

# RESEARCH PROJECT

PAGE

## *A Survey of some biochemical and haematological parameters (Tests) in malnourished Children.*

LIBRARY NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY P.O. BOX 346 BULAWAYO ZIMBABWE		
DATE	ACCESSION	CLASS N.
20/01/99	SC 2152	

**Researched By:** Vicent Ncube  
[N930862J]

**For:**



The National University  
of Science  
and Technology

**Programme:** Applied Biology/Biochemistry

**Duration:** August 1996 - April 1997

**Supervised by:** Dr L. Mladenovsky



## **ABSTRACT**

Malnutrition can be defined as a state in which the physical function of an individual is impaired to the point where he or she can no longer maintain an adequate level of performance such as physical work, **resisting or recovery** from the effects of disease or maintaining an adequate level of **growth**. **Biochemical**, Anthropometric and Haematological parameters can be used in **the assessment** of the state. In this project 25 malnourished children were surveyed for these Biochemical analytes (Urea, Creatinine, Protein, albumin, ALP, AST,  $Ca^{2+}$ ,  $Mg^{2+}$ ,  $PO_4^{3-}$ ,  $K^+$ ,  $Na^+$ ) and these haematological parameters (WBC's, haemoglobin) and their Anthropometric measurements (weight, height, mid-upper arm circumference, body mass Index) used to assess their level of malnourishment. All values obtained for **either measurement** were compared to standards for ages. The Cobas Mira S and Flame photometer were used for biochemical tests and the Coulter Counter for the haematological tests. From the study, it was concluded that some biochemical and haematological parameters were low in these children (eg total proteins, albumin,  $K^+$ ,  $PO_4^{3-}$ , Hb, others were high (eg Urea, Ast) and the rest of the observed parameters were unaffected (eg WBC's,  $Ca^{2+}$ ,  $Mg^{2+}$ , creatinine,  $Na^+$ ). This analysis is important for suggesting supplementary feeding in these children and long term **breast - feeding procedure**. From the point of management and treatment **we are suggesting** only the investigation of total protein level, albumin, Haemoglobin value, potassium and phosphate because they are highly correlated with malnutrition. This needs further investigation to establish management protocol as a way to reduce laboratory cost - management.