

# End-of-Life Care and Non- Venipuncture Euthanasia

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## What best describes your practice?

- General practice
- ER/specialty
- House call hospice/euthanasia
- Shelter medicine
- Other

## How does your practice typically perform for euthanasia?

- Direct venipuncture (no IV catheter)
- IV catheter
- Intrahepatic or intrarenal
- Intracardiac
- Intraperitoneal



JAVMA



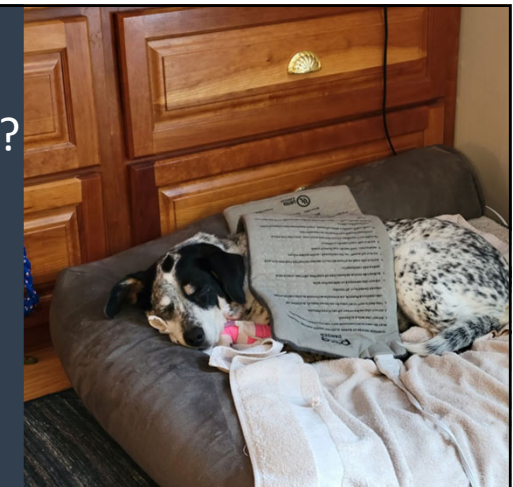
**Analysis of 2,570 responses to Dog Aging Project End of Life Survey demonstrates that euthanasia is associated with cause of death but not age**

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- End of life survey 2570 dogs
- 85.4% euthanized
  - Reason for euthanasia was pain/suffering 49.2%, poor QoL 25.7%, poor prognosis 16.5%
  - Cause of death was illness/disease in 58.1%

## When is it time?

- 3 favorite things
  - 2 have been lost
- 50-50 good vs. bad days



### Quality of Life Scale (HHHHMM Scale)

Using a scale of 0 to 10 (0 = Unacceptable, 10 = Excellent), patients can be evaluated for their quality of life.

Score	Criterion
0-10	<b>Hurt</b> —Is the patient in pain, including distress from difficulty in breathing? Can the pet's pain be successfully managed? Is oxygen necessary?
0-10	<b>Hunger</b> —Is the pet eating enough? Does hand-feeding help? Does the pet require a feeding tube?
0-10	<b>Hydration</b> —Is the pet dehydrated? Are subcutaneous fluids once or twice daily enough to resolve the problem? Are they well tolerated?
0-10	<b>Hygiene</b> —The pet should be kept brushed and clean, particularly after elimination. Does the pet have pressure sores?
0-10	<b>Happiness</b> —Does the pet express joy and interest? Is he responsive to things around him (family, toys, etc)? Is the pet depressed, lonely, anxious, bored, or afraid? Can the pet's bed be near the kitchen and moved near family activities to minimize isolation?
0-10	<b>Mobility</b> —Can the pet get up without assistance? Does the pet need human or mechanical help (eg, a cart)? Does she feel like going for a walk? Is she having seizures or stumbling? <i>Note: Some caregivers feel euthanasia is preferable to amputation, yet an animal with limited mobility may still be alert and responsive, and can have a good quality of life as long as the family is committed to quality care.</i>
0-10	<b>More Good Days than Bad</b> —When bad days outnumber good days, the pet's suffering is appreciable and quality of life might be too compromised. When a healthy human-animal bond in no longer possible, the caregiver must be made aware that the end is near.

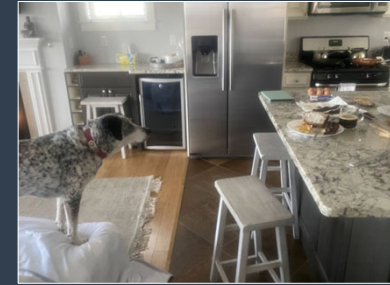
Total: A total of > 35 points is acceptable quality of life for pets.

Adapted from Canine and Feline Geriatric Oncology: Honoring the Human-Animal Bond, Villalobos A, Kaplan L—Hoboken, NJ: Wiley-Blackwell, 2007, with permission.

May 2008 Clinician's Brief (Decision-Making Issues with Euthanasia, p 23)

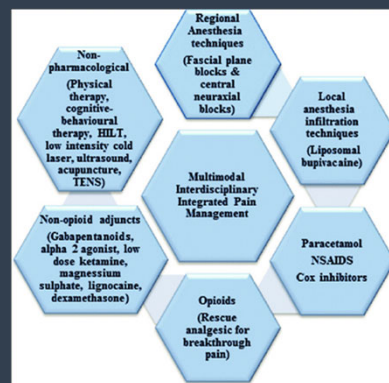
## End of life care

- Owner goals
  - Best Last Days
- Comfort
  - Pain control
  - Feeding/appetite
  - Energy level?
  - Anxiety/behavioral



## Pain control

- Multimodal!
- Opioids
  - Intermittent injectable
  - Transmucosal buprenorphine
  - Fentanyl patch
  - Codeine?
- Anti-inflammatories
- Neuropathic and chronic pain
  - Gabapentin, amantadine, anti-NGF monoclonal antibodies
- Acetaminophen
  - Dogs only!
- Acupuncture



## Amantadine

- NMDA antagonist
- Typically takes ~30d to become effective
  - Can load w/IV ketamine (0.5-1mg/kg) for more rapid onset



## Gabapentin

- Chronic pain
  - Not appropriate for acute pain as a sole agent
- Sedation

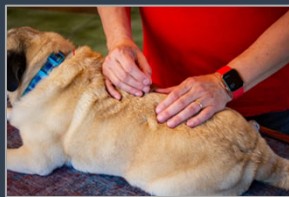
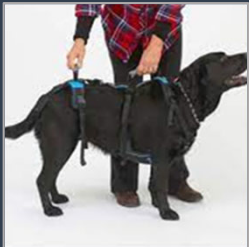


## Cannabinoids?

- Pain control
- Anxiolytic
- Anti-inflammatory
- Appetite stimulant
- Dose? Efficacy?



## Mobility support



## Help the owner help their pet

- Harnesses or slings
  - Help-em-up
  - Ruffwear
- Ramps or stairs for accessing furniture and cars
- Traction
  - Runners or yoga mats
  - Dr. Buzby's toegrips
  - PawFriction
- Orthopedic beds
- Access to bathroom breaks?



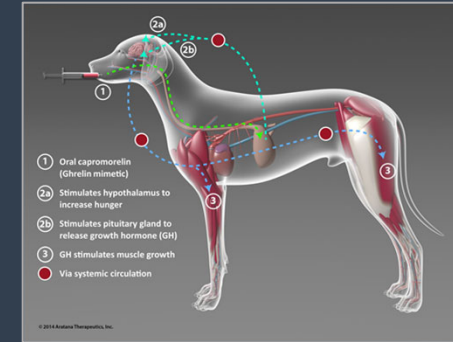
## Physical rehab

- Targeted management of musculoskeletal disease
- Low impact activities (swimming, water treadmill)
- Maintain strength and ROM
- Social interaction



## Feeding & appetite

- Anti-emetics
  - Cerenia
  - Ondansetron
  - Metoclopramide
- Appetite stimulants
  - Entyce/Elura
  - Mirtazipine
  - Benzodiazepines (cats)
  - Rebound



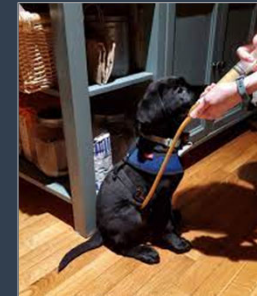
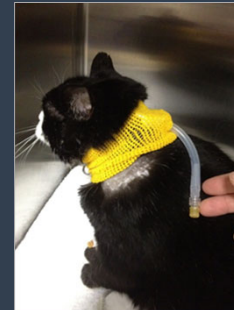
## Rebound

- Must be given orally
- Palatable
- Canine and feline versions
- 1mL/lb/day divided into 3-4 feedings



Crude Protein (min.)	2.5 %
Crude Fat (min.)	2.0 %
Crude Fiber (max.)	0.5 %
Moisture (max.)	88 %
Lysine (min.)	0.1 %
Methionine (min.)	0.05 %
Phenylalanine (min.)	0.08 %
Linoleic acid (min.)	0.4 %
Alpha-linolenic acid (min.)	<0.1 %
EPA (min.)	<0.1 %
DHA (min.)	<0.1 %
Calcium (min.)	0.2 %
Iron (min.)	0.21 mg
Manganese (min.)	0.08 mg
Zinc (min.)	0.18 mg
Vitamin A (min.)	76 IU
Vitamin D3 (min.)	4 IU
Vitamin E (min.)	2 IU
Thiamine (min.)	0.15 mg
Riboflavin (min.)	0.11 mg
Pantothenic acid (min.)	0.09 mg
Niacin (min.)	0.21 mg
Vitamin B6 (min.)	0.45 mg
Folic acid (min.)	0.01 mg
Biotin (min.)	0.003 mg
Vitamin B12 (min.)	0.0005 mg
Choline (min.)	15.23 mg
Taurine (min.)	0.1 %

## Feeding Tubes?

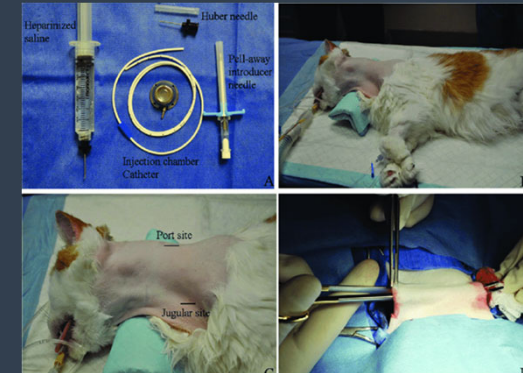


## Feeding tube goals

- Improve caloric or water intake
  - Manage motility issues
  - Permanent solution?
  - Do we expect the pet to return to eating and drinking normally?
- Medication administration
- Safe tube use
  - Set O expectations for management and trouble shooting
  - Avoid NG tubes at home



## Vascular access port



Guerios et al Revista Colombiana de Ciencias

## Cognitive dysfunction syndrome

- Diet
- Selegiline
  - MAO inhibitor
  - Many drug interactions: fluoxetine, amitriptyline, mirtazapine, clomipramine, phenylpropranolamine, narcotics, trazodone, metoclopramide, amitraz
- Sedatives
- Melatonin

<b>D</b>	<b>DISORIENTATION</b>	<ul style="list-style-type: none"> <li>• Get stuck, difficulty getting around objects, goes to wrong side of door</li> <li>• Stares blankly at walls, floor or into space</li> <li>• Does not recognize familiar people/familiar pets</li> <li>• Gets lost in home or yard</li> <li>• Less reactive to visual (light) or auditory (sounds) stimuli</li> </ul>
<b>S</b>	<b>SOCIAL INTERACTIONS</b>	<ul style="list-style-type: none"> <li>• More irritable/fearful/aggressive with visitors, family or other animals</li> <li>• Decreased interest in approaching, greeting or affection seeking</li> </ul>
<b>S</b>	<b>SLEEP/WAKE CYCLES</b>	<ul style="list-style-type: none"> <li>• Pacing/tremors/deeps less/awake at night</li> <li>• Vocalization at night</li> </ul>
<b>H</b>	<b>HOUSESOILING, LEARNING AND MEMORY</b>	<ul style="list-style-type: none"> <li>• Less able to learn new tasks or respond to previously learned commands/training</li> <li>• Indoor soiling of urine or stool/decreased signaling to go out</li> <li>• Difficulty getting dog's attention/increased distraction/decreased focus</li> </ul>
<b>A</b>	<b>ACTIVITY</b>	<ul style="list-style-type: none"> <li>• Decrease in exploration or play with toys, family members, other pets</li> <li>• Increased activity including aimless pacing or wandering</li> <li>• Repetitive behaviors (eg., circling/tremors/ticking/tongue squaring)</li> </ul>
<b>A</b>	<b>ANXIETY</b>	<ul style="list-style-type: none"> <li>• Increased anxiety when separated from owners</li> <li>• More reactive/fearful to visual (light) or auditory (sounds) stimuli</li> <li>• Increased fear of places/situations (eg., new environments/going to outdoors)</li> </ul>

## Anxiolytics

- Constitutive for underlying anxiety disorders/stress or cognitive dysfunction
  - Fluoxetine
  - Melatonin
  - Trazodone
  - Gabapentin
  - Benzodiazepines?
- Sedation/anxiolytics for events such as veterinary visits or home euthanasia



## Event sedation

- How much sedation is needed?
- How much stress or anxiety do you expect the pet to have in the situation?
- How painful is the pet?
- What is the pet's cardiovascular and metabolic status?
- *Is the end goal euthanasia?*



## What does your practice typically use to premedicate patients prior to euthanasia?

- No pre-medication (euthanasia solution only)
- Propofol or alfaxalone
- Alpha-2 agonist
- Opioid
- Benzodiazepines

## Why premedicate prior to euthanasia?

- Decreases pain and anxiety for the pet
- Minimize need for restraint during euthanasia
- May improve experience for owner
- Injection of propofol and euthanasia solution can be painful
  - Consider administering sodium channel blocker prior to IV injection



<https://www.cliniciansbrief.com/article/euthanasia-protocols>

## TREATMENT AT A GLANCE: CHILL PROTOCOL

- ▶ Gabapentin (20-25 mg/kg PO) should be administered the evening before the scheduled appointment.
- ▶ A combination of gabapentin (20-25 mg/kg PO) and melatonin (small dogs, 0.5-1 mg PO; medium dogs, 1-3 mg PO; large dogs, 5 mg PO) should be administered at least 1 to 2 hours before the scheduled appointment.
- ▶ Acepromazine (0.025-0.05 mg/kg OTM) should be administered 30 minutes before the scheduled appointment.

## Pre-medication options for euthanasia

- Start w/oral sedation prior to arrival if possible
- IM, SC, or transmucosal sedation
  - NMDA antagonists
  - Alpha-2 agonist
  - Benzodiazepines
  - Alfaxalone
  - Opioids



## AVMA euthanasia guidelines (2020)

- Intraperitoneal
  - May be painful
  - Prolonged death compared w/intraorgan
  - Large volume needed for medium and large breed dogs
- Intraorgan (-hepatic, -renal, -cardiac, -osseous)
  - **Must** be heavily sedated
  - Intrahepatic may be faster than IP in cats



## Intraorgan euthanasia

- Ultrasound guidance
- Anatomic landmarks
- Palpation



## Expectations

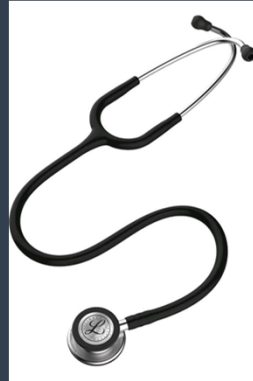
- Level of sedation
  - May lead to death in a compromised patient
- Death will take longer when patient is heavily sedated, euthanasia solution is given non-IV
- Be mindful of scheduling needs
- Have a backup plan





## Assessing cardiac arrest

- Auscultation
- Lack of corneal reflex



## Aftercare

- Care of remains
  - Expanded services of pet aftercare companies
- Owner support
  - Grief counseling
  - Support groups
  - Veterinary social workers



## Compassion fatigue


- **Accept** that emotions such as compassion fatigue are normal and inevitable in EOL cases.
- **Verbalize** the challenges of EOL care; avoid “bottling it in.”
- **Approach** a colleague who may be showing signs of compassion fatigue.
- **Have** debriefing sessions at the end of each day.
- **Seek** professional counseling when appropriate.
- **Use** role-playing techniques in a staff training setting to offset the effects of compassion fatigue.

### Wellbeing Assessment for Veterinarians

Start your journey to improved professional wellbeing with the Professional Quality of Life (ProQOL) Assessment

[myvetlife.avma.org/rising-professional/your-wellbeing/wellbeing-self-assessment](https://myvetlife.avma.org/rising-professional/your-wellbeing/wellbeing-self-assessment)

We're here to help veterinary colleagues



**VETS4VETS**

Confidential wellness support for the veterinary profession

[vinfoundation.org/resources/vets4vets/](https://vinfoundation.org/resources/vets4vets/)

### Veterinary Mental Health Initiative ↓

- Experienced Veterinarians (15+ Years in Practice)
- Early Career Veterinarians (Recent Graduates)
- Representation and Inclusion Concerns in Veterinary Medicine
- Colleagues of Veterinarians who have Died from Suicide
- Veterinary Technicians Group

[shanti.org/programs-services/veterinary-mental-health-initiative/](https://shanti.org/programs-services/veterinary-mental-health-initiative/)

## Questions?

Remember to **access the link to the CE certificate** in the chat panel of the webinar control panel.

NOTE: CE certificate not available for watching the recording.

Questions about CE?

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Questions about topic?

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