosterol, zymostenol, and lathosterol. However, cholesterol serum levels, cholesterol intake, and fat intake were similar between groups. **Table 1. Sterol Serum Levels (nmol/L)**

Sterols	SHP Group Median (IQR)	Control Group Median (IQR)	P-Value
Lanosterol	263.5 (224.9-305.6)	299.8 (248.0-348.8)	0.25

Zymosterol	90.3 (64.3-112.9)	133.2 (102.7-167.2)	0.01*
24-dehydrolathosterol	83.4 (75.2-111.5)	160.8 (104.9-205.8)	0.02*
Desmosterol	790.3 (711.7-949.9)	974.6 (866.0-1336.2)	0.01*
Zymostenol	239.5 (163.4-360.2)	516.1 (266.4-648.8)	0.02*
Lathosterol	929.2 (733.4-1,630.3)	2,477.2 (1,095.3-3,733.3)	0.02*
Cholesterol	846,995.4 (757,122.5-970,825.8)	894,646.2 (779,287.8-1,009,347.8)	0.25

*Significant p-value

Conclusions: SHP participation is associated with lower serum levels of multiple sterols. This suggests less endogenous synthesis of cholesterol among SHP participants, which may reduce risk for dyslipidemia and poor cardiovascular health. Further research is needed to understand the long-term impact of SHP participation on sterol levels.

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PV010 / #531

E-POSTER VIEWING: CHILDHOOD & ADOLESCENCE

A RETROSPECTIVE COHORT STUDY OF SHORT STATURE IN CHILDREN AGED 6–7 YEARS: AT WHAT AGE DO DISPARITIES EMERGE?

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Background and Aims: There are differences in the rates of short stature (WHO HAZ<-2SD) between the various sectors in Israeli children aged 6 years. We aimed to: (a) Assess risk factors for short stature at age 6 years. (b) Evaluate the impact of clinical and socioeconomic factors on linear growth from birth to age 6 years.
Methods: This was a retrospective cohort study. Anonymized anthropometric data measured at the first grade of school during 2015–2019 were collected from the Ministry of Health records. Retrospective data were extracted for each child from the national birth registry and Maternal Child Health Clinics files.
Results: The cohort included 368,088 children, 1.6% with short stature. Children with short stature at age 6 had a normal mean HAZ at age 2 months, which decreased to -2SD by ~12 months, while children with normal stature maintained their HAZ. Differences in the HAZ of children with a lower socio-economic score compared to medium and high scores were not evident at 2 months, and emerged from 6 months onwards. In a logistic regression model, the variables that predicted short stature at first grade were female sex, longer gestation, lower HAZ at age 2 months, birth weight<90th percentile, being in the ultraorthodox Jewish sector, and a smaller delta HAZ until age 2 years.
Conclusions: Growth gaps between different sectors of school-aged Israeli children emerge between birth and age 12 months. Maternal child health clinics should closely monitor for growth faltering during the first and second years of life.

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PV011 / #372

E-POSTER VIEWING: CHILDHOOD & ADOLESCENCE

SHORT-TERM MEMORY DEVELOPMENT AMONG ADOLESCENTS AND ASSOCIATED FACTORS IN BENIN, WEST AFRICA

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Background and Aims: Background and aims: Malnutrition affects physical growth and health of young children and is reflected in their performance at school. Considering that memory is one of the essential components for the acquisition of knowledge and skills, this study aims at evaluating the determining factors of short-term memory (STM) of school-going adolescents in different peri-urban areas in Southern and Northern Benin, West Africa.
Methods: Methods: A total of 288 school-going adolescents in peri-urban areas in the north and 234 in the south, were enrolled in the study. STM was measured using Wechsler's numerical span test. Data on food consumption frequency, dietary diversity and nutritional status as well as households socio-economic and demographic characteristics and food insecurity were also collected. Binary logistic regression was used to evaluate factors associated to STM.
Results: Results: More than 60% of adolescents reached minimum of 3 meals or had a dietary diversity score of at least four food groups out of 7 per day. Stunting prevalence was 42.2% with 9.0% severe form. In terms of cognitive ability, 53.3% of students had low STM. Adolescents who had low meal frequency and those from food insecure and poor households were more likely to have low STM capacity.
Conclusions: Conclusions: Proper development of memory is associated with feeding practices and households' socio-economic status. To stimulate adolescents' cognitive development, particular emphasis must be placed on interventions and policies to combat food insecurity and poverty within households as well as facilitating their access to safe and nutritious foods.

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PV012 / #316

E-POSTER VIEWING: CHILDHOOD & ADOLESCENCE

THE EFFECT OF THE SCHOOL NUTRITION EDUCATION PROGRAM ON CHILDREN'S KNOWLEDGE OF MILK AND DAIRY PRODUCTS AND THEIR CONSUMPTION IN POLAND; FOLLOW UP STUDY

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Background and Aims: The sustainability of education focused on improving dietary behaviors, including the consumption of milk and dairy products as important foods for children, has not been extensively studied. The aim of this study was to determine the sustainability of school-based nutrition education on children's knowledge and consumption of milk and dairy products in Poland.
Methods: A nutrition education-based intervention study was carried out on 724 children aged 8-10 years (372 girls; 352 boys). Dietary data were collected using the Short Form Food Frequency Questionnaire (SF-FFQ4PolishChildren®). The study was repeated after 6 months.
Results: Only 50% children consumed milk and milk products at least once a day. The percentage of consumption in this category was significantly lower in girls than in boys (48% vs. 51%; $p<0.0001$). In addition, the percentage of girls in the category once a week or less was higher (6% vs. 3%; $p<0.0001$). Only 17% of children, regardless of gender, answered correctly about the recommended amount of milk to drink. More than 70% of children correctly reported milk and dairy products as a source of calcium in their diet. At follow-up, the frequency of milk and dairy product consumption increased slightly (by 2%). There were also significant positive changes in knowledge about milk and dairy products.
Conclusions: The multi-component education program improved the nutrition knowledge in the short term regardless of socioeconomic variables. This suggests that a special path of nutrition education addressed to children may be required in terms of increasing the consumption of milk and dairy products.

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PV013 / #321

E-POSTER VIEWING: CHILDHOOD & ADOLESCENCE

CONSUMPTION OF MILK AND MILK PRODUCTS AND ADIPOSITY IN PRIMARY SCHOOL CHILDREN AGED 8-10 YEARS IN POLAND

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Background and Aims: Milk and dairy products should be an integral part of the diet, especially for children, due to their high nutritional value and health benefits. The aim of this study was to determine the frequency of consumption of milk and dairy products and their effect on adiposity indicators (WHtR, pBAI) in children aged 8-10 years.
Methods: A cross-sectional study was conducted with 1198 children (573 girls; 625 boys). Dietary data were collected using the food frequency questionnaire (SF-FFQ4PolishChildren®). Anthropometric measurements were taken, and waist/height ratios (WHtR) and pediatric body adiposity index (pBAI) were calculated.
Results: At least 70% of school children consumed milk 5-6 times a week, including only 52% every day, regardless of gender. The mean WHtR index value was 0.45 ± 0.067, significantly higher in boys (0.45 ± 0.08 vs. 0.44 ± 0.05; p=0.0001). WHtR>0.5 was found in 14% of children, with a higher percentage in boys (16% vs. 11%; p=0.002). The mean value of the pBAI index was 19.1 ± 4.9 and did not differ by gender. Using the recommended pBAI values, desirable values were found in 88% of the children, including 84% of boys and 93% of girls (p<0.0001). Considering the frequency of milk and dairy product consumption, significantly lower WHtR values were found in the group with the highest frequency of their consumption.
Conclusions: Our study did not confirm the link between higher frequency of milk consumption and adiposity measured by the WHtR and pBAI index, but showed that boys aged 8-10 probably have a greater risk of adiposity.

PV014 / #375

E-POSTER VIEWING: CHILDHOOD & ADOLESCENCE

GROWTH, BODY COMPOSITION, PUBERTAL CHANGES AND CARDIO-METABOLIC OUTCOMES AT ADOLESCENCE IN A FOLLOW-UP COHORT OF SMALL FOR GESTATIONAL AGE NEONATES

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Background and Aims: Small for gestational age (SGA) babies are at risk of growth faltering as well as developing cardio-metabolic disorders, subsequently. Aim was to study physical growth, pubertal pattern, body composition and bio-chemical profile at adolescence in a cohort of SGA neonates.
Methods: A previous cohort of 50 full-term SGA and 50 Appropriate for gestational age (AGA) babies representing upper middle-upper high socio-economic strata who are being followed-up in the Growth Clinic of the Department since their time of birth comprised sample for this study. At adolescence, their physical growth, pubertal status was assessed along with metabolic profile (High density lipoprotein (HDL), low density lipoprotein (LDL), Fasting insulin, Triglycerides (TG), and cholesterol). Body composition and nutritional status by means of bio-electric impedance was conducted.
Results: Male SGA adolescents had significantly lower body fat ($p=0.007$), weight ($p=0.012$), BMI ($p=0.016$), and skinfolds ($p<0.05$) compared to AGA adolescents. It's worth noting that there were no differences detected among female subjects. Onset and progression of pubertal development in our SGA adolescents remained unaffected. All other biochemical indicators were similar between adolescents with SGA and those with AGA, with the exception of fasting insulin ($p=0.003$).
Conclusions: According to our findings, birth weight status of SGA children has no effect on their future metabolic health. Nonetheless, the reduced physical growth attainments seen in male SGA but not in females point to a protective mechanism that allows them to reach their growth potential in a manner comparable to that of AGA. There may have been additional effects from social and nutritional factors.

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PV015 / #424

E-POSTER VIEWING: CHILDHOOD & ADOLESCENCE

MAIN NUTRITIONAL TOPICS BASED ON A REVIEW OF THE EUROPEAN AND NATIONAL DIETARY GUIDELINES: THE HEALTHCRAFT PROJECT

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Background and Aims: HealthCraft promotes healthy lifestyle behaviors, in primary-school children through training videos and Minecraft. The aim was to review the available guidelines regarding healthy eating in children/adolescents to choose five key topics as learning objectives for the dietary component of HealthCraft.
Methods: Scientific databases (Scopus, PubMed) were searched on December 2023 with certain key words [(“dietary” OR “nutritional”) AND (“guidelines” OR “recommendations” OR “initiative”) AND (“child*” OR “adolescent*”) to retrieve European and national dietary guidelines and initiatives for childhood/adolescence. At the same period, the web was searched for identifying scientific associations with relevant content communicating evidenced-based nutrition recommendations for children/adolescents.
Results: In total, one guideline document was identified from Greece and one review of international food-based dietary guidelines. Moreover, 11 initiatives/campaigns from well-known scientific associations were also identified. Most guidelines have a food group approach with a special focus on fruits and vegetables intake, as well as dairies and sources of protein and fat. Regular meal and snack patterns, and breakfast consumption are usually highlighted, along with the value of hydration. Lowering sugar, fat, and salt intake and establishing behaviors, like family meals and dental hygiene, are also targeted.
Conclusions: Following an evidence-based approach the five topics regarding healthy eating that were included in the dietary component of the HealthCraft were a) an overview of essential food groups, b) fruits and vegetables, c) hydration, d) breakfast and snacking. **Acknowledgements**: HealthCraft project has received funding from the European Union (Erasmus+, KA220-SCH-Cooperation partnerships in school education-2023 Round 1).

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PV016 / #285

E-POSTER VIEWING: CHILDHOOD & ADOLESCENCE

FEEDING DIFFICULTIES AMONG CHILDREN WITH AUTISTIC SPECTRUM DISORDER (ASD)

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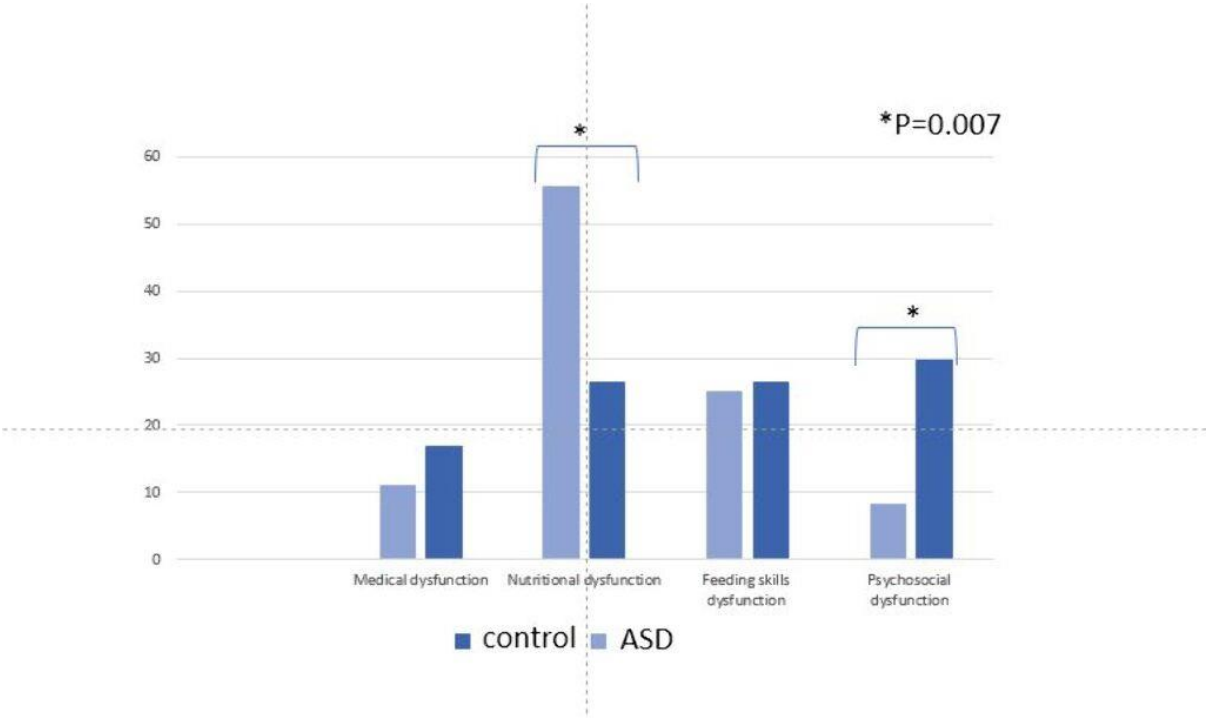
Background and Aims: Data on feeding difficulties in children with autism spectrum disorder (ASD) is limited. We aimed to investigate factors associated with Pediatric Feeding Disorder (PFD) among children with ASD
Methods: A retrospective analysis was conducted on medical records of infants and toddlers diagnosed with PFD, based on the WHO-defined criteria. Children with ASD and PFD were compared to children with PFD but without an ASD diagnosis
Results: The study included 141 children with PFD (median age [interquartile range]: 6 [4, 15] months at diagnosis). Among them, 47 were diagnosed with ASD. In 15 children (33%), the diagnosis of PFD preceded the diagnosis of ASD. Significantly more children in the ASD group were male (52.6% vs. 34.4%, p=0.03) and were born to parents with lower academic backgrounds ($p<0.05$, table 1). Additionally, children with ASD were older at PFD diagnosis (10 vs. 5 months, respectively, p=0.05). When comparing PFD domains, children with ASD exhibited significantly more nutritional dysfunction and less psychosocial dysfunction than those without ASD Figure 1, p=0.007).

Table 1 Demographic and clinical characteristics of children with pediatric feeding disorder (PFD) with and without ASD diagnosis

Variable	PFD with ASD N=47	PFD without ASD N=94	P value
Sex. Male	39 (83)	56 (59)	**0.004**
Age, at PFD diagnosis months	10 (5, 20.25)	5 (3.62, 10.25)	**0.05**
Socioeconomic status Cluster, ~~mean±SD~~ Index, ~~mean±SD~~	 6.5 (5,8) 0.68 (0.3,1.08)	 8 (5,8) 1.08 (0.38, 1.08)	 0.23 0.15
Parents' marital status Married Divorced Single parent	 37 (78) 6 (12) 4 (10)	 76 (80) 14 (15) 4 (5)	 0.54
1st Parental academic background	14 (29)	57 (61)	**0.002**
2nd Parental academic background	12 (25)	63 (67)	**<0.001**
Number of siblings	1 (0,2)	1 (0,1.5)	0.19
Gestational age	38 (35.2,39)	38 (37,39)	0.35
Delivery by C/S	19 (38)	22 (23)	**0.03**
Birth weight, grams	3000 (2155, 3446.5)	3042.5 (2705, 3405)	0.43
Breastfeeding	21 (44)	30 (32)	0.06
Breastfeeding-month	3 (0,9.75)	5 (0,9)	0.74



Conclusions: Children with ASD and PFD present distinct challenges, including later diagnosis more nutritional difficulties and less psychosocial difficulties. Early screening and tailored interventions are essential to address their specific needs.

PV017 / #343

E-POSTER VIEWING: CHILDHOOD & ADOLESCENCE

LONGTERM METABOLIC HEALTH OF VERY LOW BIRTH WEIGHT NEONATES AT THE AGE OF 9-10 YEARS

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Background and Aims: Very low birth weight (VLBW) neonates are prone for longterm metabolic abnormalities. Aim of the study was to assess growth, Blood Pressure (BP), lipid profile and insulin resistance at 9-10 years.
Methods: We followed longitudinally 102 VLBW neonates (less than 1250 grams) till 9-10 years. Their weight, Height, Head Circumference(HC) and BP were measured alongwith metabolic profile -Growth Hormone, Insulin like growth factor1 (IGF1), HIgh density lipoprotein (HDL), low density lipoprotein (LDL), Fasting insulin, HOMA-IR, Triglycerides (TG) and cholesterol
Results: The mean (SD) gestation and birth weight (n=102) were 30.3(3) weeks and 1012(154) grams respectively, of which, 47 were < = 1kg, 55 were > 1kg, < =28 weeks=31, > 28 weeks =70, SGA= 55, AGA=47 , female=50, male =52 . Significantly higher number were Small for gestational age (SGA) in > 28 weeks (50/70, 71%, P=<0.001) and in <= 1 kg (31/47, 66%, p=0.024) neonates. Weight (P=0.053) and systolic BP (p=0.006) were significantly higher in SGA VLBW neonates as compared to appropriate for gestational age (AGA). Height (p=0.03) , IGF1 (p=0.026), fasting insulin (p= < 0.001), HOMA-IR (P= 0.007), HDL (P=0.044) were significantly higher in <= 1 kg babies. Male children had higher height (p=0.023), higher HC (P=0.012), Systolic BP (P=0.026), HDL(P=0.035) than female children.
Conclusions: Less than equal to 1kg babies had higher height, IGF1, HDL, fasting insulin, HOMA-IR and systolic BP by 9-10 years who were mostly SGA babies signifying that they are more prone for metabolic syndrome in later life

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PV018 / #322

E-POSTER VIEWING: CHILDHOOD & ADOLESCENCE

THE IMPACT OF CBT SESSIONS ON EATING BEHAVIOR, SELF-ESTEEM, AND COPING AMONG ADOLESCENTS WITH EATING DISORDERS

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Background and Aims: Eating disorders among adolescents pose significant psychological and health challenges. Cognitive Behavioral Therapy (CBT) is a well-established intervention that may improve eating behaviors, self-esteem, and coping mechanisms in this population. This study aims to evaluate the effects of a structured CBT program on these factors in adolescents diagnosed with eating disorders.
Methods: A total of 40 adolescents (ages 13-18) with diagnosed eating disorders participated in a 12-week CBT program. Participants were assessed at baseline, mid-treatment, and post-treatment using standardized measures: the Eating Disorder Examination Questionnaire (EDE-Q) for eating behaviors, the Rosenberg Self-Esteem Scale (RSES) for self-esteem, and the Coping Strategies Inventory (CSI) for coping skills. Data were analyzed using mixed-model ANOVA to assess changes over time.
Results: The results indicated a significant reduction in disordered eating behaviors ($p < 0.01$) and a notable increase in self-esteem ($p < 0.01$) and adaptive coping strategies ($p < 0.05$) among participants following the CBT sessions. Improvements were sustained at the follow-up assessment conducted three months post-treatment.
Conclusions: The findings suggest that CBT is an effective intervention for improving eating behaviors, enhancing self-esteem, and fostering better coping mechanisms among adolescents with eating disorders. These results highlight the importance of integrating psychological therapies into treatment plans for this vulnerable population. Future research should explore the long-term effectiveness of CBT and its applicability in diverse settings.

PV019 / #415

E-POSTER VIEWING: CHILDHOOD & ADOLESCENCE

EVALUATION OF THE EFFECT OF COVID-19 PANDEMIC QUARANTINE APPLICATIONS ON NUTRITION, PHYSICAL ACTIVITY AND SLEEP STATE IN ADOLESCENTS

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Background and Aims: This study was conducted to determine the changes in nutrition, physical activity and sleep of adolescent individuals in the growth and development age during the quarantine period.
Methods: A total of 200 adolescents, 103 females and 97 males, aged 10-19, selected by random sampling method living in different cities of Turkey, participated in the study. The research data were obtained by online survey method and SPSS program was used for the analysis of the obtained data.
Results: It was determined that the most missed meal in quarantine was lunch (37.5%). Food portions of 47.5% of the participants increased in quarantine, the portion increase in boys was higher than that of girls, and the difference was significant ($p<0.05$). Most of the adolescents (60.5%) experienced nutritional changes due to psychological effects, the loss of appetite in girls was significantly higher than in boys (p 0.05). It was found that 82.5% of the participants had increased inactivity due to quarantine, and 74.0% of them were negatively affected their activity levels because of not going to school. It was observed that 70.0% of adolescents had increased sleep time in quarantine, 71.5% had irregular sleep hours, and 70.5% had an increase in the behavior of sleeping late and waking up late. There was no significant relationship between genders in physical activity and sleep changes ($p>0.05$).
Conclusions: As a result of the study, it has been shown that quarantine causes negative changes in nutrition, physical activity and sleep habits in adolescents and causes weight gain.

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PV020 / #534

E-POSTER VIEWING: CHILDHOOD & ADOLESCENCE

DISPARITIES IN MATERNAL KNOWLEDGE AND PRACTICES ON SLEEP TRAINING: A CROSS-SECTIONAL ANALYSIS OF URBAN VS RURAL AREAS

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Background and Aims: Quality sleep is crucial for the growth and development of children. Sleep training is an effective method to improve the sleep quality of young children. This study aims to identify the knowledge and practices of mothers regarding sleep training for young children in Indonesia.
Methods: This cross-sectional study involved 417 mothers with young children aged 3-36 months in urban and rural areas of Indonesia. Data on socio-demographic characteristics, maternal knowledge, and maternal practices related to sleep training were collected between March and June 2024. Data were collected using forms and questionnaires completed by the participants. Univariate and bivariate analyses were conducted, and comparative analysis between groups was done using the Chi-square and Fisher's exact test.
Results: The Fisher's exact test indicated that mothers in urban areas, with higher education, working in informal sectors, and having a higher economic status had significantly better knowledge of sleep training ($p < 0.05$). No significant association was found between maternal age, residential area, educational background, occupation, economic status, and maternal behavior related to sleep training. Additionally, no significant association was found between maternal knowledge and behavior related to sleep training.
Conclusions: Mothers living in urban areas with higher education, working in informal sectors, and having a higher economic status have significantly better knowledge of sleep training. However, this knowledge is not significantly associated with their behavior in implementing sleep training practices. Further research is necessary to explore the complexities of the relationship between maternal knowledge and behavior in sleep training.

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PV021 / #17

E-POSTER VIEWING: CHILDHOOD & ADOLESCENCE

SHAPING SMILES: BRAZILIAN IMMIGRANT MOTHERS' PERSPECTIVES ON DIETARY INFLUENCES ON THEIR YOUNG CHILDREN'S ORAL HEALTH

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Background and Aims: Background: Children's oral health is greatly influenced by dietary habits, which are shaped by parental perceptions and practices. Among Brazilian immigrant mothers, cultural beliefs and experiences play a crucial role in shaping these perceptions and practices. This study explores how Brazilian immigrant mothers view the impact of diet on their children's oral health.
Methods: Methods: Using a qualitative approach, we conducted semi-structured interviews with 29 Brazilian mothers of preschool-age children (2-5 years) living in the United States. Participants were recruited through community organizations, social media, and social networks. The interviews were audio-recorded, transcribed verbatim, and analyzed using thematic analysis, with the support of MAXQDA software, to identify key themes.
Results: Results: Three main themes emerged: (1) the role of maternal beliefs, knowledge, and practices in shaping children's dietary habits; (2) maternal perceptions of sugary foods and beverages as primary contributors to oral health issues; and (3) barriers to maintaining healthy dietary practices, including availability of unhealthy foods, economic constraints, and the influence of care provided by others, such as daycare providers, preschool staff, and family members.
Conclusions: Conclusion: Brazilian immigrant mothers hold unique beliefs and practices regarding how diet affects their children's oral health, shaped by their cultural background and acculturation process. These findings highlight the need for culturally tailored oral health education and interventions that address the specific challenges and strengths of Brazilian immigrant families to support healthy dietary practices and enhance the oral health outcomes of their young children.

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PV022 / #683

E-POSTER VIEWING: CLINICAL NUTRITION

UNMASKING THE HIDDEN LINK: MALNUTRITION AND ALLERGIES IN PEDIATRIC PATIENTS

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Background and Aims: Malnutrition is a common feature in pediatric allergic diseases. It could contribute to immune system dysfunction and influence the disease course. Thus, preventing and treating malnutrition is of pivotal importance for an effective management of these conditions. We evaluated malnutrition and its contributing factors in a cohort of allergic pediatric patients visiting a tertiary center for Pediatric Allergy.
Methods: We evaluated pediatric patients (both sexes, age 2-18 yrs) with respiratory (RA), food (FA) and drug (DA) allergy and with malnutrition by excess (defined by a BMI-for-age z-score >+2 SD) or by defect (defined by a BMI-for-age z-score <-2 SD). Main anamnestic, demographic, lifestyle and dietary variables were assessed.
Results: A total of 204 allergic patients (62.7% male, mean age 9.2 yrs) were evaluated: 121 patients with RA, 57 with FA and 14 with DA. Twelve patients presented multiple allergies (9 with both RA and FA, and 3 with both RA and DA). Malnutrition by excess was more frequent if compared with malnutrition by defect in allergic patients (86.3% vs 13.7%, $p<.05$). It was more frequent in patients with RA (95.8%) and with DA (100%) if compared with patients with FA (59.6%)($p<.05$). Key contributing factors included poor parental education, high screen time, sedentary behavior, excessive consumption of ultra-processed foods, and reduced intake of healthy, minimally processed foods.
Conclusions: The study underscore the need of addressing malnutrition by excess in allergic patients, particularly those with severe or drug-resistant conditions. Lifestyle and dietary interventions are critical for preventing malnutrition and improving management of allergic diseases.

PV023 / #248

E-POSTER VIEWING: CLINICAL NUTRITION

ENERGY NUTRIENT DENSE FORMULA AMONG INFANTS WITH CONGENITAL HEART DISEASE WITH FALTERING GROWTH IN THE PHILIPPINE HEART CENTER : AN OBSERVATIONAL STUDY

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Background and Aims: Nutritional intake of infants with congenital heart disease (CHD) is compromised at all stages of surgical treatment, leading to faltering growth (FG). Currently, there is no energy-nutrient-dense formula (ENDF) for infants available in the Philippines that can be used before and after CHD surgery for infants with fluid restrictions. This observational case series study aimed to evaluate growth parameters and user experience of infants receiving ENDF.
Methods: Methodology: ENDF was introduced to infants aged 0-18 months with CHD and FG admitted to the Philippine Heart Center for surgical intervention between September 2023 and February 2024. Weight was measured and plotted on the WHO-growth chart at admission, discharge (D), and at follow-up visits at 2 weeks post discharge (FU1) and 4-6 weeks post discharge (FU2). Clinicians completed three user experience questionnaires (D, FU1, FU2), while caregivers answered one questionnaire (FU2).
Results: Results: Of the 28 infants enrolled, 24 completed the study. There was no significant difference in mean weight gain in the first 10 days postoperatively (p=0.96). Weight gain reached statistical significance at FU2 (5.72 ± 1.64 kg to 6.68 ± 1.5 kg (+17%) (p=0.037)). At admission, 23 patients(95.8%) had WAZ<-2, whereas at FU2 only 15 patients (62.5%) had WAZ <-2 and 37.5% had WAZ=0 (p= 0.013). [DK1] Both clinicians and caregivers reported positive user experience.
Conclusions: Conclusion: CHD infants undergoing surgery who used ENDF showed significant weight gain and catch-up growth. It seems beneficial to improve the local feeding practices in Philippines by introducing ENDF to support growth after open heart surgery.

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PV024 / #362

E-POSTER VIEWING: CLINICAL NUTRITION

IMPACT OF NUTRITIONAL INTERVENTIONS ON GROWTH AND RECOVERY IN PEDIATRIC PATIENTS WITH CONGENITAL HEART DISEASE

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Pontificia Universidad Javeriana de Cali, Alimentación Y Nutrición, cali, Colombia

Background and Aims: Background and Aims:
Children with congenital heart disease (CHD) often face growth challenges due to increased metabolic demands and limited nutrient absorption. This study evaluates the impact of tailored nutritional interventions on growth parameters and recovery in pediatric patients with CHD undergoing surgical correction.
Methods: Methods:
A cohort of 10 pediatric patients (aged 6 months to 5 years) with various forms of CHD was selected. Pre-surgical and post-surgical nutritional assessments were conducted, including anthropometric measurements (weight, height, mid-upper arm circumference) and laboratory markers (albumin, prealbumin, and vitamin D levels). Each patient received a customized nutrition plan designed to meet increased caloric and protein requirements based on their specific clinical condition. Nutritional status and growth parameters were evaluated at baseline and 3 months post-surgery.
Results: Results:
At 3 months post-surgery, 70% of the patients showed significant improvement in weight gain (mean increase of 1.5 kg, $p < 0.05$) and height (mean increase of 2.5 cm, $p < 0.05$). Albumin and prealbumin levels normalized in 80% of the patients, indicating enhanced nutritional status. Two patients with complex CHD required additional caloric support due to persistent growth delays, but overall nutritional outcomes were positive.
Conclusions: Conclusions:
Tailored nutritional interventions significantly improved growth and recovery in pediatric CHD patients post-surgery. These findings underscore the importance of individualized nutrition plans in managing the unique needs of this vulnerable population and optimizing post-operative outcomes.

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PV025 / #249

E-POSTER VIEWING: CLINICAL NUTRITION

PERSONALIZED NUTRITIONAL MANAGEMENT IN PEDIATRIC GLYCOGENOSIS IXA: INSIGHTS FROM A CASE REPORT

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Background and Aims: Glycogen storage disease type IXa (GSD IXa) is a rare genetic disorder characterized by a deficiency in liver phosphorylase kinase, leading to excessive glycogen accumulation in the liver.The management of GSD IXa in pediatric patients presents significant nutritional challenges, particularly in balancing glucose homeostasis while supporting growth and development.
Methods: This case report describes a pediatric patient diagnosed with Glycogenosis IXa, highlighting the clinical presentation, diagnostic journey, and nutritional management.
Results: An 11-month-old male was referred to our clinic for vomiting and failure to thrive. His parents noted poor weight gain and delayed milestones from early infancy, with frequent episodes of irritability, lethargy, and sweating, particularly before feedings. Genetic testing identified a mutation in the PHKA2 gene, confirming the diagnosis of glycogen storage disease type IXa (GSD IXa). Despite a rigorous feeding schedule every 2-3 hours, including night feeds, the patient continued to experience low blood glucose levels and poor weight gain.The introduction of cornstarch before bedtime helped prolong periods of normoglycemia overnight. Additionally, the patient's feeding intolerance, including occasional vomiting and early satiety, further complicated nutritional management. To avoid episodes of hypoglycemia we used a sensor for continuous glucose monitoring.
Conclusions: This case illustrates the significant nutritional challenges in managing an infant with GSD IXa. Frequent feedings and careful dietary planning are crucial to prevent hypoglycemia and support growth. However, despite multiple nutritional interventions, achieving optimal growth and metabolic stability in GSD IXa remains difficult. Ongoing multidisciplinary care and tailored nutritional strategies are essential for managing this complex condition.

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PV026 / #250

E-POSTER VIEWING: CLINICAL NUTRITION

OVERCOMING BARRIERS IN NUTRITIONAL REHABILITATION FOR CHILDHOOD ANOREXIA: A CLINICAL AND PSYCHOLOGICAL APPROACH

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Background and Aims: Anorexia nervosa (AN) is a severe eating disorder characterized by restricted food intake, intense fear of gaining weight, and distorted body image. The nutritional management of anorexia in children presents unique challenges due to their ongoing physical and cognitive development.
Methods: This case report presents a 11-year-old female who exhibited significant weight loss, malnutrition, and psychological distress (refusal to eat).
Results: No significant medical history, but a strong family history of anxiety and obsessive-compulsive disorder. At clinical examination we noticed signs of malnutrition, including brittle hair, dry skin, and slowed heart rate (bradycardia, hypotensive). Nutritional rehabilitation required gradual caloric reintroduction and electrolyte monitoring, combined with psychological and family-based therapy. Reintroducing nutrition in malnourished children must be done cautiously to avoid refeeding syndrome, a potentially fatal condition caused by rapid shifts in electrolytes when nutrition is reintroduced. Calculating energy requirements can be difficult, especially because many children with anorexia may require more calories than typical due to the need for "catch-up growth." The child was hospitalized and a multidisciplinary team, developed a personalized treatment started with parental nutrition, followed by a refeeding plan (starting at 1200 kcal/day, gradually increasing by 200 kcal every 2–3 days). The child participated in cognitive-behavioural therapy (CBT) to address her anxiety around food and body image.
Conclusions: The patient's evolution led to an improvement in both physical health and emotional well-being. This case highlights the multifaceted challenges in the nutritional management of anorexia nervosa in children, including the risks of refeeding syndrome, developmental concerns, psychological complexities, and family dynamics.

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PV027 / #272

E-POSTER VIEWING: CLINICAL NUTRITION

LIPID EXCRETION IN INFANTS AFTER BOWEL RESECTION

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Background and Aims: To minimize PN without growth delay in children with short bowel syndrome (SBS) we need to know the bioavailability of macronutrients.
Methods: In 37 infants with SBS (13 massive jejunum resection (***Je***), 24 with ileum and/or colon resection (***Il)***) lipids fractions in stools were measured regularly by thin-layer chromatography: the total amount of lipids (TL), non-esterified fatty acids (NEFA) ets.. As a control group 24 infants with malnutrition of other origin were chosen. 7 children in ***Je*** group and 11 in ***Il*** group received formular with standard lipids, others - formular with 50% of lipids as MCFA
Results: In ***Je*** lipids intake was rising with age of 1#2-3#3-6 months (from 2±1 to 3.5±3 and 5.7±1.6 g/kg/day), but TL didn't rise significantly (3,8±2#5,4±1,4#4,5±2,4 g/100ml). More than 50% of TL were NEFA . On standard formular in ***Je*** subgroup lipid excretion was 2 times higher than in control (4,6±2,6g/100ml #2,3±1,7g/100ml , p<0,01) due to NEFA (2,2±1,4 # 1±0.8 g/100ml). In ***Il*** group intake during 3 months rose from 3.3±1.4g/kg to 4±2.54g/kg, lipid excretion - from 3,6±2,4 to 5±1. g/100ml, (p>0.01). 13 patients on standard diet excrete significantly less lipids than in Je group, but not significantly more lipids than control (general lipids (3.0±2,s3#2,3±1,6 g/100 ml, NEFA 1±0.7 # 0.9±0.8g/100 ml).
Conclusions: In average 38% of taken lipids are lost with stools by children with in SBS. The reason of high lipid excretion is poor adsorbtion. The largest excretion is at the beginning of enteral nutrition. Children with jejunum resection have higher lipid excretion.

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E-POSTER VIEWING: CLINICAL NUTRITION

THE RELATIONSHIP BETWEEN MATERNAL CAROTENOID STATUS WITH INFANT KIDNEY SIZE

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Background and Aims: Despite the importance of vitamin A (retinol) in kidney development, the impact of pro-vitamin A carotenoids (α & β carotene, and β-cryptoxanthin) on kidney size has not been examined. Furthermore, non-provitamin A carotenoids (lutein, lycopene, and zeaxanthin) are known for their antioxidant properties, yet their role in infant kidney development remains unexplored. We assessed the association between maternal carotenoid status and infant kidney size, a key surrogate for life time nephron number and longitudinal renal filtration capacity.
Methods: An IRB-approved study enrolled 72 pregnant mothers before the anatomy scan. Maternal blood was collected at delivery, and infant kidney ultrasounds were performed within 48-72 hours after birth. Plasma samples were analyzed using HPLC and LC-MS/MS for concentrations of total α-carotene, β-carotene, β-cryptoxanthin, lycopene, and zeaxanthin. Spearman's correlation was perfomed to evaluate the correlation between maternal carotenoids and infant kidney size (length and volume). A p-value <0.05 was considered significant.
Results: Total β-carotene and total lycopene were significantly correlated with infant left kidney volume ($r = 0.291$, $p = 0.014$) and ($r = 0.240$, $p = 0.044$), respectively. Plasma concentrations of carotenoids varied widely (for example, 2.31 to 296.62 µg/L for α-carotene, 3.69 to 1123.25 µg/L for β-carotene, 5.11 to 559.77 µg/L for β-cryptoxanthin, 7.75 to 1053.62 µg/L for lycopene, and 33.77 to 445.71 µg/L for zeaxanthin).
Conclusions: In our unadjusted analysis, maternal carotenoids with and without pro-vitamin A activity correlated with infant left kidney volume. Further research, with adjusting for confounders, is needed to clarify the role of maternal carotenoids in fetal kidney development.

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PV029 / #182

E-POSTER VIEWING: CLINICAL NUTRITION

ONLINE NUTRITION-RELATED INFORMATION FOR PEOPLE WITH DUCHENNE MUSCULAR DYSTROPHY AND THEIR CARERS: EVALUATION OF QUALITY, HEALTH LITERACY DEMAND AND READABILITY.

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Background and Aims: Over and undernutrition are common in people with Duchenne Muscular Dystrophy (DMD). This study aimed to describe the content and evaluate the quality, health literacy demand and readability of written nutrition-related information for people with DMD and/or their carers available on Google.
Methods: Fifteen Google searches were conducted using structured search terms. Three hundred websites were screened for eligibility. Quality was assessed using the DISCERN instrument and the Health on the Net Foundation Code of Conduct (HONCode) principles. Health literacy demand was evaluated using the Patient Education Materials Assessment Tool (PEMAT). Readability assessments were performed using eight validated readability formulas.
Results: Forty eligible websites were identified. The most discussed topics were nutritional supplements (60%), vitamin D and/or calcium (57.5%), the role of nutrition in DMD (52.5%) and obesity/weight gain (50%). The mean DISCERN (3.1±1) and HONCode (3±1.3) scores indicated moderate website quality. However, according to the DISCERN total scoring, only 15% of websites presented information classified as good or excellent. High adherence to the HONCode principles was achieved by 12.5% of websites. Overall, information required high levels of health literacy and had low levels of understandability (mean score: 56.1±14.8%) and actionability (mean score: 39±21.7%). Only 25% of websites met the recommended readability grade level.
Conclusions: This systematic information resource appraisal identified a relatively small number of high-quality, accessible, online patient/carer information addressing nutrition in DMD. Given the importance of adequate nutrition, high-quality and comprehensible resources covering the range of nutritional issues in DMD should be developed.

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E-POSTER VIEWING: CLINICAL NUTRITION

PURPURA REVEALING VITAMIN C DEFICIENCY - CASE REPORT

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Background and Aims: Scurvy is an acute or chronic disease caused by dietary vitamin C deficiency. In the past, scurvy was endemic in prisons, on ships and, in general, in anyone who ate a diet low in fresh fruit and vegetables. The disease is characterised by haemorrhaging, ossification problems, gum damage, extreme tiredness and reduced resistance to infection. It can be cured by administering vitamin C. Nowadays, the quality and diversification of our diet make the occurrence of scurvy unlikely, especially as the amount of vitamin C needed to prevent it is very low, around 20 milligrams per day. Larousse 2006
Methods: Observations: Mrs FM was born on 15 October 1990 in Bamako, is single and is an obstetric nurse. She consulted the department on 04 October 2024 for a spot on her thighs.
Results:

Cli nical examination: purpuric macules on the thighs measuring 10 cm to 5 cm in diameter and a history of gingivorrhagia. **Complementary examination:** vitamin C levels showed 3µmol/l for reference values of 26-85 µmol/l. **Discussion:** This is the first case of scurvy. Our observation poses a clinical problem with multiple etiologies to be

considered before avitaminosis C.

Conclusions: Conclusion: In the past, scurvy was endemic in prisons, on ships and, in general, in anyone who ate a diet low in vegetables and fresh fruit. It is therefore essential to raise public awareness of the need for a diversified diet. Reference: © Larousse 2006

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PV031 / #416

E-POSTER VIEWING: CLINICAL NUTRITION

ASSOCIATION BETWEEN LIFESTYLE CHARACTERISTICS AND THE PRESENCE OF METABOLIC DYSFUNCTION-ASSOCIATED STEATOTIC LIVER DISEASE IN CHILDREN AND ADOLESCENTS

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Background and Aims: Dietary habits and physical activity have been proposed as modifiable risk factors for metabolic dysfunction-associated steatotic liver disease (MASLD) in children/adolescents, however, relevant data remain limited, whereas data on other aspects like sleep remain sparse. This study aimed to investigate potential associations between dietary intake, physical activity, sedentary activities, and sleep habits, and the presence of MASLD in children/adolescents.
Methods: A total of 52 children/adolescents with overweight/obesity and MASLD and 60 children/adolescents without MASLD matched for age, gender, body mass index, and Tanner stage were included. Dietary intake was evaluated by four 24-hour recalls and analyzed for energy and macro-/micro-nutrients using the Nutritionist Pro software. Physical activity was assessed using Self-Administered Physical Activity Checklist. Total night sleep hours were recorded and the daytime sleepiness was evaluated using The Pediatric Daytime Sleepiness Scale.
Results: Children/adolescents with MASLD spent fewer minutes per day on physical activity [49 (31, 66) versus 67 (42, 93), p=0.003] and more hours per day playing computer/video games [3 (1, 5) versus 2 (1, 3), p=0.039] compared to their counterparts without MASLD, while no significant differences in energy and macro-/micro-nutrients intake were observed. Regarding sleep habits, no significant differences in total night sleep hours and daytime sleepiness were observed between participants with MASLD and without MASLD (p>0,05).

Conclusions: Children/adolescents with MASLD were less active and more sedentary than those without MASLD, while no differences in dietary intake, in terms of energy and macro-/micro-nutrients intake, and sleep habits were recorded between children/adolescents with and without MASLD.

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PV032 / #584

E-POSTER VIEWING: CLINICAL NUTRITION

KNOWLEDGE OF DIETARY TREATMENT AMONG CAREGIVERS AND PATIENTS WITH PHENYLKETONURIA IN LATVIA.

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Background and Aims: Phenylketonuria (PKU) is an inherited metabolic disorder caused by deficiency of the enzyme phenylalanine hydroxylase (PAH). The main PKU treatment is low phenylalanine (Phe). Avoiding foods naturally high in protein and regular use of the L- amino acid mixture is required for a complete and balanced diet.The study aims to assess the knowledge of phenylketonuria patients and their parents/carergivers about low-protein diet and how they use it in daily life.
Methods: The survey was done from February till April 2024 in Children's Clinical University Hospital, Riga, Latvia. 50 respondents (patients with PKU or their caregivers) participated in the survey. All respondents were asked to fill the questionnaire (24 questions) about PKU diet and the disorder itself. The data was analysed using IBM SPSS Statistics programme and MS Excel.
Results: 50 respondents participated in the study, of which 43 - women (86%) and 7 - men (14%). 52% of respondents were in the age group of 31-45 years, and 26% were in a group of 45-60 years. 78% of respondents were parents of PKU patients, 10% were grandparents of PKU patients and 12% were PKU patients themselves. Mainly respondents with an advanced level of education (62%) participated in the survey, it was observed that the level of education of PKU patients and their parents with the duration of the PKU disease exposure is associated with better knowledge about low protein diet.
Conclusions: Knowledge of patients and their caregivers about disorder and nutritional therapy is crucial to insure good metabolic control.

PV033 / #494

E-POSTER VIEWING: CLINICAL NUTRITION

ASSOCIATION BETWEEN ACUTE RESPIRATORY TRACT INFECTIONS AND INFANT AND YOUNG CHILD FEEDING PRACTICES AMONG 6 TO 23 MONTHS OLD CHILDREN IN ADDIS ABABA, ETHIOPIA, 2023

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Background and Aims: Background: Suboptimal child feeding practice is widely documented to be associated with an increased risk of acute respiratory tract infections (ARI) among children below two years. Although the reduction of acute respiratory tract infection due to feeding problem was encouraging until 2010; the national prevalence of ARI is unchanged. Aim: To examine the association between acute respiratory tract infections and infant and young child feeding practices.
Methods: A facility based analytical cross-sectional design was conducted from August to September, 2023 among 342 children aged 6- to 23-months paired with their mothers in three randomly selected public health centers located in Addis Ababa. Data on socio-demographic, household, child health and feeding practices were collected through face-to-face interview using electronic method. The data was entered and analyzed using the statistical package for social sciences (SPSS) version 26. The association between IYCF practices and ARI was analysed using Chi-square test and binary logistic regression model.
Results: Early initiation of breastfeeding (AOR 0.57; 95% CI: 0.39, 0.82) and Exclusively Breastfed for the first two days after birth (AOR 0.64; 95% CI: 0.45, 0.91) were associated with lower risk of ARI. Infants and children who were frequently fed (AOR 0.54; 95% CI: 0.38, 0.76) and consumed fruits and vegetables (AOR 0.37; 95% CI: 0.23, 0.61) were also less likely to experience ARI.
Conclusions: Actions targeting the revised IYCF practices that include early initiation of breastfeeding, exclusive breastfeeding in the first two days after delivery, consumption of vegetables or fruits and frequent feeding of infants and children are recommended.

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PV034 / #267

E-POSTER VIEWING: CLINICAL NUTRITION

PEDIATRIC NUTRITIONAL SCREENING TOOL TO IDENTIFY MALNUTRITION AND AT RISK FOR MALNUTRITION AMONG ADMITTED PATIENTS AGED 1-5 YEARS OLD

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Background and Aims: Malnutrition among hospitalized children is common associated with increased morbidity, mortality**,** longer hospital stay, more expenses and delayed recovery. Routine screening of nutritional status has been hindered by lack of accurate, simple and valid nutritional screening tool. The objective was to develop a pediatric nutritional screening tool to identify hospitalized patients who are malnourished and at risk of malnutrition and establish cut off point and accuracy of risk scores
Methods: The Pediatric Nutritional Screening Tool was assessed prospectively among 246 patients aged 1-5 years old admitted at a tertiary center. Anthropometric measurements, weight change, Clinical conditions and Dietary intake were evaluated on admission. Accuracy parameters like sensitivity, specificity, positive predictive value, negative predictive value, positive likelihood ratio, negative likelihood ratio, prevalence and post test probability were computed. Cut-off point score was determined by using receiver operating characteristic curve.
Results: Multivariate analysis indicated that all the parameters used in the Pediatric Nutritional Screening Tool: Anthropometric, Body weight loss, Clinical condition and Dietary intake (p 0.000001 for all factors) were all associated in identifying malnutrition and at risk for malnutrition. Sensitivity was 85.5%, Specificity was 88.3%, PPV was 78.9%, NPV was 92.3% and Accuracy was 87.4%. Cut-off point score of 6 was found to indicate high risk of malnutrition.
Conclusions: The Pediatric Nutritional Screening Tool accurately identifies pediatric patients who are malnourished and at risk for malnutrition. This can be used as part of routine admission procedure to help in early identification and initiate appropriate nutritional intervention and decrease morbidity associated with nutritional depletion.

PV035 / #268

E-POSTER VIEWING: CLINICAL NUTRITION

MODIFIED PEDIATRIC NUTRITION SCREENING TOOL TO IDENTIFY MALNUTRITION AND THOSE AT RISK FOR AMONG CHILDREN AND ADOLESCENTS IN A GOVERNMENT HOSPITAL IN THE PHILIPPINES

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Background and Aims: Malnutrition is not properly determined among hospitalized older children in the Philippines. This study was made to determine the reliability and validity of the modified pediatric nutrition screening tool in identifying malnutrition and risk of malnutrition among admitted pediatric patients aged 6 to 18 years old.
Methods: The Modified Pediatric Nutritional Screening Tool (PNST) was assessed among 130 admitted patients aged 6 to 18 years old. Evaluation of anthropometric measurements, body weight changes, clinical conditions and dietary intake were done within 48 hours of admission. Intraclass correlation coefficient was used to determine reliability of the tool among different raters while chi square test was used to determine correlation of the tool with Screening Tool for the Assessment for Malnutrition in Pediatrics (STAMP).
Results: The comparison of the modified PNST measurements by two observers showed no significant difference with p value of 0.078. All PNST criteria except clinical condition were associated with risk of malnutrition based on STAMP (p value < 0.05). The overall modified PNST criteria is significantly associated with risk of malnutrition based on STAMP with $p<0.000001$.
Conclusions: The modified PNST accurately identifies malnutrition and risk of malnutrition among admitted patients aged 6-18 years old. The criteria used in the modified PNST were strongly associated with risk for malnutrition measured using previously validated tools and demonstrates a good interobserver reliability. It is recommended to be used as routine screening in the hospital setting for early identification of malnutrition and risk for malnutrition.

PV036 / #692

E-POSTER VIEWING: CLINICAL NUTRITION

IGE-MEDIATED COW'S MILK PROTEIN ALLERGY IN INDIAN CHILDREN

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Background and Aims: Cow's milk protein allergy (CMA) is the most common food allergy in India. However, there is limited data on local paediatric CMA. I aimed to describe the demographics, clinical characteristics, natural history and diagnostic performance of skin prick test (SPT) and cow's milk-specific immunoglobulin E (CM-IgE) in Indian children diagnosed with IgE-mediated CMA.
Methods: A retrospective review of medical records was conducted for children with an SPT performed to cow's milk between 2019 to 2024.
Results: There were 355 patients included, 313 cow's milk allergic and 42 cow's milk tolerant. The median age of reaction was 6 months (IQR 4-8). The most common allergic presentation was cutaneous reactions, followed by gastrointestinal reactions. Six patients (1.9%) reported anaphylaxis at initial presentation and 16 children (5.1%) experienced anaphylaxis to cow's milk at least once in their lifetime. Most of the CMA patients (81.8%) acquired natural tolerance by 6 years old. SPT to cow's milk of ≥ 7 mm and CM-IgE of ≥ 13 kU/L showed good discriminative abilities in predicting a failed oral food challenge (OFC) outcome.
Conclusions: CMA is a food allergy which commonly presents during infancy, and parents need to be aware of the likelihood of severe allergic reactions, including anaphylaxis. Prognosis for CMA is generally favourable. Future prospective cohort studies are required to better understand the natural history and better define the diagnostic cut-of values for allergy testing in our population.

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E-POSTER VIEWING: CLINICAL NUTRITION

PERCEPTIONS JR STUDY: PERCEPTION OF PEDIATRICIANS AND FAMILIES ABOUT NUTRITIONAL SUPPLEMENTS: ACCEPTANCE, TOLERABILITY AND SATISFACTION IN MALNOURISHED CHILDREN

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Background and Aims: To explore perception of doctors prescribing nutritional supplements (NS) in children, and to investigate factors of tolerance and adherence to nutritional treatment.
Methods: A cross-sectional, descriptive observational study based on an electronic survey to study doctors' perceptions of five patients with NS and families. Were included socio-demographic variables of doctors and children, nutritional status, characteristics of NS (hyper-caloric oral with fibre (HOFF), oral peptide (OPF) and hyper-caloric infant (HIF), route of administration, benefits, satisfaction, palatability, adherence, and acceptance.
Results: 163 doctors, 815 children included, 64% received HOFF, 16% FOP, 20% HIF. 84% exclusive oral NS. Total daily calorie intake of NS ranged from 30-75%, significantly higher under 6 months of age. Improvement in overall condition, nutritional status and quality of life was observed in 82%, 79.5%, and 80%. Enhancement of tolerance and digestive symptoms was reported in 83.5% and 72%. Satisfaction and acceptance of NS was very good in 80%; taste was the most influential factor. Adherence was adequate in 60%, smell was the significant in lack of adherence. Positive factors to adherence were information about benefits, form of use, and medical follow-up (77%, 72%, 81%). The best-accepted flavour was chocolate (44%). 97% of doctors would recommend the same formula again.
Conclusions: Doctors and families perceived an excellent benefit from the use of the prescribed formulas, improved quality of life, high satisfaction, acceptance, and adherence. Factors for adequate adherence were sufficient information about formulations and benefits, continuity of follow-up. Prescribing doctors would recommend supplement use again.

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PV038 / #527

E-POSTER VIEWING: CLINICAL NUTRITION

SERUM VITAMIN LEVELS AND OXIDATIVE STRESS IN CHILDREN AND ADOLESCENTS WITH SICKLE CELL ANEMIA

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Background and Aims: To describe and compare the vitamin profile and oxidative stress of children and adolescents with and without sickle cell anemia.
Methods: This is a quantitative, cross-sectional comparative study. The population consisted of 33 children and adolescents aged between 3 and 18 years with sickle cell anemia, who were frequently monitored at the Hemocentro de Uberaba outpatient clinic, and 33 healthy schoolchildren from the city of Uberaba. To assess markers of inflammation and oxidative stress, CRP and malondialdehyde (MDA) were measured. Vitamins A, E, D, parathormone, calcium and alkaline phosphatase were measured. The data was analyzed using the statistical program Statiscal Package for Social Sciences (SPSS) version 16.0 FOR WINDOWS. Descriptive analysis, measures of centrality and dispersion, variable correlation tests and group comparison tests were used.
Results: When comparing the groups with and without sickle cell anemia, it was observed that children and adolescents with sickle cell anemia had higher levels of CRP and MDA and lower levels of vitamins A, E and D than the comparison group.
Conclusions: In view of the comparisons made, it can be said that the vitamin deficiencies prevalent in individuals with sickle cell anemia are not only due to poor nutrition, but also to the metabolic peculiarities caused by the disease, such as a high energy and nutrient expenditure. The deficiency of vitamins A, D, E and beta-carotene and high levels of CRP and MDA in most of the sickle cell patients in this study show an impairment of antioxidant defense and high oxidative stress in this population.

PV039 / #356

E-POSTER VIEWING: CLINICAL NUTRITION

CASE STUDY OF A PRE-PUBERTAL FEMALE WITH GROWTH STUNTING AND PROFOUND MICRONUTRIENT DEFICIENCIES LINKED TO A HIGHLY RESTRICTED ORAL DIET.

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Background and Aims: We present the case of a female with background of ASD and ADHD. Her diet since the age of 6 years consisted of potato crisps and water. She has strict sensory preferences. Her presentation aged 10 years was with a 1 year history of intermittent unexplained bilateral parotid gland swelling. Weight: 30.15kg (25th-50th centile), height:119cm (<<<0.4th centile, no indication of pre-pubertal height growth). Feet had not grown for 2 years, hair was thinning. Cardiovascular, respiratory and GI examinations were unremarkable. We explored the possibility that vitamin C deficiency may be related to the parotid swelling.
Methods: Blood tests revealed normal neutrophil, B12, Folate, Iron and bone profiles. Her micronutrient profile is as below:
Results:

Vitamin C (>32umol/l)	Vitamin D (>50)	Vitamin A (1.1-3.5 umol/l)	Vitamin E (16-35umol/l)	Zinc (9.8-19)	Copper (12.5-19)	Selenium (0.6-1.29)
<2	11.6	0.6	35	9.1	9.9	0.15

Conclusions: Replacement was prioritised, given the dietary restriction, to those most important: 300mg, reducing to 100mg Vitamin C- using an odourless, flavourless and colourless powder:water preparation. We treated Vitamin D with Ergocalciferol 300,000iu IM Single Dose, followed by oral drops 400iu od. Vitamin A was treated with one IM dose. We present profound growth stunting and micronutrient deficiencies in the absence of weight loss, in a child with extreme selective eating and neurodiversity. Replacement was difficult and limited, but successful via the oral route and required

significant planning to ensure therapies did not further restrict her diet. It remains unclear if the parotid swelling was linked to vitamin C deficiency.

PV040 / #238

E-POSTER VIEWING: CLINICAL NUTRITION

EFFECT OF NUTRITION THERAPY ON BODY COMPOSITION OF GIRLS WITH ANOREXIA NERVOSA

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Background and Aims: Anorexia nervosa is a severe mental disorder, characterized by a pathological concentration on body weight and distorted perception of one's body shape, leading to extreme malnutrition and its serious complications. The aim of the study was to assess the progress of nutritional treatment of girls with anorexia. Additionally, effect of time of nutritional therapy on body weight and body composition was assessed.
Methods: The study included 25 girls admitted to the Department of Pediatrics, Nutrition and Metabolic Diseases of the Children's Memorial Health Institute due to extreme malnutrition in the course of anorexia nervosa. In patients were carried out nutrition therapy. Body weight, body height and BMI were normalized to mean and standard deviation for age and gender. Body composition was assessed by bioelectrical impedance method, using In Body s10 analyzer.
Results: At the end of nutrition therapy significant progress in Z-score values of body weight ($p<0,01$), body weight for height ($p<0,01$) and BMI ($p<0,001$) was observed. Increase of Z -score values of muscle mass ($p<0,01$) was also observed. However, there was no significant icreasement of body fat at the end of nutritional intervention ($p>0,05$). Only body weight to body height was significantly different depending on nutritional therapy duration ($p<0,05$).
Conclusions: In studied girls, increase of body weight was mainly resulted of increase of muscle mass. Duration of nutritional treatment did not affect body composition of studied girls.

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PV041 / #233

E-POSTER VIEWING: GUT MICROBIOME AND BIOTICS

ENZYME PROFILES OF LACTOBACILLUS STRAINS FROM HUMAN BREAST MILK CULTIVATED IN THE PRESENCE OF VARIOUS PREBIOTIC OLIGOSACCHARIDES

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Background and Aims: Breast milk contains several important components, including probiotic microflora, particularly bacteria from the *Lactobacillus* and *Bifidobacterium* genera. A key characteristic of probiotic *Lactobacillus* strains is their capacity to metabolize prebiotic oligosaccharides and produce polysaccharides, which facilitate their adhesion to the epithelial cells of the gastrointestinal tract (GIT). This study aimed to characterize the carbohydrate utilization profiles of six *Lactobacillus* strains isolated from human breast milk.
Methods: The research involved four strains of *Lactobacillus rhamnosus* and two strains of *Lactobacillus brevis*. We prepared modified MRS media with various carbohydrate sources, including sucrose, cellobiose, and oligosaccharides with prebiotic potential, among others. Additionally, the Biolog system was used to evaluate the ability of these strains to utilize a broad range of substrates. Various enzymatic assays were conducted on the strains that metabolize the studied oligosaccharides.
Results: The studied strains present different oligosaccharide utilization profiles. This diversity allows them to thrive in various environments and efficiently utilize available nutrients, highlighting their adaptability and potential benefits for gut health. Strain specificity was observed in the production of enzymes that hydrolyze specific glycosidic bonds in the studied substrates. Additionally, some strains naturally produce polysaccharides.
Conclusions: A deeper understanding of the enzymatic activities and metabolic pathways of probiotic *Lactobacilli* may reveal how they interact with the host's digestive system, potentially leading to improved dietary recommendations and therapeutic applications for optimizing infant health. **Acknowledgment:** This study is financed by the European Union-NextGenerationEU, through the National Recovery and Resilience Plan of the Republic of Bulgaria, project BG-RRP-2.004-0001-C01

PV042 / #161

E-POSTER VIEWING: GUT MICROBIOME AND BIOTICS

SYNBIOTIC TREATMENT WITH BIFIDOBACTERIUM LKM512 AS A POSSIBLE COGNITIVE ENHANCER IN MICE AND HUMAN.

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Background and Aims: We have recently reported that symbiotic treatment with a mixture of Bifidobacterium animalis subsp. lactis LKM512 and arginine improved cognitive flexibility in young and middle-aged adult mice, by using originally developed behavioral task, indicating our synbiotics as a possible cognitive enhancer throughout developmental period to aged.
Methods: In animal study, mice were treated with synbiotics from juvenile oeriod to young adulthood. In human study, a Japanese modified version App of the FNAME test (modified J-FNAME), originally developed by Dr. Rentz and co-workers (2011) which assesses face and name associative memory, was developed and assessed in young and aged people living in Japan.
Results: In animal study, cognitive enhansing effect was crealy found. In human study using our originally devepled App, age-dependent decrease in the cognitive score was successfully found, indicating that the modified J-FNAME task can measure cognitive score throughout aging. Preliminary results in symbiotic treatment in young adults indicate possible effect as a cognitive enhancer in infant.
Conclusions: Note that our translational study is now going but our preliminary results suggest that symbiotic treatment can be a possible cognitive enhancer not only in aged, dementia stage, but also developing stage. Ethical discussion before synbiotic treatment in infant will be needed.

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PV043 / #388

E-POSTER VIEWING: GUT MICROBIOME AND BIOTICS

INFLUENCE OF ADVANCED MATERNAL AGE ON GUT MICROBIOTA FROM MOTHER AND NEWBORN.

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Background and Aims: The age of first pregnancy is rising in all developed countries. This is known as advanced maternal age (AMA) and has been linked to unfavorable outcomes for the mother and the newborn. Pregnancy causes changes in the gut microbiota with a significant decrease of alpha and beta diversity, similar to what happens with aging. So, modification in the gut microbiota during pregnancy are well documented, but never have been studied in AMA condition, and neither how it could affect the microbiome of the newborn.
Methods: This is a pilot study from a larger one, where a total of 20 mothers were recruited from two Spanish hospitals. They were divided in: control group, <35 years old; AMA group, ≥35 years old. Faecal samples were collected at the moment of recruitment and also close to the labour day with meconium samples. The hypervariable region of the 16S rRNA gene was characterised by DNA extraction from faecal samples and subsequent PCR and sequencing using the Illumina PE250 platform. An analysis of alpha and beta diversity at filum level was carried out using the free software RStudio.
Results: After pregnancy, alpha and beta diversity were affected at filum level in both study groups, with less diversity, which was more pronounced in AMA group. This is also reflected in the diversity of meconium, which is more diverse in the control group than in the AMA group.
Conclusions: In conclusion, changes in alpha- and beta-diversity in advanced maternal pregnancy appear to be greater, affecting the diversity of meconium.

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PV044 / #596

E-POSTER VIEWING: GUT MICROBIOME AND BIOTICS

CATCH UP GROWTH IN WEIGHT AND GUT MICROBIOTA DEVELOPMENT IN SGA AND AGA CHILDREN– A PROSPECTIVE COHORT STUDY

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Background and Aims: Establishing the gut microbiota in Small for Gestational Age (SGA) infants may have lifelong consequences and significant health effects. However, no longitudinal cohort studies have been conducted to characterize the gut microbial profiles of SGA children born on time and presenting catch-up growth in body mass. The study aimed to assess the pattern of gut microbiota colonization in full-term SGA infants with catch-up weight gain in the first year of life.
Methods: The gut microbiota of 19 full-term SGA and 46 full-term Appropriate for Gestational Age (AGA) infants were compared during the first year of life using full-length 16S rRNA gene sequencing. Stool samples and body mass measurements were collected at 7 time points. The alpha and beta diversity and taxa abundance were determined to reflect the gut microbiota composition across stages.
Results: SGA children had higher alpha diversity at most time points. In SGA infants, the Shannon index correlated with body weight gain over time ($\beta = 0.85$; CI = 0.24, 1.45, $p = 0.015$), which was not observed in AGA children. The characteristic genera for SGA were Citrobacter, Staphylococcus, Blautia, Veillonella, Klebsiella, Clostridium XIVa, Enterobacter, Escherichia Shigella, Salmonella, Enterococcus, and Raoultella.
Conclusions: Despite complete intrauterine development, the gut microbiota of full-term SGA and AGA children present different developmental patterns across the first year of life. In SGA infants with catch-up weight gain, an increased proportion of bacteria potentially associated with obesity and those producing short-chain fatty acids (SCFAs) were observed along with the increased alpha diversity of the bacterial community over time.

PV045 / #221

E-POSTER VIEWING: GUT MICROBIOME AND BIOTICS

GLUCOSYLTRANSFERASES FROM ORAL STREPTOCOCCUS STRAINS STREPTOCOCCUS SALIVARIUS

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Background and Aims: The oral microbiota is attractive after demonstrating its importance for oral health and potential association with systemic diseases. Glycosyltransferases from *Streptococcus mutans* are extracellular enzymes that, in the presence of sucrose, catalyze the synthesis of glucose polymers. Additionally, strains of the species *Streptococcus salivarius* produce numerous protein antimicrobials (bacteriocins) that inhibit a number of pathogenic microorganisms. The concurrent presence of genes for bacteriocins and glycosyltransferases in *Streptococcus salivarius* strains is currently unknown, which raises the question of horizontal gene transfer in the oral microbiome. The aim of the present study was to investigate the possibility of strains of *Streptococcus salivarius* producing simultaneously glycosyltransferases and bacteriocins.
Methods: Saliva samples were collected from individuals of different background. Potential strains were selected using morphological and biochemical identification methods. The selected strains were grown on BHI broth and Mitis Salivarius agar media. Molecular identification was performed by 16S rRNA sequencing.
Results: Eighty strains were isolated, thirteen of which were identified as *Streptococcus salivarius*. Furthermore, eight of them were able to synthesize glucan and four strains showed antimicrobial activity against *E. coli* and *Staphylococcus aureus*. *In situ* analysis of the produced glycosyltransferases revealed that two of the strains produced glycosyltransferases with molecular weight of 180 kDa and fructosyltransferase with molecular weight of 120 kDa.
Conclusions: Moreover, the ability of the glycosyltransferases to transfer the glucose units to various acceptors has been demonstrated. **Acknowledgements**: This study was supported by the European Union- NextGenerationEU, through the National Recovery and Resilience Plan of the Republic of Bulgaria, project № BG-RRP-2.004-0001-C01, DUECOS.

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PV046 / #410

E-POSTER VIEWING: INFANCY

A LONGITUDINAL STUDY TO DESCRIBE CHANGES IN BREASTFEEDING, MILK INTAKE AND INFANT FEEDING PRACTICES IN IVORY COAST BETWEEN DECEMBER 2022 AND JUNE 2024

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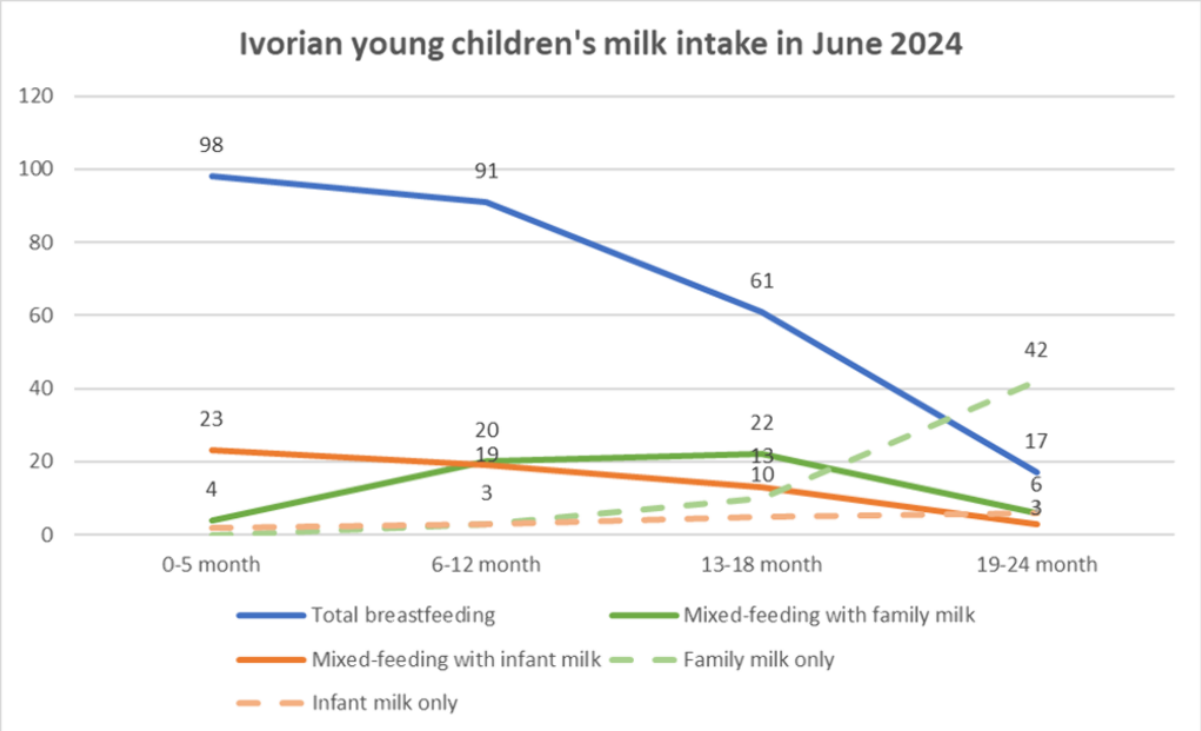
Background and Aims: In Ivory Coast, since the ministerial decree number 689/MSHPCMU/MCI on August 2, 2021, pharmacies have become the exclusive points of sale for infant formula (0-36 months). This study assesses the impact of this regulation on infant feeding practices.
Methods: This study was conducted in 3 waves: December 2022 (n=632), September 2023 (n=716), and June 2024 (n=629). Mothers with infants under 24 months from Ivory Coast's four main regions were interviewed face-to-face, with participants stratified by residence, socio-economic class, and infant age.
Results: The restriction on infant formula sales did not have a significant impact neither on total nor exclusive breastfeeding (EBF) rates before 6 months *(Table 1)*. The introduction of non-adapted beverages (water, teas and herbal drinks) and foods before 6 months remains high and unchanged. If those were removed, the EBF rate would be 85% in 2024. The average age for stopping breastfeeding remains at 17 months. The new legislation had a neutral (41%) or positive (52%) impact on mothers' perceptions of infant formula quality. There was no significant change in the use of infant formula before 6 months (23% in 2022 and 25% in 2024). Family milk remains the primary milk alternative to breastmilk as of one year. ***Table 1:*** Summary of results for the 3 waves of the study

	1st wave (December 2022)	2nd wave (September 2023)	3rd wave (June 2024
Breastfeeding rate			
Breastfeeding rate before 6 months	99%	97%	98%
Exclusive breastfeeding rate	22%	16%	26%
If the infants not be given water, teas, herbal drinks or food, the exclusive breastfeeding rate would be	77%	59%	85%
Breastfeeding rate between 6 and 12 months	98%	91%	91%
Breastfeeding rates between 12 and 18 months	63%	69%	61%
Breastfeeding rate between 18 and 24 months	34%	30%	17%
Proportion of children receiving water before 6 months of age	64%	69%	67%
Proportion of children eating solid food before 6 months of age	22%	34%	18%
Proportion of children receiving infant milk			
Proportion of children receiving infant milk before 6 months of age	23%	41%	25%
Proportion of children receiving infant milk between 6 and 12 months of age	29%	34%	28%
Proportion of children receiving infant milk between 12 and 18 months	26%	20%	23%
Proportion of children receiving infant milk between 18 and 24 months of age	17%	12%	15%
Proportion of children receiving family milk			
Proportion of children receiving family milk before 6 months of age	2%	6%	4%
Proportion of children receiving family milk between 6 and 12 months of age	30%	30%	25%
Proportion of children receiving family milk between 12 and 18 months of age	48%	48%	36%
Proportion of children receiving family milk between 18 and 24 months of age	64%	65%	54%

Graph 1: Ivorian young children's milk intake in June 2024



Conclusions: The new legislation has not significantly impacted breastfeeding practices or the use of infant formula and non-adapted foods and drinks before 6 months in Ivory Coast between 2022 and 2024.

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PV047 / #508

E-POSTER VIEWING: INFANCY

COW´S MILK ALLERGY IN CZECH INFANTS

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Background and Aims: The incidence of CMA diagnosed by general paediatricians (GPs) in the Czech Republic is a topic that has not been previously reported. We aimed to evaluate the approximate incidence of CMA and to elucidate the perception of some of the clinical symptoms possibly associated with CMA.
Methods: We collected data using an anonymous online questionnaire. The questions focused on the length of the individual medical practice, the number of newborns assessed per year, and the number of infants diagnosed with CMA per year by the same clinician. We also collected data on symptoms not perceived by practitioners as possibly associated with CMA.
Results: We obtained responses from 98 GPs, of whom 96 diagnose CMA independently. Table 1 summarises the approximate CMA incidence among GPs with different durations of clinical practice. Sixty (61%) GPs do not consider the runny nose a sign of CMA, 16 (16%) the lower respiratory tract symptoms, 13 (13%) the hoarseness, 6 (6%) cough, and 4 (4%) the watery stools.

years of GP´s clinical practice	number of responders	min incidence of CMA in %	max incidence of CMA in %
< 5	9	1	13
5 to 10	11	3	10
10 to 20	13	2	14
20 to 30	21	1	8
30 to 40	28	1	13
> 40	14	1	20

Conclusions: Czech GPs differ in their approach to symptoms possibly associated with CMA in infants. Based on the presented data, we suspect that Czech GPs tend to overestimate the incidence by up to 20%.

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PV048 / #473

E-POSTER VIEWING: INFANCY

IMPACT OF A NEW BIOACTIVE COMPOUNDS-ENRICHED INFANT FORMULA ON IMMUNE DEVELOPMENT DURING THE FIRST YEAR OF LIFE: THE EARLYTOLERA STUDY

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Background and Aims: Different bioactive compounds present in human milk influence immune system development. We analyzed the effects of a new infant formula enriched with *Osteopontin, HMOs, GOS and Probiotics* on immune response in healthy infants up to 12 months of life.
Methods: 231 healthy babies were recruited from 0-2 months and were randomized to receive a standard infant formula (SF=79) or experimental enriched formula (EF=75) during the first year of life. Additionally, 77 breastfed infants (BF) were enrolled as reference group. Saliva samples were collected at 3, 6 and 12 months of life to determine both sIgA (Secretory IgA ELISA, *Calbiotech, CA, USA),* and cytokines levels *[IL-6, Il-10 and TNF-alpha]* (LUMINEX xMAP technology, *HSTCMAG-28SK, Merck-Millipore)*.
Results: BF infants showed higher sIgA levels at 12 months compared to formula-fed infants ($p<0.001$). Interestingly, EF infants presented better anti-inflammatory response (lower Il-6/IL-10 and TNF-alpha/IL-10 ratios) compared to BF and SF infants, particularly from 6 months of life ($p<0.001$). After considering sex and type of early nutrition, EF girls at 12 months, but not boys, not statistically differed in sIgA levels compared to BF girls ($p>0.05$). Likewise, anti-inflammatory response (cytokines levels and ratios) was more pronounced in EF girl infants at 6 and 12 months of life, compared to SF ones ($p<0.05$).
Conclusions: *Conclusion:* Early nutrition and infant sex impact on immune response. Bioactive nutrients-enriched infant formula seems to modulate infant immune response up to 12 months of life, mimicking immunomodulatory properties of breast milk. **Funding:** *Laboratorios Ordesa S.L. & TOLERA (CIEN Project)-Spanish Ministry of Science, Innovation & Universities (IDI-20170870).*

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PV049 / #567

E-POSTER VIEWING: INFANCY

EVALUATION OF AN INFANT FORMULA WITH LARGE, MILK PHOSPHOLIPID-COATED LIPID DROPLETS ON GROWTH AND ADIPOSITY: THE SATURN STUDY

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Background and Aims: Background and aims: Childhood obesity is a global public health threat, with an alarming rising incidence. Breastfeeding is associated with different adiposity development and a reduced overweight risk compared to formula-feeding. Our objective was to evaluate the impact of a Concept infant milk formula (IMF), with large, milk phospholipid-coated lipid droplets, being closer to human milk lipid globules characteristics, on growth and body composition parameters compared to Control IMF and exclusive breastfeeding (EBF).
Methods: Methods and design: A double-blind, randomized, controlled trial (RCT) including healthy, term infants aged <6 weeks at start, who received concept IMF (n=62) or control IMF (n=64) during the first 6 months of life, compared to infants receiving EBF (n=123). Anthropometrics, body composition parameters and their trajectories during the first 2 years of life were compared, with change in fat mass index between 6 and 12 months of age as the primary outcome parameter. ANOVA with post-hoc Dunnett's test and mixed model analyses were applied.
Results: Results: No clinical relevant differences in birth characteristics were found between the groups. However, maternal characteristics (educational level, pre-pregnancy BMI and smoking during pregnancy) were different between the formula-fed infants and exclusively breastfed infants. At age 2 years, 41, 43 and 119 children were still participating in the concept IMF, control IMF and exclusively breastfed group, respectively. The rest of the data are currently being analyzed.
Conclusions: Conclusion: This RCT will improve understanding of the role of dietary lipid droplet characteristics in infant adiposity development and the potential impact on childhood health outcomes.

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PV050 / #315

E-POSTER VIEWING: INFANCY

GOAT MILK AND COWS MILK BASED FORMULA COMPARISON

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Background and Aims: There have been efforts to compare the nutritional content between goat, cow and human milk to investigate its safety as an infant formula, along with some studies testing goat's milk formula in other animals which have shown positive results. However, there have been relatively few trials in human infants
Methods: The use of goat's milk infant formula results in normal growth. Growth, blood nutritional markers, and health status were comparable in infants who received goat's milk-based infant formula to that of infants who received cow's milk-based infant formula. Therefore, the safety and tolerability of goat's milk-based infant formula did not appear to differ from cow's milk-based formula
Results: There were no differences in the other blood nutritional markers and they were in the normal ranges for both formula groups. There were no differences in the risk of a health condition or event between infants who received goat's milk formula and cow's milk formula at 6 months. There was no difference in weight, length, head circumference, and BMI between the two formula groups across the 6 months.
Conclusions: The microbiome composition seen to develop in those fed goat's milk formula appears to be more similar to that of breast-fed infants than those fed cow's milk-based formula. Overall, goat's milk-based formulas appear to be a suitable alternative to cow's milk-based infant formula

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PV051 / #383

E-POSTER VIEWING: INFANCY

FEEDING OF A SYNBIOTIC INFANT FORMULA IN A RANDOMIZED CONTROLLED TRIAL: EFFICACY, SAFETY AND GROWTH ASPECTS UNTIL 3 YEARS OF AGE

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Background and Aims: Early life nutrition plays a key role in the development of the gut microbiota and is therefore essential for the healthy maturation of the immune system and the prevention of infections. This study investigated the effect of feeding a synbiotic infant formula (IF) until 3 years of age (YOA).
Methods: In this multicenter, double-blind, controlled trial, 540 healthy infants were included. N=460 were equally randomized at 1 month of age to receive a synbiotic (*Limosilactobacillus fermentum* CECT 5716 (average daily dose at least $2x10^8$ colony forming units/d), galacto-oligosaccharides) or a control formula for eleven months. Breastfed infants (n=80) were included as a reference group. Urinary samples were collected at 1 (baseline) and 4 months of age to investigate the D(-)-lactate-creatinine-ratio. Data on infections, adverse events, growth and stool were recorded until 3 YOA.
Results: Anthropometric data and their standardised z-scores were comparable between groups throughout the first 3 YOA. *L. fermentum* CECT 5716 could not be detected in the stool samples after stop of IF feeding. D(-)-lactate-creatinine-ratio was comparable between formula groups during the intervention. While consumption of IF resulted in a 23% reduction in lower respiratory tract infections (RTIs) during the first YOA, the follow-up did not reveal a significant effect on infections (diarrhea, otitis, RTIs, infections).
Conclusions: Overall, IF consumption in the first year of life was well-tolerated and demonstrated safety through age appropriate growth until 3 YOA. The data suggest that feeding IF reduces the risk for lower RTIs during the time of consumption.

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PV052 / #325

E-POSTER VIEWING: INFANCY

MICRONUTRIENT INTAKE IN VERY LOW BIRTH WEIGHT INFANTS WITH NECROTIZING ENTEROCOLITIS OR BRONCHOPULMONARY DISEASE DURING COMPLEMENTARY FEEDING

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Background and Aims: Very low birth weight (VLBW) infants, particularly those with necrotizing enterocolitis (NEC) or bronchopulmonary dysplasia (BPD), may have increased nutritional needs, even during complementary feeding. However, data on their micronutrient intake during this critical stage of development remain scarce.
Methods: In this secondary analysis of a prospective observational study, micronutrient intake in VLBW infants was assessed through 24-hour recalls at 6 weeks corrected age (CA), and 3-day dietary records at 12 weeks, 6, 9, and 12 months CA. Nutrient intakes were compared to preterm infant reference values, or term infant values when preterm guidelines were unavailable. Total iron and vitamin D intake included both dietary and supplemental sources.
Results: Of 218 infants enrolled, 37 had BPD and 11 were diagnosed with NEC (≥ grade-II). No significant differences were found in total vitamin D, calcium, or zinc intake between infants with and without comorbidities. However, infants with NEC had a significantly lower phosphorus intake at 12 months CA (NEC: 397 mg/d; no-comorbidity: 548 mg/d; p-adj: 0.04). Total iron intake was higher in infants with comorbidities from 6 months CA onwards (BPD: 1.51-2.54 mg/kg/d; NEC: 1.80-3.51 mg/kg/d; no-comorbidity: 1.01-2.34 mg/kg/d), though recommendations for iron and vitamin D were not met by the end of the first year CA. Phosphorus, calcium, and zinc intakes generally met recommended
levels.

CA	Total iron intake (mg/kg/d)				
	Infants without BPD, NEC	BPD	p-adj.	NEC	p-adj.
	Mean ± SE	Mean ± SE		Mean ± SE	
6 weeks	4.35 (±0.13)	4.51 (±0.24)	0.75	4.12 (±0.24)	0.84
12 weeks	3.70 (±0.11)	3.60 (±0.17)	0.83	3.80 (±0.27)	0.84
6 months	2.34 (±0.13)	2.54 (±0.22)	0.75	3.51 (±0.31)	0.05
9 months	1.00 (±0.10)	1.82 (±0.29)	0.07	2.54 (±0.47)	0.05
12 months	1.01 (±0.11)	1.51 (±0.22)	0.07	1.80 (±0.43)	0.10
Recommended daily iron supplementation in preterm infants: 2–3 mg/kg/d until 6–12 months of age.					

CA	Total vitamin D intake (IU/d)				
	Infants without BPD, NEC	BPD	p-adj.	NEC	p-adj.
	Mean ± SE	Mean ± SE		Mean ± SE	
6 weeks	1118 (±26)	1072 (±62)	0.98	1106 (±136)	0.99
12 weeks	1068 (±26)	1069 (±47)	0.98	1106 (±90)	0.99
6 months	1045 (±18)	1048 (±60)	0.98	1021 (±79)	0.98
9 months	1007 (±30)	1006 (±58)	0.99	1017 (±128)	0.98
12 months	797 (±44)	871 (±74)	0.98	740 (±146)	0.98
Recommended daily vitamin D intake in preterm infants: 800-1000 IU/d.					

CA	Dietary calcium intake (mg/d)				
	Infants without BPD, NEC	BPD	p-adj.	NEC	p-adj.
	Mean ± SE	Mean ± SE		Mean ± SE	
6 weeks	392 (±13)	388 (±37)	0.80	418 (±48)	0.80
12 weeks	392 (±12)	378 (±26)	0.80	374 (±23)	0.87
6 months	420 (±14)	406 (±25)	0.80	396 (±36)	0.80
9 months	481 (±22)	504 (±31)	0.80	512 (±58)	0.80
12 months	560 (±19)	532 (±35)	0.80	477 (±35)	0.80
Recommended daily calcium intake in term infants: 0-3 months: 220 mg/d, 4-12 months: 330 mg/d.					

CA	Dietary phosphorus intake (mg/d)				
	Infants without BPD, NEC	BPD	p-adj.	NEC	p-adj.
	Mean ± SE	Mean ± SE		Mean ± SE	
6 weeks	236 (±9)	225 (±22)	0.52	243 (±31)	0.76
12 weeks	244 (±9)	226 (±17)	0.56	210 (±14)	0.56
6 months	337 (±14)	295 (±18)	0.52	306 (±33)	0.60
9 months	451 (±16)	439 (±21)	0.97	380 (±53)	0.51
12 months	548 (±17)	493 (±36)	0.37	397 (±35)	**0.04**
Recommended daily phosphorus intake in term infants: 0-3 months: 120 mg/d, 4-12 months: 180 mg/d.					

CA	Dietary zinc intake (mg/d)				
	Infants without BPD, NEC	BPD	p-adj.	NEC	p-adj.
	Mean ± SE	Mean ± SE		Mean ± SE	
6 weeks	3.42 (±0.15)	3.56 (±0.46)	0.95	3.44 (±0.77)	0.95
12 weeks	3.40 (±0.15)	3.58 (±0.14)	0.95	3.04 (±0.46)	0.95
6 months	3.87 (±0.16)	3.90 (±0.30)	0.95	3.83 (±0.59)	0.95
9 months	4.42 (±0.16)	4.22 (±0.25)	0.95	5.04 (±0.59)	0.95
12 months	5.08 (±0.15)	4.67 (±0.24)	0.95	4.67 (±0.51)	0.95
Recommended daily zinc intake in term infants: 0–3 months: 1.5 mg/d; 4–12 months: 2.5 mg/d.					

CA: corrected age; BPD: bronchopulmonary dysplasia; NEC: necrotizing enterocolitis; SE: standard error.
To detect differences between infants with NEC or BPD and infants without comorbidities either a Student's t-test or the Mann-Whitney U test was used. P-values for between-group comparisons of the same nutrient at different timepoints were adjusted using the Bonferroni-Holm method (p-adj). p-adj <0.05 were considered statistically significant.
Total = dietary intake + supplements.

Conclusions: These findings suggest similar intakes of most micronutrients between infants with and without BPD or NEC. However, further research is crucial to determine whether these intakes meet the potentially higher needs of infants with chronic conditions.

PV053 / #229

E-POSTER VIEWING: INFANCY

A SPECIFIC BLEND OF FIVE HUMAN MILK OLIGOSACCHARIDES MITIGATES IGE-MEDIATED IMMUNE RESPONSES IN AN IN VITRO FOOD ALLERGIC-LIKE MODEL AND IN VIVO MURINE ASTHMA MODEL

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Background and Aims: HMOs, the third most abundant solid component of breast milk, are complex carbohydrates with unique structural diversity. Emerging research suggests HMOs confer a broad range of protective effects and may attenuate allergy susceptibility in early life. The objective of this work was to evaluate the effects of a unique blend of fucosylated, acetylated, and sialylated HMOs (5HMO) on mitigation of allergic-like responses using both an *in vitro* and *in vivo* model of exaggerated IgE-mediated immune activity.
Methods: To mimic food-specific IgE-induced hypersensitivity, we challenged intestinal cells with 1 µg/mL of an antigen-antibody complex (BSA-IgE) in the presence of various doses of 5HMO for 24 h. IL-8, CCL20, NFκB activity were detected by ELISA. Using a house dust mite mouse model of allergy, we investigated the impact of oral treatment of 8–9-week-old mice with biologically relevant doses of 5HMO in amelioration of allergic airway disease severity. Lung histopathology scores, circulating IgE, cytokine levels, and inflammatory cell infiltration were quantified.
Results: Chemokine release data revealed the protective effects of 5HMO in preventing a food allergic-like response in intestinal cells. In the murine asthma model, 5HMO supplementation led to a significant reduction in HDM-specific serum IgE levels, cytokine levels, and histopathological outcomes.
Conclusions: 5HMO demonstrated the reduction of IgE-mediated inflammatory responses in both experimental models. The findings from this work suggest that early life supplementation of this unique blend of HMOs may offer protection against development of various atopic disorders, such as food allergy and asthma.

PV054 / #203

E-POSTER VIEWING: INFANCY

CONCENTRATIONS OF TETRAHYDROFOLATE, 5-METHYLTETRAHYDROFOLATE AND FOLIC ACID IN FRONTAL CORTEX FROM HUMAN INFANTS

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Background and Aims: Humans have limited liver DHFR capacity which results in detectable folic acid (FA) in plasma. We have previously found FA in primate plasma and tissues including the brain. However, folate profiles in human tissue have only been reported for surgical samples from skin and colonic mucosa and have not been reported for human brain. Our aim was to determine the folate profile in frontal cortex from human infants.
Methods: Autopsied human infant frontal cortex samples (n=5) were acquired from NICHD Brain and Tissue Bank for Developmental Disorders and were analyzed for their content of tetrahydrofolate (THF), 5-methyltetrahydrofolate (5-MTHF) and folic acid (FA).
Results: All three forms of folate were detected in each frontal cortex sample analyzed. The mean ± SEM of the sum of the three folates analyzed was 252.5 ± 17.35 pmol/g tissue (range 214 to 312). THF was the predominant folate in each sample with a mean concentration of 201 ± 13.26 pmol/g tissue. Mean 5-MTHF and FA concentrations were 30 ± 11.43 and 20.7 ± 3.35 pmol/g tissue, respectively. The range of the FA/5-MTHF molar ratio was 0.3 to 2.4.
Conclusions: Our data reveal that THF was the predominant folate in human infant frontal cortex and that FA was found in each sample. The level of FA exceeded that of 5-MTHF in some samples. Additional research is necessary to understand the implications of these findings.

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PV055 / #452

E-POSTER VIEWING: INFANCY

A HYDROLYZED LIPID BLEND WITH PHOSPHOLIPIDS MODULATES THE BRAIN TRANSCRIPTOME AND LIPIDOME IN A REGION- AND DIET-DEPENDENT MANNER IN A NEONATAL PIGLET MODEL

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Background and Aims: The brain undergoes tremendous growth and expansion in the first year of life. Rate of development differs across brain regions. The impact of nutrition upon brain development and later cognitive function remains a key research topic. This study aims to evaluate how a lipid module containing partially hydrolyzed triglycerides with phospholipids supports brain development in a translational piglet model.
Methods: Two-day-old piglets (N = 48) were randomized into either a sow-fed reference group [SR] or one of three sow milk replacer groups: control (C), HF (lipid blend including hydrolyzed triglycerides), or HF-PL (lipid blend including hydrolyzed triglycerides and phospholipids). Weights, activity level, feeding scores, and stool scores were recorded daily. Piglets were euthanized at days 28-29 and brain tissues were dissected for RNA-sequencing and shotgun lipidomics. Statistical analyses were performed using R v4.2.
Results: Piglets exhibited healthy weight gain regardless of sow milk replacer diet, and brain weights did not differ between groups at study completion. Study groups did not differ in activity or diarrhea incidence. Gene expression was differentially affected by diet depending on brain region. The highest number of diet-modulated genes were observed within the corpus callosum, followed by the striatum, hippocampus, and internal capsule. C and HF differed from SR piglets in abundance of lipid classes in the prefrontal cortex, while HF-PL prefrontal cortex lipid composition was closest to SR.
Conclusions: Diet modulated the brain transcriptome and lipid composition in a region-dependent manner. Piglets fed HF-PL diet displayed tissue development of a key brain region closest to SR.

PV056 / #730

E-POSTER VIEWING: INFANCY

IMPACT OF FORTIFIED INFANT CEREALS WITH REGULAR DIET ON AGE-APPROPRIATE GROWTH AND DEVELOPMENT: A RETROSPECTIVE ANALYSIS ON CASE-SERIES

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Background and Aims: Iron-Deficiency Anemia (IDA) affects 293.1 million children in Low- and Middle-Income Countries, with 30-40% prevalence in India. This study evaluates the impact of fortified infant cereals on improving macro- and micronutrient intake, resulting in age-appropriate growth and development.
Methods: A retrospective analysis of 11 infants from a multicentric study with mild to borderline anemia (hemoglobin <100 g/L or 10g/dL) over 6 months was conducted. Participants received fortified cereal along with regular homemade food and were assessed every 6 weeks. Data collected included anthropometric measurements, dietary recall, breastfeeding frequency, and nutrient intake. Outcomes were focused on hemoglobin, macro-, and micronutrient levels, and their impact on age-appropriate growth and cognitive function.
Results: These infants, aged 6 months old followed till 12 months, showed a significant increase in energy intake from 319.50 to 623.03 kcal/d (p = 0.008), meeting the Estimated Average Requirement (EAR). Protein intake increased from 8.94 to 21.27 g/d, exceeding the RDA by over 50%. Vitamin A intake rose from 66.80 to 260.80 µg/d, and lipid intake improved from 9.59 to 15.24 g/d. Iron intake increased from 3.84 to 6.30 mg/d, with improvement in anemia in 91% of participants, as assessed from serum iron, serum ferritin, and soluble transferrin (Figure 1). The mean weight increased from 2.72 kg at birth to 8.88 kg at 12 months (Figure 2). Improvements in anthropometric measurements (WAZ, WHZ, HAZ scores) and Bayley-III developmental scores with enhanced cognitive and motor functions were observed.
Conclusions: Food fortification and early screening is a cost-effective strategy to combat nutrient deficiencies and anemia in Indian infants, improving overall health outcomes.

Figure 1: Changes in daily macro- and micro-nutrient intake and other biochemical parameters.

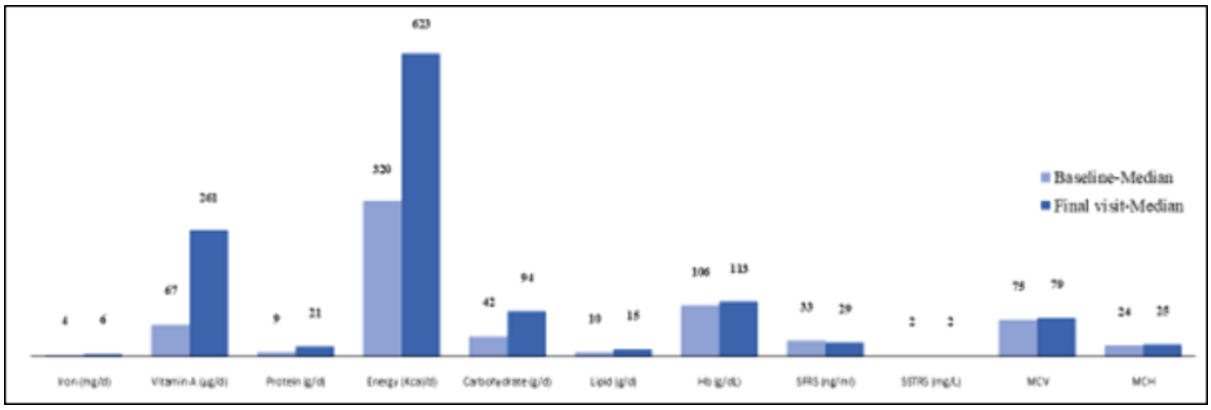
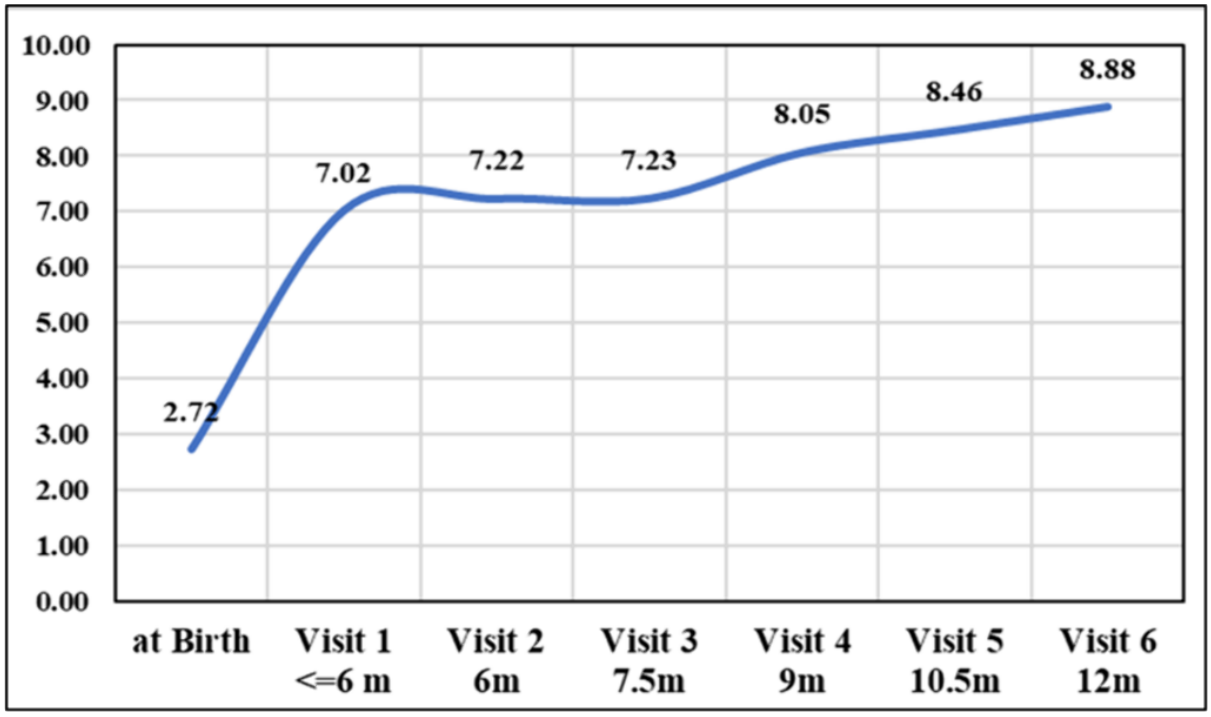


Figure 2: Visit-wise changes in mean weight for all the cases



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PV057 / #317

E-POSTER VIEWING: INFANCY

POTENTIAL BENEFITS OF BOVINE MILK IMMUNOGLOBULINS IN PEDIATRIC NUTRITION

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Background and Aims: Human breast milk comprises many factors involved in immune defense to mitigate infectious disease. Immunoglobulins (Ig) are present in human breast milk and provide immuno-protective properties to breast-fed infants. The immunoglobulins are generated based on the mother's past exposure to infectious pathogens and may prevent similar infectious agents from colonizing in an infant. Bovine milk is a potential source of immunoglobulins and may mimic some of the anti-infectious benefits of human milk Igs. To test this hypothesis, bovine milk immunoglobulin G (IgG) purified from mature bovine milk was evaluated against prevalent intestinal and respiratory pathogens, in *vitro*.
Methods: A series of bacterial and host cell interaction assays were performed with HT-29 colonic and A549 alveolar basal epithelial for gastrointestinal and respiratory pathogens, in the absence and presence of bovine milk IgG. Furthermore, bovine milk IgG was subjected to *in vitro* gastrointestinal transit, using a modified INFOGEST static *in vitro* infant digestion protocol and re-examined in the intestinal cell culture model *in vitro*.
Results: Bovine milk IgG significantly reduced the adhesion of several infant prevalent bacterial pathogens to the intestinal and respiratory cell surface *in vitro*. Furthermore, the anti-adhesive effect of IgG was retained even after *in vitro* infant gastrointestinal digestion.
Conclusions: Epithelial cells lining the gastrointestinal and respiratory tracts are primary targets for invasive, harmful bacteria. Bovine immunoglobulins reduced bacterial infection of these primary targets *in vitro* and show future promise for immune support in infants.

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PV058 / #376

E-POSTER VIEWING: INFANCY

SAFETY AND EFFICACY OF VACCINATION DURING LACTATION: A COMPREHENSIVE REVIEW OF VACCINES FOR MATERNAL AND INFANT HEALTH

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Background and Aims: Vaccination during lactation might be crucial for maternal and infant health, yet hesitancy persists due to safety concerns, limited trial data, and spreading of misinformation on social media. This study aims to provide an overview of evidence on vaccine safety and efficacy in breastfeeding mothers.
Methods: Literature was retrieved using "breastfeeding," "postpartum," and "vaccination" as search terms in three databases (Ovid/Medline, Embase, Clarivate Analytics). A three-stage selection process was done: initial screening in Rayyan, large-language model (LLM)-assisted screening, and full-text evaluation. Studies on postpartum vaccination assessing safety or efficacy in mothers or infants qualified for inclusion. The LLM (GPT-4) provided scores with rationale for each eligibility criterion, facilitating human review. Study quality was assessed descriptively using NHLBI tools.
Results: Seventy studies were reviewed on SARS-CoV-2, cholera, influenza, pertussis, pneumococcal, rabies, polio, rotavirus, rubella, chickenpox, smallpox, and yellow fever (YF) vaccines. Vaccine reactogenicity and immunogenicity in lactating individuals were generally similar to the general population. Moreover, 25 of 29 studies noted safety of postpartum maternal vaccination for breastfed infants, with YF vaccine as notable exception. Biomarker efficacy, measured by milk antibodies, was evident in 44 of 45 studies, showing increased milk antibodies and enhanced human milk neutralization after vaccination, suggesting possible protection conferred to infants. However, direct clinical data on disease outcomes are limited.
Conclusions: This review provides a comprehensive synthesis of evidence on postpartum vaccination to guide healthcare professionals in advising lactating individuals. Moreover, this review highlights the value of integrating LLMs into citation screening to enhance review efficiency and accuracy.

PV059 / #445

E-POSTER VIEWING: INFANCY

A MATERNAL DIET ENRICHED WITH FIBER AND POLYPHENOLS PROGRAMS THE IMMUNITY OF THEIR DESCENDANCE

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Background and Aims: Bioactive compounds, such as polyphenols and fiber, present in the Mediterranean Diet modulate immune system functionality. In addition, dietary intake during pregnancy and lactation of these biaoctive dietary components can have also a role in the immuneprogramming of their descendance. This study aimed to assess how a polyphenol and fiber enriched maternal diet impacts the immune response of their offspring along life, since birth to adult age.
Methods: For that, it was stablished a group of rats receiving the standard diet (REF group), whereas the others were were fed with and experimental diet enriched with polyphenols (0.5%)/fiber (9%) during pre-gestation (P group), gestation (G group), or lactation (L group). A last group received the experimental diet during all three periods (PGL group). The imapct of the intervention was stablished in terms lymphocyte phenotyping at systemic and mucosal compartments (antibody bound fluorochom staining and flow cytometry analysis), but also in terms of their immunglobulin (Ig) profile (Multiplex) at birth, the end of lactation and at adult age in the case of the PGL group.
Results: The intervention impacted differntly the immune profile of the rat pups depending on the period in which the maternal suplementation was performed. Specially, the longest supplementation modulated the lymphocyte phenotye as well as decreased the T heper 1 / T helper (Th1/Th2 balance) associated Ig proportions to a more immunoregulatory profile.
Conclusions: The maternal intervention with a diet enriched with polyphenols and fiber demonstrates to beneficillay impact the immune profile of their offspring along life.

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PV060 / #439

E-POSTER VIEWING: INFANCY

DETERMINANTS OF LINEAR GROWTH FAILURE AMONG TERM-BORN CHILDREN IN THE SRI LANKA CHILD GROWTH COHORT (SLCGC)

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Background and Aims: Growth failure during the first 24 months of life leads to loss of potential human capital. The aim of this study is to determine the factors associated with linear growth failure in children 12-24 months in Sri Lanka.
Methods: Term newborns (≥ 37 weeks) aged 12 to 24 months at the time of study (N=1875) were recruited using a two-stage stratified cluster sampling method for the SLCGC study. Trained enumerators interviewed mothers, obtained data from health records, and took anthropometric measurements. Length-for-age Z (LAZ) and weight-for length Z (WAZ) scores were calculated as per WHO growth reference using WHO Anthro. LAZ or WHZ < -2 was referred to as stunting and wasting, respectively.
Results: The proportion of children with stunting and wasting was 15.8% and 12.0% respectively. Stunting was significantly higher among boys (18.3%), with higher ages (20.7%), living in the plantation sector (28.5%), lower education level of the mother (20.1%), mother being employed as a casual worker 33.3%, and in families in the poorest wealth quintile (27.8%) and perceived as poor (20.1%). Low birth weight (35.4%) and those children not achieving a minimum dietary diversity at 8 months (20.6%) reported higher level of stunting. Wasting was significantly higher in males (15.7%), with higher age category (15.6%) and mothers having inadequate weight gain during pregnancy (15.4%) and low birth weight (25.5%).
Conclusions: Socio-economic deprivation is a strong reason with, both perceived poverty and objectively assessed household wealth index emerging as strong predictors of stunting along with poor maternal education.

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PV061 / #578

E-POSTER VIEWING: INFANCY

DETERMINANTS OF EARLY GROWTH FALTERING AMONG TERM-BORN NORMAL BIRTH WEIGH CHILDREN IN THE SRI LANKA CHILD GROWTH COHORT (SLCGC)

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Background and Aims: Poor growth in first 1000 days of life is a risk factor of subsequent poor health The aim of this study is to determine associated factors with early growth faltering in children 12-24 months in Sri Lanka.
Methods: Term newborns (≥37weeks) aged 12-24 months with 2.500-3.499kg birth weight (n=1485) were analysed. Weights were extracted from the Child Health Development Record and weight-for-length Z(WAZ) scores were calculated using WHO Anthro(WHO 2006). Growth faltering is downward deviation of WAZ >0.35 at the time of assessment from birth WAZ. Growth status at 4.00-4.99 months of life was categorized into 3 groups: no growth faltering, newly occurring growth faltering and pre-existing growth faltering. Multinomial logistic regression was carried out using socio-demographic, feeding, perinatal and illness related characteristics.
Results: The proportion of children with new growth faltering, pre-existing growth faltering and no growth faltering at 4th month of life was 5.9%, 29.9% and 64.3% respectively. Having diarrhoea the month before (OR= 2.67) was significantly associated with new growth faltering while living in the urban sector (OR=2.2), mothers age above 35 years (OR=1.5), being a male (OR=1.4) and not being exclusively breast fed (OR=1.5) was significantly associated with pre existing growth faltering at 4 months of age. While a third of children show growth faltering at 4 months, majority of them remain so by 12 months
Conclusions: About a third of children shows growth faltering during first 4 months of life and remain so by 12 months. If modifiable risk factors are addressed this could be prevented thus improving long term health.

PV062 / #164

E-POSTER VIEWING: MALNUTRITION

MIDDLE EAST REGIONAL PROTOCOL: DIET FORTIFICATION FOR MILD AND MODERATE PICKY EATING IN TYPICALLY DEVELOPED CHILDREN: AN EXPERT OPINION PAPER

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Background and Aims: Picky eating is a common behavior among children globally, negatively impacting their physical and mental growth. This article aims to create a regional protocol to help healthcare professionals identify and manage mild and moderate picky eating cases, a crucial step in addressing this serious issue.
Methods: A virtual roundtable discussion was held to gather the opinions of seven pediatricians and two pediatric dietitians from eight Middle Eastern countries and discussed different topics, including clearly defining mild and moderate picky eating, identifying the role of diet fortification (with an oral nutritional supplement either neutral flavor powder added to food or liquid ONS as meal supplement), and developing a systematic diet fortification approach in the Middle East.
Results: The panel identified picky eating as consuming an inadequate amount and variety of foods by rejecting familiar and unfamiliar food. Most of the time, moderate picky eating cases had micronutrient deficiencies with over- or undernutrition; the mild cases only showed inadequate food consumption and/ or poor diet quality. Paying attention to the organic red flags like growth faltering and development delay and behavioural red flags, including food fixation and anticipatory gagging, will help

healthcare professionals evaluate the picky eaters and the caregivers to care for their children.

Conclusions: The panel agreed that food fortification through a food-first approach and oral nutritional supplements (either neutral flavor powder added to food or liquid ONS as meal supplement) Would be the best for Middle Eastern children. We believe these recommendations would facilitate identifying and managing picky-eating children in the Middle East

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E-POSTER VIEWING: MALNUTRITION

FEEDING PRACTICES AND NUTRITIONAL STATUS OF ADOLESCENTS IN ELEMENTARY SCHOOLS WITH CANTEENS IN SOUTHERN BENIN

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Background and Aims: Effects of poor dietary practices and habits emerge in early childhood and have long-term implications for health in adulthood. This study aimed at analyzing the feeding practices and nutritional status of school-aged children in elementary schools with canteens in three urban and peri-urban communes in southern Benin.
Methods: Schoolchildren dietary and nutritional data as well as households socioeconomic data were collected from a random sample of 641 schoolchildren aged 6-14yrs. The 24-hour recall was used to calculate the dietary diversity score (DDS), and anthropometry for nutritional status. A generalized linear model was built to assess factors associated to schoolchildren DDS and stunting height-for-age index.
Results: Schoolchildren diet was dominated by cereals (corn and rice), other vegetables (mainly tomatoes), fish, and oil. DDS did not differ from school days (5.8 ± 5.4) to non-school days (5.7 ± 1.4) (p=0.200). Malnutrition prevalences were 13.3% for stunting, 14.9% for wasting, 12.7% for underweight, and 1.6% for overweight/obesity. Overweight/obesity was higher in girls than boys. The lower the level of education of mothers in the household, the lower the children's DDS. Schoolchildren living in households where father's occupation is a farmer were more likely to have low DDS. The older the student, the more affected they are by stunting. Schoolchildren living in households with a high socioeconomic status were less likely to have low DDS and to suffer from stunting.
Conclusions: Malnutrition remains prevalent among schoolchildren in urban areas of Benin. Nutrition education, coupled with school gardens are planned to improve children's nutritional and health status.

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E-POSTER VIEWING: MALNUTRITION

FACTORS ASSOCIATED WITH FRUIT AND VEGETABLE CONSUMPTION BY WOMEN OF CHILDBEARING AGE AND CHILDREN AGED 6-23 MONTHS IN THE ATACORA DEPARTMENT OF NORTHERN BENIN

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Background and Aims: Fruits and vegetables are crucial for health in Benin's north, yet micronutrient deficiencies persist despite abundant local produce availability. This study aims to assess the factors associated with the consumption of fruit and vegetables by households in the Atacora region.
Methods: A total of 187 households were randomly selected in the Atacora department. To achieve this, a food consumption survey was carried out in three (03) communes. Two villages per commune were randomly selected to carry out the food consumption frequencies of households through a 7-day recall for periods of abundance and scarcity. A multinomial regression model was used to explain the consumption frequency of species depending on socio-demographic factors and seasonality.
Results: The mothers surveyed were mainly housewives (97.29%), aged over 18 (94.56%) and belonging to the Waaba sociolinguistic group (60.96%). A total of 50 fruits and vegetables were consumed either in sauce form, fresh, or incorporated into cereal porridge. About vegetables, only okra is eaten all year round. Among fruits, papaya is the most widely consumed all year round. Guava and mango are eaten in times of both abundance and scarcity. A low fruit and vegetable variety score (5.8±2.05 (abundance/scarcity); 1.6±1.12 (abundance); 1.8±1.18 (scarcity)) was observed in most households. The fruit and vegetable variety score is influenced by the residence commune, the season and the mother's age.
Conclusions: These results suggest that key messages need to be developed to raise awareness in Atacora communities of both the nutritional importance and the need to consume a variety of fruits and vegetables.

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PV065 / #510

E-POSTER VIEWING: MALNUTRITION

ASSESSMENT OF VITAMIN B12 AND FOLATE STATUS AND THEIR DETERMINANTS IN CHILDREN WITH SEVERE ACUTE MALNUTRITION

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Background and Aims: Vitamin B12 and folate are essential micronutrients, deficiencies of which cause anemia, poor growth, and an increased risk of infections, along with irreversible neurological damage to the developing brain in children. The study aimed to assess the vitamin B12 and folate levels among children with severe acute malnutrition(SAM) and their associated factors.
Methods: A hospital-based prospective observational study was conducted on 100 children with SAM aged 6-59 years admitted to a tertiary-care facility in Northern India from July 2022 to June 2023. A structured proforma was used to record socio-demographic information, detailed clinical history, general and systemic examination findings, and anthropometric assessment. Developmental assessment was performed using Denver's Developmental Screening Test II. Serum vitamin B12 < 203 pg/mL and folate< 4 ng/mL were taken to classify the children as deficient.
Results: The mean age of the children was 24.18±11.5 months with 64.0% aged 6–12 months. Vitamin B12 and folate deficiency were found in 61.0% and 19.0% of the children, respectively. A deficiency of Vitamin B12 was significantly associated with delayed developmental milestones in all domains, a Mid Arm Circumference of <11.5 cm, severe anemia, a low platelet count, and folate deficiency, and a folate deficiency was significantly associated with age>12 months, delayed developmental milestones in all domains, severe anemia, a low platelet count and vitamin B12 deficiency.
Conclusions: Vitamin B12 deficiency is highly prevalent in children with SAM whereas folate deficiency is much lower. Apart from iron and folic acid supplementation, government programs should consider vitamin B12 supplementation for children aged 6–59 months.

PV066 / #422

E-POSTER VIEWING: MALNUTRITION

QUALITY IMPROVEMENT EFFORTS IN SCREENING OF CHILDREN FOR UNDERNUTRITION UNDER RBSK PROGRAM IN MEGHALAYA, INDIA

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Background and Aims: Meghalaya has high malnutrition in children, due to poverty, food insecurity, awareness and geography (1,2). 46.5% of children show stunting, 12.1% wasting, 26.6% are underweight (NFHS 5) (3). RBSK program provides health-checks at community level for children upto 18, to detect diseases, deficiencies, disabilities and birth defects. State government's recent initiatives aim to improve outreach quality. Initial field observations show improvements in service quality. Aims We spotlight initiatives taken to improve detection of undernutrition and appropriate referrals.
Methods: Meghalaya state-government, recognizing undernutrition in children, is making efforts to improve availability of staff, infrastructure, referrals, training and reporting (4). For RBSK, in 2022-2023, all 78 Mobile Health Teams were provided 5-day training using human-centred design, comprising theory, practicals, and clinic observations. Clinicians and public health specialists provided training in undernutrition concepts, its detection and management. Skills in anthropometric measurements and calculation of Z-scores using standard weight/age, height/age, and weight/height charts, were strengthened through practice sessions. Regular visits by district managers, mentoring sessions by state officials and new initiatives like quality checklist, peer support and ongoing refresher trainings help equip the team better.
Results: An upward trend in screening quality of children and reporting is being observed under RBSK program. Screening for undernutrition, wasting, stunting, MAM/SAM is being carried out correctly.
Conclusions: Quality improvement initiatives need sustaining. Better follow-up can further ensure proper management of children with undernutrition. Further research is needed to evaluate the outcomes.

PV067 / #525

E-POSTER VIEWING: MALNUTRITION

PREVALENCE AND CORRELATES OF DOUBLE AND TRIPLE BURDEN OF MALNUTRITION AMONG MOTHER-CHILD PAIRS IN INDIA: INSIGHTS FROM 2019-21 NATIONAL FAMILY AND HEALTH SURVEY

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Background and Aims: This study aimed to examine the prevalence and coexistence of double and triple burdens of malnutrition and their association with various factors among mother-child pairs residing in the same Indian household.
Methods: Data were drawn from the latest 2019-21 National Family and Health Survey. Information on anthropometric measures and haemoglobin levels of children, as well as anthropometric measurements of their mothers, were used to calculate DBM and TBM. Bivariate and multivariable logistic regression models were used to assess the factors associated with DBM and TBM.
Results: The prevalence of DBM and TBM among mother-child pairs was 6.6% and 7.0%, respectively. In the adjusted logistic regression models, mothers with short stature, from the richest wealth quintile, aged over 35 years, and those who had achieved at least secondary education were more likely to suffer from the DBM. Similarly, mothers with short stature, from the richest wealth quintile, aged over 35 years, and those who had achieved at least secondary education were more likely to suffer from the TBM. Besides, place of residence, religion, breastfeeding and region emerged as most significant factors determining DBM and TBM.
Conclusions: There is low prevalence of DBM and TBM among mother-child pairs in India. Several nutrition interventions to address DBM and TBM and an integrated approach through policies pertaining to enhancing food security and comprehending the essentials of optimal health outcomes for both ends of the malnutrition spectrum are imperatively needed.

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PV068 / #449

E-POSTER VIEWING: MALNUTRITION

NUTRITIONAL THERAPY IN MALABSORPTION SYNDROME AND CHRONIC DIARRHEA IN CHILDREN: A RETROSPECTIVE STUDY FROM THE NATIONAL HEALTH PROGRAM IN ROMANIA

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Background and Aims: Malabsorption syndrome and chronic diarrhea contribute significantly to malnutrition in children. Effective management depends on nutritional therapy with dietary products. The aim of this study is to highlight the increasing necessity for nutritional interventions in malabsorption syndrome of different etiologies.
Methods: We collected data on patients who benefited from nutritional therapy between January 2021 and June 2024 as part of the National Health Program "Malabsorption Syndrome and Chronic Diarrhea in Children", conducted at the "Grigore Alexandrescu" Emergency Clinical Hospital for Children in Bucharest, Romania. They received lactose-free, semi-elemental, elemental, or gluten-free dietary formulas administered orally or enterally, depending on digestive tolerance. Nutritional status and the progression of digestive conditions were monitored periodically.
Results: Through the National Health Program mentioned above, 6,048 boxes of dietary products were distributed to 549 patients. The main indication was cow's milk protein allergy with 196 patients (35.7%). Inflammatory bowel diseases and celiac disease accounted for 18.5% and 5.1%, respectively. A significant percentage of cases involved surgically treated digestive malformations that progressed to short bowel syndrome and malabsorption syndrome (13.4%). The rest of 140 patients (28.05%) received special formulas for other causes of malabsorption and malnutrition.
Conclusions: Malabsorption syndrome and chronic diarrhea represent a public health issue, significantly affecting the development of children. The increasing incidence of conditions such as food allergies or inflammatory bowel diseases highlights the need for accessible nutritional resources through national health programs. Personalized nutritional interventions have significantly improved patients' nutritional status, underscoring the essential role of nutritional therapy in managing malabsorption syndrome.

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PV069 / #314

E-POSTER VIEWING: MALNUTRITION

BRIDGING NUTRITIONAL GAPS FOR TODDLERS BY COMPLETE NUTRITION

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Background and Aims: Early food habits, practices, and dietary patterns develop rapidly within the first two years of life, with evidence that diet quality may decline as children age, evaluating diet quality in paediatric populations is of increasing interest, however, due to a paucity of evidence-based dietary guidelines for children under two, combining these multidimensional behaviours into a single meaningful measure remains a challenge
Methods: There is limited research on the contribution of milk to the diets of children under two, specifically, whether Growing Up Milks (GUM) provide a nutritional advantage compared to standard cow's milk (CM) . Simulation data have shown that replacing CM with GUM resulted in protein intakes more in line with recommendations, reduced saturated fatty acid (SFA) intake and increased likelihood of adequate intakes of vitamin D and iron.
Results: The consumption of GUM was associated with higher nutritional adequacy of the diets of children upto 23-months-of-age, with increased likelihood of meeting nutrient requirements. more likely to have carbohydrate intakes that were in line with recommendations and improved iron and vitamin D intakes. Although GUM had a positive effect on index scores, consumption toward the second year of life may not have the same impact as during early childhood as previously reported in younger children according to GUM consumption
Conclusions: Dietary strategies to promote a healthy diet through optimising nutrient intake could also result in more favourable dietary intake profiles, rather than solely concentrating on milk, however, further research is required on the consequences of consuming GUM on overall dietary diversity.

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PV070 / #412

E-POSTER VIEWING: MALNUTRITION

COMPREHENSIVE DIAGNOSIS CRITERIA FOR STUNTING AND ASSOCIATED FACTORS IN INFANTS AND TODDLERS

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Background and Aims: Although the World Health Organization (WHO) established a standard for the diagnosis of stunting, accepting this standard is controversial. Therefore, a comprehensive effort was made to diagnose stunting properly and avoid misdiagnosing other causes of short stature in children. The study aimed to determine the proportion of stunting and identify associated medical factors in infants and toddlers aged 3 to 59 months in Mohammad Hoesin Hospital in Palembang.
Methods: A cross-sectional study was conducted in the hospital inpatient ward and outpatient clinics at Mohammad Hoesin Hospital from April to September 2023. Stunting was defined as length or height-for-age < -2 standard deviation (SD) according to the WHO standard, combined with an inadequate growth pattern or a history of weight deceleration that reflects chronic malnutrition. The growth rate was calculated for subjects under two years of age using the WHO weight and length increment table.
Results: A total of 183 children were included in the study; 55.2% were males, 67.2% were children under two years old, and 35.5% were defined as stunting. Of the 65 stunting subjects, 39.6% were male, 38.2% were children under two years of age, 22.8% had good nutritional status, 92.2% of subjects showed an abnormal growth rate, and 100% of subjects aged > 2 years were retarded according to bone age examination. Furthermore, chronic infection affected 22 stunted subjects (P = 0.001, OR 4.132, 95%CI 1.909-8.943); 50% of them had tuberculosis, 13.6% had chronic diarrhoea, others had human immunodeficiency virus (HIV) (9.1%) or cytomegalovirus infection (CMV) (9.1%). Meanwhile, 48 suffered from chronic disease (P = 0.001, OR 3.022, 95%CI 1.561-5.850), 37.5% had congenital heart disease, 18.8% had epilepsy, and 14.6% had laryngomalacia.
Conclusions: The comprehensive diagnosis of stunting showed a high proportion of cases, and those were significantly related to chronic infectious diseases and chronic diseases.

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PV071 / #421

E-POSTER VIEWING: MALNUTRITION

ASSESSING FRUIT AND VEGETABLE CONSUMPTION AND ITS INFLUENCE ON MALNUTRITION IN HOUSEHOLDS ACROSS BENIN, WEST AFRICA

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Background and Aims: Dietary inadequacies especially low consumption of healthy and nutritious foods significantly contribute to malnutrition. This study assessed household fruits and vegetables (F&V) consumption within households and identified associated factors in Benin, West Africa.
Methods: The survey was conducted in rural areas across all departments of Benin, excluding Littoral which is only urban settings with lowest rates of malnutrition and food insecurity. A total of 927 households with precarious living conditions were selected, targeting those with women of reproductive age (15-49 years) and at least one child aged 0-59 months. Socio-economic data were collected, and a 24-hour dietary recall assessed F&V consumption. A generalized linear model identified factors influencing F&V consumption among these households.
Results: Commonly consumed F&V species were *Solanum lycopersicum* (45%), *Capsicum annuum* (43%), and *Allium cepa* (22%). Neglected and underutilized species like *Adansonia digitata*, *Vitex doniana* leaves, *Corchorus olitorius* and *Parkia biglobosa* (pulp) were also consumed. Households consumed in average two different types of F&V daily (1.9±1.3), with 85% eating at least one. Vegetables (81%) including leafy vegetables (57%) were consumed more frequently than fruits (28%). F&V Consumption varied across departments ($p<0.001$). Factors influencing consumption included area of residence, age, household size, and education, with higher education levels associated with increased fruit and vegetable intake ($p=0.005$).
Conclusions: These findings highlight the need for targeted dietary interventions to boost fruit and vegetable F&V, which are crucial for improving child health and nutrition in Benin. Addressing consumption patterns is vital for combating malnutrition in vulnerable populations.

PV072 / #464

E-POSTER VIEWING: MALNUTRITION

MODERATING EFFECTS OF FOOD FRESHNESS IN MARKETS ON THE RELATIONSHIPS AMONG CONSTRUCTS OF THE THEORY OF PLANNED BEHAVIOR OF HEALTH EATING IN CHINESE ADULTS

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Background and Aims: Food freshness may affect individual choice of healthy eating. This study was to investigate whether self-reported food freshness of markets moderates the relationships between three major constructs of the theory of planned behavior (TPB), i.e., attitude, subjective norms, and perceived behavioral control (PBC), and intention of healthy eating in Chinese adults living in metropolitan areas.
Methods: An online cross-sectional study was performed in 408 Chinese adults aged 18-64 years residing in Shanghai and parts of Anhui province using a previously validated questionnaire from August to December 2019. The moderating effects of food freshness was examined a structural equation modeling (SEM).
Results: In the unconstrained model, PBC had a positive relationship with both short-term (B=1.137, P<0.001) and long-term (B=0.291, P<0.001) intention of healthy eating. In those with less food market freshness, the relationship between PBC and short-term intention remained the same (B=1.144, P<0.001) and the relation between short-term and long-term intention became significant (B=0.243, P=0.042). However, in those with more food market freshness, PBC had same relationships with both short-term (B=0.792, P<0.001) and long-term (B=0.171, P=0.028) intention of healthy eating and the relation between subjective norm and short-term intention became significant (B=0.127, P=0.013). The moderating effect was statistically significant (P=0.000).
Conclusions: Food freshness of market may moderate the relationships between major constructs of TPB and intention of healthy eating in Chinese adults in metropolitan areas. Further study is needed to determine whether there exists reginal differences among the relationships. This work was supported by the National Research Foundation of Korea grant funded by the Korea government(MSIT) (RS-2023-00280503).

PV073 / #696

E-POSTER VIEWING: MALNUTRITION

THE EVOLUTION OF GROWTH CHARTS OF INFANTS WITH TEMPORARY ILEOSTOMY IN THE FIRST YEAR OF LIFE – DESCRIPTIVE STUDY OVER A 10-YEAR PERIOD

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Background and Aims: Temporary ileostomy is a life-saving surgical procedure performed in the case of abdominal surgical emergencies. In the pediatric population, up to 75% of these are performed in the first 6 weeks of life. Given that most of these infants have low birth weight, there is constant concern for their optimal nutritional recovery.
Methods: We conducted a retrospective descriptive study over a period of 10 years in a national reference center for neonatal surgery in Bucharest, on a group of 50 children hospitalized during the neonatal period with acute surgical abdomen that required ileostomy.
Results: We evaluated 50 infants with the following recommendations for ileostomy: necrotizing enterocolitis, intestinal malformations, meconium ileus (cystic fibrosis), Hirschsprung's disease, gastroschisis, intestinal volvulus, and intestinal perforation. We followed the weight curve until 1 year of age. The mortality rate in the first year of life was 22%. We observed a significant improvement in nutritional status, as follows: the mean Z score for birth weight was -2.8, for weight at 6 months was -2.11, and for weight at 1 year was -1.05 (at the lower limit of normal).
Conclusions: Nutritional recovery of infants with temporary ileostomy was satisfactory in the study group, despite the complexity of the treatment of the underlying diseases and the management problems we encountered.

PV074 / #136

E-POSTER VIEWING: MALNUTRITION

HYPOSELENAEMIA BEFORE AND AFTER LIVER TRANSPLANTATION IN CHILDREN

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Background and Aims: Children scheduled for liver transplantation are severely malnourished due to liver failure and impaired gastrointestinal absorption. In particular, in many cases, they are not adequately supplemented with microelements, including selenium. As a result, children's post-operative recovery of their general condition may be impaired and therefore appropriate supplementation should be provided preoperatively.
Methods: This study investigated pre- and post-operative serum selenium levels in paediatric patients undergoing liver transplantation at a single centre at Kyoto University Hospital, 22 children admitted to the Intensive Care Centre at Kyoto University Hospital between 2020 and 2024 were included.
Results: Hyposelenaemia was present in 12/22 (45%) children before liver transplant surgery. Hyposelenaemia showed a rapid improvement trend with intravenous selenium supplementation. Hyposelenaemia at 1 and 2 months postoperatively with or without selenium supplementation was present in 15 (68%) and 8 (36%) cases, respectively. The duration of treatment was 45.1 days. The average dose of selenium was 2.8 μg/kg/day. There were no complications of systemic symptoms due to low serum selenium. Complications when hyposelenaemia was diagnosed were hypocarnitinaemia in 46%, hypozincaemia in 62% and secondary hypoparathyroidism with iPTH > 60 in 29%. Decreased selenium was observed in 13% of cases after intravenous selenium supplementation was discontinued, but no adverse events occurred after intravenous supplementation was resumed.
Conclusions: Children with liver failure are at high risk of developing hyposelenaemia, both before and after liver transplantation. Close monitoring and treatment is therefore necessary.

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E-POSTER VIEWING: MALNUTRITION

FOOD ENVIRONMENT OF PUBLIC ELEMENTARY SCHOOL CANTEENS IN SOUTHERN BENIN: IMPLICATIONS FOR ADDRESSING MALNUTRITION IN SCHOOLCHILDREN

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Background and Aims: School food environment, including availability and accessibility of food, affects children's eating habits and is essential for improving the nutrition and health of children in resource-limited areas. This study aims to assess the food environment in public elementary schools with canteens in Southern Benin and its potential effects on the nutrition and health of schoolchildren, particularly regarding malnutrition.
Methods: Data were collected from 12 public schools in the main city of Southern Benin where the national school feeding program is being implemented. This involved 853 schoolchildren, through a combination of direct observation, interviews, and surveys. Key areas of focus included the diversity of food supply, food preparation, hygiene practices, and the dietary preferences of schoolchildren. The diversity of food offerings was evaluated based on an 8-food group index, while hygiene standards were assessed using a 15-point sanitation index.
Results: Findings reveal a limited food supply, with a median diversity score of 4 out of 8, and insufficient sanitary quality, with a median hygiene index of 7 out of 15. The available foods are mainly energy-dense but deficient in micronutrients, as the canteens predominantly serve cereals, roots, tubers, and legumes, with a scarcity of fruits, leafy greens, and dairy products as well as animal proteins.
Conclusions: Current food environment in the public elementary school canteens does not adequately support balanced, micronutrient-rich diets, potentially exacerbating malnutrition among schoolchildren. Strategies for improving food diversity and hygiene practices are essential to enhance the nutritional impact of the school feeding program.

PV076 / #413

E-POSTER VIEWING: MALNUTRITION

ASSOCIATION BETWEEN LOOSE STOOLS AND CLINICAL OUTCOMES IN INFANTS (0-11 MONTS) WITH SEVERE ACUTE MALNUTRITION: SAMAC STUDY

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Background and Aims: Infants d (0-11months) diagnosed with severe acute malnutrition (SAM) are often admitted with infectious diarrhoea. However, some develop loose stools during hospital stays. We aimed to determine associations between daily number of loose stools and clinical outcomes.
Methods: An observational, prospective study was conducted, analysing medical records of 432 infants. Infants admitted with loose stools and those that developed loose stools post-admission were recorded. Therapeutic formulae were categorised by nutrient/molecule type. Association between number of loose stools and length of stay (LOS), time to discharge, feed type, weight gain, time to death (TTD), and mortality were determined.
Results: 88 (30%) developed loose stools during their hospital stay while 51 (18%) were admitted with loose stools. Most infants 0-5 months received F-75 (n=42) with 9% (n=13) receiving breastmilk. 239 (80%) infants 6-11 months received F-75/diluted F-100. Significant associations were found between number of loose stools per day and time to discharge ($p<0.001$), and TTD ($p=0.03$). For infants <6 months, loose stools were associated with mortality ($p<0.001$) and time to discharge ($p<0.001$). In those aged 6-11 months, associations were seen with mortality ($p<0.001$) and time to discharge ($p<0.001$). Significant ($p=0.015$) associations for the group were reported between feeding type and average number of daily loose stools ($P=0.015$).
Conclusions: Most infants developed loose stools post-admission, potentially due to the type of feed provided. This impacted clinical outcomes negatively. Preventing the development of loose stools and promoting breastfeeding may improve clinical outcomes. Further research into the causes of loose stools and formula impact remains vital.

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PV077 / #404

E-POSTER VIEWING: MALNUTRITION

ACUTE NEUROMOTOR PATHOLOGY? NO, IT'S CELIAC DISEASE!

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Background and Aims: Celiac disease is a common immune-mediated disease of the small intestine caused by sensitivity to dietary gluten in genetically predisposed individuals. The paper aimed to emphasize the variability of signs that might bring a celiac child to the doctor.
Methods: The authors discuss the case of a toddler referred for inability to walk in September 2024 to the Pediatrics Department of "Grigore Alexandrescu" Hospital.
Results: One year nine months old boy presented with weight loss and consistent refusal to walk. Patient's personal history indicated normal somatic, motor and neurocognitive development up to a month prior of admission, when he started experiencing occasional food vomiting (one episode per day) and weight loss (approximately 2 kg) with normal food intake. Diarrhea alternating with constipation, important abdominal distension, fatigue and muscle atrophy (predominantly lower limbs and buttocks) followed. The parents repeatedly sought medical advice for the patient's apparent inability to walk up to the moment of referral to our department. Laboratory tests revealed iron deficiency, decreased serum proteins and vitamin D levels. Celiac disease was confirmed by highly elevated anti-tissue transglutaminase antibodies (20 times normal) in three samples and genetic testing.
Conclusions: Severe fatigue and refusal to walk and not gastrointestinal symptoms (although present, but mild) were the primary complaints. The characteristic clinical picture of failure to thrive was obvious, but was cast into the shade by the so-called neurological findings. A complete medical history is often the key to diagnosis.

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E-POSTER VIEWING: MALNUTRITION

VITAMIN A DEFICIENCY IN CHILDREN PRESENTING TO OPHTHALMOLOGY SERVICES WITH CLINICAL FINDINGS IN NORTHERN IRELAND

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Background and Aims: Vitamin A deficiency has been recognised as a major public health concern in low-middle income countries and according to the World Health Organization, vitamin A deficiency is the leading cause of preventable childhood blindness. Ophthalmologists in Northern Ireland(NI) have noted an increase in children presenting with pathology related to vitamin deficiencies, in cases presenting with profound visual loss. Patients can present with optic nerve atrophy alongside retinal dysfunction. Our primary aim was to review cases to identify trends among children with visual loss and vitamin A deficiency. A secondary aim was to review current management practices in the absence of regional guidelines.
Methods: We retrospectively reviewed profiles of five children identified by ophthalmology consultants in NI. Data collected included patient demographics, medical and dietary history, vitamin A levels. Management practices were reviewed in terms of treatment, monitoring, and outcomes.
Results: Three out of five cases had Autism Spectrum Disorder (ASD) and have restricted diets. Vitamin A levels ranged from <0.2 to 1. All children had clinical findings on their opthalmology examination. 3 children had visual acuity of light perception, no light perception or hand movements in one or both eyes. Only one child was documented to take a multivitamin, but compliance was poor. Management approaches varied and there was no standardisation regarding monitoring levels.
Conclusions: This review underscores the need to consider vitamin A deficiency in children, particularly those with autism and restricted diets. We are advocating for improved awareness and more robust prevention and treatment strategies within our local area.

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PV079 / #183

E-POSTER VIEWING: MALNUTRITION

NUTRIENT-DENSE FOOD FORMULA USING LOCALLY PRODUCED INGREDIENTS FOR MANAGING MALNUTRITION IN HIV-INFECTED CHILDREN UNDER FIVE IN CENTRAL TANZANIA: A RANDOMIZED CONTROLLED TRIAL

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Background and Aims: Malnutrition significantly impacts HIV-infected children, particularly in sub-Saharan Africa, where it exacerbates disease progression and increases mortality. In Tanzania, 38.59% of HIV-infected children under five are malnourished, impairing their response to antiretroviral therapy (ART) and heightening their vulnerability to opportunistic infections. This study aims to develop and evaluate a nutrient-dense food formula using locally sourced ingredients to manage malnutrition in HIV-infected children aged 6-59 months in Tanzania's central zone.
Methods: the randomized controlled trial (RCT) will be conducted in two phases. First, a nutrient-dense food formula will be developed using locally available ingredients such as maize, soybeans, and the red-billed Queleas (Quelea quelea), a highly nutritious bird species abundant in Tanzania. Nutritional optimization will be achieved using a linear programming model tailored to the specific needs of both asymptomatic and symptomatic children. Second, the RCT will assess the formula's effectiveness on 156 malnourished HIV-infected children. Participants will be randomly assigned to intervention and control groups, and outcomes will be evaluated based on anthropometric and clinical indicators over six months
Results: The phase one of the study the formula will be processed into an instant porridge and currently undergoing laboratory analysis to confirm its nutritional content. The product will additionally undergo verification by Tanzania Drug and Food Authority and Bureau of Standard before conducting a case control study to test the effectiveness of the nutrient dense food formula.
Conclusions: This study offers a potential sustainable, locally tailored solution to manage malnutrition and improve health outcomes for HIV-infected children in high-prevalence areas.

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PV080 / #197

E-POSTER VIEWING: MALNUTRITION

THE ROLE OF DIET AND DEMOGRAPHICS IN CHILD MALNUTRITION: A FOCUS ON MUAC IN INDIAN CHILDREN AGED 12-24 MONTHS.

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Background and Aims: Mid upper arm circumference (MUAC) is used as an indicator of malnutrition. As MUAC remains relatively consistent during 6 months-5 years of age, it can be used as an age-independent marker of malnutrition. Our study aims to assess the effects of diet and sociodemographic characteristics on MUAC.
Methods: We enrolled 246 children of 12-24 months age. Socio-demographic details, detailed feeding history and anthropometric measurements were recorded. Socio-Economic Status(SES) was determined using Kuppuswamy classification. Outcome measured was MUAC and categorized into: <11.5cm, between 11.5 to 12.5 cm and >12.5 cm. Severe Acute Malnutrition (MUAC <11.5cm) and Minimum Dietary Diversity (MDD) were defined by WHO guidelines.
Results: We assessed 246 children at 17.6 ± 4.2 months; of these, 176 (72%) belonged to Lower SES, 210 (85%) mothers were unemployed; 119 (48%) belonged to rural areas. MUAC was measured in 232 children; 20 (8.7%) had MUAC< 11.5 cm (SAM), 50 (21.5%) had 11.5-12.5 cm and 162 (69.8%) had > 12.5 cm. Among SAM cases (n=20), 15 (75%) had mothers who were either uneducated or educated to less than tenth standard (p=<0.001), 15 (75%) were from families belonging to lower SES (p=0.013); 12 (60%) families resided in rural areas (p=0.011). Out of 50 children with MUAC between 11.5-12.5 cm, 48 (96%) mothers were home-makers (p=0.045). Out of 68 children who received MDD in the last 24 hours, 6 (8.8%) had SAM whereas 55 (80.9%) had MUAC >12.5cm (p=0.027).
Conclusions: Children in rural areas, having lower SES, unemployed mothers and lacking dietary diversity were more likely to have poor nutritional status.

PV081 / #228

E-POSTER VIEWING: MALNUTRITION

SOCIO-DEMOGRAPHICS, DIETARY DIVERSITY AND MALNUTRITION: AN ANALYSIS IN TODDLERS IN INDIA

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Background and Aims: Socio-demographic status of families may influence provision of adequate diet to infants and young children in the family, hence impacting growth. Minimum dietary diversity (MDD) and Minimum meal frequency (MMF), as defined by WHO, are terms used to assess adequacy of diet in infants and young children. Our study aims to find a correlation between these characteristics and malnutrition.
Methods: Children aged 12-24 months were enrolled. MDD was assessed using 24-hour recall. Socio-Economic Status (SES) was assessed using Kuppuswamy classification. Outcomes assessed were proportion of underweight, stunting and wasting; which were defined as per WHO guidelines.
Results: Out of 246 children aged 17.6 ± 4.2 months; 70% fulfilled the criteria for MMF, while only 74 (30%) children were receiving MDD. Out of these,176 (72%) belonged to lower three SES and MDD was adequate in only 43 (24.4%) of them, compared to 31/70 (44%) in upper SES (p=0.016). Children from 121 (49%) families resided in rural areas of which 32 (26.4%) met MDD, as compared to 42/125 (33.6%) in urban areas (p=0.081). We found that 79 (32%) children were underweight, 51 (20.7%) wasted and 83 (33.7%) were stunted. Out of 79 underweight children, 69 (87.3%) belonged to lower SES (p=0.019) and 45 (57%) resided in rural areas (p<0.001). Similarly, 89.3% of stunted children (p=0.055) belonged to lower SES. Out of 51 wasted children, 49% (p=0.046) belonged to the lower three strata and 60.8% resided in rural areas (p=0.04).
Conclusions: Socio-demographic variations impact dietary diversity and adequacy, which is a significant cause of malnutrition in children.

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PV082 / #323

E-POSTER VIEWING: MALNUTRITION

THE IMPACT OF PARENT MANAGEMENT TRAINING USING A CBT APPROACH FOR PARENTS OF CHILDREN WITH GROWTH STUNTING: CASE STUDIES

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Background and Aims: Growth stunting in children is often linked to various psychosocial factors, including parenting practices and family dynamics. This study investigates the effects of Parent Management Training (PMT) utilizing a Cognitive Behavioral Therapy (CBT) approach on parents of children experiencing growth stunting. The aim is to explore how enhancing parental skills can positively impact children's growth and development.
Methods: This qualitative study involved three families with children diagnosed with growth stunting. Each parent participated in a 10-week PMT program focused on CBT principles, including identifying negative thought patterns, improving communication skills, and implementing effective behavior management strategies. Pre- and post-intervention assessments included parent interviews and observations of parenting practices, as well as monitoring changes in children's growth metrics.
Results: All three families reported significant improvements in parenting efficacy and reduced stress levels. Observations indicated a shift toward more positive reinforcement and consistent routines. Growth measurements of the children showed an average increase in height and weight percentile rankings within the intervention period, suggesting an association between improved parenting strategies and child development.
Conclusions: The findings highlight the potential of PMT using a CBT approach to empower parents and positively influence the growth of children with stunting issues. These case studies provide valuable insights into the role of parental involvement in child development and underscore the need for integrative approaches in addressing growth stunting. Future research should expand on these findings with larger samples and quantitative measures.

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PV083 / #519

E-POSTER VIEWING: MALNUTRITION

THE IMPORTANCE OF DESIGNING AND MONITORING A CORRECT NUTRITIONAL PLAN IN INDIVIDUALS WITH METABOLIC DISEASES

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Background and Aims: Background and Aims. A nutritional plan for individuals with metabolic diseases is a tailored dietary strategy designed to manage specific health conditions related to metabolism, such as diabetes, obesity, metabolic syndrome, and others. This study aims to describe the nutritional plan for individuals with metabolic diseases, its components, and why it is very important for them.
Methods: This is a systematic review of the literature focused on articles from 2014-2024 sourced from PubMed, Google Scholar, Scopus, and Web of Science to gather relevant findings on designing and monitoring a nutritional plan for individuals with metabolic diseases.
Results: Results: Based on the recent publications related to[U1] nutritional plan in individuals with metabolic diseases is shown that this plan must be comprehensive, personalized approach that focuses on balanced nutrition, portion control, and regular monitoring to effectively manage their condition and improve overall health. It is best developed in collaboration with healthcare professionals to meet the individual's needs. A well-structured and monitored nutritional plan is essential for effectively managing metabolic diseases, preventing complications, and promoting overall health and well-being. The plan typically includes the following components: Individual Assessment, Balanced Macronutrients, Portion Control, Regular Meal Timing, Nutrient-Dense Foods, Hydration, Monitoring and Adjustments, Education and Support and Physical Activity.
Conclusions: Designing and monitoring a correct nutritional plan are essential for individuals with metabolic diseases, as they play a critical role in disease management, preventing complications, and overall health improvement.

PV084 / #124

E-POSTER VIEWING: MALNUTRITION

ROLE OF INFLAMMATION IN IMPAIRING POST-HOSPITAL DISCHARGE GROWTH AMONG UNDERWEIGHT CHILDREN HOSPITALISED WITH ACUTE ILLNESS IN SUB-SAHARAN AFRICA AND SOUTH ASIA

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Background and Aims: Medical and nutritional management of acutely ill undernourished children in low- and middle-income countries aim to support convalescence and rapid weight gain. However, two-thirds of children remain underweight for extended periods and stunting increases. The biological mechanisms underlying such growth faltering are not well understood. These study focussed on three questions: How do inflammatory and growth biomarkers differ from community children in underweight and non-underweight children after acute illness? What mechanisms lead to underweight children gaining weight but not height in the early post-discharge period? What are the effects of systemic inflammation, intestinal dysfunction and environmental exposure on post-discharge weight gain?
Methods: We analysed an extensive panel of biomarkers of inflammation, enteropathy,

growth mediators and other exposures at hospital discharge among acutely ill children and among well community peers in sub-Saharan Africa and South Asia.

Results: Despite resolution of clinical signs of illness at discharge, children displayed extensive perturbations in inflammatory proteins and growth mediators irrespective of nutritional status. Systemic inflammation impacted mediators of linear growth including the GH/IGF1 axis and bone metabolism to a larger extent and weight gain via enteroendocrine peptide YY and glucagon pathways to a lesser extent. Systemic inflammation negatively affected weight gain directly. Intestinal dysfunction impacted linear growth mediators through systemic inflammation. Adverse household and chronic medical conditions predominantly influenced weight gain through inflammation.

Conclusions: Persistent systemic inflammation at hospital discharge strongly impairs post-discharge linear growth and limits weight gain. It is critical to address inflammation, the intestinal mucosal barrier and other exposures driving inflammation to optimise recovery.

PV085 / #598

E-POSTER VIEWING: MALNUTRITION

GLOBAL PERCEPTIONS OF OPTIMAL POST-MALNUTRITION WEIGHT GAIN & GROWTH: A MIXED METHODS STUDY

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Background and Aims: To inform future child malnutrition treatment programmes by describing perceptions of optimal rates of post-malnutrition weight gain/growth; assessing how short- and long-term outcomes are currently prioritised; understanding perceptions of the role of malnutrition treatment services in preventing non-communicable diseases (NCDs)
Methods: A mixed methods study, involving a global online survey (December 2023-March 2024) and key informant interviews (March-July 2024). Participants were professionals with experience in severe malnutrition and/or child health, identified through convenience and snowballing sampling
Results: Sixty-eight survey respondents were included, from a range of backgrounds. Ten were interviewed. Almost half of survey participants perceived 5-10 g/kg/d as optimal weight gain in both inpatient and outpatient treatment. In terms of programme aims, 71% ranked ‘preventing mortality’ as the most important. Two-thirds (66%) rated reducing the risk of adulthood NCDs as a ‘very important’ long-term aim, while 3% said this was of ‘low/no importance’. Slower post-malnutrition weight gain was seen as beneficial by 69% of respondents, while 13% had opposing views and 18% were unsure . Key concerns were avoiding overfeeding/physiological disturbances and radical

changes among those who supported slower weight gain , and worries about not meeting energy requirements among those who did not .

Conclusions: There is strong consensus that preventing mortality remains the key aim of malnutrition treatment programmes but also increasing recognition of a potential to impact long-term NCD risk. Towards this, perceptions of optimal post-malnutrition weight gain targets vary, and better evidence is urgently needed to inform future policy/practice.

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PV086 / #523

E-POSTER VIEWING: MALNUTRITION

VALIDATION OF MODIFIED PEDIATRIC NUTRITION SCREENING TOOL (MPNST) AMONG HOSPITALIZED PHILIPPINE CHILDREN IN A TERTIARY HOSPITAL

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Background and Aims: Malnutrition is a worldwide problem that needs to be detected and addressed especially in children. This study determined the use of the modified Pediatric Screening Tool (mPNST) among hospitalized Philippine children in a tertiary hospital. It used the Subjective Global Nutritional Assessment (SGNA) as reference standard, and compared mPNST with Pediatric Nutrition Screening Tool (PNST), Screening Tool for the Assessment of Malnutrition in Pediatrics (STAMP), and STRONGkids: Nutritional risk screening tool (STRONGkids).
Methods: This was a cross-sectional study with 132 participants aged 1 month to 18 years old from June 2024 to October 2024. Participants were nutritionally screened with mPNST, PNST, STAMP and STRONGkids; and nutritionally assessed with SGNA. Descriptive statistics summarized general characteristics of participants; and analysis of validity used sensitivity and specificity, predictive indices, and likelihood ratio with 95% confidence interval (CI).
Results: 132 children were included in the study. Majority were males (55.3%) aged 5.7years old, and majority (73.5%, n=97) were infectious cases. Malnutrition prevalence using mPNST was 55.3% (n=73) compared to SGNA, which was 78.8% (n=104). The mPNST had a sensitivity and sensitivity of 67.31% and 89.29%, respectively, with a positive predictive value of 95.89% and diagnostic accuracy of 71.97%. The PNST, which the tool was modified from, had lower sensitivity(54.81%) and diagnostic accuracy(62.88%). STAMP had lower sensitivity (61.54%), diagnostic accuracy (65.91%) and positive likelihood ratio (3.466). STRONGkids had lower specificity (64.29%) and positive likelihood ratio (2.288).
Conclusions: The mPNST can be used as a screening tool for malnutrition risk for hospitalized children.

PV087 / #504

E-POSTER VIEWING: MALNUTRITION

THE IMPORTANCE OF CHILDCARE IN PREVENTING IRON DEFICIENCY ANEMIA

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Background and Aims: The promotion of prevention strategies, such as encouraging breast milk and an iron-rich diet, should be widely disseminated and encouraged in pediatric consultations, schools and the media. The aim of this study was therefore to analyze the prevalence of hypoferritinemia and iron deficiency anemia in children and to assess the importance of this monitoring in childcare consultations, as recommended by the Ministry of Health and the Brazilian Society of Pediatrics.
Methods: Medical records were collected and laboratory tests were carried out, with hemoglobin and ferritin values, carried out in the pediatric service, after a period of adequate supplementation of elemental iron according to the standardization of the Ministry of Health and the Brazilian Society of Pediatrics, of children and adolescents between 4 and 14 years of age followed up since birth in this service.
Results: Of the 96 patients selected, 3.125% had a diagnosis of iron deficiency anemia and hypoferritinemia, with a ferritin value below 15mg/dl; and 6.25% had borderline ferritin values (between 15 and 30mg/dl).
Conclusions: Despite the high prevalence of iron deficiency anemia in Brazil, the study showed a low prevalence of diagnoses of hypoferritinemia and iron deficiency anemia in the outpatient clinic of the institution analyzed, highlighting the importance of proper monitoring of children in childcare consultations, with adequate prescription and monitoring of prophylactic elemental iron supplementation up to the age of two, including throughout childhood, up to the age of 14.

PV088 / #409

E-POSTER VIEWING: METABOLOMICS

THE ROLE OF LIPIDOMICS IN UNDERSTANDING DIRECT AND LONG-TERM METABOLIC EFFECTS OF CHILDHOOD MALNUTRITION: A REVIEW

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Background and Aims: Malnutrition, both under- and overnutrition, remains a significant global health issue, exacerbated by the climate crisis, urbanisation, conflicts, and socioeconomic inequalities. Childhood malnutrition can lead to severe long-term consequences, including increased susceptibility to non-communicable diseases (NCDs) such as obesity and cardiovascular disorders. This study aims to explore the utilisation of lipidomics, to discover lipid biomarkers as potential indicators of early-life onset malnutrition and predictors of future metabolic risks, including obesity and insulin resistance.
Methods: A comprehensive literature review was conducted to examine lipidomics and its role in identifying biomarkers linked to malnutrition. Recent studies involving lipid profiles in children exposed to varying nutritional environments were compared, alongside metabolic outcomes associated with desaturase activity (e.g., SCD1, FADS1, FADS2). Data from animal models and human cohorts were evaluated to validate links between lipid metabolism and body composition.
Results: Key lipid species, including phosphatidylcholines (PCs), sphingomyelins (SMs), and cholesteryl esters (CEs), were associated with future obesity risk and metabolic dysfunction in early life. Increased desaturase activities, particularly SCD1 and FADS1, were positively correlated with higher body mass index (BMI) and adiposity, while lower FADS2 activity was linked to improved metabolic outcomes.
Conclusions: Lipidomics offers a promising approach to identifying biomarkers that can predict long-term metabolic risks linked to early-life malnutrition. Further research and targeted interventions focusing on these biomarkers could strengthen global efforts to address the dual burden of malnutrition and improve health outcomes in vulnerable populations.

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PV089 / #579

E-POSTER VIEWING: METABOLOMICS

FOOD ALLERGIES IN CHILDREN: ANALYSIS OF RANDOMIZED TRIAL RESULTS

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Background and Aims: A significant increase in the share of allergic diseases is observed in many countries of the world. Today, the prevalence of allergic diseases in the entire population of the world reaches from 25% to 40%. In the world, diseases caused by food allergies are a global problem. That is why the purpose of our research is to detect food allergies in the children's population.
Methods: The research population consisted of 895 children aged 6 months to 15 years. Of these, there were 564 girls, and 331 boys. Allergen-specific IgE was determined by the immunoenzymatic method in each case. Mathematical analysis of the results of epidemiological research was carried out using Microsoft Excel 2010 and SPSS/V16.5 software package.
Results: At the next stage of epidemiological research,The study was conducted on a randomly selected contingent of identified patients..According to the research results, 16% of children who ate fish, nuts, citrus and honey had severe allergies, and 1.8% had allergies to eggs and milk. An important role in the pathogenesis of the disease is attributed to IgE, which is high in the blood serum of patients with these pathologies in 81.3% of cases.
Conclusions: As a result of the epidemiological study, the diagnosis of food allergy from allergic diseases in the children population was based on the clinical picture of the disease and also on the symptoms for which there is practically no laboratory test. Thus, the significance of the impact of each factor and the association with morbidity in the population were analyzed.

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PV090 / #348

E-POSTER VIEWING: NEONATAL & PREMATURITY

TEN YEARS OF ANALYSIS OF LOW BIRTH WEIGHT IN BRAZIL COMPARED TO A STATE IN THE SOUTH OF THE COUNTRY (2010 TO 2019).

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Background and Aims: The Information System on Live Births aims to gather information on births in Brazil. To analyze low birth weight (LBW) among live births in Brazil and Santa Catarina.
Methods: Cross-sectional study of 29,157,184 newborns from the Live Birth Information System in Brazil compared to 931,518 in Santa Catarina (2010 to 2019). Pearson's chi-squared test was used with a p-value < 0.05.
Results: BPN was 8.48% in Brazil and 7.83% in SC. In Brazil, among full-term births, there was a higher prevalence of LBW among mothers aged 40 or over (5.17%), with no schooling (7.12%) and indigenous people (5.40%) (p<0.001). In the state of Santa Catarina, it was among full-term babies born to black mothers (4.22%) and when there had been more than five previous pregnancies and/or living children. Mothers who had seven or more prenatal consultations had a lower prevalence of LBW in Brazil (3.41%) and in Santa Catarina (2.89%). In Brazil, vaginal delivery had a higher prevalence of LBW (3.99%), while in Santa Catarina it was higher in caesarean sections (3.36%), also in female neonates in Brazil (4.61%) and Santa Catarina (3.91%) and in indigenous people in Brazil (5.39%), while in Santa Catarina it was in black people (4.22%). Higher LBW in both Brazil and Santa Catarina, in neonates with Apgar scores in the 1st and 5th minutes with severe asphyxia, and in those with anomalies. Almost all the analyses were statistically significant.
Conclusions: LBW is still a public health problem in Brazil and Santa Catarina and is probably socially determined.

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PV091 / #382

E-POSTER VIEWING: NEONATAL & PREMATURITY

IMPACT OF MOTHER'S OWN MILK VERSUS DONOR HUMAN MILK ON GUT MICROBIOTA COLONIZATION IN PRETERM INFANTS: A SYSTEMATIC REVIEW

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Background and Aims: Nutritional intakes in preterm infants are associated with short- and long-term outcomes. The favorable outcomes of preterm infants who predominantly receive mother's own milk (MOM) are thought to be mediated partly through beneficial effects on the gut microbiome. When MOM is not available, donor human milk (DHM) is recommended as the best alternative. However, DHM is less effective in preventing adverse outcomes, which may be explained by compositional differences between MOM and DHM, resulting in different microbiome development. This systematic review focusses on the effects of predominant DHM versus MOM feeding on the gut microbiota composition in preterm infants.
Methods: A comprehensive search was performed in MEDLINE, Embase and Cochrane databases. Eight out of 1028 yielded publications were included. The microbiome composition clustered between the two nutritional groups.
Results: Alpha-diversity measures were lower in DHM cohorts where additional preterm formula was provided as well. DHM-fed infants showed higher abundances of *Staphylococcaceae* and *Clostridiaceae* and lower abundances of Bacteroidetes and *Bifidobacterium*. These differences have previously been associated to adverse health outcomes.
Conclusions: This underlines the importance of increasing the awareness of MOM use in preterm infants. Further studies should explore the mechanisms through which human milk affects health outcomes.

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PV092 / #593

E-POSTER VIEWING: NEONATAL & PREMATURITY

THE PREVALENCE OF POSTNATAL GROWTH FALTERING IN PRETERM INFANTS: A COMPARISON OF TWO GROWTH CHARTS AND ITS ASSOCIATION WITH CLINICAL AND NUTRITIONAL FACTORS

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Background and Aims: Monitoring postnatal growth in Neonatal Intensive Care Units is essential especially for preterm infants, who are at risk of postnatal growth faltering (PGF) due to increased energy demands and clinical complications. PGF can negatively impact neurodevelopment and increase the risk of future metabolic syndrome and cardiovascular disease. This study aims to compare the prevalence of PGF using the Fenton2013 and INTERGROWTH-21st growth charts and to identify associated clinical and nutritional factors.
Methods: A retrospective analysis of 650 preterm neonates born before 33 weeks of gestation was conducted in a level III NICU. PGF and severe PGF were defined as weight loss exceeding one or two standard deviations (SDS), respectively, between birth and discharge.
Results: The mean gestational (GA) and postmenstrual age (PMA) at discharge was 30 weeks and 37.1 weeks, respectively. The Fenton2013 charts indicated a higher prevalence of PGF (43%) and severe PGF (14.6%) compared to INTERGROWTH-21st (24.5% and 10.3%). Lower GA and birth weight were associated with higher PGF risk, while being small for gestational age (SGA) was linked to lower PGF risk. Early initiation and rapid establishment of full enteral feeding were strongly correlated with lower PGF ($p<0.001$). A decrease in PGF over time was observed, likely due to updated nutritional guidelines.
Conclusions: This study highlights the need of standardized growth monitoring and personalized nutritional interventions to enhance growth, neurodevelopment, and long-term outcomes in preterm infants. Early initiation and rapid establishment of full enteral feeding are crucial for optimizing growth in this vulnerable population.

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PV093 / #230

E-POSTER VIEWING: NEONATAL & PREMATURITY

ULTRAVIOLET LIGHT EXPOSURE INCREASES REACTIVE VITAMIN C IN INFANT LIQUID FORMULA

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Background and Aims: Background: Hospitalized infants have high levels of oxidative stress, increasing their risk for adverse health outcomes, like impaired neurodevelopment. Infant formula provides essential antioxidants, including vitamin C, which may help mitigate oxidative stress. Vitamin C is labile, and studies report its degradation upon light exposure. Since many liquid formulas for hospital use are stored in clear containers, it is important to understand the impact of light exposure on formula vitamin C content. **Aim:** Evaluate vitamin C content in light-protected and light (UV)-exposed infant liquid formulas.
Methods: Three liquid formulas (20 kcal/oz term, 22 kcal/oz discharge preterm, 24 kcal/oz inpatient preterm) were light-protected, 15 minutes UV-exposed, or 1 hour UV-exposed (n=4 per formula/exposure group). Reactive vitamin C was quantified by colorimetric assay. Statistical analyses were performed using two-way ANOVA and Tukey's multiple comparisons tests.
Results: One hour of UV light exposure significantly increased the detectable vitamin C in inpatient preterm formula from 168.6 mg/L to 179.2 mg/L, as well as in discharge preterm formula from 67.07 mg/L to 87.35 mg/L. **Figure 1.** Vitamin C levels in formulas.
Conclusions: Previous research demonstrates UV light degradation of vitamin C; however, we observed that UV exposure significantly increased the amount of vitamin C measured. Given that vitamin C conjugates with other biomolecules present, we hypothesize that light exposure releases previously unreactive vitamin C, which may then serve to scavenge free radicals. We demonstrate that the nutritional integrity of formula is altered by light exposure.

PV094 / #540

E-POSTER VIEWING: NEONATAL & PREMATURITY

ASSOCIATION BETWEEN PRETERM BREASTMILK MELATONIN CONCENTRATION, MATERNAL NUTRITION AND PSYCHOSOCIAL FACTORS AT BIRTH (PROMOTE)

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Background and Aims: Preterm birth leads to sudden interruption of transplacental transfer of melatonin that normally takes place during the last part of the pregnancy. Breastmilk is the only source of melatonin for the preterm neonate, during the first few months of life. Maternal nutrition and psychosocial factors have been associated with breastmilk melatonin. The main aim of this study is to explore the way maternal nutrition and psychosocial factors are associated with preterm breastmilk melatonin concentration.
Methods: The study population includes 50 mothers and their preterm neonates (<37 weeks) hospitalized in the Neonatology Department / NICU of the University Hospital of Heraklion. Mothers of preterm neonates were asked to collect 5-10ml of nighttime breastmilk with the use of an electrical pump between 01:00-05:00 a.m. The milk was collected in a sterile container and frozen immediately at -80^{0}C until analysis. Within the first 3 days after birth, the following maternal psychosocial factors were assessed: Depressive symptoms (*Edinburgh Postnatal Depression Scale); Anxiety (*The *Spielberger State-Trait Anxiety Inventory for Adults)*; Family functioning (*The Family Adaptability and Cohesion Evaluation Scales IV Package*). Maternal nutrition according to factors that may affect levels of breastmilk melatonin were assessed.
Results: Data collection is in progress. We expect variations of breastmilk melatonin according to maternal nutrition and psychosocial factors.
Conclusions: This study may extend our understanding about breastmilk melatonin and may support the promotion of exclusive breastfeeding of premature neonates in the first 6 months of their life and maternal-child health by nurse professionals.

PV095 / #273

E-POSTER VIEWING: NEONATAL & PREMATURITY

NUTRITIONAL STATUS OF PRETERM INFANTS WITH RESPIRATORY DISTRESS SYNDROME DURING THE FIRST FOUR WEEKS

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Background and Aims: This study assesses the intake of energy, protein, vitamins A and D in relation to respiratory distress syndrome (RDS) in preterm infants during the first four weeks after birth.
Methods: This retrospective study included neonates admitted to the neonatal intensive care unit from January to December 2023. The selection criteria were: (1) gestational age <37 weeks; (2) diagnosed of RDS; and (3) availability of nutritional data from weeks 1 to 4. Weekly nutritional assessments were conducted, averaging nutrient intake over the preceding three days. Statistical analysis was performed using SPSS 22.
Results: Infants meeting the inclusion criteria were divided into two groups based on respiratory distress severity: the endotracheal insertion at birth (Endo group, n=10) and non-invasive ventilation (NIV group, n=21). The Endo group comprised 90% of infants under 1000 grams, indicating a more critical condition. The NIV group had higher total and enteral caloric intake from weeks 2 to 4, with vitamin A higher in the first 3 weeks and vitamin D in the first 2 weeks. However, weekly weight gain (g/kg/week) didn't differ between groups. Parenteral protein intake (g/kg/day) was higher in the Endo group during weeks 1 to 4. Enteral calories, protein and total vitamins A and D in week 4 negatively correlated with length of hospital stay and TPN days.
Conclusions: Optimizing nutritional support is crucial for improving outcomes in preterm infants with RDS, particularly in those requiring intensive respiratory interventions.

PV096 / #336

E-POSTER VIEWING: NEONATAL & PREMATURITY

NATURAL COURSE OF REGURGITATION IN HEALTHY EARLY AND MODERATE PRETERM INFANTS

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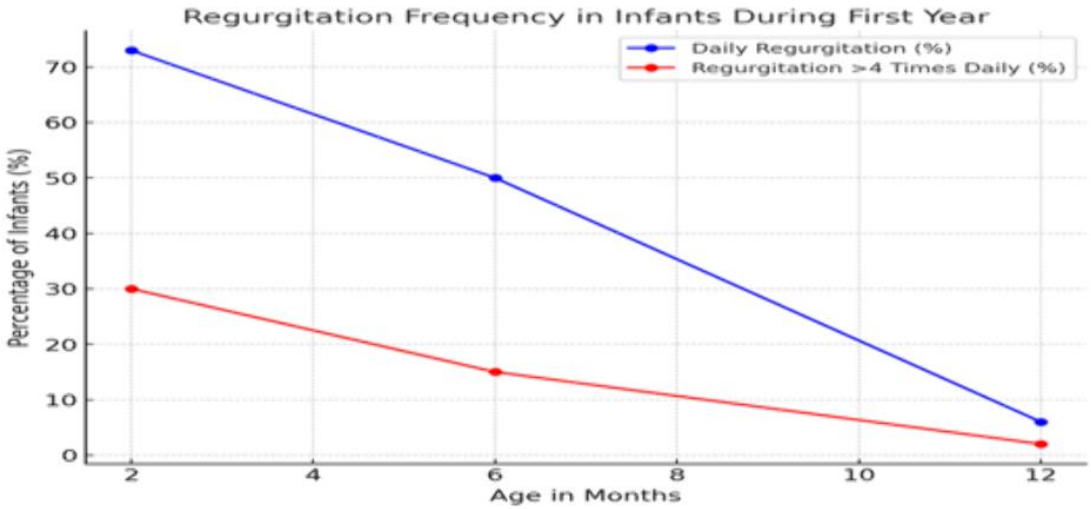
Background and Aims: Natural history of infant regurgitation during the first year of life in early and moderate preterm babies may not be same as the term babies.Many of parents keep visiting the hospital for the same complaints more often
Methods: Parents recorded the frequency of regurgitation for one week before each consultation throughout the first year. A subgroup analysis was conducted based on feeding method.
Results: Out of 179 newborns initially included in the study, 121 (67.5%) were followed for the entire year. Regurgitation was most frequent in the first two months, with 73% of infants experiencing daily episodes, gradually decreasing to 50% by the sixth month. In the first two months, 30% of infants regurgitated more than four times per day. By 12 months, only 6% of infants had daily regurgitation. Exclusively breastfed infants experienced fewer episodes of regurgitation compared to those who were partially breastfed. Weight gain was notably affected by frequent regurgitation, particularly in infants who were not exclusively breastfed.



Conclusions: Regurgitation is common in infants and typically decreases over time, with most cases resolving by 12 months of age. Infants who regurgitate more than four times per day in the first four months show reduced weight gain, especially if partially

breastfed. The data also suggest that exclusively breastfed infants experience less frequent regurgitation compared to their partially breastfed counterparts

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E-POSTER VIEWING: NEONATAL & PREMATURITY

EFFECT OF MATERNAL COVID-19 VIRUS INFECTION ON PLACENTAL METABOLIC BIOMARKERS.

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Background and Aims: The placenta functions as an active interface between the blood circulations of the mother and the fetus, controlling physiological changes in both. This organ carries out a variety of physiological tasks that help to maintain fetal homeostasis. COVID-19 can affect trophoblastic cells' oxygen supply, metabolic environment, and cell metabolism in pregnant women, which can negatively impact key fetal development mechanisms. The aim of this study was to examine, for the first time, the impact of COVID-19 infection during pregnancy on the endocrine function of metabolic indicators in placenta.
Methods: 124 expectant mothers were selected from Virgen de las Nieves and Clinico San Cecilio (Granada) and Virgen de la Arrixaca (Murcia) hospitals and divided into two groups: the COVID-19 group and the control group. Protein fractions were extracted from placenta samples through mechanic homogenization in tissue protein extraction reagent (T-PER) (Thermo Scientific Inc., Hanover Park, IL, USA) combined with a protease inhibitor cocktail (Sigma-Aldrich, St. Louis, MO, USA) at 4ºC, and stored at -80 ºC for further analysis. The metabolic parameters in proteins extracts were measured using the HMHEMAG-34K Milliplex Human Metabolic Hormone Magnetic Bead Panel.
Results: Higher placental levels of lipocalin-2 and resistin indicated an underlying pro-inflammatory condition in the gestation of COVID-19-affected moms. This group also showed lower levels of leptin and GLP-1.
Conclusions: This finding suggest, that COVID-19 could affects energy metabolism in placenta, which may have important implications for postnatal health.

PV098 / #403

E-POSTER VIEWING: NEONATAL & PREMATURITY

EFFECT OF OROPHARYNGEAL COLOSTRUM ADMINISTRATION ON TWO SERUM GROWTH FACTORS IN PREMATURE NEWBORNS

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Background and Aims: ***Background and aims***: Prematurity is associated with various neonatal pathologies, such as necrotizing enterocolitis, which are partly consequence of the immaturity of the infant's immune and digestive systems. Breast milk contains various bioactive components, such as growth factors that help these systems mature, but premature newborns have physiological difficulties swallowing, thereby missing out on the benefits of breastfeeding. The aim of this study is to investigate the effect of oropharyngeal administration of colostrum on serum levels of various growth factors during the first month of life in extremely premature infants.
Methods: Methods: 100 premature neonates (<32 weeks of gestation and/or weighing <1500 g) were enrolled and divided into two groups: colostrum group (n=48), receiving 0.2 ml of oropharyngeal colostrum every 4 h for the first 15 days of life, and control group (n=52), not receiving oropharyngeal colostrum. Serum concentrations of EGF and TFG-a, were assessed at 1, 3, 15, and 30 days of postnatal life.
Results: ***Results***: The results showed an increase in plasma concentrations of EGF, with maximum concentration at one month of age. Also, a higher concentration of TGF-a (at 3 and 30 days) and EGF (at 30 days) in the colostrum group with respect to the control group.
Conclusions: ***Conclusión***: The administration of oropharyngeal colostrum during the first 15 days of life modulates the plasma concentrations of different growth factors, which could have a positive influence on the development of both the immune and digestive systems and become a safe adjuvant therapy to minimize possible comorbidities associated with prematurity.

PV099 / #300

E-POSTER VIEWING: NEONATAL & PREMATURITY

THE HIGHS AND LOWS: HUMAN CYTOMEGALOVIRUS LACTATIA IN MOTHERS DELIVERING VERY PRETERM NEONATES - A PROSPECTIVE OBSERVATIONAL STUDY

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Background and Aims: Postnatal-CMV(pCMV) infection is acquired from ingestion of CMV-positive mother's own breastmilk (MOM). Clinicians need to be cognizant of epidemiology, and morbidities associated with pCMV in very preterm infants. There is lack of clarity on implications of using unpasteurized fresh MOM in high-risk infants. CMV sero-positivity, secretor rates in breast milk are likely dependent on geographic/sociocultural factors. Our study aimed at prospectively studying CMV secretion in MOM, transmission rates and clinical outcomes
Methods: This prospective-observational study included mother-baby dyads delivered at <32 weeks' gestation. MOM was tested by PCR for CMV secretion at 1-2 weeks postnatally. Neonates of secretor mothers were tested at 4-6 weeks of life. In vitro, specific amplification of the Major Immediate Early Gene(MIE) within the CMV genome was done. Levels >42.5 copies /ml in quantitative PCR, was classified as positive. Association of pCMV with clinical outcomes were analysed.
Results: Ninety-three mothers were analysed for CMV secretor status(lactatia) in MOM. Fifty(53.7%) were positive. Transmission rate of CMV secretors to neonates was 23%. There was significant association of pCMV positivity with lower gestational age/birth weight. pCMV infants had higher risk of Bronchopulmonary dysplasia(BPD)[RR 5.3(1.0-31)], Retinopathy (ROP)needing therapy [RR17.3(1.0-194)], longer duration of respiratory supports and hospital-stay.
Conclusions: Awareness about CMV secretor status in 53.7% of tested MOM was of relevance to families and clinical-teams. pCMV(in nearly 1/4th of CMV secretor mothers) were monitored for symptomatic pCMV and need for therapy. Additional precautions to prevent horizontal spread, cohorting and contact precautions for pregnant staff in the NICU could be instituted. CTRI/2023/05/053246 IHEC TP039/2022

PV100 / #459

E-POSTER VIEWING: NEONATAL & PREMATURITY

ROLE OF EXTRA VIRGIN OLIVE OIL MATERNAL SUPPLEMENTATION IN THE OFFSPRING IMMUNITY

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Background and Aims: Extra virgin olive oil (EVOO) is an important agent of the Mediterranean diet. In addition, EVOO is recognised to confer antioxidant and anti-inflammatory effects. These seem to be attributed to its high content in monounsaturated fatty acids and the presence of polyphenols. However, the effects on immunity of EVOO during perinatal periods in the mother, the breast milk and the infant are scarce. The aim of the present study was to evaluate the impact of EVOO supplementation during pregnancy and lactation on the descendance at preclinical level.
Methods: Rats were daily supplemented with 10 mL/Kg of EVOO during gestation and lactation periods. Plasma were obtained from pups at the end of suckling for immunoglobulin (Ig) profile assessment. Intestinal immune barrier was also studied in histological sections and by evaluating the expression of tight junctions and mucins genes by Real Time-PCR. The proportion of Ig-Coating Bacteria in the caecum was also assessed by flow cytometry.
Results: Maternal EVOO supplementation induced changes in the Ig profile, by strengthening the IgG2c response. It also had a trophic effect and changes in some biomarkers in the small intestine of pups whose mothers received EVOO. Ig binding bacteria in EVOO rats was significantly higher than in REF animals.
Conclusions: In **conclusion**, the supplementation with EVOO during gestation and laction seems to have a positive impact on the immunity and intestinal health in the offspring, although further studies are necessary to better stablished this effect.

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E-POSTER VIEWING: NEONATAL & PREMATURITY

A QUALITY IMPROVEMENT (QI) PROJECT AIMED AT INCREASING BREASTFEEDING INITIATION WITHIN THE FIRST HOUR OF LIFE IN A REMOTE AREA OF UTTARAKHAND ,INDIA

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Background and Aims: Early initiation of breastfeeding (EIBF) within the first hour of birth is vital for neonatal health, reducing mortality, and providing essential immunological benefits.However, many mothers face challenges in EIBF. Only 2 out of 5 newborns in the world are put to the breast within first hour of life.Considering the significant impact of malnutrition on infant health EIBF plays a crucial role in improving the health of babies and contributes positively to nation building efforts.This Quality Improvement (QI) study aimed to enhance EIBF rates in a remote area through multifaceted interventions, including skin-to-skin contact, staff training, and parental education.
Methods: A QI project was conducted over a one-year period, involving 756 deliveries (404vaginal, 352 cesarean). The study population consisted of neonates born after 35 weeksgestation, excluding high-risk cases. A multidisciplinary team including nurses and obstetricians, implemented interventions such as promoting skin-to-skin contact, enhancing staff training, educating mothers, and tracking data. Baseline EIBF rates were recorded at 8%, with a target to increase this to≥80%.
Results: Following the intervention, EIBF rates improved from 8% to 88% within the first three months. A slight decline to 82% was noted at six months, but after reinforcing interventions, the rate reached 87% by the end of the study. The overall improvement was significant despite 13% of cases involving NICU admissions or maternal health conditions that hindered early breastfeeding.
Conclusions: The study's findings underscore the effectiveness of targeted interventions in improving EIBF rates and emphasize the need for continuous reinforcement in healthcare practices to ensure sustainable improvements.

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PV102 / #90

E-POSTER VIEWING: NEONATAL & PREMATURITY

EUGR AND NEURODEVELOPMENTAL OUTCOMES IN VLBW INFANTS RECEIVING AN ENTERAL-ONLY DIET IN A RESOURCE-RESTRICTED, ACADEMIC HEALTHCARE FACILITY, CAPE TOWN, SOUTH AFRICA.

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Background and Aims: Very-low-birth-weight infants (VLBWIs) are at risk of growth failure. Little is known about the impact on the growth of an enteral-only feeding regimen. We aimed to review postnatal growth in VLBWIs in a resource-limited setting.
Methods: A retrospective analysis of VLBWIs at Tygerberg Hospital from 2021-2022 was conducted. Mean somatic growth, enteral-feed volume and fortification practices were determined.
Results: Preliminary data: The initial cohort included 530 VLBWIs (58% male). The mean gestational age was 28 weeks with a mean birth weight of 1000g. The median age of lowest weight was before 7 days, the mean weight loss was below 10%, and the median age for regaining of birth weight was before 14 days. Most infants showed poor growth (≤15g/kg/d) despite a mean total daily fluid intake of 170±27ml/kg/day with 3.3±0.8g/100ml human milk fortifier (below the recommended dose of 4g/100ml). At day 49, the median growth was below 15g/kg/day. The EUGR rate (Weight centile <-1.28) was 69%. Data from 2022 and neurodevelopmental outcome data are still being analysed.
Conclusions: Weight loss and regain of birth weight are similar to international standards despite an enteral-only diet. Growth remains suboptimal up to 7 weeks of life with weight gain below the minimum weight gain of 15g/kg/day. This may be due to suboptimal HMF supplementation. EUGR rate remains high but remains in line with many international standards. Enteral feeds should be started as early as possible and earlier or higher dose fortification may be required. More research is warranted to decrease the EUGR rate and improve neonatal outcomes in resource-limited settings.

PV103 / #147

E-POSTER VIEWING: NEONATAL & PREMATURITY

DONOR HUMAN MILK VERSUS FORMULA FOR THE TREATMENT OF HYPOGLYCEMIA IN THE BREASTFEEDING NORMAL NEWBORN POPULATION

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Background and Aims: Neonatal hypoglycemia is a medical emergency and if mother's own milk is not adequately available, supplementation is indicated. Thus, the aim of this study is to evaluate the effectiveness of donor human milk vs. formula supplementation in treating hypoglycemia in breastfeeding newborns.
Methods: IRB-approved, RCT enrolled mother-infant dyads (n=18) at time of delivery (NE, USA) if ≥36 weeks gestation and mothers intended to exclusively breastfeed. Infant's meeting standard unit criteria to receive treatment for hypoglycemia (after breastfeeding attempts) were randomized to receive bottle supplementation of pasteurized donor human milk or commercial infant formula (both 20 calories/ounce), up to two feedings with maximum of 15 mL/feed. The Mann-Whitney U test compared variables between groups. P-value <0.05 was significant.
Results: Per Table 1, glucose levels were higher after Treatment 1 in the formula group despite no difference in volume of intake or time (minutes) to receive treatment. 67% of infants required a second treatment for hypoglycemia. Glucose levels showed no difference following Treatment 2, though infants receiving donor milk experienced longer time to receive treatment (37.5 vs. 23 minutes, p=0.02).

Table 1: Infant Glucose Levels (mg/dL) Before and After Study Treatment

Variable (median)	**Formula** (n=10)	**Donor Milk** (n=8)	p-value
TREATMENT 1:			
Glucose Before	39.5	38	*0.15*
Glucose After	56	49.5	***0.03***
TREATMENT 2:			
Glucose Before	35	40	*0.07*
Glucose After	53.5	55.5	*0.94*

Conclusions: Preliminary data shows infant glucose levels were similar after receiving supplementation with pasteurized donor human milk compared to commercial infant formula. However, additional research is needed in a larger sample size.

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PV104 / #148

E-POSTER VIEWING: NEONATAL & PREMATURITY

EVALUATING PHYSIOLOGIC Z-SCORE CHANGES AND MALNUTRITION CLASSIFICATIONS IN EXTREMELY LOW BIRTH WEIGHT INFANTS BASED ON BIRTH GESTATIONAL AGE

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Background and Aims: Extremely low birth weight (ELBW, <1000 g) infants experience larger declines in weight z-score with postnatal diuresis than older infants—inflating malnutrition diagnoses as defined by z-score change. This study aimed to evaluate weight z-score changes in ELBW infants across varying birth gestational ages and to compare with malnutrition classifications.
Methods: IRB-approved study retrospectively evaluated 37 ELBW infants (NE, USA) including 2013 Fenton weight z-score changes and associated neonatal malnutrition classifications: <0.80 = none, 0.8-1.2 = mild, >1.2-2.0 = moderate. Non-parametric statistics evaluated data with $p<0.05$ significant.
Results: There were no differences in z-score change from birth to postnatal diuresis nadir or discharge across gestational age. There was no difference in malnutrition across gestational age (Table 1), but more met mild or moderate classifications when comparing birth vs. postnatal diuresis nadir to discharge z-score change. **Table 1: Comparison of Z-Score Change Categories in ELBW Infants Per Neonatal Malnutrition Criteria**

Malnutrition Category	**22-23 Weeks** (n=4)	**24-25 Weeks** (n=10)	**26-27 Weeks** (n=12)	**28-30 Weeks** (n=11)	*p-value*
Birth to Discharge No Mild Moderate	**3 (75%) 0 (0%) 1 (25%)**	**6 (60%) 2 (20%) 2 (20%)**	**7 (58%) 3 (25%) 2 (17%)**	**11 (100%) 0 (0%) 0 (0%)**	*0.207*
Postnatal Diuresis Nadir to Discharge No Mild Moderate	**4 (100%) 0 (0%) 0 (0%)**	**10 (100%) 0 (0%) 0 (0%)**	**10 (83%) 2 (17%) 0 (0%)**	**11 (100%) 0 (0%) 0 (0%)**	*0.457*

Conclusions: No significant differences were observed in weight z-score change or malnutrition classification for ELBW infants across varying gestational ages, however observations may be clinically significant.

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PV105 / #380

E-POSTER VIEWING: NEONATAL & PREMATURITY

EFFECT OF ADVANCED MATERNAL AGE ON MITOCHONDRIAL SIZE AND MORPHOLOGY IN HUMAN PLACENTA.

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Background and Aims: Advanced maternal age (AMA), defined as ≥35 years old at delivery, has been related to adverse neonatal/obstetric outcomes and gestational complications, potentially affecting different aspects of placental function. Mitochondria play a prominent role in placental activity and have been previously linked to some of these complications, so it is reasonable to hypothesize that the structure and function of these organelles might be affected during AMA pregnancies. Consequently, the aim of this study was to evaluate mitochondria from AMA placentas in order to evaluate possible changes in their size and morphology.
Methods: Placentas from ≥35 years old women (n=10) and <35 years old women (n=9) were collected in two hospitals; “Virgen de las Nieves” (Granada) and “Virgen de la Arrixaca” (Murcia). Tissue samples were taken from the subchorial zone, the “fetal side” of the placenta, subsequently fixed in 2% glutaraldehyde + 1% formaldehyde in 0.05 M cacodylate buffer (pH 7.4) for 2 hours and processed for transmission electron microscopy (TEM) analysis. Images were quantitatively evaluated using ImageJ, being the statistical analysis performed with GraphPad Prism 8.
Results: Syncytiotrophoblast's mitochondria showed decreased area ($P < 0.0001$) and perimeter ($P < 0.0001$) in AMA samples compared to those in the control group. Regarding circularity, it was also augmented in mitochondria from AMA samples ($P < 0.0001$) in comparison with the control group.
Conclusions: AMA seems to induce morphological changes in placental mitochondria, with reduced size and perimeter, and increased circularity, which may be associated with excessive fragmentation and swelling, possibly leading to organelle misfunction.

PV106 / #186

E-POSTER VIEWING: OBESITY

INVESTIGATING THE ROLE OF GUT MICROBIOTA IN CHILDHOOD OBESITY: A METAGENOMIC APPROACH

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Background and Aims: Childhood obesity is a growing global concern, leading to long-term health complications. Emerging evidence suggests that gut microbiota plays a crucial role in regulating metabolism and energy balance, which may contribute to obesity. This study aims to investigate the association between gut microbiota composition and childhood obesity using metagenomic sequencing to identify microbial markers that could serve as therapeutic targets.
Methods: A cohort of 100 children, aged 6-12 years, was recruited, including 50 obese and 50 non-obese controls. Fecal samples were collected and subjected to metagenomic sequencing to analyze the gut microbiome. Bioinformatic analysis was performed to identify microbial diversity, composition, and functional pathways linked to obesity. Statistical models were used to assess correlations between gut microbiota profiles, dietary habits, and body mass index (BMI).
Results: The analysis revealed significant differences in gut microbiota composition between obese and non-obese children. Obese children exhibited reduced microbial diversity, with an increased abundance of Firmicutes and a decreased proportion of Bacteroidetes, compared to controls. Additionally, metabolic pathways related to energy harvest, including those associated with short-chain fatty acid production, were more prevalent in the obese group. Certain bacterial species, such as *Faecalibacterium prausnitzii*, were found to be inversely correlated with BMI.
Conclusions: Our findings suggest that alterations in gut microbiota composition and function may contribute to the development of childhood obesity. Targeting specific microbial pathways may offer novel therapeutic strategies for obesity prevention and treatment. Further research is needed to explore potential interventions to modulate the gut microbiota in obese children.

PV107 / #517

E-POSTER VIEWING: OBESITY

EFFECTS OF POLYSACCHARIDE MACROMOLECULES SUPPLEMENTATION ON GUT MICROBIOTA AND CARDIO-METABOLIC ALTERATIONS IN CHILDREN WITH OBESITY

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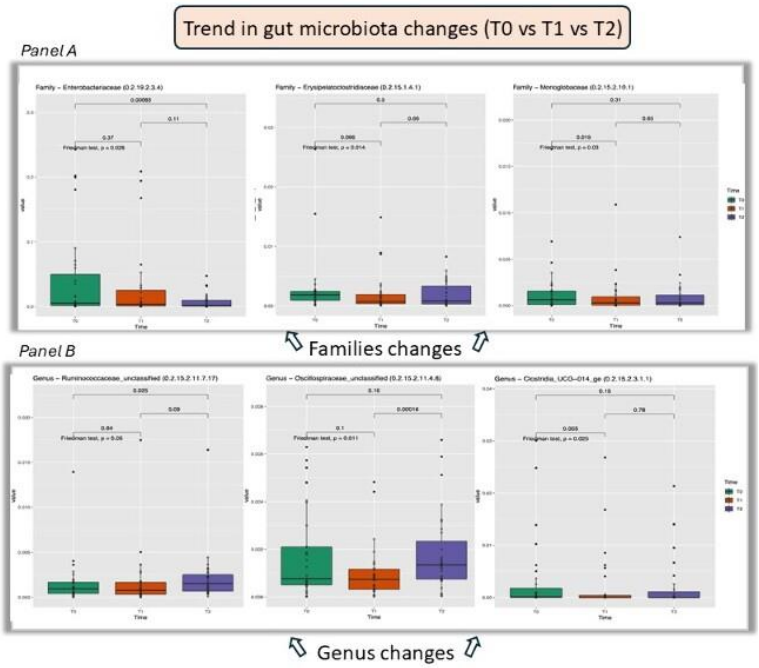
Background and Aims: Childhood obesity is a global public health issue. We aimed to determine the effects of polysaccharide macromolecules supplementation combined with dietary intervention on gut microbiota and cardio-metabolic alterations in children and adolescents with obesity
Methods: We enrolled children aged 8-14 years with obesity and at least one cardio-metabolic alteration (hypetriglerides, hypertension, hypo-HDL cholesterol, altered glucose metabolism). Enrolled subjects were visited at baseline (T0), after 4 months of combined dietary intervention and polysaccharidic macromolecules supplementation (5g/die of soluble and insoluble fibers) (T1), and after 4 months from T1 (8 months from baseline) of dietary-lifestyle intervention alone (T2). At T0, T1 and T2 gut microbiota analysis, body composition assessment, blood tests and mediterranean diet adherence (according to KIDMED) were collected
Results: Thirty-one children were enrolled (mean age 10.4±1.6). The BMI z-score significantly decreased at each timepoint ($p<0.001$), while the percentage of fat mass significantly decreased only at T1 ($p=0.035$). Table 1 shows changes in cardio-metabolic alterations; LDL cholesterol and alanine-aminotransferase significantly decreased from T0 to T2 ($p=0.02$). KIDMED score increased significantly at T1 ($p<0.001$) and remained stable for all study periods. Significant changes in relative abundance for specific taxonomic groups were observed.
Families *Monoglobaceae*, *Erysipelatoclostridiaceae* and genus *Clostridia_UCG_014* were reduced between T0 and T1. Diet alone reduces

relative abundance of family *Enterobacteriaceae* and significantly increases relative abundance of genus *Ruminococcaceae* and *Oscillospiraceae (see Panel A,B)*.

Cardio-metabolic changes (T0 vs T1 vs T2)

	T0	T1	T2
Visceral obesity (WC ≥ 90° percentile)	100%	83%	77%
Hypertriglyceridemia (TG ≥ 90° percentile or TG*≥ 150 mg/dL)	41%	34%	19%
Dyslipidemia (HDL ≤ 10° percentile or HDL*≤ 40 mg/dL):	39%	40%	29%
Hypertension (SBP or DBP ≥ 90° percentile or SBP*≥ 130 mmHg or DBP*≥ 85 mmHg):	23%	11%	3%
Hyperglycemia (HOMA ≥ 90° percentile or FBG≥ 90° percentile or FBG*≥ 100 mg/dl or type 2 diabetes)	53%	37%	32%

Table 1. ***Metabolically unhealthy obesity (MUO)*** *according to IDEFICS criteria for children 8-10 years and IDF criteria(*) for >10 years*



Conclusions: Dietary intervention combined with fibers supplementation significantly reduced cardiometabolic alterations. Supplementation itself reduced fat mass (probably due to the effect on satiety) and the abundance of obesity-associated bacterial families.

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E-POSTER VIEWING: OBESITY

IS ADHD ASSOCIATED WITH THE OBESITY AND THE BODY FAT DISTRIBUTION IN SCHOOL AGE CHILDREN?

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Background and Aims: Although an association between ADHD and obesity in adults has been confirmed in many research, the results of studies in paediatric population are less conclusive. What's more, previous studies have mainly focused on body mass index (BMI) as an indicator of obesity, without providing deeper insight into body fat content and distribution. Thus the aim of the study was to assess the association between ADHD and obesity in children using a comprehensive anthropometric approach including the body composition analysis and Waist-to-Height Ratio (WHtR) as the central obesity risk indicator.
Methods: BMI, WHtR and body fat percentage (%Fat) estimated with BIA have been compared between children with confirmed ADHD (n=45) and control group (n=464) in age 6-12y. The IOTF criteria have been employed to diagnose obesity and WHtR>0.5 was used as the indicator of central obesity risk. The ADHD-obesity link has also been examined in analyses adjusted for confounding factors.
Results: Higher rate of obesity (OR=3.19), *z* scores WHtR (0.55 vs. -0.06) and the risk of central obesity (OR=2.67) were found in children with ADHD compared to the control group, despite of lack of differences in sex and age adjusted %Fat. Nevertheless, the analyses adjusted for controlled factors didn't confirm the examined associations.
Conclusions: Despite the lack of differences in fat content, the results suggest increased risk of obesity and central obesity related to ADHD. The effects of interaction between ADHD and factors related to living conditions on obesity risk are warranted in future research.

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E-POSTER VIEWING: OBESITY

EXCESS WEIGHT, BUT NUTRITIONAL DEFICIENCIES – A ROMANIAN PEDIATRIC STUDY RAISES A RED FLAG

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Background and Aims: Childhood obesity is a global public health issue, associated with multiple nutritional deficiencies, despite an excess of caloric intake. This study aims to investigate the prevalence of nutritional deficiencies in overweight/obese children and to assess correlations between vitamin D levels/serum iron and body mass index (BMI).
Methods: We performed a retrospective observational study including overweight/obese children admitted to ”Grigore Alexandrescu” Hospital over a one-year period (2023-2024), for unrelated conditions. Children were classified using age and gender-specific BMI-percentile as: overweight (≥85th-95th percentile), obese (≥ 95thpercentile) or severe obesity (>120% of 95thpercentile), according to CDC growth charts. Patients were grouped according to serum 25-hydroxyvitamin D(ng/ml): deficiency:<10, insufficiency:10-29.9, sufficiency:30-100 and according to hemoglobin and serum iron in: normal, iron-deficiency and iron-deficiency anemia. Associations between BMI and vitamin D level/hematological status respectively were examined.
Results: The studied cohort included 51 patients, mean age 11 years, 55% female, 68.6% came from urban areas. 41.2% were overweight, 39.2% obese and 19.6% severely obese. 64.71% had insufficient serum 25-hydroxyvitamin D and 3.92% vitamin D deficiency. An inverse correlation was observed between vitamin D levels and BMI (r=-0.37,p=0.015). The prevalence of iron-deficiency, iron-deficiency anemia was 33.3% and 27.45% respectively. There was no correlation between serum iron and BMI (r=-0.07).
Conclusions: This study shows that vitamin D deficiency is highly prevalent in overweight/obese children and emphasizes the need for targeted screening, alongside appropriate interventions such as dietary adjustments and vitamin D supplementation. This study also found iron-deficiency with a high prevalence in the overweight category.

PV110 / #105

E-POSTER VIEWING: OBESITY

ASSESSMENT OF MACRONUTRIENT INTAKE AND DIETARY PATTERNS IN INDIAN OVERWEIGHT/OBESE ADOLESCENTS WITH NON-ALCOHOLIC FATTY LIVER DISEASE

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Background and Aims: Non-alcoholic fatty liver disease (NAFLD) is a growing public health concern in developing nations, including India, where the prevalence of the disease is on the rise among adolescents. Nutrition is a modifiable risk factor that plays a critical role in preventing or delaying the onset of NAFLD. The aim of this study was to assess the dietary patterns of adolescents diagnosed with NAFLD using a validated dietary assessment tool.
Methods: A total of 102 adolescent boys and Girls having NAFLD were enrolled from General Pediatrics OPD. It was a Double blinded placebo-controlled RCT. In this paper the focus is on the baseline characteristics of adolescents with NAFLD, specifically examining their dietary patterns. Information on socio demographic profile and anthropometric measurements was collected. A semi-quantitative, 59-item meal-based food frequency questionnaire (FFQ) was developed to assess the 24 hour dietary intake of adolescents.
Results: A total of 102 adolescents with mean ±standard deviation (SD) age of **12.35±1.90 yr** and mean **BMI 27.94±4.87 kg/m**2 were enrolled. The dietary intake of Indian adolescents with NAFLD have shown high levels of adequacy for all macronutrients, including protein**(B:265.9% ; G:245.2%)** , carbohydrates (CHO) **(B:386.8% ; G:369.8%),** and fat **(B:269.5% ; G:246.1%)**. In particular, the percentage adequacy of CHO was found to be higher compared to the Indian Estimated Average Requirement (EAR).
Conclusions: Our study revealed that the high percentage adequacy of all macronutrients, particularly CHO may suggest that they are consuming a diet that is high in refined carbohydrates, which can contribute to the development of NAFLD.

PV111 / #551

E-POSTER VIEWING: OBESITY

COMPARATIVE ANALYSIS: GASTRIC BYPASS VS. GASTRIC RESTRICTIVE SURGERY IN ADOLESCENT FEMALES WITH TYPE 1 DIABETES AND OBESITY

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Background and Aims: The aim of this investigation is to assess the carbohydrate metabolism and beta-cell function in obese adolescent females diagnosed with type 1 diabetes mellitus (T1DM) following two distinct bariatric interventions: Roux-en-Y gastric bypass (RYGB) and gastric restrictive (GR) surgery.
Methods: In this 4-week longitudinal clinical trial, 32 obese adolescent females diagnosed with T1DM participated, with an average age of 15±3 years, average weight of 86±8 kg/m, and mean HbA1c of 7.2±1.3%. These participants underwent either RYGB (N=16) or GR (N=16) surgery. Glucose levels, insulin secretion, and insulin sensitivity were evaluated at baseline, as well as 1 and 4 weeks post-surgery, utilizing hyperglycemic clamps and C-peptide modeling kinetics. Additionally, glucose levels, and gut-peptide responses to mixed meal tolerance test (MMTT) were measured at baseline and 4 weeks post-surgery.
Results: Findings revealed that at 1 week post-surgery, both RYGB and GR groups exhibited comparable weight loss and reduced fasting glucose levels, with only RYGB showing enhanced insulin sensitivity. By the 4-week mark, while weight loss remained consistent between groups, normalization of fasting glucose was evident only after RYGB. Furthermore, the disposition index remained stable after RYGB but notably increased by 36% after GR. Notably, MMTT induced a substantial rise in insulin secretion, glucagon-like peptide-1 (GLP-1) levels, and beta-cell sensitivity to glucose solely after RYGB in obese adolescent females with T1DM.
Conclusions: These findings underscore the more rapid enhancement in glucose regulation provided by RYGB compared to GR in obese adolescent females with T1DM, attributed to improved insulin sensitivity and beta-cell responsiveness, partly due to an incretin effect.

PV112 / #100

E-POSTER VIEWING: OBESITY

FASTING INSULINEMIA ADJUSTED FOR AGE AND SEX IS RELATED TO HIGH BLOOD GLUCOSE AND TRIGLYCERIDE VALUES IN OVERWEIGHT AND OBESE CHILDREN AND ADOLESCENTS

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Background and Aims: Peripheral insulin resistance is a comorbidity frequently associated with obesity. Several authors suggest the use of fasting insulinemia adjusted for age and sex as a laboratory indicator. The present study evaluated the prevalence of blood glucose and plasma lipid abnormalities among overweight and obese children and adolescents with and without elevated insulinemia.
Methods: 383 patients aged between 7 and 19.9 years and BMI > +1 z-score were evaluated. Blood samples were collected (8 hours of fasting) to assess blood glucose, insulinemia, total cholesterol, HDL-cholesterol, LDL-cholesterol and triglycerides. The cut-off points for blood glucose were used according to the 2015 Brazilian Diabetes Society Guidelines, dyslipidemia according to the 2017 Brazilian Guideline on Dyslipidemia and Prevention of Atherosclerosis, and hyperinsulinism according to the 2020 Brazilian Association of Nutrology Criteria for the Diagnosis and Treatment of Metabolic Syndrome in children and adolescents. Statistical evaluation was performed using the chi-square test.
Results: Table 1 shows the results obtained.

	Normal Insulinemia		Elevated Insulinemia		p
	number	percentage	number	percentage	
Elevated CT	111	29.0%	139	36.3%	0.254
High LDL	75	19.6%	100	26.1%	0.839
Low HDL	71	18.5%	117	30.5%	0.078
High TG	54	14.1%	120	31.3%	< 0.001
High blood glucose	4	1.0%	17	4.4%	0.025

The presence of elevated triglycerides and blood glucose was higher among patients with hyperinsulinism.

Conclusions: Among overweight and obese children and adolescents, the prevalence of elevated fasting hyperglycemia and hypertriglyceridemia was higher when insulin was elevated. For HDL, which is generally reduced in the presence of insulin resistance, the p-value was very close to the limit. High total and LDL cholesterol also had a numerically higher prevalence in the groups with high insulin, but both without statistical significance. The data show that elevated insulinemia, with cut-off points adjusted for age and sex, may be associated with changes in glycemic and lipid profiles.

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E-POSTER VIEWING: OBESITY

VITAMIN D3 STATUS IN CHILDREN WITH OBESITY

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Background and Aims: Obesity among children is one of the major global health problems. Vitamin D3 deficiency often accompanies this pathology, contributing to its numerous complications. Our aim is to assess the status of vitamin D among children with obesity.
Methods: Demographic and biological data were retrospectively evaluated from the medical chart of fourty children with obesity. Fourty-eight children with normal weight served as controls. Data analysis was performed using SPSS.
Results: The median age was 9.5 years for the children with obesity and 10.1 years for the control group. A significant difference ($p<0.05$) was noted regarding the vitamin D3 values between children with obesity (median value 53.5 nmol/l) and the children from control group (median value 82.75 nmol/l). No significant differences were noted between the two groups in terms of serum calcium ($p=0.2$) or alkaline phosphatase ($p=0.19$). Vitamin D3 deficiency was reported in 17 children with obesity (42%), and in 3 cases among the control group. In the subgroup of children with obesity and vitamin D deficiency, significantly higher values of C-reactive protein were recorded compared to the subgroup of children from the control group with normal vitamin D3 ($p<0.05$). Regarding cholesterol and LDL fraction, no significant differences were recorded for the subgroup of children with obesity and vitamin D3 deficiency compared with normal weight and vitamin D3 serum level ($p=0.7$, respectively $p=0.4$). However, HDL values were significantly lower ($p<0.05$).
Conclusions: The study once again emphasizes the need for testing of vitamin D3 status in children with obesity and correcting deficiencies.

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E-POSTER VIEWING: OBESITY

COMPARATIVE ANALYSIS OF DIETARY HABITS AND OBESITY PREDICTION: BODY MASS INDEX VERSUS BODY FAT PERCENTAGE CLASSIFICATION USING BIOELECTRICAL IMPEDANCE ANALYSIS

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Background and Aims: Obesity remains a widely debated issue, often criticized for the limitations in its identification and classification. This study aims to compare two distinct systems for classifying obesity: body mass index (BMI) and body fat percentage (BFP) as assessed by bioelectrical impedance analysis (BIA). By examining these measures, the study seeks to clarify how different metrics of body composition influence the identification of obesity-related risk factors.
Methods: The study enrolled 1255 adults, comprising 471 males and 784 females, with a mean age of 36 ± 12 years. Participants exhibited varying degrees of weight status, including optimal weight, overweight, and obesity. Body composition analysis was conducted using the TANITA Body Composition Analyzer BC-418 MA III device (T5896, Tokyo, Japan), evaluating the following parameters: current weight, basal metabolic rate (BMR), adipose tissue (%), muscle mass (%), and hydration status (%)
Results: Age and psychological factors like cravings, fatigue, stress, and compulsive eating were significant predictors of obesity in the BMI model but not in the BFP model. Additionally, having a family history of diabetes was protective in the BMI model (OR: 0.33, 0.11–0.87) but increased risk in the BFP model (OR: 1.66, 1.01–2.76). The BMI model demonstrates exceptional predictive ability (AUC = 0.998). In contrast, the BFP model, while still performing well, exhibits a lower AUC (0.975), indicating slightly reduced discriminative power compared to the BMI model.
Conclusions: BMI classification demonstrates superior predictive accuracy, specificity, and sensitivity. This suggests that BMI remains a more reliable measure for identifying obesity-related risk factors compared to the BFP model.

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E-POSTER VIEWING: OBESITY

IMPACT EVALUATION OF NUTRITION EDUCATION ON KNOWLEDGE, ATTITUDES, AND BEHAVIOR AMONG PRIMARY SCHOOL CHILDREN IN CHIANG MAI, THAILAND: A CLUSTER RANDOMIZED CONTROL TRIAL

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Background and Aims: The increasing prevalence of childhood obesity in Thailand highlights the need for effective interventions. Nutrition education is key to promoting healthy dietary behaviors to combat obesity. This study aimed to evaluate the impact of a nutrition education intervention on the nutrition knowledge, attitudes, and behaviors (KAB) of 4th- to 6th-grade students in Chiang Mai, Thailand.

Methods: A cluster randomized controlled trial involved four schools (121 students) in the intervention group and five schools (153 students) in the control group. The intervention included nine weeks of animated video modules on nutrition topics. Data on demographics, KAB, nutritional status, and dietary intake were collected. Non-parametric tests and the Difference-in-Differences (DID) approach were used for analysis.
Results: Baseline characteristics were similar between groups, except for students' age ($p = 0.003$) and ethnicity ($p = 0.021$). Post-intervention, no significant changes in weight-for-height or height-for-age were observed, though the intervention group had a higher proportion of overweight students ($p = 0.048$). Both groups showed reductions in cholesterol, iron, dietary fiber, and sodium intake, with increased white rice consumption. The intervention group showed notable changes in mango, Cucurbitaceae, and egg consumption. The DID analysis revealed a significant improvement in module 2 knowledge scores (DID = 0.6, $p = 0.001$), but no significant changes in overall KAB.
Conclusions: The intervention improved specific knowledge but had limited effects on overall KAB. Broader, long-term strategies may be required to influence sustained dietary behavior changes and effectively combat childhood obesity.

PV116 / #99

E-POSTER VIEWING: OBESITY

A NEW WAY TO UNDERSTAND THE DEVELOPMENT OF OBESITY: THE MICROBIOME-GROWTH AND ENERGY EXCRETION MODEL (MEEM)

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Background and Aims: Background: Over the years, the consensus has developed that weight gain is primarily caused by consuming more energy than is "burned" by the body (i.e. the energy balance model). However, evidence from earlier in the 21st century showed that weight gain was essentially independent of food intake [1] or energy expenditure [2], throwing the blame onto unproven options such as the so-called ultra-processing of foods [3]. 1. Foster, R.; Lunn, J. 40th Anniversary briefing paper: food availability and our changing diet. *Nutrition Bulletin* **2007**, *32*, 187-249. 2. Westerterp, K.R. Physical activity, food intake, and body weight regulation: insights from doubly labeled water studies. *Nutrition Review* **2010**, *68*(3), 148-154. 3. Elizabeth, L.; Machado, P.; Zinöcker, M.; Baker, P.; Lawrence, M. Ultra-processed foods and health outcomes: A narrative review. *Nutrients* **2020**, *12*(7), 1955. **Aims**: To introduce a new way to understand the intestinal microbiome, and that weight-gain is due to the drop in energy excretion following dysbiosis: microbiome malfunction.
Methods: This work relies only on literature review.
Results: We suggest that dysbiosis is effectively inherited as a malfunctioning microbiome is passed from mother to child down subsequent generations. Accordingly, our hypothesis suggests that developmental disease during childhood derails both the immune system and the gut-brain axis, thus explaining the range of observed disease [4]. 4. Smith, D. et al. On the inheritance of microbiome-deficiency: paediatric functional gastrointestinal disorders, the immune system and the gut-brain axis. *Gastrointest. Disord*. **2023**, *5*, 209-232.
Conclusions: Our analysis may help ameliorate current disease. Future prevention may prove possible.

PV117 / #216

E-POSTER VIEWING: OBESITY

SLEEP DISORDERED BREATHING PATTERN PREDISPOSES OBESE CHILDREN AND ADOLESCENTS TO NON ALCOHOLIC FATTY LIVER DISEASE

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Background and Aims: Background- Sleep-disordered breathing pattern (SDBP) is a well-established correlate of childhood and adolescent obesity and has been shown to modulate the development of metabolic complications. **Aim**- To determine the prevalence of SDBP in Indian children and adolescents with obesity and identify its impact on metabolic complications.
Methods: Methodology- 102 (68 boys 11.95 + 3.1 years) children and adolescents with obesity presenting to the Pediatric deptt of our hospital,screened for SDBP by PSQ,Chervin RD, metabolic complications (OGTT, ALT, lipid profile and BP), The impact of SDBP on metabolic complications was assessed using student T-test and chi-square test.
Results: Results- SDBP was identified in 34 patients (33.3%). Subjects with SDBP had similar age (10.8 + 2.9 years as against 11.9 + 3.1 years, p =0.085), BMI SDS (3.01 + 4.08 as against 2.4+ 0.8, p =0.33). Complications identified in the study included hypertension (n=33, 32.4%), steatohepatitis (n=22, 21.6%), dysglycemia (n=6, 5.9%), and dyslipidemia (n=22, 21.6%). Subjects with SDBP had higher ALT levels (52.9 + 42.7 as against 39.1 + 21.7, p =0.043) than those without it. LDL (88.2 + 20.4 as against 90.6 + 27.9, p =0.68), triglyceride (139.8 + 70.5 as against 119.3 + 55.1, p =0.13) and HDL (38.2 + 7.4 as against 40.9 + 8.3, p =0.14) levels were same in the two groups.
Conclusions: Conclusion- SDBP is common in obese Indian children and adolescents and predisposes to increasing SGPT levels. Greater prevalence of comorbidities in obese children and adolescents with SDBP. The prevalence of SDBP is independent of adiposity parameters and age.

PV118 / #12

E-POSTER VIEWING: OBESITY

PEDIATRIC OBESITY AND TSH LEVELS

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Background and Aims: Obese children are often screened and referred to pediatric endocrinology for abnormal thyroid function tests. It is well known that TSH levels are mildly increased in obese children but there are no evidence-based data that treating this elevation can change the outcome of obesity
Methods: To determine the prevalence of elevated thyroid-stimulating hormone (TSH) levels in obese children and adolescents referred to pediatric endocrinology clinics and its association with positive Anti Thyroid Peroxidase Antibodies. (Anti TPO) A retrospective review of medical records of 100 obese children referred for abnormal thyroid function tests was performed. Children were younger than 18 years of age with BMI above 95th percentile. Data about age, sex, body mass index, TSH, thyroid functions, and thyroid antibodies, were collected.
Results: All patients were referred for abnormal thyroid function tests and got repeated tests along with Anti TPO levels. Interpretation of TSH results showed a normal level for age in 65% and slightly elevated TSH but below 10 uiu/ml in 32% Only three obese patients (3%) had Hashimoto disease (positive Anti TPO) and elevated TSH requiring therapy
Conclusions: Mild elevation of TSH values in the absence of autoimmune thyroid disease is common in obese children and adolescents. This elevation is often a result of obesity rather than a cause. High Leptin levels in obese children have been postulated as an etiology.