

LSBMD of lactating adolescents at 9-24 weeks pp ($0.999 \pm 0.114 \text{ g/cm}^2$) was 11.7% lower ($p < 0.05$) than in those at 3-8 weeks pp ($1.131 \pm 0.126 \text{ g/cm}^2$). TBMD, but not LSBMD, correlated with calcium intake ($r = 0.50$, $p = 0.06$), weight ($r = 0.63$, $p < 0.01$), height ($r = 0.66$, $p < 0.01$), and MAMC ($r = 0.81$, $p < 0.01$). These preliminary results suggest that the reduction in LSBMD during lactation is very intense in adolescents, over twice reported values for adult women. Calcium intake may contribute to total bone mass but it does not appear to influence the loss of bone mass during lactation in adolescents.

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Soy isoflavone extracts affect bone mineralization in lactating rats.

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Although research has shown that soy isoflavones increase bone density in peri- and postmenopausal women, scarce data exists on the skeletal effects of soy isoflavone intake during lactation, another critical lifecycle stage for bone mineralization. Our hypothesis is that soy isoflavones will attenuate the bone loss associated with lactation. Immediately after parturition, lactating rats were randomly assigned to one of four nutritionally-complete diets ($n = 12/\text{group}$) in which casein-based diets were supplemented with different levels of soy isoflavone extracts (ADM Novasoy, Decatur, IL): 0, 2, 4, or 8 mg isoflavones/g protein. At weaning, 6 animals from each group were sacrificed for immediate post weaning bone measurements. The remaining 6 rats from each of the groups continued on their respective diets for 4 wks when bones were collected. Feed intakes and body weights of dams immediately or 4 wks post weaning were not significantly different ($p = 0.596$ and $p = 0.647$, respectively) when the combined soy isoflavone groups were compared with the control.

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Effects of Chicken Extract on Milk Composition in Lactating Women, Jane C-J Chao¹, Hsu-Ping Tseng¹, Ching Wen Chang², Yi-Yi Chien², Heng Kien Au², Jium-Rong Chen¹, Fan Kao³. ¹Graduate Institute of Nutrition and Health Sciences, Taipei Medical University, 250 Wu-Hsing Street, Taipei, Taiwan 110 Taiwan, ²Department of Obstetrics and Gynecology, Taipei Medical University Hospital, Taipei, Taiwan, ³Department of Nutrition and Health Technology, Taipei Medical University, Taipei, Taiwan

This study was to investigate the effect of chicken extract on growth and development related proteins/peptide in milk of lactating women. The healthy pregnant women with age below 40 years old, natural delivery of single birth, less than three pregnancy numbers, no complication, non-vegetarians, without smoking, drinking and drug abuse were recruited. Thirty pregnant women were evenly divided into the control or chicken extract (CE) group. The CE group was given one bottle (70 g) of Brandi's Essence of Chicken three times a day within 30 min after each meal from the 37th week of pregnancy to 3 days post-parturition. All women in the CE group consumed chicken extract at least for 10 days. Milk was collected twice a day in the morning and afternoon from 1 to 3 days post-parturition. The results showed that total protein, casein, and lactalbumin levels in milk were not significantly different between the control and CE groups. However, the levels of lactoferrin and epidermal growth factor (EGF) were significantly increased by 37 and 62% ($P < 0.05$), respectively, in the CE group. Therefore, chicken extract elevates lactoferrin and EGF in milk of lactating women. (Supported by Cerebos Pacific Limited)

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Awareness, Comfort Level, and Counseling of Breastfeeding Among Physicians and Nurses in Mississippi.

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To measure the possible impact of the national *Loving Support* campaign among health providers in Mississippi, a mail survey was conducted among 98 physicians and 104 nurses using a self-administered questionnaire. A significantly higher proportion of nurses than physicians were aware of the *Loving Support* campaign. The comfort level in breastfeeding counseling increased significantly among nurses than physicians (31% vs. 9%, $p < 0.001$). Ninety percent nurses and only 41% physicians referred their

clients to WIC for provision of a breast pump in the past four years. A significantly higher proportion of nurses adopted a number of changes in dealing with problems associated with breastfeeding compared to their physician counterparts. The observed difference in awareness, comfort, and counseling activities between the providers may be partly explained by the differential impact of the campaign, or partly by their experience and training, or both. More efforts are needed to continue breastfeeding outreach activities and training for providers, especially addressing physicians. Supported by USDA Grant 59-3198-7-521.

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Standard Nutrition in Pre-Mature Infants Does Not Provide Optimal Growth.

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Optimal nutrient requirements in premature infants are not well defined. For example, standard U.S. human milk fortifiers (HMF) have increased their protein content from 3.0 to 3.5 g/kg/d the past year with the goal of matching intrauterine (I) growth rates (GR). The aim of this study was to examine GR in a group of neonates ($< 1500 \text{ g}$, $n = 8$) receiving standard of care nutrient intake to determine if their GR is comparable to IGR. Infants with congenital anomalies were excluded. In all cases, standard care procedures were met for both health care and nutritional therapy with standard levels of protein (3.5 g/kg/d), energy (120 kcal/kg/d) and micronutrient intake. At birth, the premature babies with a gestational age (GA) of 28.0 ± 2.1 weeks weighed $1.047 \pm 0.231 \text{ kg}$, which compares favorably to a standard 28-wk fetus (1.1 kg). After six weeks of standard care, babies weighed $1.696 \pm 0.214 \text{ kg}$ resulting in a gain of $15.5 \pm 2.3 \text{ g/d}$ or $< \text{half of the IGR goal (39.3 g/d)}$. Babies gained $24.0 \pm 4.7 \text{ g/d}$ during the last 3 weeks of study. Therefore, optimal neonatal growth does not occur with standard nutrient intakes, suggesting that further research is required to define optimal intake of protein and other nutrients.

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Growth of healthy term infants fed a powdered casein hydrolysate-based formula (CHF).

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The purpose of the study was to compare wt and wt gain of healthy term infants fed a powdered (PWD) CHF to that of infants fed a liquid (RTF) CHF. A masked, randomized, parallel study was conducted. Infants were enrolled between 0-9 d of age and fed either a RTF or PWD CHF until 112 d of age. Anthropometric measurements were collected at entry and 14, 28, 56, 84 and 112 d and gains were calculated from 14 to 112 d. Intake and stool patterns were assessed following entry and prior to each visit. Questionnaires were completed by parents at 112 d. The primary analysis was intent to treat. 195 infants (100 RTF, 95 PWD) were enrolled and 137 (70%) completed. Exits due to formula intolerance were similar between groups (21 RTF, 16 PWD). Wt and wt gain of infants fed RTF and PWD were similar. Mean wt gains were $23.9 \pm 0.7 \text{ g/d}$ for RTF and 23.4 ± 0.7 for PWD. No differences were observed in length or HC or their respective gains. Infants fed PWD had significantly lower formula intakes and passed significantly fewer stools/d. Stool consistencies were similar except at entry when infants fed RTF had firmer stools. The majority of parents responded that their infant did well/very well on the formula (72% RTF, 30% PWD) and they were somewhat/very satisfied with the formula (78% RTF, 85% PWD). The results confirm that infants fed a PWD CHF had similar growth and tolerance when compared to infants fed a marketed RTF CHF. (Supported by RPD, Abbott Laboratories)

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Non-Exclusively Breastfed Infants Under Six Months of Age Are at Risk for Anemia and Vitamin A Deficiency

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A cross-sectional study of full term breastfed infants ages 1-6 months, from a peri-urban community of South Africa was undertaken to determine the