

Suggested Needle Sizes¹ and Injection Volumes

Species	Intravenous	Intraperitoneal	Intramuscular	Subcutaneous
Mouse	Lateral tail vein 0.2 ml, 23-25 ga	2-3ml, 25-27 ga	Quadriceps, posterior thigh, 0.05 ml, 25-27 ga	Scruff, dorsolat, thorax, flank, 2-3 ml, 23-25 ga
Rat	Lateral tail vein, 0.5ml, 22-25 ga	5-10ml, 25 ga	Quadriceps, posterior thigh, 0.1 ml, 25 ga	Scruff, dorsolat, thorax, flank, 5-10 ml, 23-25 ga
Hamster	Femoral or jugular vein, 0.3 ml, 25-27 ga	3-4 ml, 23-25 ga	Quadriceps, posterior thigh, 0.1 ml, 25 ga	Scruff, dorsolat, thorax, flank, 3-4 ml, 23-25 ga
Guinea pig	Ear vein (27 ga), saphenous v. (25 ga), 0.5 ml, 25-27 ga	10-15 ml, 23-25 ga	Quadriceps, posterior thigh, 0.3 ml, 25 ga	Scruff, dorsolat, thorax, flank, 5-10 ml, 23-25 ga
Rabbit	Marginal ear vein, 1-5 ml (slowly), 22-25 ga	50-100 ml, 21-25 ga	Quadriceps, posterior thigh, 0.5 ml, 23-25 ga	Scruff, dorsolat, thorax, flank, 30-50 ml, 21-25 ga
Cat	Cephalic vein, 2-5 ml (slowly), 21-25 ga	50-100 ml, 21-23 ga	Quadriceps, posterior thigh, 1 ml, 23 ga	Scruff, dorsolat, thorax, flank, 50-100 ml, 21-23 ga
Dog	Cephalic vein, 10-15 ml (slowly), 21-23 ga	200-500 ml, 21-23 ga	Quadriceps/ posterior thigh, 2-5 ml, 23 ga	Scruff, dorsolat, thorax, flank, 100-200 ml, 20-23 ga
Pig (50 kg)	² Ear vein, precava, ext./int. jugular, cephalic (limb), cephalic (neck), femoral cranial abdominal, 10-50 ml, 20-21 ga (1.5 in long for neck sites)	200-500 ml, 21-23 ga	Lateral neck, Lumbar epaxials, Quadriceps, posterior thigh, 5-10 ml, 20-23 ga	Lateral neck 5-10 ml 20-23 da
Primate (marmoset)	Lateral tail vein, 0.5 – 1 ml (slowly), 23-25 ga	10-15 ml, 21-23 ga	Quadriceps/ posterior thigh, 0.3 -0.5 ml, 23-25 ga	Scruff, dorsolat, thorax, flank, 5-10 ml, 21-25 ga
Primate	Cephalic vein,	50-100 ml,	Quadriceps/	Scruff, dorsolat,

(baboon)	recurrent tarsal vein, Jugular vein, 10-20 ml (slowly), 21-23 ga	21-23 ga	posterior thigh, Triceps, 1 – 3 ml, 21-23 ga	thorax, flank, 100 - 200 ml, 21-25 ga
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¹The higher the gauge number, the smaller the needle. Use the smallest sized needle that will deliver the injection appropriately because this will minimize the pain of injection (non-anaesthetized animals). A larger needle may be needed for administering viscous materials or large volumes.

²Adapted from Swindle, Smith, Laber, Goodrich & Bingel, Biology and Medicine of Swine, in: Laboratory Animal Medicine, www.ivis.org, 2003.

Adapted from AALAS Reference Directory 2007