

GENERAL INFORMATION

Due to a change in emphasis of research studies two projects, "The Action of Various Phosphatases on Thiamine Pyrophosphate" and "Development of a Reliable, Diagnostic Test for Riboflavin Deficiency", were terminated. No work was done on the study "Lipid Studies in Arcus Senilis" during the last two quarters. Final report of the study "The Relationship between Vitamin A Blood Level and Vision as Tested by the Electroretinogram (ERG)" has been published by the Cordis Corporation, 125 N.E. 40th Street, Miami, Florida 33137.

STUDY REPORT

1. Title: "Epidemiological, Clinical and Biochemical Studies of Beriberi in Infants and Adults in Thailand"*

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Objectives

To evaluate by means of physical examination, erythrocyte transketolase determination and analysis of thiamine contents in urine and milk thiamine nutrition in pregnant and lactating women and their infants in four areas of Thailand.

Progress:

The studies carried out in Chiengmai, Ubol, Bangkok and Songkhla were reported in the 1964-5 SMAL Annual Report. Only subjects from low economic group were studied previously. Study during this period was carried out in subjects of an higher economic group, that is with income over 1,000 Baht (\$50 U.S.) per month. The results are shown in Table I and II.

About 4 per cent of pregnant and 13 per cent of lactating women are in inficent range as measured by urinary thiamine level. This is comparable to findings in the low income group studied previously. However, only 3 per cents of lactating women are in deficient range as measured by erythrocyte transketolase activity. Unfortunately, blood from infants of high economic groups is not available for erythrocyte transketolase determination. Our findings suggest that thiamine nutrition is no different between the high and low economic groups of pregnant and lactating women in Bangkok,

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Table 1
Urine Thiamine Levels

Subject/Location	No. of subj	% Distribution*		
		Deficient	Low	Satisfactory
1. Pregnant 15-45 years				
Chiengmai	43	14.0	30.2	55.8
Ubol	65	4.6	12.3	83.1
Songkhla	52	0	13.5	86.6
Bangkok (low income)	29	0	31.0	69.0
Bangkok (high income)	24	4.1	4.2	91.7
2. Lactating 15-45 years				
Chiengmai	37	40.5	27.0	32.4
Ubol	66	10.6	25.8	63.6
Songkhla	53	3.8	20.8	75.5
Bangkok (low income)	33	9.1	60.6	30.3
Bangkok (high income)	31	12.9	29.0	58.1
3. Infants 7 mo & under				
Chiengmai	14	14.3	14.3	71.4
Ubol	57	0	5.3	94.7
Songkhla	36	2.8	5.6	91.7
Bangkok (low income)	18	0	16.7	83.3
Bangkok (high income)	30	0	0	100
4. Controls 15-45 years				
Chiengmai	17	17.7	29.4	52.9
Ubol	10	0	70.0	30.0
Songkhla	9	0	33.3	66.7
Bangkok (low income)	35	8.6	34.3	57.1
Bangkok (high income)	13	23.1	38.5	38.5

* Criteria utilized based upon ICNND survey for the Union of Burma, 1961
Deficient <27 μ g B₁/gm Creatinine, Low 27-65, Satisfactory > 66

Table II
Erythrocyte Transketolase Activity

Subject/Location	No. of subj	% Distribution*		
		Deficient	Low	Satisfactory
1. Pregnant 15-45 years				
Chiengmai	43	37.2	4.7	58.1
Ubol	65	18.5	12.3	69.2
Songkhla	52	9.6	7.7	82.7
Bangkok (low income)	29	13.8	6.9	79.3
Bangkok (high income)	23	4.4	8.7	87.0
2. Lactating 15-45 years				
Chiengmai	37	13.5	5.4	81.1
Ubol	66	21.2	15.2	63.6
Songkhla	53	11.3	5.7	83.0
Bangkok (low income)	33	18.2	6.1	75.8
Bangkok (high income)	30	3.3	10.0	86.7
3. Infants 7 mo & under				
Chiengmai	14	14.3	7.1	78.6
Ubol	57	31.6	3.5	64.9
Songkhla	36	8.3	2.8	88.9
Bangkok (low income)	18	0	0	100
4. Controls 15-45 years				
Chiengmai	17	17.7	11.8	70.6
Ubol	10	30.0	10.0	60.0
Songkhla	9	0	0	100
Bangkok (low income)	35	37.1	5.7	57.1
Bangkok (high income)	14	7.1	7.1	85.7

* Criteria utilized based upon ICNND survey for the Union of Burma, 1961
Deficient > 20 Stimulation of ETK by TPP invitro: Low 16-20: Satisfactory < 15