

# **Chemical Studies on Human Breast Milk.**

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## **Abstract:**

The variation in some chemical constituents of human breast milk from the first month to the fifteenth month of breast-feeding was studied. Deductions were then made as to the effect this variation had on the nutritional status of the children whose mothers' breast milk was collected. This study was done on milk samples collected from nursing mothers of children who were healthy and of those who were malnourished.

The results obtained showed a decrease in the protein and immunoglobulin contents for both groups studied. An increase in the lactose content was observed for the healthy group while no definite trend could be discerned in the malnourished group. The average values obtained for proximate compositions were: Protein:  $1.30 \pm 0.18$ g/100ml;  $1.27 \pm 0.30$ g/100ml; Fat:  $1.85 \pm 1.06$ %;  $1.39 \pm 37$ %; Lactose:  $5.77 \pm 2.5$ g/100ml;  $7.19 \pm 1.73$ g/100ml; pH:  $7.03 \pm 0.22$ ;  $6.54 \pm 0.30$ : For the healthy and malnourished groups respectively.

Values obtained for immunoglobulin were: IgA  $117.00$ g/100ml to  $100.00$ g/100ml and  $25.00$ g/100ml to  $6.00$ g/100ml; IgG  $27.00$ g/100ml to  $16.00$ g/100ml and  $12.00$ g/100ml to  $8.00$ g/100ml, for the healthy and malnourished groups respectively. The thiocyanate content of the analysed milk varied from a minimum of  $0.35$ , u mole/l to a maximum of  $0.90$ , u mole/l, for the healthy group and for the malnourished group from a minimum of  $0.10$ , u mole/l to a maximum,  $0.75$  p mole/l.

Amino acid values for the malnourished group were slightly higher than those for the Healthy group with the exception of lysine. The limiting amino acid in both groups was methionine. The children in this study were observed to grow well during the first four months of life until retardation in growth started reaching a maximum at the sixth month. This period was observed to correspond with the weaning period, when maize gruel (ogi) or Baby Custard diet had been introduced. The extent and duration of these food supplements presumably tend to influence to a large extent the eventual nutritional status of the infant.

**Keywords:** Milk/ human breast milk

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