University of Notre Dame Institutional Animal Care and Use Committee
Fluid Administration Guidelines

Purpose

Fluid administration is indicated for animals having difficulty recovering from injectable anesthesia or when dehydration exists. Adequate hydration is necessary for post-surgical recovery when small animals are already stressed from the consequences of anesthesia, possible hypothermia, hypoglycemia, and post-operative pain.

Procedure

1. The route of fluid administration will determine the rapidity of absorption into the bloodstream. The routes are listed below in order of absorption from fastest to slowest.
2. It is often better to give larger volumes of fluids by a slower route than a small volume by a faster route for dehydration.
3. Sterile saline (0.9% NaCl) is recommended for most injections. Avoid giving hypertonic solutions subcutaneously.
4. Do not administer fluids if kidney function is impaired without first consulting the veterinary staff.
5. Only conscious animals may be given oral fluids.
6. Fluids should be warmed either by running the syringe under warm water or using fluids pre warmed in the incubator to avoid hypothermia or shock, especially in the smaller rodents.

The preferred routes are indicated by bold type for each species.

	Mouse	Rat	Hamster	Guinea Pig	Rabbit
Daily Maint volumes	80ml/kg/day	100ml/kg/day	100mg/kg/day	100mg/kg/day	100 – 200 ml/kg/day
Intravenous	0.5 ml max. bolus replacement up to 1.0 ml over 4 hrs	1.5 ml max bolus replacement up to 6.0 ml over 4 hrs	N/A	N/A	10 ml max bolus replacement up to 48 ml over 4 hrs
Intramuscular	0.1 ml max/site 0.2 ml max. total per day	0.25 ml max/site 1.0 ml max total per day	0.15 ml max/site 0.3 ml max total per day	0.3 ml max/site 0.6 ml max total per day	0.5 ml max/site 4.0 ml max total per day
Intraperitoneal	0.5 ml max total per 2 hrs	1.5 ml max total per 2 hrs	1.5 ml max total per 2 hrs	3.0 ml max total per 2 hrs	10 ml max total per 2 hrs
Subcutaneous	**0.3 ml max./site 1.0 ml max. total**	**2.0 ml max./site 6.0 ml max total**	**1.0 ml max/site 4.0 ml max total**	**0.5 ml max/site 8 ml max total**	10 ml max/site 20 ml max total/4 hrs
Oral	1 ml max. total per 4 hours	3.0 ml max total per 4 hours	2.0 ml max total per 4 hours	4 ml max total per 4 hours	**12 ml max total** per 4 hours

References

1. Fluid Therapy in Small Mammals, Connie J. Orcutt, DVM, Dipl. ABVP, The North American Veterinary Conference – 2005 Proceedings, http://www.ivis.org/
2. AALAS Learning Library – www.aalaslearninglibrary.org

7/2003 VAS, rev. 2/2011, 2/2014, 3/2017 VAS
IACUC Fluid Replacement GL17