

*Plasmodium Falciparum* Infection Rates in Normal and Enzyme-Deficient Erythrocytes of  
Glucose-6-Phosphate Dehydrogenase Deficient Heterozygous Thai Women

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**OBJECTIVE:** *P. falciparum* infection rates in normal and enzyme-deficient erythrocytes of Thai women heterozygous for glucose-6-phosphate dehydrogenase (G-6-PD) deficiency are being determined and compared.

**DESCRIPTION:** Women, heterozygous for G-6-PD deficiency (an X-chromosome-linked trait), are mosaics: approximately half of their red blood cells are normal, the other half are G-6-PD deficient. The two cell populations can be distinguished histochemically by the methemoglobin elution method<sup>1</sup>. This technique is being applied to blood from Thai women who have malaria and are heterozygous for G-6-PD deficiency. Infection rates in both normal and enzyme-deficient red blood cells are being determined and compared. Hematocrit, reticulocyte count, red blood cell morphology, hemoglobin type, and G-6-PD activity (spectrophotometric assay) are also being determined.

**PROGRESS:** To date, approximately 600 women and girls with malaria, who presented at the Provincial Hospital or Malaria Eradication Center in Chantaburi, have been tested by the methemoglobin elution technique. Approximately ten per cent have been classified as heterozygous for G-6-PD deficiency. Parasite counts have been made in both normal and enzyme-deficient cells and these data are now being analyzed.

**REFERENCES:**

1. Gall, J.C. Jr., Brewer, G.J., and Dern, R.J.: Studies of glucose-6-phosphate dehydrogenase activity of individual erythrocytes: The methemoglobin elution test for identification of females heterozygous for G-6-PD deficiency. *Am. J. Hum. Genet.* 17: 359, 1965.