Circulating Fat Soluble Vitamins and Ionized Calcium Concentrations in Saddle-billed Storks *(Ephippiorhynchus senegalensis)* Under Human Care

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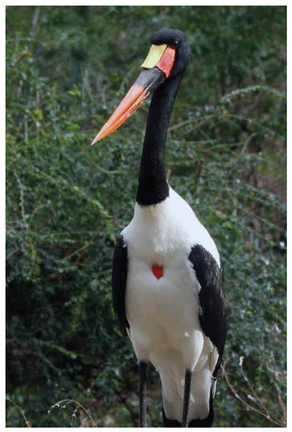
Introduction

Fecundity of saddle-billed storks in human care is dropping. With reports of developmental abnormalities such as fatal malpositions, late term embryo deaths and beak abnormalities in recent hatchlings, there are concerns that there is a nutritional basis for these incidents. Nutritional status of the breeding pair can have a substantial impact on the viability of the offspring. Vitamins A, E, D and calcium are implicated.



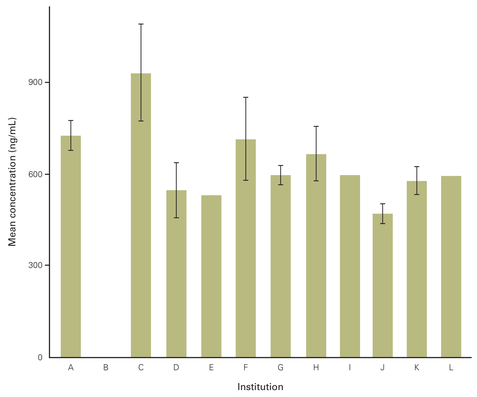
Methods

- Requested opportunistic collection for vitamins A, E, 25-OH D, and ionized calcium analysis
- 12 institutions responded
- Shipping for samples handled by each institution
- MSU DCPAH
  - 25-OH D via radioimmunoassay
  - Ionized calcium via NOVA 8+
  - Vitamin profile via HPLC with UV detection

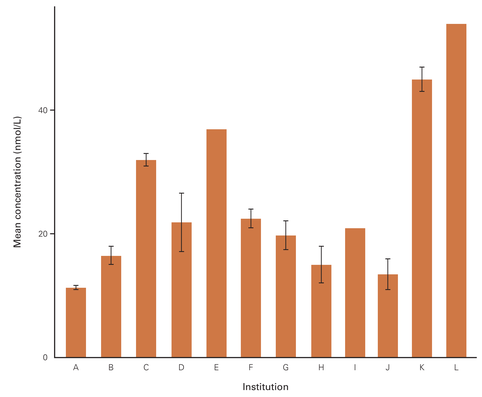
Figures and Results

- Mean vitamin A and 25-OH D were not significantly different among institutions or sexes
- Vitamin E and ionized calcium values were significantly higher in females compared to males across all institutions ($p<0.05$)
- Ionized calcium concentrations differed significantly among facilities ($p<0.01$)

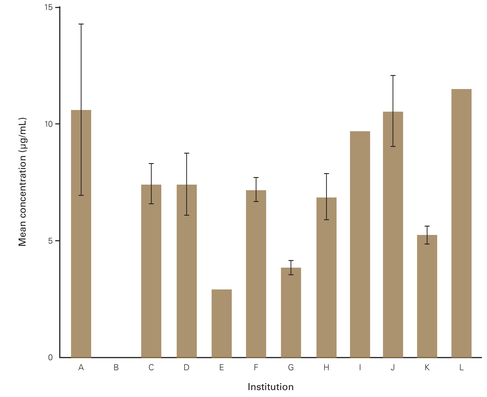
Mean Serum Vitamin A



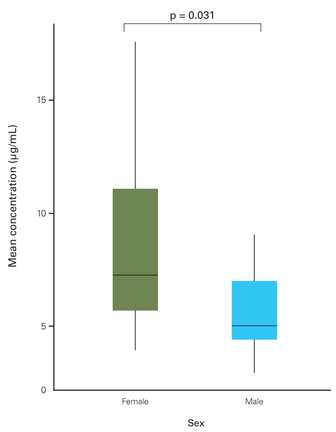
Mean Serum 25-OH D



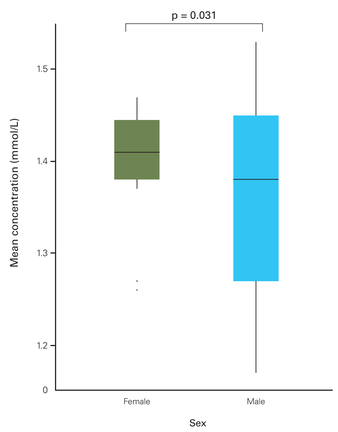
Mean Serum Vitamin E



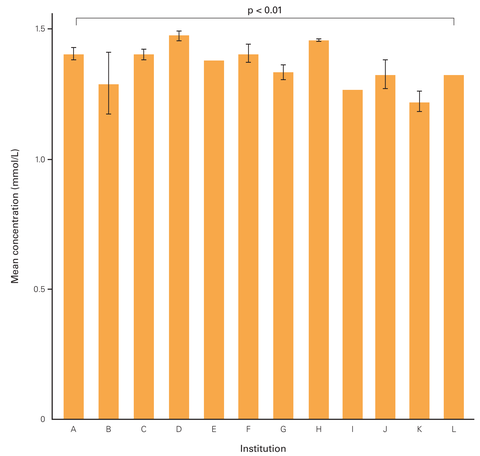
Serum Vitamin E by Sex



Serum Ionized Calcium by Sex



Mean Serum Ionized Calcium



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