Results: We found no relationship between n-6 PUFAs either in maternal plasma (MP) or in cord plasma at birth and HM at the 6th week of lactation. In contrast, there were significant positive association between n-3 PUFAs in HM at the 6th week of lactation and n-3 PUFAs in the mothers at delivery (table). Similarly, we found significant positive correlations between cord plasma C20:5n-3 values at birth and the most important n-3 long chain PUFA metabolites, the C20:5n-3 ($r=0.45$, $p<0.001$) and C22:6n-3 ($r=0.30$, $p<0.05$) values in HM at the 6th week of lactation.

	HM C18:3n-3	HM C20:5n-3	HM C22:5n-3	HM C22:6n-3
MP C18:3n-3	0.10	0.21	0.28a	0.24
MP C20:5n-3	-0.07	0.29a	0.18	0.37b
MP C22:5n-3	-0.14	0.45c	0.20	0.30a
MP C22:6n-3	-0.22	0.20	0.10	0.18

[Table]

^a= $p<0.05$, ^b= $p<0.01$, ^c= $p<0.001$

Conclusion: Our findings that maternal n-3 PUFA status at delivery is significantly and positively associated to n-3 PUFA content of human milk at the 6th week of lactation call further attention to optimal n-3 PUFA supply during pregnancy.

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THE EFFECT OF LACTOBACILLUS RHAMNOSUS GG SUPPLEMENTED ENTERAL FEEDING ON THE MICROBIOTIC FLORA OF PRETERM INFANTS-DOUBLE BLINDED RANDOMIZED CONTROL TRIAL

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Aim: The intestinal flora of preterm infants, dominantly presents with decreased amounts of probiotics. This is enhanced by formula feeding. The aim of this double blinded randomized control trial was to compare the stool flora of bottle fed preterm infants randomized to receive lactobacillus rhamnosus GG 3×10^9 or placebo with each enteral feed.

Method: Within 0-3 days after birth 46 healthy preterm enterally fed infants were enrolled to receive either the probiotic or placebo. Rectal and throat swabs were preformed together with faecal sampling at study day 7, 21, 42. The presence of lactobacillus rhamnosus GG, colonization and somatic growth were recorded during the study. **Results:** In the probiotic fed group, both the number of lactobacillus in the stool and the amount of colonized infants were significantly higher ($p=0.014$ and $p=0.03$ respectively) on study day 7, as well as study day 21 ($p=0.024$ and $p=0.022$ respectively). At the same time we did not note a significant difference in e.coli colonization on any of the following study days 7,21,42 ($p=0.93$, $p=0.37$ and $p=0.47$ respectively). Further on we did not show a significant difference in weight gain upon discharge between the two study groups ($p=0.567$, 95% CI (-168,305)).

Conclusions: An preterm infant formula with a addition of probiotics leads to a rapid growth of lactobacillus rhamnosus in the gut of bottle fed infants, but does not have a potential to decrease the amount of pathogenic organisms, nor to increase weight gain during enteral nutrition.

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HYDRATION OF FAT-FREE MASS IN HUMAN NEWBORNS: ASSESSMENT AND IMPLICATIONS WHEN CALCULATING BODY COMPOSITION FROM BODY DENSITY

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Background and aims: Assessment of infant body composition is of interest when investigating nutritional requirements and when early origins of overweight and obesity are studied. Equipment (PeaPod) for assessing infant body volume accurately and conveniently has recently become available. Together with body weight, body volume can be used to calculate body density. Body composition can be calculated from body density using the "Fomon" or the "Butte" model. These models differ regarding the water content in fat-free mass (hydration factor, HF). We assessed HF and its biological variability in newborns and compared results calculated using the two models at one and 12 weeks of age.

Methods: Body volume and body weight were measured in 12 healthy fullterm infants less than

10 days old using PeaPod. Their total body water was assessed using isotope dilution. Furthermore, PeaPod was used to assess body volume and body weight of 108 healthy fullterm infants at one and 12 weeks of age.

Results: HF was found to be 80.9% with a low biological variability (0.81% of average HF). Values for body fat (%) calculated using the "Butte" model were significantly lower than when using the "Fomon" model at one week ($p < 0.05$) and 12 weeks ($p < 0.01$). The difference between the two models was particularly large at one week, probably due to different HF-values.

Conclusions: Our HF-value is in agreement with that in the "Fomon" model and our results support the conclusion that this model is preferable when calculating body composition from body density in infants.

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VITAMIN A AND ZINC DEFICIENCY IN SCHOOL-AGED CHILDREN IN A DEVELOPING COUNTRY, TURKEY

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Background and aims: Nowadays, asymptomatic micronutrient deficiencies are gaining importance as a public health problem and getting attention of the health authorities. Vitamin A and zinc deficiencies are common micronutrient deficiencies like iron and iodine deficiency. This study was undertaken to investigate the prevalence of asymptomatic vitamin A and zinc deficiency among school-aged children and to evaluate the affecting factors.

Methods: The study was carried out in schools in Ankara Turkey from April to May 2009. 585 girls and 478 boys, a total of 1063 healthy children aged 5-16 years were taken in to the study. Serum retinol, zinc, ferritin, and hs-CRP levels and complete blood count of each case were determined. A questionnaire was developed to collect socio-economic and demographic information of the participants. Data on dietary pattern of the children, illness history for the previous two-week period, vitamin supplementation were questioned. **Results:** Zinc deficiency was observed in 27.8% of the cases where as only 2.2% of the cases had suboptimal vitamin A

levels. There were significant positive correlations between serum retinol and hemoglobin values and statistically significant negative correlation between serum retinol level and ferritin and hs-CRP.

Conclusions: Even though vitamin A deficiency is not an important health problem among school-aged children in Ankara, Turkey, zinc deficiency seems to be still an important problem. Nationwide prevention programmes must be developed in order to prevent the widespread micronutrient deficiencies.

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LIPID METABOLISM IN SMALL FOR GESTATIONAL AGE INFANTS AT BIRTH AND AFTER 72 H OF AGE

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Aims. The aim of our study was to investigate association between birth weight and lipid levels on birth and after 72 h of age.

Methods: 50 term singleton small for gestational age (SGA) and 48 appropriate for gestational age (AGA) newborns were included in study. Groups were matched for gestational age. Concentrations of total cholesterol (t-CHOL), high density lipoprotein (HDL)-cholesterol, low density lipoprotein (LDL)-cholesterol and triglycerides were measured in cord blood and after 72h of age. We compared groups according to ponderal index (PI): below than 10th percentile SGA1 or above than 10th percentile SGA2.

Results: Triglycerides were significantly increased in SGA infants on birth (0.57 ± 0.37 vs. 0.39 ± 0.24 mmol/l, $p < 0.01$). Levels of t-CHOL, HDL and LDL were similar in SGA and AGA infants. Higher levels of t-CHOL and LDL were found in SGA newborns after 72 h of age (2.75 ± 0.74 vs. 2.42 ± 0.51 mmol/l, $p < 0.05$; 1.15 ± 0.54 vs. 0.82 ± 0.45 mmol/l, $p < 0.05$), whereas difference in levels of triglycerides and HDL were not significant. SGA1 infants had also higher values of triglycerides in cord blood than SGA2 group ($p < 0.01$) but in day three triglycerides were statistically less in SGA1 group ($p < 0.05$). Other parameters showed no difference between groups at birth as well as in day three.

Conclusions: Our data suggest that intrauterine growth restriction change fetal lipid metabolism.