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## **Clinical biochemistry in healthy manatees (*Trichechus manatus latirostris*).**

Harvey JW, Harr KE, Murphy D, Walsh MT, Chittick EJ, Bonde RK, Pate MG, Deutsch CJ, Edwards HH, Haubold EM.

### **Source**

Department of Physiological Sciences, College of Veterinary Medicine, University of Florida, PO Box 100144, Gainesville, Florida 32610, USA. harveyj@mail.vetmed.ufl.edu

### **Abstract**

Florida manatees (*Trichechus manatus latirostris*) are endangered aquatic mammals living in coastal and riverine waterways of Florida and adjacent states. Serum or plasma biochemical analyses are important tools in evaluating the health of free-ranging and captive manatees. The purpose of this study was to measure diagnostically important analytes in the plasma of healthy manatees and to determine whether there was significant variation with respect to location (free-ranging versus captive), age class (small calves, large calves, subadults, adults), and gender. No significant differences in plasma sodium, potassium, bilirubin, glucose, alanine aminotransferase, or creatine kinase were found among these classes of animals. Compared to free-ranging manatees, captive animals had significantly lower mean concentrations of plasma chloride, phosphate, magnesium, triglycerides, anion gap, and lactate. Captive manatees had significantly higher mean values of total CO<sub>2</sub>, calcium, urea, creatinine, alkaline phosphatase, gamma-glutamyltransferase, total protein, albumin, and albumin/globulin ratio than did free-ranging animals. Differences in the environments of these two groups, including diet, temperature, salinity, and stress, might account for some of these results. The higher plasma lactate and anion gap concentrations and lower total CO<sub>2</sub> concentrations of free-ranging manatees were probably due to greater exertion during capture, but the lack of elevated plasma creatine kinase activity relative to captive animals indicates that there was no serious muscle injury associated with capture. Plasma phosphate decreased and total globulins increased with age. Plasma cholesterol and triglyceride concentrations were highest in small calves. Plasma aspartate aminotransferase was higher in large calves than in adults and subadults, and the albumin/ globulin ratio was higher in subadults than in adults. Plasma total CO<sub>2</sub> was higher and chloride was slightly lower in females than in males.

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