

CHOLESTEROL CONCENTRATIONS IN FREE-RANGING GORILLAS (*Gorilla gorilla gorilla* AND *Gorilla beringei*) AND BORNEAN ORANGUTANS (*Pongo pygmaeus*)

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Abstract

Cholesterol concentrations in captive gorillas and orangutans vary widely within species and average approximately 244 mg/dl for gorillas and 169 mg/dl for orangutans as previously published. The International Species Inventory System reports higher concentrations of 275 and 199 mg/dl for gorillas and orangutans, respectively. It is unknown if these values were typical and/or were influenced by captive management. To answer this question, banked serum samples from free-ranging mountain gorillas (*Gorilla beringei*), western lowland gorillas (*Gorilla gorilla gorilla*), and Bornean orangutans (*Pongo pygmaeus*) were analyzed for concentrations of total cholesterol, triglycerides, high density lipoproteins, and low density lipoproteins. Free-ranging mountain gorillas did not differ significantly from free-ranging lowland gorillas in cholesterol, triglyceride, high density lipoprotein, or low density lipoprotein concentrations, suggesting that mountain gorilla values could be used as a model for lowland gorillas. Free-ranging gorilla cholesterol and low density lipoprotein concentrations were significantly lower ($P < 0.05$) than in captive groups. Free-ranging male and female orangutans differed significantly ($P < 0.05$) in cholesterol, high density lipoprotein, and low density lipoprotein concentrations. Captive orangutan cholesterol concentrations were only different ($P < 0.05$) from the free-ranging female orangutans, while captive orangutan low density lipoprotein concentrations were significantly higher ($P < 0.05$) than both free-ranging male and female orangutans. The higher cholesterol and low density lipoprotein concentrations in captive apes may predispose them to problems with cardiovascular disease and might be attributed to diets, limited energy expenditure, and genetics.