

Euthanasia: Humane and Human Considerations

Sheilah Robertson
Senior Medical Director
Lap of Love Veterinary Hospice



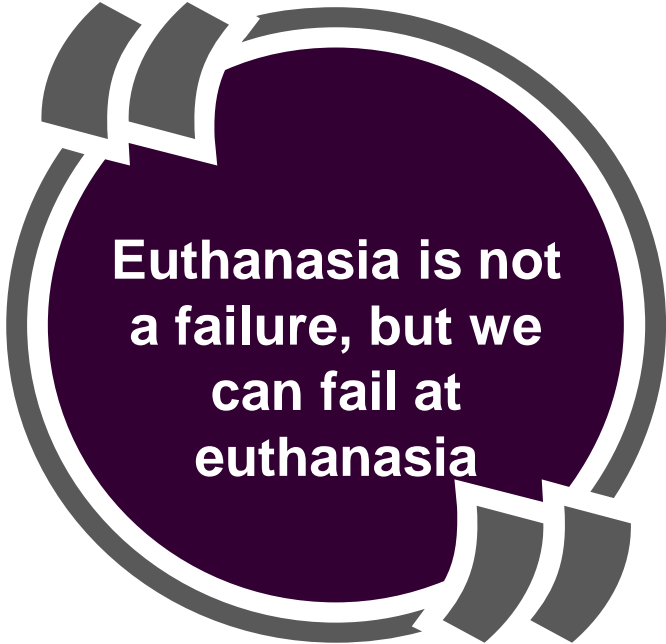
1

“a life is a story, and the way a
story ends is one of the most
important parts”



*Dr. Mary Gardner
Co-founder LOL*

2

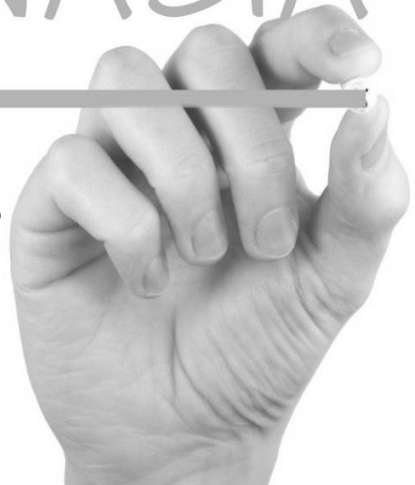


**Euthanasia is not
a failure, but we
can fail at
euthanasia**

3

EUTHANASIA

Who are the stakeholders?
Why do we euthanize animals?
Technical aspects
Controversies
Emotional impact

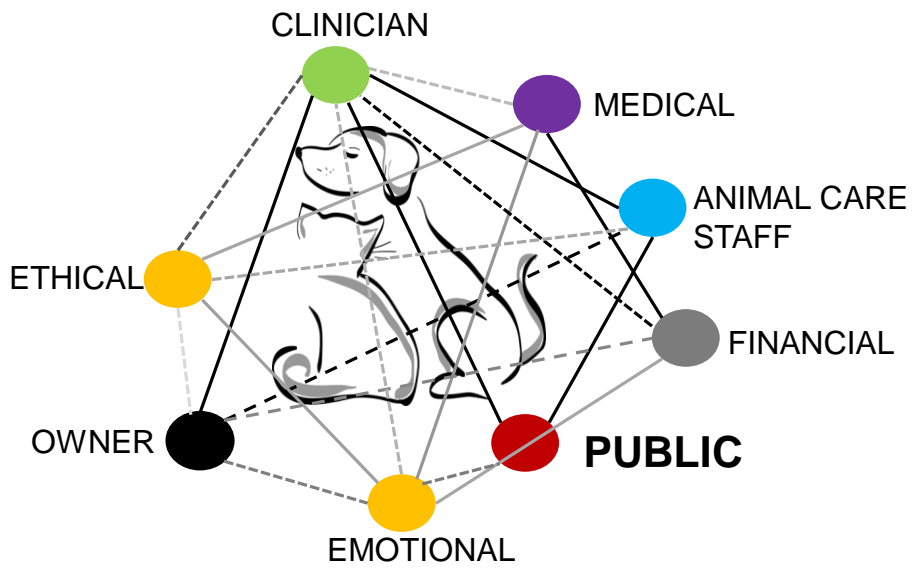


4




Human and humane considerations

5



6



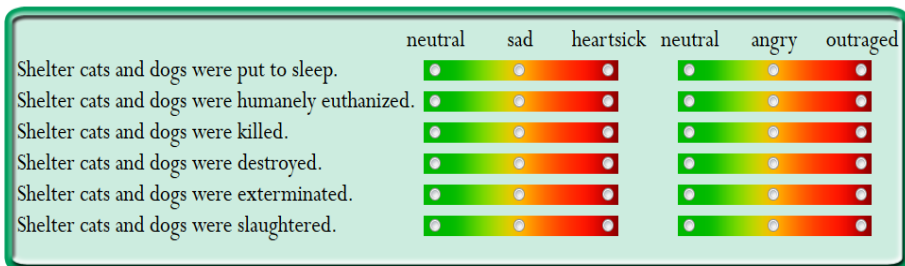
Euthanasia

Eu – good
Thanos – death

Ending the life of an animal in a way that minimizes or eliminates pain and distress

7

How does terminology affect how we feel about things?



UF Maddie's Shelter Program

8



Why?

9

Day 1

Veterinary Skills

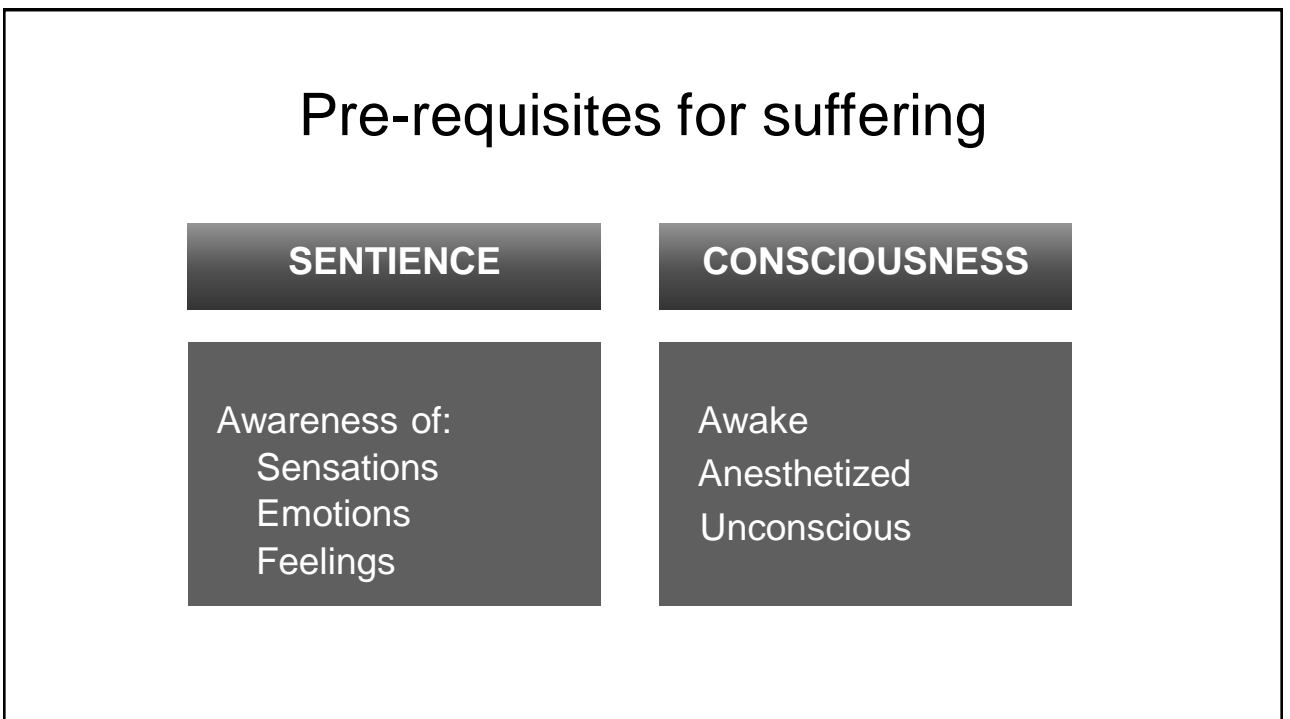


Where is euthanasia?

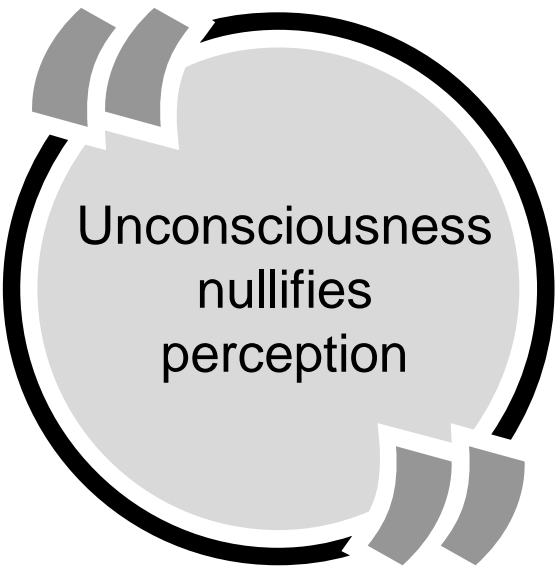
10



11



12



Unconsciousness
nullifies
perception

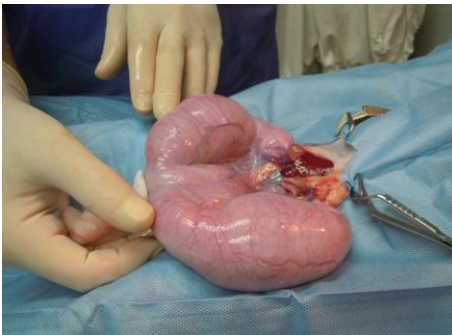
Mellor and Diesch 2006

13

COMMENTARY

Sara White JAVMA 2012

Prevention of fetal suffering during Ovariohysterectomy of pregnant animals



14

WHERE?

AT HOME



COMFORT ROOM

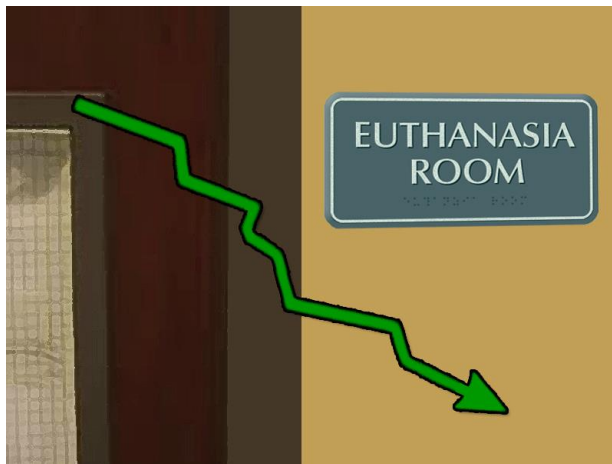


EXAM ROOM



15

WHERE?



16

WHERE?



Rosebud Indian Reservation, South Dakota



17

Rules, Regulations & Guidelines

Drug Enforcement Administration
State, and State board rules
Standards of care
AVMA Euthanasia Guidelines



18



AVMA Guidelines for the Euthanasia of Animals: 2013 Edition

19

Classification of techniques

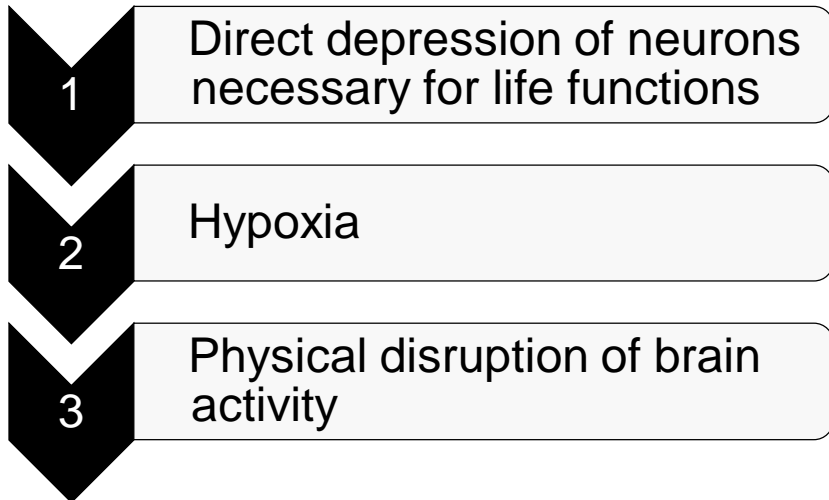
ACCEPTABLE

ACCEPTABLE WITH
CONDITIONS

UNACCEPTABLE

20

Mechanisms of euthanasia



21



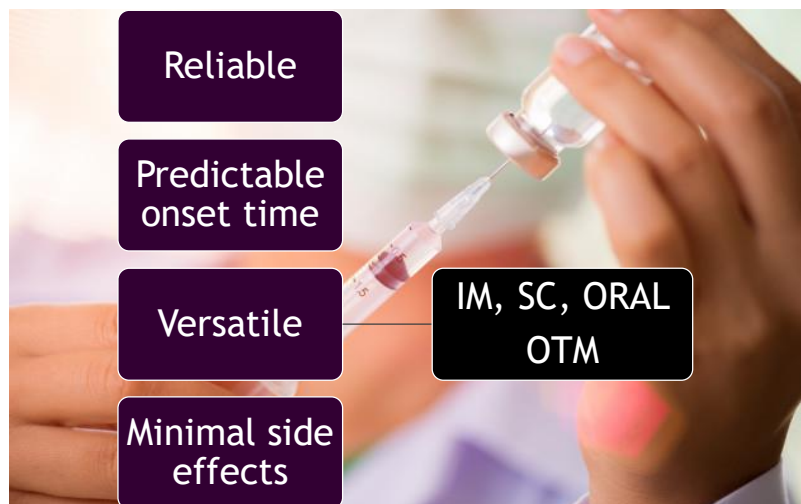
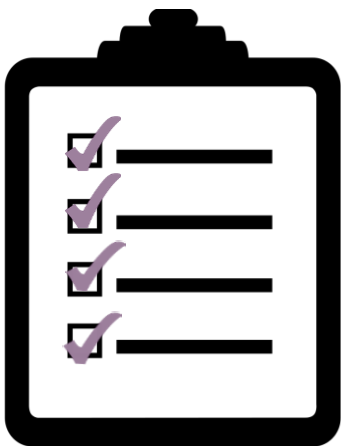
22

Pre-euthanasia sedation



23

Pre-euthanasia sedation protocols



24

24



25

25

Sedation

- Minimal restraint needed for euthanasia
- Increases choice of techniques
- Safety
- Relaxed, peaceful, sleeping



26

Pre-euthanasia sedation

Additional drugs and record keeping
Can be unpredictable
Side-effects
Added expense
Takes longer



27

Pre-euthanasia sedation



IM



SC



ORAL

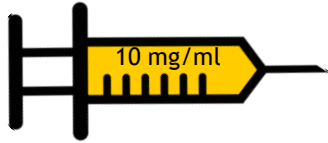


OTM

28

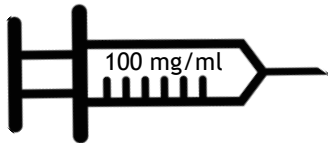


Pre-Euthanasia Sedation Protocols

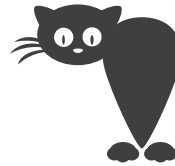


2.5 mls ACEPROMAZINE

2.5 mls KETAMINE



≤ 4.5 kg 0.2 mls



≥ 4.5 kg 0.3 mls

29



Does it sting?



01

pH

02

Size of needle

03

Speed of injection

04

Route and site of injection

30

Does it sting?



DRUG	pH
Acepromazine	4.0-5.5
Butorphanol	3.5-5.0
Ketamine	3.5-5.5
Tiletamine - zolazepam	2.0-3.5



31

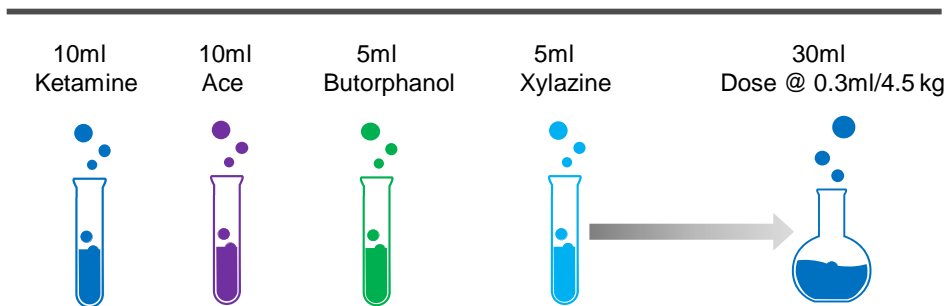
Sedation IM or SC



32

Pre-Euthanasia Sedation - Dogs

- Ketamine: 0.1ml
 - Acepromazine: 0.1ml
 - Xylazine (100 mg/ml): 0.05ml
 - Butorphanol: 0.05ml
- } Per 4.5 kg



33

“PRE-MIX” - Dogs



34

Oral sedation

Acepromazine

Trazodone

Gabapentin

Pentobarbital

Tiletamine-zolazepam



35

Gabapentin Cage trapped community cats



Prakrantz *et al* 2018

36



Available at
amazon

Ora-Plus / Ora-Sweet mix

Prakrantz *et al* 2018

37

100 mg gabapentin



38



**Oral Transmucosal
Sedation [OTM]**

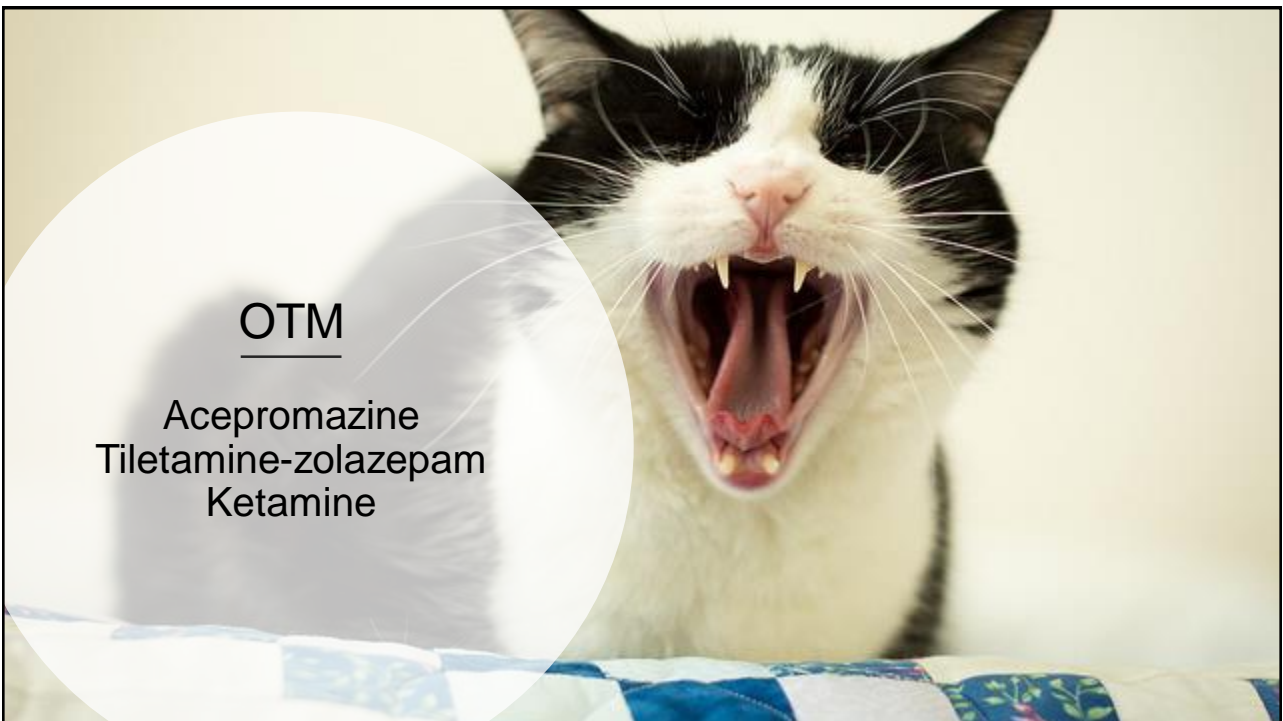
Acepromazine

Ketamine

Tiletamine-zolazepam

Alpha₂ - agonists

39



OTM

Acepromazine
Tiletamine-zolazepam
Ketamine

40

RESEARCH STUDY

Nejamkin *et al* 2019 JFMS

- 5.0 - 7.5 mg/kg
 Salivation ~ 50%
 No retching or vomiting
 Onset time ~ 15 mins
- Posture
 - Response to clippers
 - Response to restraint



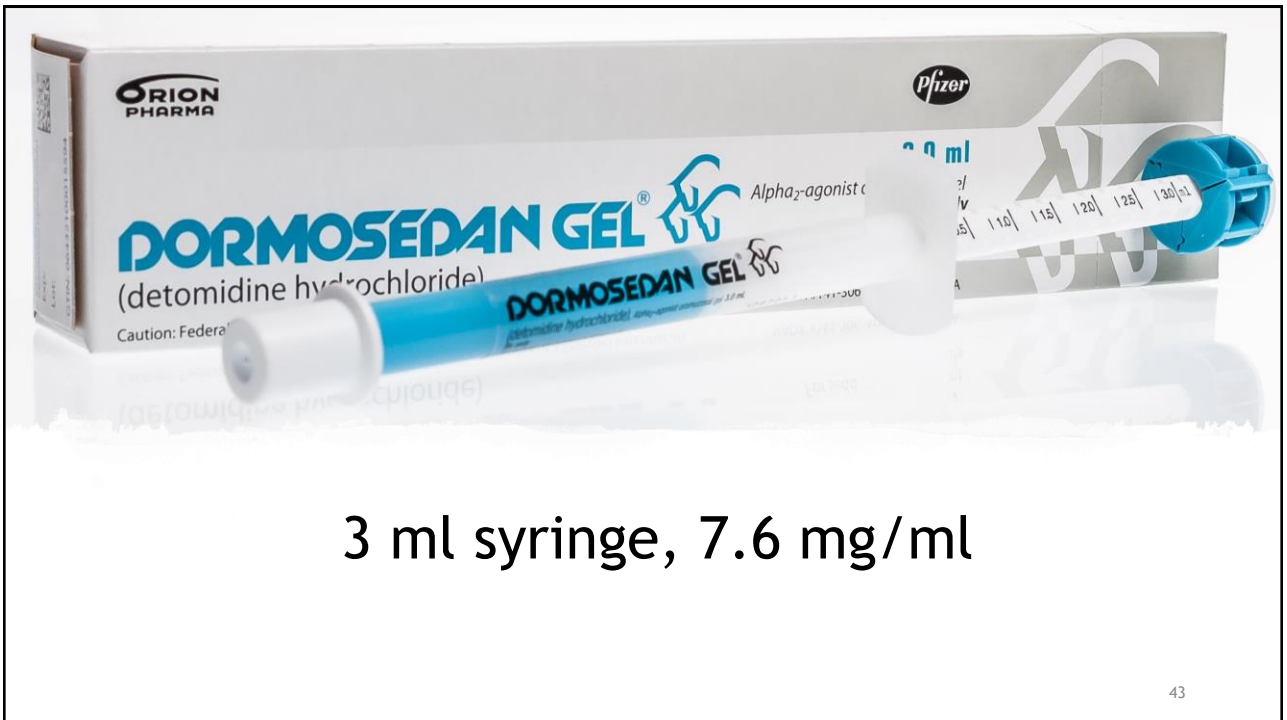
41



Difficult dogs

42

42



43

RESEARCH STUDY

Messenger *et al* 2016 AJVR

Pharmacokinetic of detomidine following intravenous or oral-transmucosal administration and sedative effects of the oral transmucosal treatment in dogs



44

RESEARCH STUDY

Messenger *et al* 2016 AJVR

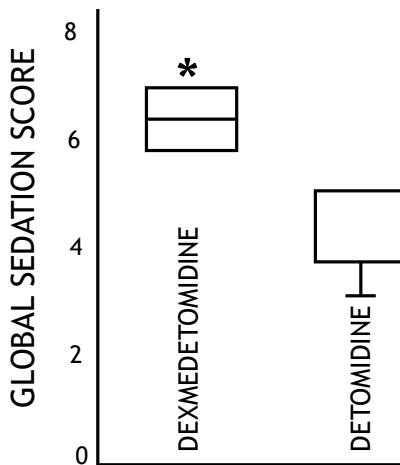
Oral Transmucosal @ 0.5-1.0 mg/m²
 Body weight = 24 ± 4.5 kg
 1.0 mg/m² = 35.3 ± 2.5 µg/kg
 ~ 0.11 ± 0.02 mls



45

45

Results



46

46



47

Oral Pentobarbital



When It Comes To **Trust** Is Everything.

Growing Relationships Through Trust.

As the original formulator of Fatal-Plus™, we have an extensive experience in providing reliable, effective and affordable products to our animal care partners. We are proud to have earned the trust of thousands of animal care professionals across the globe, and we are committed to continuing to grow our relationship with you.

- Offering a solution between a prescribed solution and over-the-counter products.
- Providing an extremely well-tolerated alternative drug to animals of any size or species.
- Developing products with excellent flow characteristics and uniformity.
- Providing built-in oral effectiveness along with convenience.
- Ensuring the availability of Fatal-Plus™ during any and all natural shortages of sodium pentobarbital.

Fatal-Plus™ contains an approved and clinically-proven oral pentobarbital salt in a 200 mg form. The 200 mg capsules are available in 100 and 500 mg bottles.

Our experience, and our expertise make a difference in providing **Reliable, effective and affordable** products to Fatal-Plus™.

For more information on product benefits, call 1-800-373-2716 • Fax to 800-521-4686 • Email: info@vortech.com

FOR OVER 30 YEARS YOU'VE TRUSTED US WITH YOUR ANIMAL CARE NEEDS.

Vortech **Fatal-Plus**
PHARMACEUTICALS, LLC PHARMACEUTICALS, LLC

48

48

Hiding Capsules



49

49

Oral Euthanasia Solution



Dose 1g/10 kg

Three
possible
results

1. Relaxed
enough to give
more drugs

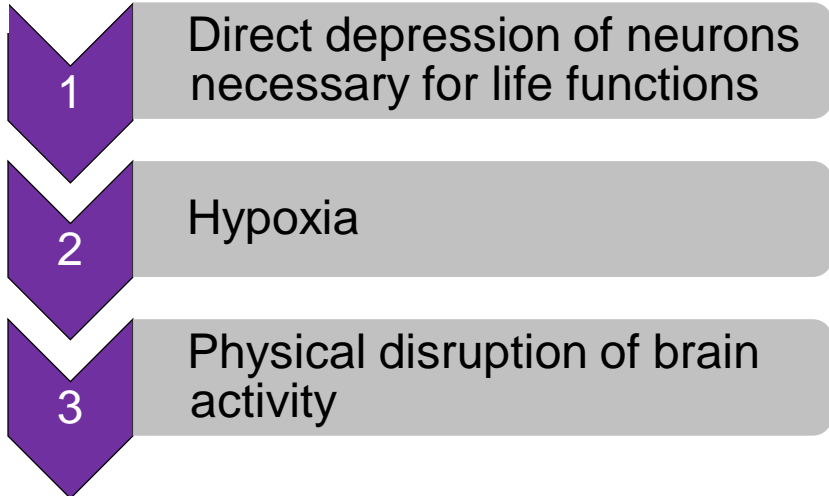
2. Sedate enough
to euthanize

3. Euthanasia

50



Mechanisms of euthanasia



51

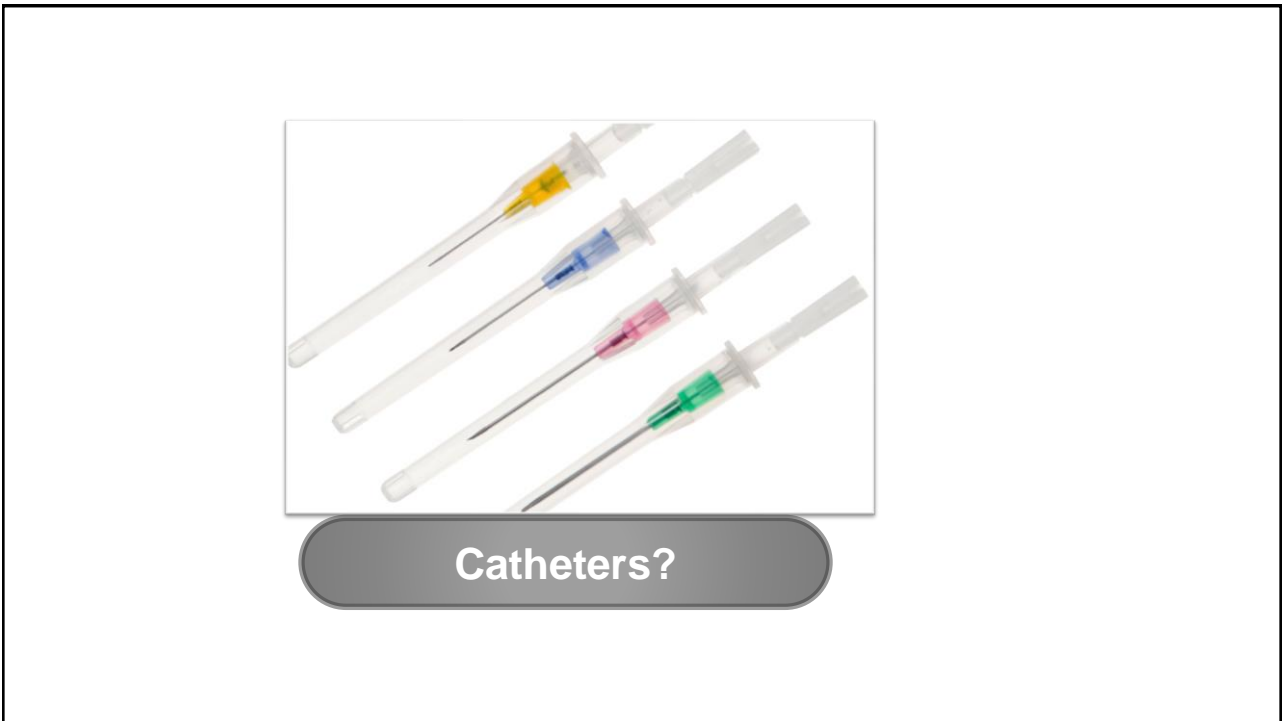
PENTOBARBITAL ± PHENYTOIN



52



53



54



55

A white HomeAgairt Pocket Reader device with a small screen and a circular scanner. To its right is a vertical double-line separator. Further right is a photograph of a person in a red hoodie scanning a white cat with a handheld device. Below these elements is a dark grey rectangular box with the text "Scanning one final time" in white, underlined.

56

Drawing up drugs

NEW



ONCE THROUGH
RUBBER STOPPER



57

ORIGINAL STUDY

Bullock *et al* 2019 JVECC

Comparison of pentobarbital-phenytoin alone vs propofol prior to pentobarbital-phenytoin for euthanasia in 436 client owned dogs



58



5-30 seconds

30-60 seconds

59

Bullock *et al* 2019 JVECC

Breed, age, weight, clinician

Drug doses used

7 predetermined adverse events recorded

Euthanasia score = sum of all adverse events

Possible score = 0-7

60

Adverse events recorded

Number of adverse events	Propofol group N=200	PP group N=236
≥ 1	53	83
0	147	153
Percentage	26.5	35.2

61

Adverse events

EVENT	Propofol group %	PP group %	Odds ratio	95% CI
Any event except muscle activity	22.0	26.3	0.79	0.51-1.23
Agonal breaths	9.5	9.7	0.97	0.51-1.84
Urination	8.0	8.5	0.94	0.47-1.87
Defecation	2.0	1.7	1.18	0.29-4.79
Vocalization	2.5	5.1	0.48	0.17-1.38
Muscle activity	6.0	14.0	0.39	0.20-0.78
Dysphoria	2.0	4.2	0.46	0.14-1.49
Catheter	2.0	3.8	0.51	0.16-1.70

62

Adverse events

EVENT	Propofol group %	PP group %	Odds ratio	95% CI
Any event except muscle activity	22.0	26.3	0.79	0.51-1.23
Agonal breaths	9.5	9.7	0.97	0.51-1.84
Urination	8.0	8.5	0.94	0.47-1.87
Defecation	2.0	1.7	1.18	0.29-4.79
Vocalization	2.5	5.1	0.48	0.17-1.38
Muscle activity	6.0	14.0	0.39*	0.20-0.78*
Dysphoria	2.0	4.2	0.46	0.14-1.49
Catheter	2.0	3.8	0.51	0.16-1.70

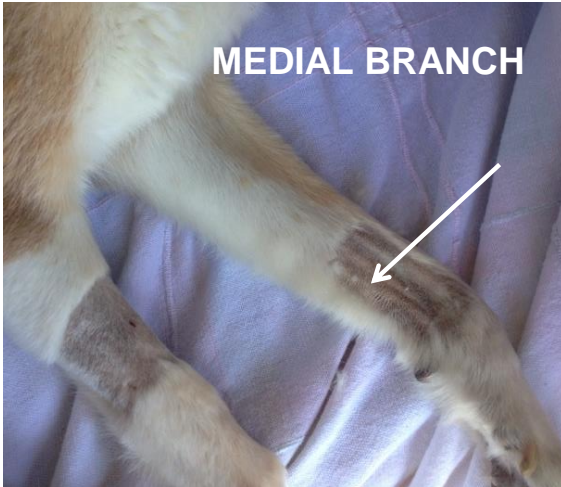
63

Conclusions: There was no difference in the likelihood of the studied adverse events during client elected euthanasia in dogs when propofol was used prior to PP. There was a significant reduction in perimortem muscle activity if propofol was given prior to PP.

64

64

Which veins



65



Dorsal Pedal Vein

66

Other routes

Intra-renal
 Intra-hepatic
 Intra-cardiac
 Intra-peritoneal

team
veterinary brief

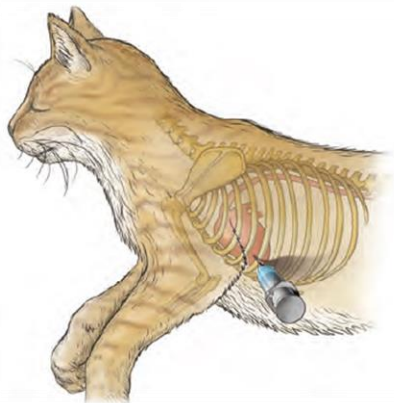
Cannot Find a Vein?

Alternate Routes for Euthanasia

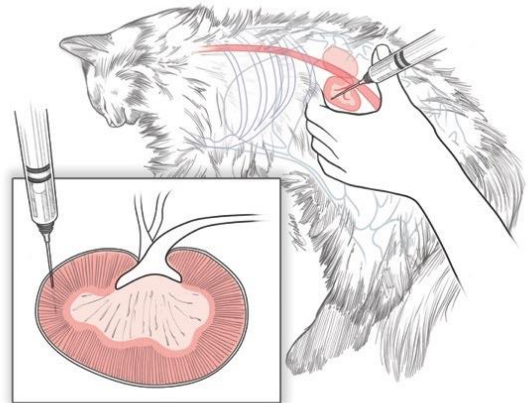
Mary Gardner, DVM
 Lap of Love
 Yorba Linda, California

67

Intra-Cardiac



Intra-renal

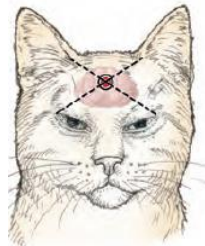


68



69

Emotional effects on observers and operators



Part III—Methods of Euthanasia by Species and Environment

S1. Companion Animals.....	43
S1.1 General Considerations.....	43
S1.2 Acceptable Methods.....	43
S1.2.1 Noninhaled Agents.....	43
S1.3 Acceptable With Conditions Methods.....	44
S1.3.1 Noninhaled Agents.....	44
S1.3.2 Inhaled Agents.....	45
S1.3.3 Physical Methods.....	45
S1.4 Adjunctive Methods.....	46
S1.5 Unacceptable Methods.....	46
S1.6 Special Considerations.....	46
S1.6.1 Dangerous or Fractious Animals.....	46
S1.6.2 Disposal of Animal Remains.....	46
S1.7 Fetuses and Neonates.....	46
S1.8 Euthanasia in Specific Environments.....	47
S1.8.1 Individual Animals in Presence of Owners.....	47
S1.8.2 Breeding Facilities.....	47
S1.8.3 Animal Control, Sheltering, and Rescue Facilities.....	47
S1.8.4 Laboratory Animal Facilities.....	47

70

3

COMPASSION

CONFIDENCE

CONTROL

71

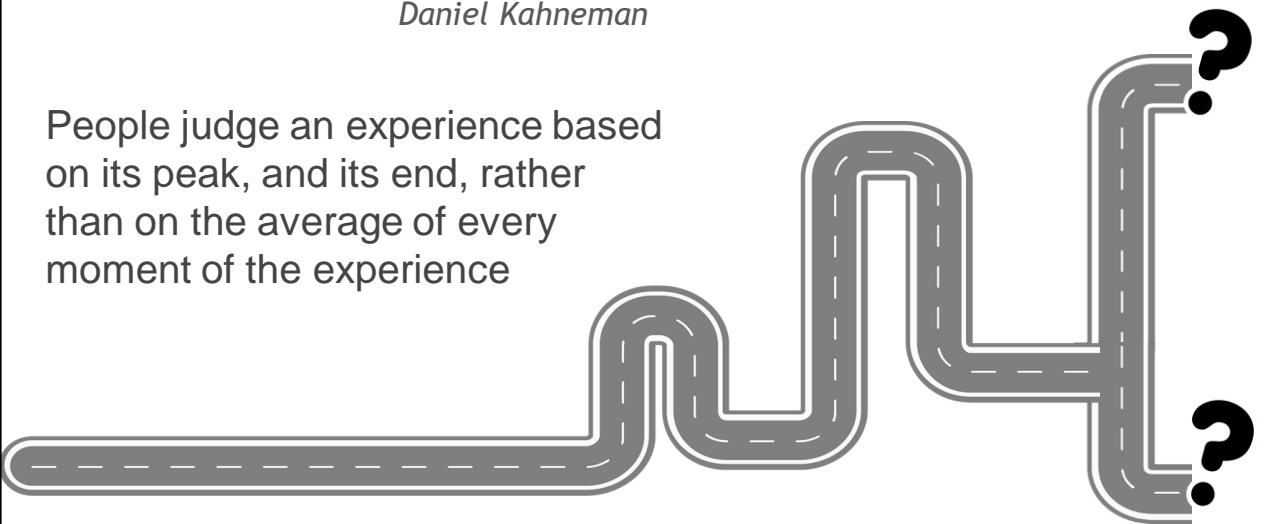


The Peak End Rule

The end is remembered just as much as the worst moment

Daniel Kahneman

People judge an experience based on its peak, and its end, rather than on the average of every moment of the experience



72

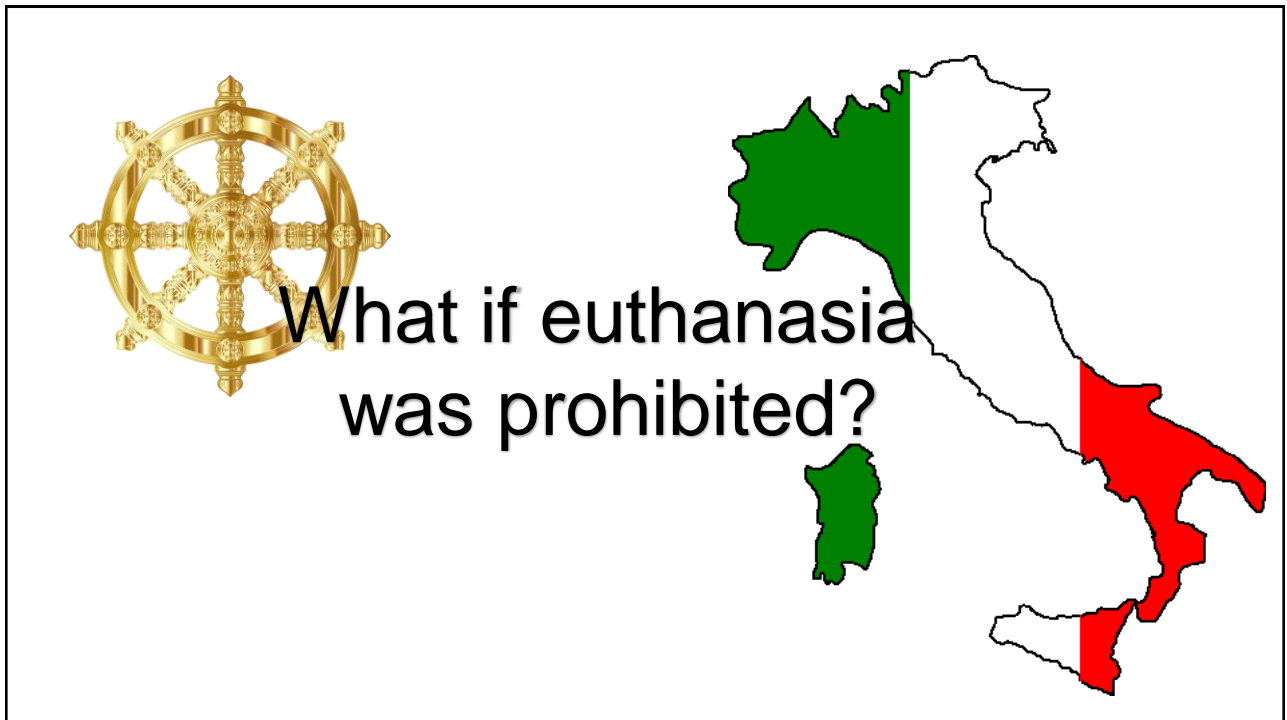
72



73



74



75

Italy

Stray dogs may only be euthanized if “seriously or incurably ill or proven to be dangerous”

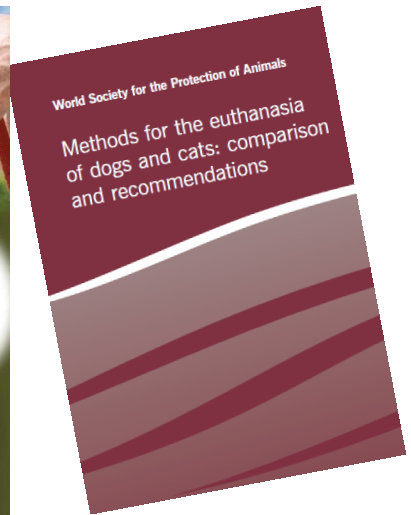
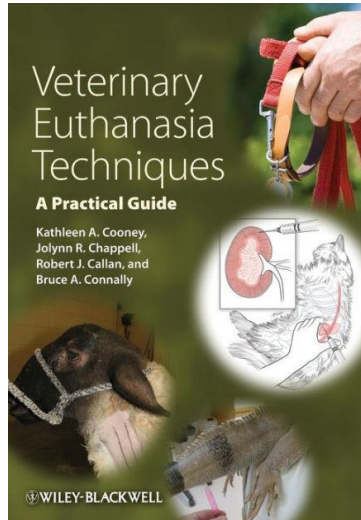
The Ministry Circular underlines the fact that “euthanasia of dogs is prohibited except in special justified cases”

Remain as strays ± neutered

Placed in shelters for the rest of their lives

76

Resources



77

LapofLove.com/Resources
Password: DVMSUPPORT



www.drsheilahrobertson.com



78