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Late Breaking  
**ABSTRACTS**

**Abstract Number LBP01**

**The Prevalence of Type 2 Diabetes Mellitus among older people in Africa - 2000-2015: A systematic review and meta-analysis**

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**Background:** There is little information on the prevalence of diabetes in the older person ( $\geq 55$  years) from the African continent. We performed a systematic review to determine the prevalence of type 2 diabetes mellitus in Africa in individuals aged  $\geq 55$  years, reported in studies from 2000 to 30-June/2015 to provide accurate data for monitoring future trends.

**Methods:** A comprehensive literature search of databases was undertaken using an African search filter to identify type 2 diabetes mellitus prevalence studies. Data was extracted and synthesized from full copies of articles that met the inclusion criteria.

**Results:** Of total of 1473 citations, 49 studies in 16086 individuals met the inclusion criteria. The overall prevalence of diabetes was 13.7% (95% CI: 11.3-16.3) and was higher in the studies based on the oral glucose tolerance test [23.9% (17.7-30.7), 12 studies, n=3,415] than fasting blood glucose criteria [10.8% (8.9-13.9), 37 studies, n=12671],  $p < 0.001$ ; in non-STEPs [17.1% (-20.1)] than STEP studies [9.6% (6.6-13.0)],  $p = 0.003$ ; and in urban [(19.7% (15.0-24.9))] vs. rural settings [7.9% (4.6-12.0)],  $p = 0.0002$ ; but did not differ significantly across age groups, gender, sample size, year of publication, region and population coverage.

**Conclusion:** These data highlight the need to reduce diabetes risk factors and implement adequate management strategies. It is essential that uniform

diagnostic methods be used in Africa and elsewhere in order to examine the trends in diabetes prevalence and evaluate the success of diabetes prevention strategies. A collaborative initiative is required between key international and national diabetes and geriatric organizations to enhance diabetes care for older people in Africa and worldwide.

**Key words:** diabetes mellitus, Prevalence, Africa, aging, older adults, epidemiology, systematic review

**Abstract Number LBP02**

**The influence of second-hand cigarette smoke exposure during childhood and active cigarette smoking on Crohn's disease phenotype defined by the Montreal Classification scheme in a Western Cape population, South Africa**

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**Background:** Smoking may worsen the disease outcomes in patients with Crohn's disease (CD), however the effect of exposure to second-hand cigarette smoke during childhood is unclear. In South Africa, no such literature exists. The aim of this study was to investigate whether disease phenotype, at time of diagnosis of CD, was associated with exposure to second-hand cigarette during childhood and active cigarette smoking habits.

**Methods:** A cross sectional examination of all consecutive CD patients seen during the period September 2011-January 2013 at 2 large inflammatory bowel disease centers in the Western Cape, South Africa was performed. Data were collected via review of patient case notes, interviewer-administered questionnaire and clinical examination by the attending gastroenterologist. Disease phenotype (behavior and location) was evaluated at time of diagnosis, according to the Montreal Classification scheme. In addition, disease behavior was stratified as 'complicated' or 'uncomplicated', using predefined definitions. Passive cigarette smoke exposure was evaluated during 3 age intervals: 0-5, 6-10, and 11-18 years.

**Results:** One hundred and ninety four CD patients were identified. Cigarette smoking during the 6 months prior to, or at time of diagnosis was significantly associated with ileo-colonic (L3) disease (RRR = 3.63; 95%CI, 1.32 - 9.98,  $p = 0.012$ ) and ileal (L1) disease (RRR = 3.54; 95%CI, 1.06 - 11.83,  $p = 0.040$ ) compared with

colonic disease. In smokers, childhood passive cigarette smoke exposure during the 0-5 years age interval was significantly associated with ileo-colonic CD location (RRR = 21.3; 95%CI, 1.16 – 391.55,  $p = 0.040$ ). No significant association between smoking habits and disease behavior at diagnosis, whether defined by the Montreal scheme, or stratified as 'complicated' vs 'uncomplicated', was observed.

**Conclusion:** Smoking habits were associated with ileo-colonic (L3) and ileal (L1) disease at time of diagnosis in a South African cohort.

### Abstract Number LBP04

#### Early life insults and current socio-economic status on motor proficiency and psychological well-being in 8-yr old South African children of mixed ancestry

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**Research Question:** We examined the relationships between birthweight, maternal smoking/alcohol and socioeconomic status (SES) on motor proficiency (MP), psychological and emotional well-being in 8-yr old children from a working class community in Cape Town. These children (n=219) were part of a nutrition and pregnancy cohort.

**Methods:** Underweight-for-age (N=64, UFA) and appropriate weight-for-age (AFA, N=155) children were assessed using Bruininks-Oseretsky Test of Motor Proficiency (fine and gross motor skills, upper-limb coordination) and the Strengths and Difficulties Questionnaire. Skinfolds, height, weight and demographics were measured.

**Results:** UFA children were smaller, lighter and had lower fat free mass ( $p < 0.05$ ). AFA children had higher standardised motor proficiency and gross motor scores ( $p < 0.05$ ), after adjusting for fat free mass (FFM). Standardised motor proficiency was inversely correlated with fatness ( $r = -0.20$ ,  $p < 0.05$ ); fine motor and standardised response scores were lower in

children whose mothers who smoked during pregnancy. Psychological/emotional well-being scores were similar between birthweight groups, and maternal smoking/alcohol use during pregnancy were not related, but housing density predicted overall Difficulties score. Mean scores were above the 85% of those for North American children, suggesting psychological and emotional challenges.

**Conclusion:** We concluded that early life influences on motor proficiency, emotional and psychological wellbeing in these children were dependent in part, on the SES of the postnatal environment.

### Abstract Number LBP06

#### Associations between sleep habits, markers of socioeconomic status and obesity in South African school children

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**Research Question:** The National Sleep Foundation recommend that school-aged children (6-13y) obtain 9-11h of sleep per night. Children with short sleep (<9h) are at an increased risk for becoming obese. Exactly how much sleep children in South Africa obtain is unclear. Furthermore, the South African setting is complex given the large variations in socioeconomic status (SES). SES has the potential to impact sleep quantity and quality such that (i) lower SES families may have worse sleep conditions and (ii) children from lower SES settings are often required to wake early to be at school before 08h00 due to transport constraints. Therefore, the aim of this study is to describe the relationship between sleep characteristics (length, quality and timing), socioeconomic status, and obesity in South African school children.

**Methods:** This study forms part of the International Study of Childhood Obesity, Lifestyle and the Environment (ISCOLE) study. Data were collected on 472 South African children (185 male,  $9.8 \pm 0.7$ y,  $18.0 \pm 3.6$ kg·m<sup>-2</sup>) using a hip-worn accelerometer (for sleep parameters) and a survey completed by both the children and their parents.

**Preliminary results:** Mean sleep time for this cohort was 9.17±0.74h (range: 6.22-11.43h), with 38% attaining less than the recommended 9-11h per night.

**Abstract Number LBP07**

**The Safe Passage Study: Ideal platform to study DOHaD**

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**Research Question:** It is still uncertain to what extent exposure to alcohol and cigarette smoke during pregnancy contribute to diseases in later life.

**Methods:** The Safe Passage Study is a prospective, multidisciplinary study designed to: 1) investigate the association between pregnancy alcohol exposure, sudden infant death syndrome and stillbirth; and 2) determine the biological basis of the spectrum of phenotypic outcomes associated with exposure, as modified by environmental and genetic factors. The main study protocol was implemented for 12,086 pregnant women enrolled in the study from two clinical sites, one spread over North and South Dakota (5024) and the other at the Bishop Lavis and Belhar residential areas of Tygerberg in Cape Town (7062). A concurrent embedded study collected even more in-depth information (such as fetal ECG, biometry and movement, Doppler flow velocity waveforms and placental histology). Fetal assessments were done at 20-24, 28-32 and 34-38 weeks of gestation. Outcome was captured at delivery and at one and twelve months.

**Results:** Not yet available.

**Conclusion:** Detailed information has been collected. Follow up of this cohort, will provide unique information on the effects of prenatal exposure to alcohol and cigarette smoke on early indicators of adult disease.

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**Abstract Number LBP08**

**Probiotics reduces the severity of necrotizing enterocolitis in HIV-exposed premature infants**

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**Research Objective:** To assess the effect of probiotics on the incidence of NEC in high risk infants born to HIV-positive and HIV-negative women.

**Patients and Methods:** HIV-exposed and HIV-unexposed premature (<34 weeks gestation) infants with a birth weight of ≥500g and ≤1250g were randomized to either the probiotic or placebo group. The probiotic consisted of 1x10<sup>9</sup> CFU, *L. rhamnosus* GG and *B. infantis* per day and was administered for approximately 4 weeks. NEC was graded according to Bell's criteria.

**Results:** 74 HIV-exposed and 110 HIV-unexposed infants were enrolled and randomized (mean birth-weight, 987g; mean gestational 28.7 weeks). The incidence of death and NEC did not differ significantly between the HIV-exposed and unexposed groups but a significant difference was found for total NEC incidence between the study and control groups (p=0.029). In the HIV-exposed group that received probiotics showed a reduced severity in the incidence of NEC according to Bells staging criteria (p=0.045).

**Conclusion:** Probiotic supplementation reduced the incidence of NEC in the premature very low birth weight infants; however results failed to show a lower incidence of NEC in HIV-exposed premature infants. A reduction in the severity of disease was found in the HIV-exposed group.

**Abstract Number LBP09**

**Pregnant in a foreign city: A qualitative analysis of diet and nutrition for cross-border migrant women in Cape Town, South Africa**

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**Abstract:** Given the importance of maternal nutrition to maternal and infant health, how do migrant women navigate their food environment during pregnancy? Foods

are imbued with new meanings in a new place. In low-and-middle-income countries including South Africa, the food environment leaves the poor, including migrants, vulnerable to both undernutrition and overnutrition. Thus one of the mechanisms through which economic and social vulnerability may be experienced is via the foods one consumes. Examining food perceptions in the context of pregnancy offers a potentially powerful lens on wellbeing. Methods: Nine focus group discussions (N=48) with Somali, Congolese, and Zimbabwean men (n=3) and women (n=6), and 23 in-depth interviews with Congolese, Somali and Zimbabwean women living in Cape Town were conducted, exploring maternal and infant nutrition. We used thematic analysis to guide analysis. Results: (1) Participants described longing for self-categorised “traditional” foods, yet had limited access and little time and space to prepare these foods in the manner they had back home. (2) Sought-after foods available—and even celebratory—for migrants in Cape Town during pregnancy tended to be calorie-dense, nutrient poor fast foods and junk foods. (3) The fulfilment of cravings were presented as the embodiment of health during pregnancy. (4) Iron-folic acid supplementation was perceived as curative rather than preventive. (5) While participants did not describe hunger during pregnancy, food scarcity seemed possible. Discussion: Food perceptions during pregnancy reflected migrants’ orientation towards home. Fast foods were widely acceptable and available during pregnancy; given that these foods were not perceived to have negative health consequences, which may offer insights into growing obesity in LMIC. Interventions targeting migrants should consider the symbolic nature of food, the increasingly globalised food environment in urban LMIC settings, as well as the contexts in which health perceptions evolve.