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SUPPLEMENT: A FIELD TRIAL OF 2 POINT OF CARE GLUCOMETERS IN HEALTHY CALVES

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A FIELD TRIAL OF 2 POINT OF CARE GLUCOMETERS IN HEALTHY CALVES

(Your glucometer could be misdiagnosing your patient)

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Introduction: Point of Care in Vet Med

- Point of care (POC) devices are becoming more utilized in veterinary medicine
- One area that has specifically benefitted from POC devices is ambulatory food animal practice
 - Rapid results
 - Lower cost

Introduction: Our Predicament...

- At the author's institutions, glucometers and glucometer supplies are commonly purchased by a central supply office
 - So it is not uncommon for small animal glucometers to be most commonly purchased due to institutional supply procedures
- What does this mean for the large animal clinician when they are interpreting results performed on a small animal POC device?

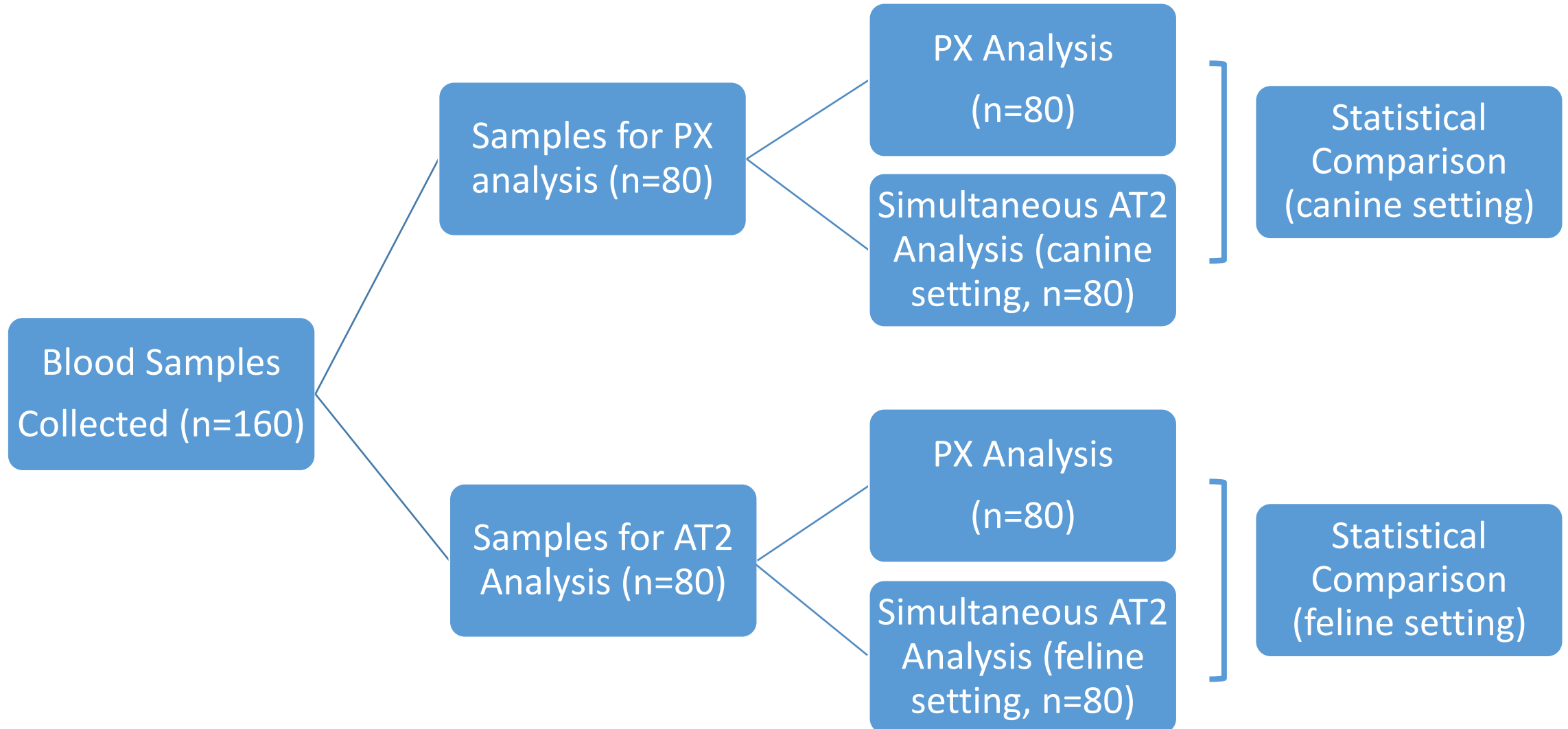
Introduction: Investigation Goals

- The goals of our investigation were to:
 - Determine the relationship between a POC glucometer validated for cattle vs a small animal POC glucometer in healthy calves
 - Using both the “Canine” and “Feline” settings of the small animal POC glucometer

Materials and Methods

- Samples were collected from 6 healthy calves
 - At various time points over a 14 day period
- Upon collection samples were immediately processed by both POC glucometers
 - Precision Xtra (PX, validated for cattle)
 - Alphasnak 2 (AT2, validated for dogs and cats)
 - Each sample was ran under either the canine or feline setting

Materials and Methods

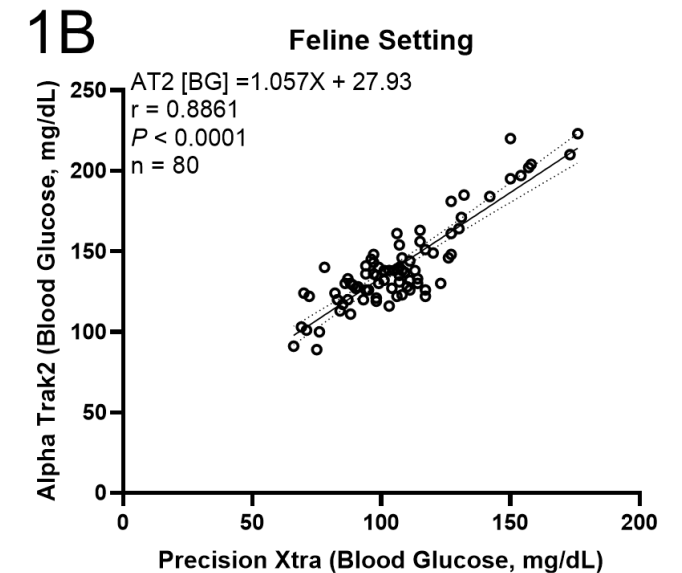
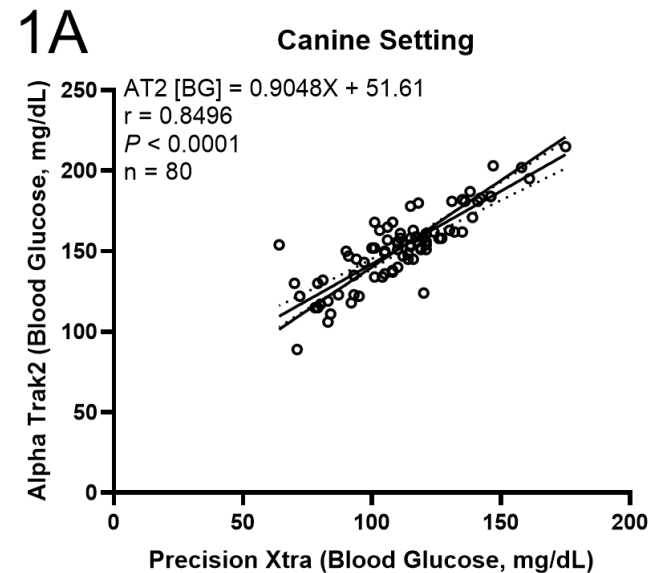


Materials and Methods

- Samples were compared as previously described
 - Linear regression
 - Bland-Altman analysis
- Commercial statistical software program
 - Prism, Graphpad Inc.

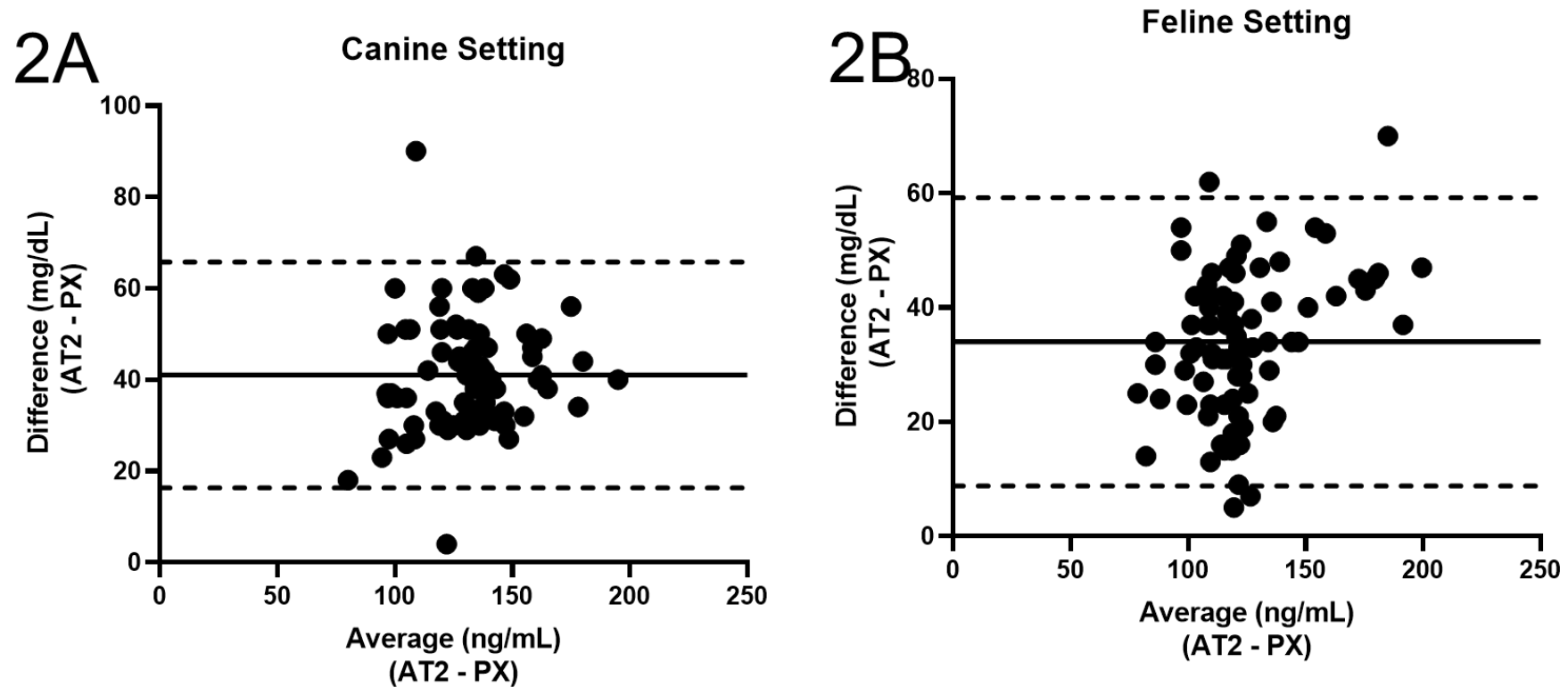
Results

- Blood glucose concentrations ranged from 64-175 (mean \pm standard deviation: 111.2 ± 22.1) and 89-215 (mean \pm SD: 152.2 ± 23.6) mg/dL for the PX and AT2 (canine setting) devices respectfully
- Blood glucose concentrations ranged from 66-176 (mean \pm SD 106.6 ± 23.1) and 89-223 (mean \pm SD: 140.7 ± 27.6) mg/dL for the PX and AT2 (feline setting) devices respectfully
- Figures 1A and 1B demonstrate regression analysis of the comparisons



Results

- Figures 2A and 2B demonstrate Bland-Altman analysis for each setting



Discussion

- Clinicians should be aware of the AT2's ability to report an increased blood glucose concentration when compared to the PX device
 - Of the AT2 settings, the feline setting appears to be closer to the PX results, although both AT2 settings demonstrate bias

Limitations and Future Directions

- Limitations include the small sample size of calves, and the use of a narrow age range of healthy calves
- More research is needed in the establishment of reference ranges for calves with the AT2 device
- Also needed is an exploration of agreement for hypo- and hyperglycemic samples from sick calves
 - More likely to be clinically important
- Questions: Joe Smith, jsmit604@utk.edu

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