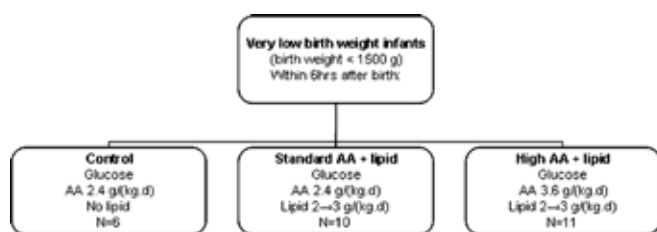


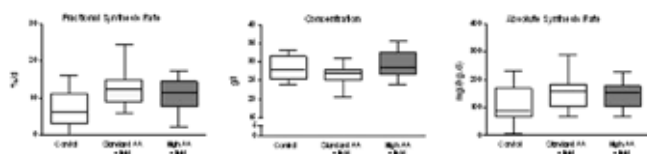
(Figure 1). Lipids were started at 2 g/(kg.d) and increased to 3 g/(kg.d) the following day.



Abstract 356 Figure 1 Study design

At postnatal day 2, infants received a primed continuous infusion of [ $^{13}\text{C}_6$ ,  $^{15}\text{N}$ ]leucine. Mass spectrometry was used to determine the fractional and absolute albumin synthesis rates (FSR and ASR, respectively).

**Results** Albumin FSR, concentration, and ASR were not significantly different between groups (Figure 2; median, IQR).



Abstract 356 Figure 2 Albumin FSR, concentration, and ASR

**Conclusion** Albumin concentration was in normal range in all groups. Albumin synthesis rates and concentration are not increased upon introduction of 2g lipids/(kg.d) and 3.6g AA/(kg.d) from birth onwards.

### 357 HUMAN MILK BILE SALT-STIMULATED LIPASE: THE DYNAMIC CHANGES DURING LACTATION

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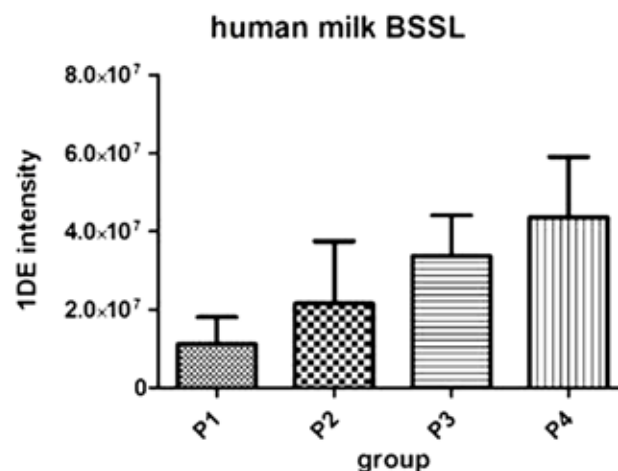
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**Background and Aims** The efficient digestion of milk triglycerides is guaranteed by the combined action of gastric lipase, colipase-dependent pancreatic lipase, and bile salt-stimulated lipase (BSSL). Human milk contains the major part of BSSL. Data regarding the dynamic changes of human milk BSSL are scarce.

The aim of this study was to evaluate the changes of human milk BSSL content at different stages of lactation by proteomic techniques.

**Methods** We designed a prospective longitudinal study. Human milk samples were collected from 18 healthy mothers who delivered a singleton term newborn (Gestational age 37–41 weeks) on the 3<sup>th</sup>, 7<sup>th</sup>, 15<sup>th</sup>, and 60<sup>th</sup> postpartum day. Proteomic techniques were carried out to evaluate different profile expression of BSSL in milk: in particular SDS-PAGE analysis coupled with LC-MS MS mass spectrometry.

**Results** BSSL levels increased significantly from the 3<sup>th</sup> to the 60<sup>th</sup> postpartum day (figure).



Abstract 357 Figure 1 Human milk BSSL at different study points

**Conclusions** The increased levels of human milk BSSL could compensate for low endogenous capacity to digest dietary fat in early life as efficient absorption of lipids is important, not only for energy utilization but also for optimal growth and functional neurodevelopment.

### 358 THE EFFECT OF GALACTAGOGUE HERBAL TEA ON OXIDANT AND ANTI-OXIDANT STATUS OF HUMAN MILK

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**Background and Aims** Human milk (HM) has a number of anti-oxidant constituents which may protect newborns against oxidative damage. Poor HM production is the most frequent cause of breastfeeding failure. Galactagogues are believed to stimulate initiation and maintenance of HM production. Herbal tea containing fenugreek has recently been presented in the market. We aimed to compare global oxidant and antioxidant capacity of HM among mothers drinking galactagogue herbal tea or not.

**Methods** Volunteer mothers 18–35 years of age without any antenatal or perinatal risk factors. Milk samples were collected in the first day after delivery. Mothers were randomly assigned to receive galactagogue herbal tea (Humana still-tee®) 3 cups/day or same amount of water as placebo. Second samples were obtained 7–10 days later. The total antioxidant capacity (TAC), total oxidant status (TOS) and the oxidative stress index (OSI) were compared between groups.

**Results** Subjects were randomly assigned to herbal tea (n=40) and placebo (n=40) groups. In first and second samples TAC, TOS and OSI were similar in both groups. TAC (p=0.375 and p=0.058) was lower and TOS (p=0.382 and p=0.118) was higher in second samples compared to first samples in both groups but not significantly. In second samples OSI (p=0.024 and p=0.007) increased significantly compared to first day in each group.

**Conclusions** Galactagogue herbal tea used in this study has no effect on global oxidant and antioxidant status of HM. Oxidative stress index increases in course of lactation compared to colostrum.

### 359 INTRASUBJECT VARIATION IN ESTIMATES OF NEONATAL INTRAHEPATOCELLULAR LIPID USING 1H NMR SPECTROSCOPY

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**Background and Aims** To date there are no reports of intra-subject variability for intrahepatocellular lipid (IHCL) assessed using 1H NMR spectroscopy in neonates. This study utilized a high-field (3-Tesla) MRI scanner to perform repeated assessment of IHCL on neonates.

**Methods** Measurements were acquired using a 10 x 10 x 10 mm voxel during 90 seconds. IHCL was assessed using the ratio between the lipid and water peaks. The within subject coefficient of variation (WS CV) was calculated.

**Results** In 15 babies, MRS was measured twice in each lobe in the same region of interest. Values > 0.2 gave reproducible results; the WS CV was 12% on the right and 3% on the left. MRS was measured once in each lobe in 32 babies (GA at birth median 36 weeks, range 24–42; GA at scan median 42 weeks, range 37–46). Among 17 babies with MRS > 0.2 on both sides WS CV calculated between left and right for was 54% (95% CI 50%–58%) and Mean (SD) was 0.73 (0.33) on the right and 0.58 (0.42) on the left (p<0.005).

**Conclusions** Neonatal IHCL measured using 3T is markedly lower than other age groups and systematically higher on the right than the left possibly reflecting the influence of lobe size and cardiac pulsation. Values ≤ 0.2 are imprecise and should be classified as below the limit of quantification. The optimal imaging strategy is likely to use a consistent region of interest within the right lobe.

### 360 SEX DIFFERENCES IN ADIPOSE TISSUE QUANTITY AND DISTRIBUTION IN NEWBORN INFANTS

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**Background and Aims** Adipose tissue (AT) quantity and distribution influence metabolic health. In adult life women have greater total and subcutaneous AT, but men have greater internal abdominal AT (*Gender Medicine*, 2009; 6: 60–75). We aimed to explore AT volume and distribution in newborn male and female infants using magnetic resonance imaging (MRI).

**Methods** A retrospective observational study was performed, using an existing database of neonatal body composition data, to compare male and female healthy term infants.

#### Results

Abstract 360 Table 1 Anthropometry at scan in male and female infants

Measurement; mean (SD)	Male (n=95)	Female (n=90)	p value
Weight (g)	3590 (456)	3475 (496)	0.104
Length (cm)	53.0 (2.2)	52.7 (2.8)	0.435
Head circumference (cm)	36.4 (1.3)	35.8 (1.3)	0.002

Abstract 360 Table 2 AT volume in male and female infants

AT volume (ml); mean [95% CI], after adjustment for scan weight	Male (n=95)	Female (n=90)	p value
Total AT	746 [718, 774]	841 [812, 869]	<0.001
Abdominal superficial subcutaneous AT (SSAT)	102 [97, 107]	122 [117, 128]	<0.001
Non-abdominal SSAT	540 [519, 560]	606 [586, 627]	<0.001
Abdominal deep subcutaneous AT (DSAT)	14 [13, 15]	18 [17, 20]	<0.001
Non-abdominal DSAT	12 [11, 13]	13 [12, 14]	0.008
Abdominal internal AT (IAT)	22 [20, 24]	21 [20, 23]	0.672
Non-abdominal IAT	56 [53, 60]	59 [55, 63]	0.310

**Conclusions** Female newborn infants have higher total and subcutaneous AT, but similar internal abdominal AT compared to males. Longitudinal study is required to assess gender specific alterations in AT distribution during infancy and childhood, and may identify possible influences of internal abdominal AT development in males.

### 361 OVERWEIGHT AND SCHOLASTIC ACHIEVEMENT IN CHILEAN SCHOOL-AGE CHILDREN

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**Background and Aims** Overweight has been linked to health problems and deteriorate school outcomes. Some studies show that overweight school-age children have lower scholastic achievement (SA) but the evidence is controversial. The aim of this study was to determine the association between overweight and SA in elementary fifth grade school children from the Chile's Metropolitan Region.

**Methods** This was an observational, cross-sectional and correlational study. Data were reported for 477 children of both sexes and from 26 schools (public, subsidized and non-subsidized). SA was measured with the Education Quality Measurement System test score (SIMCE), of national coverage. The current nutritional status was assessed through the body mass index z-score (z-BMI), controlling for dietary and physical activity behaviours, socio-economic status (SES, family and educational factors). Data were processed using descriptive statistics and multiple linear regressions from the Statistical Analysis System software (SAS).

**Results** Overweight children had not significantly lower SA compared with non-overweight children (P>0.05). SES (P<0.001), type of school (P<0.01), the number of repeated grades (NRG) (P<0.05) and parents' educational level (P<0.05) were the variables that correlated with SA. SES, the NRG and mother's educational level, were the variables with the greatest explanatory power for SA variance. The current nutritional status expressed as z-BMI did not contribute to explain SA variance.

**Conclusion** Current nutritional status was not associated with SA. SES, the number of repeated grades and mother's educational level could be strong predictors of SA.

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### 362 HIGH INCIDENCE OF IRON DEFICIENCY IN HEALTHY YOUNG INFANTS IN THE NETHERLANDS: PRELIMINARY RESULTS OF THE IROSTAT STUDY

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**Background** Iron deficiency (ID) and iron deficiency anemia (IDA) during infancy are associated with poor neurological development. A food consumption survey in the Netherlands showed that the median iron intake of infants, aged 2 to 3 years, was below the advised adequate intake of 7 mg/day.

**Aim** To investigate the iron status in healthy young infants in the Netherlands and to identify risk factors for ID.

**Methods** We conducted a multi centre, observational study in healthy young infants aged 0.5 to 3 years. We measured serum