

# ERYTHROCYTE GLUTATHIONE PEROXIDASE ACTIVITY IN NORMAL CHINESE AND IN PATIENTS WITH INHERITED METABOLIC DISEASE

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## ABSTRACT

Glutathione peroxidase (GSH-PX; EC 1.11.1.9) is a selenoenzyme. Many studies had confirmed the correlation between GSH-PX and Selenium (Se) status in the body. Erythrocyte GSH-PX can be used as a good indicator for body Se status. In this study, the reference ranges of GSH-PX activity in Chinese infants (at 3 to 5 days and at 4 weeks after birth), children (1-10 years) and adults (20-78 years) were estimated to be 19.4-49.3 (U/g hemoglobin), 24.7-43.3, 25.6-56.0, and 28.1-87.8, respectively. There were no differences between the erythrocyte GSH-PX activity of infants and that of children, but the enzyme activity of adults was higher than that of either infants and children. The erythrocyte GSH-PX activity of 11 patients with different inherited amino acid metabolic disorders were also analyzed. Results showed that the erythrocyte GSH-PX activity in the patients with or without dietary treatment were all within normal reference range. No Se-deficient symptom was found in these patients. This indicates that local Chinese foods, in combination with special formulas used in dietary treatment, can meet the Se requirement of patients with restricted dietary therapy.

**Keywords:** *Glutathione peroxidase, inherited metabolic disease, reference range.*

## INTRODUCTION

The requirement for selenium (Se) in human nutrition is now well established [1]. Although Se is associated with various protein fraction of tissue and serum, the most known function is incorporation to

the selenoenzyme, glutathione peroxidase (GSH-PX; EC 1.11.1.9, Glutathione: hydrogen-peroxide oxidoreductase) [2,3]. GSH-PX is important in detoxification of organic peroxides in the cells [2-4]. Many studies had confirmed the correlation between GSH-PX and Se status in the body

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