71 METABOLIC BALANCE STUDIES IN LBW INFANTS FED FOUR DIFFERENT FORMULAS. III) CALCIUM AND PHOSPHOROUS BALANCES. Gnazzo N., Calvo E., Co zarin A., Boccaccio C., Sola H. and O'Donell A.M. CESNI (Center of Studies on Infant Nutrition) H.M.I.R. Sarda. Buenos Aires. Argentina.

Ca and P balance data in LBW infants fed four different formulas are shown below. Ca was determined by specific electrode and atomic absorption; P by a modification of Fiske-Subarow's method.

	Vital Inf.	Nan	S26	3242
Ca intake (mg/Kg/d)	153.3±21.4	129.4±15.5	112.8±15.4	180.5±11.7
% Ret	31.5±19.0	42.7±15.5	31.5±15.4	48.1±11.7
P intake (mg/Kg/d)	108.2±15.1	72.0±8.6	74.6±3.8	90.1±10.1
%Ret	40.4± 7.3	55.7±11.8	42.2±14.0	52.0±13.8

Ca retention correlated with intake (r=0.83 p 0.001) except for formula 3242 (r=0.55 p 0.05). The correlation between fecal Ca and fat malabsorption for V.I., Nan and S26 was significant (r=0.54 p 0.01). No correlation was found in formula 3242, surely due to its high MCT content and excellent absorption coefficient in all babies fed this formula.

P retention correlated with intake (r=0.94 p 0.001) in all formulas except S26 (r=0.57 p=NS). Fecal P excretion was 12.1 ± 6.7% on intake for every formula, but 3242 in which it was 28 ± 10.2% of intake. Retention varied within wide ranges 22 to 76.

72 EASY-ABSORPTION DIET AS A THERAPEUTIC COMPLEMENT IN CHILDHOOD DIARRHOEA. Eichenberg J., Schmidt B.J. and Hadorn, B. (Department of Pediatrics. Sorocaba Medical School.PUC.S.Paulo.Brazil & Univ. Kinderklinik Graz,Austria.

The study was based on the Baukasten Principle("Feeding with isolated components"), offering an easily digestible nourishment and an adequate protein and calory supply. 38 infants less than 1 year old, with diarrhoea and electrolytic disorders of 2nd and 3rd degrees and malnutrition on 1st to 3rd degree were studied. The patients were divided into two groups: Group I - 18 infants (11 males, 7 females) who received a conventional feeding program, rehydrations and reintroduction of cow or powdered milk, initially diluted and afterwards in its pure form. Group II - 20 infants (11 males, 9 females) who received a special diet, composed of partially hydrolyzed lacto-albumin, 3% glucose, dextrino-maltose, corn oil, a mixture of mineral salts and oligometals, and vitamins. All these components were mixed with water, thus forming an easily absorbable feeding product, with a concentration of 302,8 ± 1.2 mOsm/l.

The results obtained were statistically significant, showing better evolution of Group II which received the new formula. Considering the good tolerance towards the new product, as well as its easy digestion and absorption, the authors recommend it as a really valuable therapeutic complement in infant diarrhoea.

73 MAGNESIUM METABOLISM DURING EARLY THERAPY OF DIARRHEAL DEHYDRATATION IN MARASMIC INFANTS. Carraza F. R., Speroto G. and Cardoso A.L. Instituto da Criança, Hospital das Clinicas of Faculty of Medicine, São Paulo University. Brazil.

Metabolic studies were performed in 12 dehydrated marasmic infants during 6 consecutive days divided in 2 groups. Group 1 (control) was treated with a standard regimen of fluidotherapy and refeeding after 24 h with increasing amounts of cow milk. Group 2 besides a standard therapy, received 1 to 2 mEq/Kg/day of Mg, intravenously initially and there after I.M. The mean retention of Mg at the end of study was greater in the group 2 (2.27 ± 1.74 mEq/Kg) than in the group 1 (0.80 ± 1.01 mEq/Kg) and the retention of Mg was much greater than could be accounted for the corresponding retention of N. The mean plasma Mg was significantly greater in the group 2, during all the study. In the control, after the 2nd day, we observed two infants with severe hypomagnesemia, without clinical signs. The mean concentration of muscle Mg in the control fell at 7th day but not in the group 2. We conclude that in the diarrheal dehydratation in marasmic infants there is a Mg depletion, that should be corrected. We suggest the administration of 1 mEq/Kg/day (0.3 of maintenance and 0.7 of repair), plus a calculated amount corresponding to a on-going losses by severe diarrhea.

74 METABOLIC AND GROWTH STUDIES IN S.L.B.W. INFANTS FED AND EXPERIMENTAL FORMULA. Boccaccio C., O'Donell A., Cordano A., Gnazzo N. and Cozzarin A. CESNI (Center for Studies of Infant Nutrition).H.M.I.R.Sarda.Bs.As.Argentina.

Six SLBW were fed for 4 weeks an experimental high protein and Ca formula(E%: 81Kcal/dl). Metabolic data are presented in other abstracts. Average intakes were (Per Kg/Day): En: 143 ± 19 Kcal; Prot: 4.3 ± 0.5 grs; Ca: 167 ± 22 mg; Na: 2.5 ± 0.3 mEq. Weight gain was very close to the gain of the Reference Fetus of Zeigler et al.: 109 ± 9 %. Weight gain in relation to energy intake was in close agreement with O'Donnell et al. estimates. In spite of high protein intakes, B.U.N. was 6.8 ± 1.8 mg./dl; plasma and urine osmolality were 236 ± 13 (220-251) and 167 ± 4 (116-216) respectively. Metabolic acidosis was not detected. About the 3rd week, babies showed a trend to decrease serum Alb. This study confirms the high protein requirements of SLBW. The growth pattern in relation to nutrient intake might reflect a newly formed body mass of adequate composition. On-going studies might valide thid hypothesis.

75 FORTIFICATION ON BISCUITS WITH HEME-IRON. SENSORY EVALUATION AND IRON BIOAVAILABILITY. M.Amar,N.Cartagena, J.King, F.Pizarro and A. Stekel. Institute of Nutrition and Food Technology, University of Chile, Santiago.

School age children in Chile receive 30g of biscuits each day through a national food supplementation program. Wheat flour biscuits were fortified with 4,6 and 8% of a hemoglobin concentrate obtained from cattle blood. The 4% and 6% fortified biscuits were considered acceptable for consumption and did not show unfavorable changes after storage for 6 months at room temperature or 40°C. Bioavailability of the heme-iron was studied isotopically in 15 children preparing biscuits with radioactive hemoglobin obtained from a ^{55}Fe-injected calf. Each child received 30g of biscuits containing 5.5mg of heme-iron and 2.1 uCi of ^{55}Fe on day 1 and a solution of ferrous ascorbate (2mg iron, 0.7 uCi ^{59}Fe) on day 2. Absorption was calculated from the circulating radioactivity on day 15 according to Eakins and Brown. Geometric mean absorption of the fortification iron was 19.7% with a heme-iron/ferrous ascorbate absorption ratio of 0.65. Fortification of biscuits with hemoglobin appears as a promising way of providing children with bioavailable iron.

76 INFLUENCE OF PRENATAL NUTRITION ON FETAL GROWTH. Muzzo, S. and Zvaigahft, A. Institute of Nutrition and Food Technology, Santiago. Chile.

The consecuences of malnutrition before and during the pregnancy on rat fetal growth are well known. Early postnatal malnutrition (EPM) decreases weight, DNA content and estradiol receptors in uteri. There is no recovery following rehabilitation. We tried to determine whether EPM causes intrauterine malnutrition in the next generation or whether nutritional deficit during pregnancy must also be present. EPM was induced increasing litter size during the suckling period. The following groups were formed: 1) Normal nutrition postnatally and during subsequent pregnancy. 2) Normal postnatally followed by 8% protein diet during pregnancy. 3) EPM and normal diet during pregnancy. 4) EPM followed by 8% protein diet during the pregnancy. Fetuses were obtained on day 21 of gestation. Weights and nuclei acids were measured in liver, placenta and brain. A significantly decrease of weights and nucleic acids content of liver and placenta was observed in groups 2 and 4. Nuclei acid content and weight of brain was also decreased only in group 4. Nutrient deficiencies during pregnancy alters liver and placental growth, while previous EPM in the mother also alters brain growth, suggesting permanent consequences in this organ.