SAFE BLOOD WITHDRAWAL

Blood withdrawal is a routine procedure in many research and clinical animal activities. Typically restoration of blood volume and its components occur within 14 days of blood withdrawal in healthy animals. Though volume is typically restored within 24 hours, two weeks is often needed to replace all blood constituents. Typically healthy animals will replace blood constituents at a rate of 1 ml/kg/day.

Single Blood Withdrawal

- No more than 10% of total blood volume should be withdrawn at any single event. In healthy animals, the approximate circulating blood volume is 6% of total body weight.
  
  o **For Example:** A healthy 40 kg animal would be expected to have 6% or 2.4 kg (2400 ml) of circulating blood. A maximum single blood draw should be no more than 240 ml.

Repeated Blood Withdrawal

- No more than 20% of blood volume per month and no more than 10% in one draw unless scientifically justified.
  
  o **For Example:** Using the same 40 kg animal, with 2400 ml of blood as above, a total of 480 ml may be withdrawn across multiple blood draws over a 4 week period.

For survival procedures, if a volume of blood greater than that listed above is required then the PI should contact a CAR veterinarian for additional guidance and provide a scientific justification in the AUF.

BLOOD COLLECTION GUIDELINES

Safe amount of blood (in ml) to collect =

- Animal's Weight (in lbs.) x 0.06 (6% total body weight) x 450 (grams per pound) x 0.20 (total blood withdrawal per month)
- Animals Weight (in grams) x 0.06 (6% total body weight) x 0.20 (total blood withdrawal per month)
- Animal's Weight (in kg) x 0.06 (6% total body weight) x 0.20 (total blood withdrawal per month) x 1000 (grams per kilogram)