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**AT A GLANCE**

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**Geriatrics - Euthanasia**

**Pre-Euthanasia Sedation Protocols**

Lap of Love practitioners use a heavy pre-euthanasia sedation protocol. For dogs, the drugs may be mixed in one syringe and given SC or IM. **For each 10 pounds of body weight** mix 0.1 ml **ketamine** (100 mg/ml) + 0.05 ml **xylazine** (100 mg/ml) + 0.1 ml **acepromazine** (10 mg/ml) + 0.05 ml **butorphanol** (10 mg/ml).

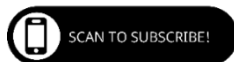
For cats, there are 2 protocols. Protocol 1 mixes **dexmedetomidine** (0.5 mg/ml), 0.02-0.04 ml/lb + **ketamine** (100 mg/ml), 0.02-0.04 ml/lb + **butorphanol** (10 mg/ml), 0.02-0.04 mg/lb, for a total volume of 0.06-0.12 ml/lb.

Cat protocol 2 mixes Tiletamine/Zolazepam (**Telazol**, 100 mg/ml), 0.01-0.02 ml/lb + **ketamine** (100 mg/ml), 0.01-0.02 ml/lb + **acepromazine** (10 mg/ml), 0.005-0.01 ml/lb, for a total volume of 0.025-0.05 ml/lb.

Lap of Love offers comprehensive training for their employees, including alternative euthanasia methods for situations where venous access is challenging. If you are interested in becoming an associate with Lap of Love, visit this page:

<https://info.lapoflove.com/dvmQA>. All veterinarians may sign up to access their Veterinary Resource Center [here](#) and everyone has access to their web-based Pet Quality-of-Life Scale that is available [here](#).

**Leanne Mathew, DVM, Lap of Love webinar, 8/13/2024**  
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**Herbology**

**Silymarin from Milk Thistle as a hepatoprotectant**

Silymarin (SM), derived from milk thistle (*Silybum marianum*) and its active component **silybinin**, is **considered a liver protectant not a “treatment”**<sup>1</sup>. Silymarin is a polyphenolic compound which acts as an antioxidant, anti-inflammatory, antifibrotic, and antiapoptotic agent.

In animals, silymarin is used to support liver health, manage intoxications, and alleviate chemotherapy side effects. For instance, it improves health in parrots with fatty liver disease and enhances liver function, immune response, and egg quality in poultry, while also mitigating mycotoxin effects [ref]. It may also offer kidney protective benefits in various species, including dogs, birds, rabbits, and horses. In one study of dogs with liver disease given silymarin (1.275 mg/kg) for 28 days, ALT, AST, GGT decreased but ALP did not decrease [ref]. **The dose for silymarin for dogs and cats is 20-50 mg/kg/day unless it is formulated with phosphatidylcholine for improved absorption (Nutramax).**

In aging laying hens, silymarin lowers ALT, AST, triglycerides, and total cholesterol levels most effectively at a dose of 500 mg of silymarin powder per kg of feed.

In rabbits, the silymarin dose is 4-15 mg/kg PO q8-12h.

In humans, silymarin significantly lowers ALT, AST, and triglyceride levels and improves HDL. However, it does not notably impact GGT, total cholesterol, LDL, or BMI, though one study did report improved fibrosis [ref]. In humans, silymarin is employed to treat liver cirrhosis, alcoholic liver disease, viral hepatitis, poisoning from Amanita mushrooms, and liver damage from toxins and drugs [ref].

[This article](#) includes a diagram illustrating how milk thistle interacts with the liver and microbiota. [ref]

<sup>1</sup> Tom Tully, *Ask a Vet webinar 7/25/2024*

[Dražen Đuričić & Mirela Sablić; Veterinarska stanica, Vol. 56 No. 2, 2025](#)  
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