1

How do we know they hurt?
Assessing acute pain in dogs and cats

Sheilah Robertson, Senior Medical Director, Lap of Love Veterinary Hospice

2
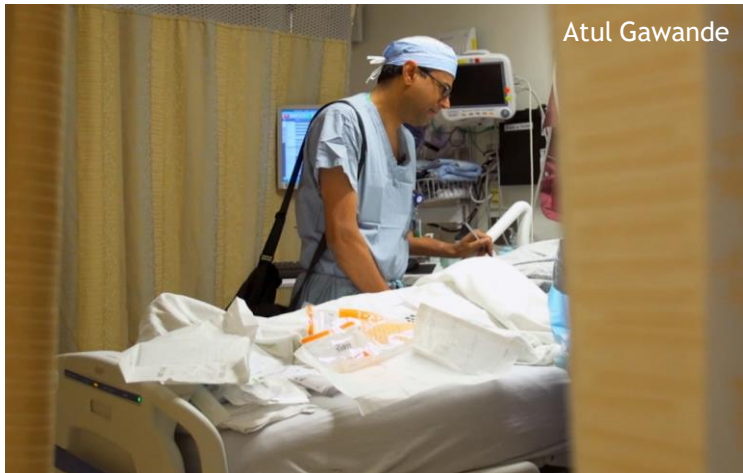
The 3 A's of pain management

A^3

Assess | Alleviate | Anticipate

3

Atul Gawande

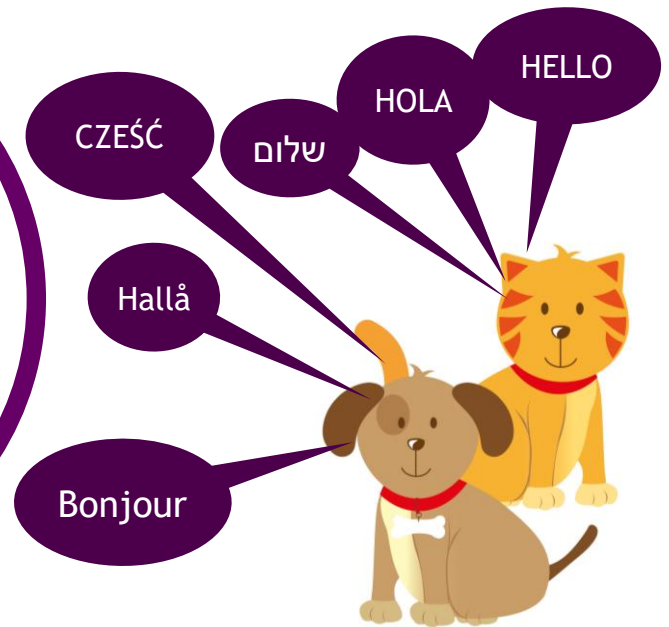….what the patient says it is | …. what we say it is

4

It's not that cats and dogs are nonverbal, but rather that we don't speak their language

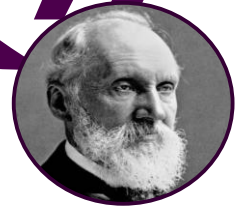CZEŚĆ שלום HOLA HELLO Hallå Bonjour

5

We act as a "proxy"

6

When you can measure what you are speaking about, and express it in numbers, you know something about it

Lord Kelvin

7

If you can not measure it, you can not improve it

8

Is pain being assessed?

17% of veterinary practices routinely use a pain assessment tool

> 80% of nurses and technicians agree that they are useful

Hunt *et al* 2015 Vet Rec

9

Why is it important?

Pain has a negative effect on:
   Gastrointestinal function
   Appetite
   Blood pressure
   Heart rate and rhythm
   Weight
   Immune status
   Healing

10

Five Freedoms

1. **Freedom from hunger and thirst**
by ready access to fresh water and diet to maintain health and vigor

2. **Freedom from discomfort**
by providing an appropriate environment including shelter and a comfortable resting area.

3. **Freedom from pain, injury or disease**
by prevention or rapid diagnosis and treatment

4. **Freedom to express normal behavior**
by providing sufficient space, proper facilities and company of the animal's own kind

5. **Freedom from fear and distress**
by ensuring conditions and treatment which avoid mental suffering

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> " Validated assessments are essential in cases of seizure and protective custody in cases of cruelty and neglect "

Fox MW 2019
Arch Vet Sci Med

12

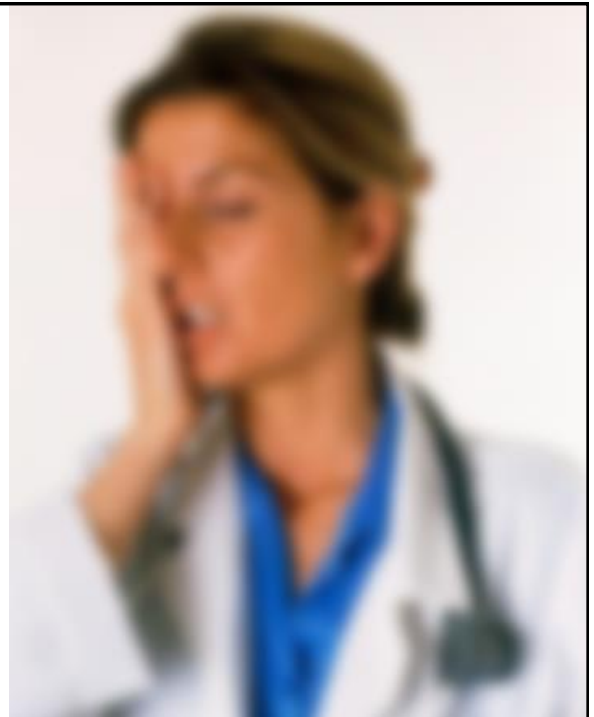"Professional opinion will then be based more on an objective determination than subjective impression"

13

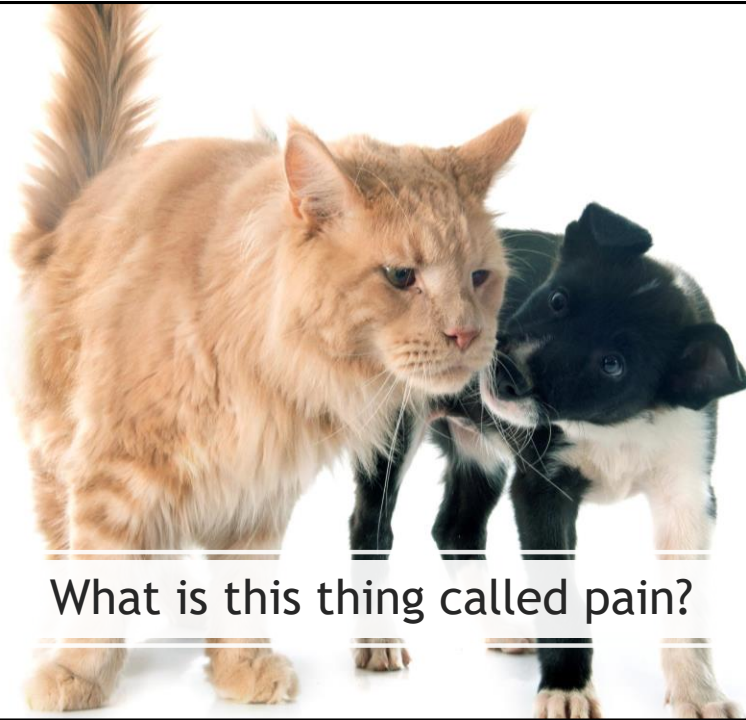# Why is it important?

Enhances patient care ⎯⋀⎯
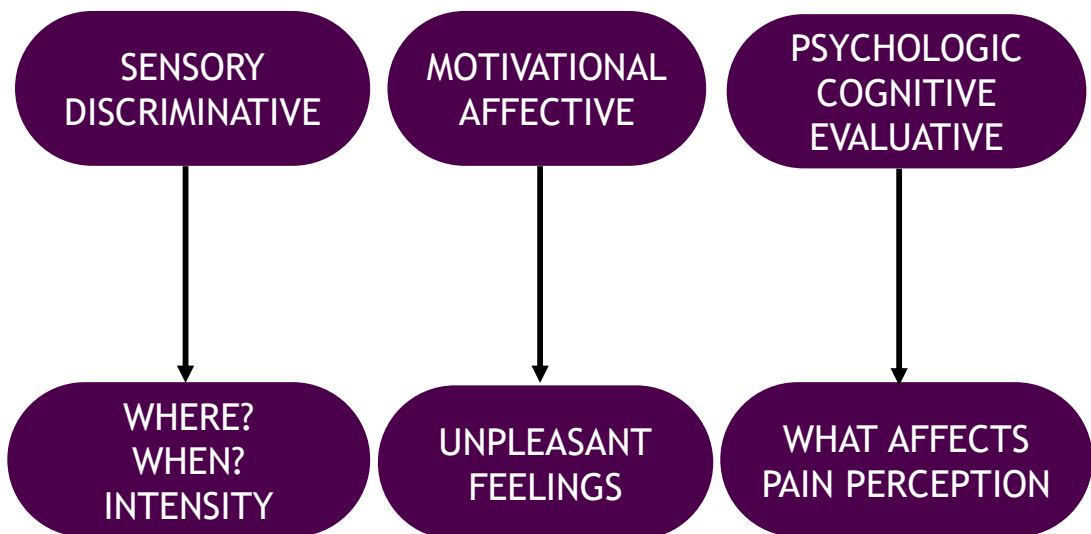
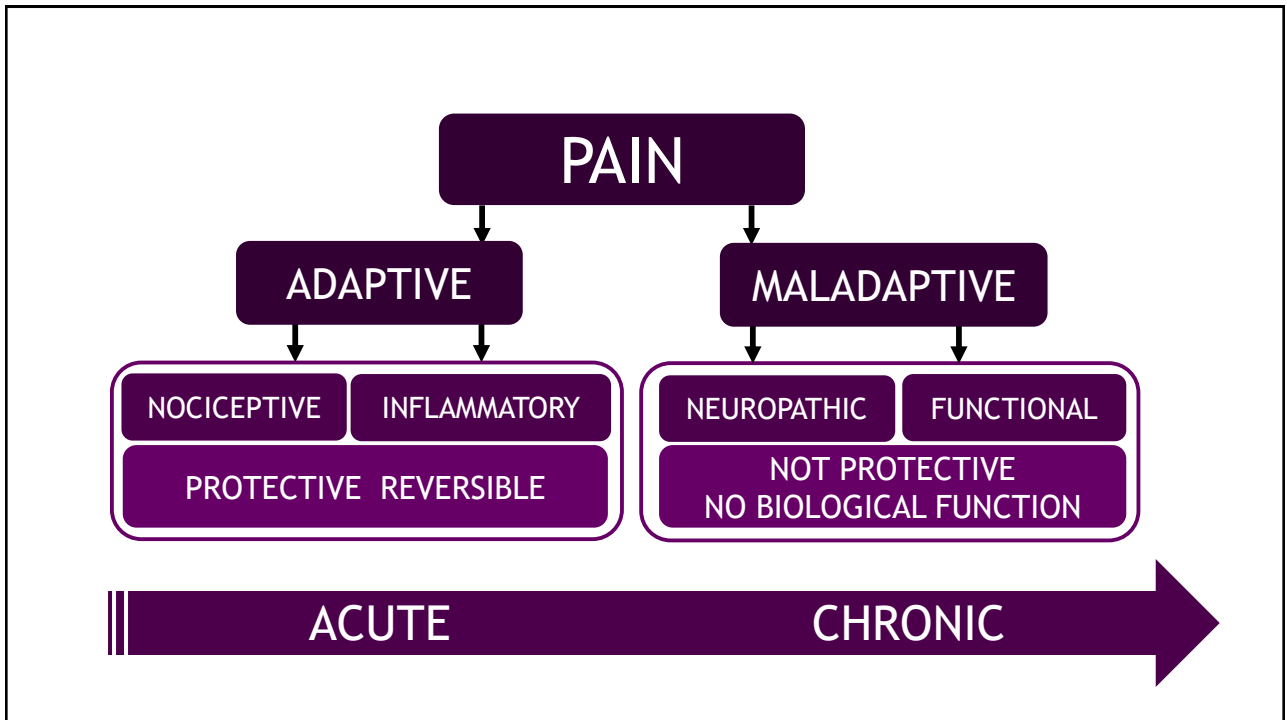↓ Compassion fatigue and stress

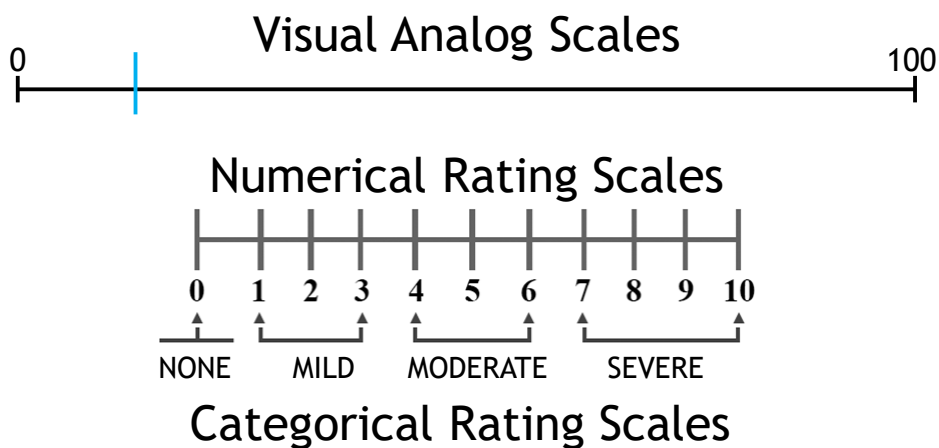Improves work satisfaction ☺

14

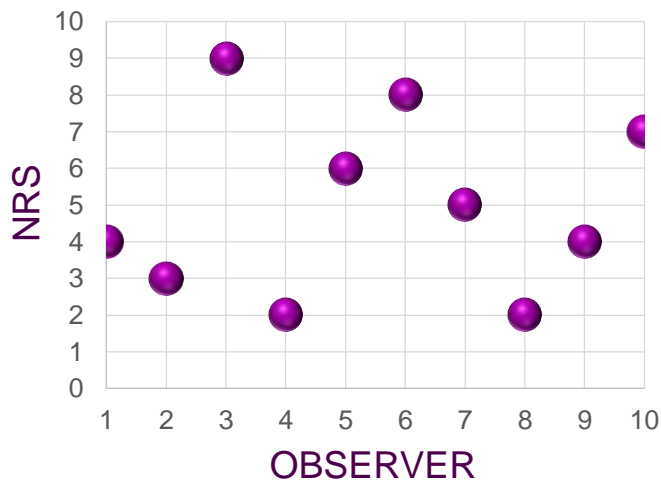What is this thing called pain?

15

SENSORY DISCRIMINATIVE	MOTIVATIONAL AFFECTIVE	PSYCHOLOGIC COGNITIVE EVALUATIVE
WHERE? WHEN? INTENSITY	UNPLEASANT FEELINGS	WHAT AFFECTS PAIN PERCEPTION

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Slide 17

PAIN

ADAPTIVE

MALADAPTIVE

NOCICEPTIVE	INFLAMMATORY
PROTECTIVE REVERSIBLE	

NEUROPATHIC	FUNCTIONAL
NOT PROTECTIVE NO BIOLOGICAL FUNCTION	

ACUTE   CHRONIC

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Slide 18

Unidimensional scales

Visual Analog Scales

0   100

Numerical Rating Scales

0   1   2   3   4   5   6   7   8   9   10

NONE   MILD   MODERATE   SEVERE

Categorical Rating Scales

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Unidimensional scales

29 to 36%
Inter-observer
Variability

Holton *et al* 1998 JAVMA

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One size does not fit all

20

Melanocortin 1 receptor (MC1R) gene

Altered pain sensitivity

Increased sensitivity to opioids

Decreased efficacy of local anesthetics

Higher anesthetic requirements

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RESEARCH PAPER   Perez *et al* VAA 2017

Relationship between the melanocortin-1
receptor (MC1R) variant R306ter and
physiological responses to mechanical
or thermal stimuli in Labrador Retrievers

22

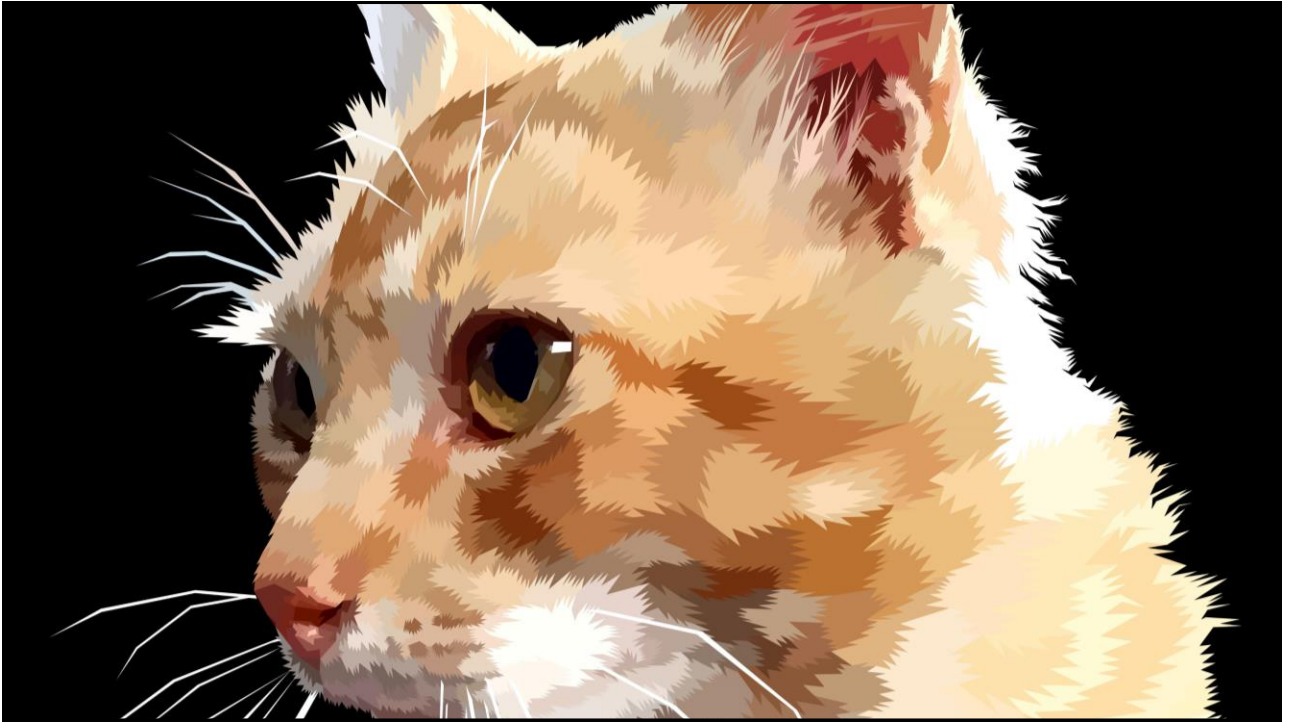
23

Assessment

Normal behaviors

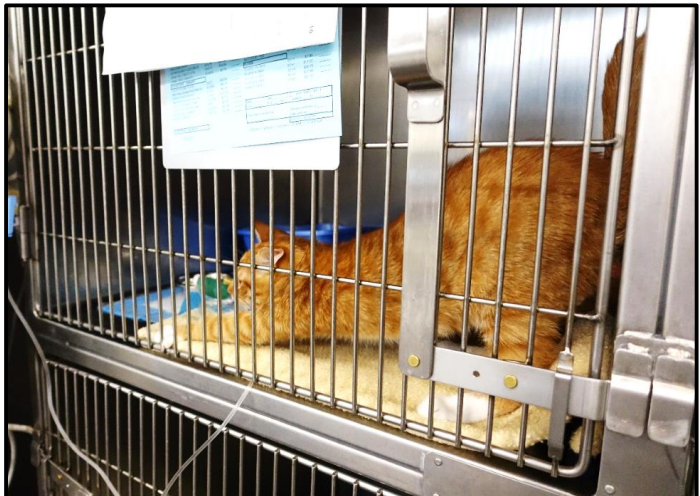Loss of normal behaviors

Development of new behaviors

24

25

Normal Behavior

26

Validation of the English version of the UNESP-Botucatu multidimensional composite pain scale for assessing postoperative pain in cats

10 assessment domains

Blood pressure

Appetite

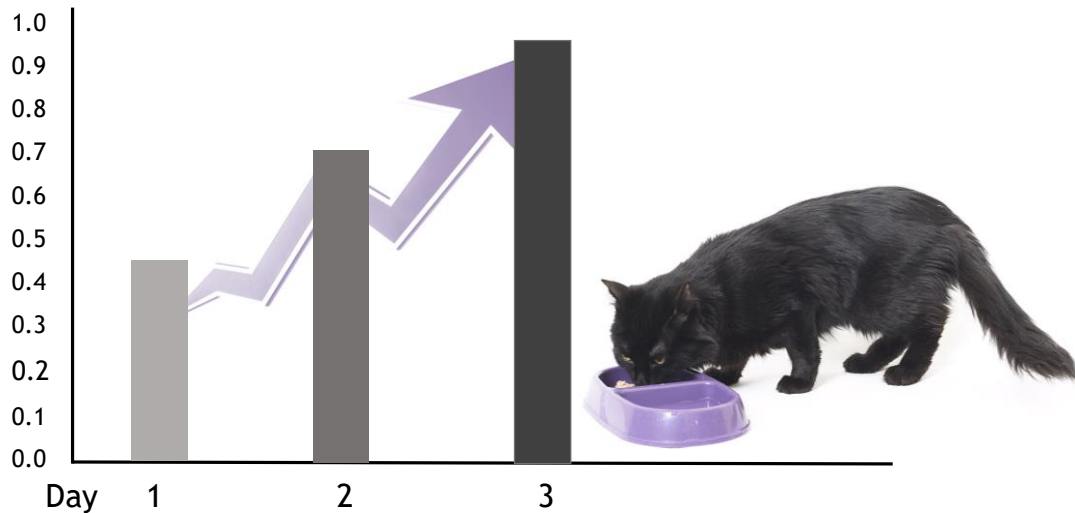Maximum score = 30

Intervention ≥ 7

Brondani *et al* 2013 BMC Vet Res
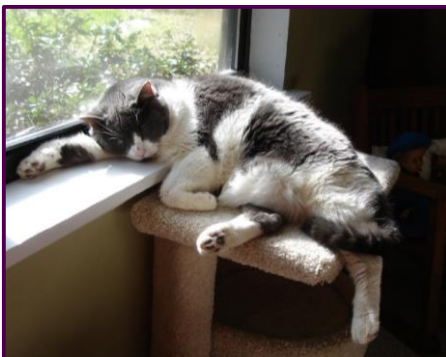
27

28

Appetite after admission

Zeiler *et al* 2014 JFMS

29

Objective Measures

Evaluation of the effects of the hospital visit stress on physiologic parameters in the cat

Heart rate, respiratory rate, blood pressure

Quimby *et al* 2011 JFMS

30

Short-form CPS-UNESP-Botucatu

Unpublished work

- Four blocks of questions
- Dynamic and interactive approach
- 12 points (rescue analgesia ≥ 4)
- No physiological variables

Video and real-time assessment

Different types of pain

Eight languages

Université de Montréal

31

Definitive Glasgow acute pain scale for cats: Validation & intervention level

7 Questions

Facial expression

Maximum score is 20

Suggested intervention ≥ 5

Reid *et al* 2017 Vet Rec www.newmetrica.com

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Assessment Domains

01 | Vocalization

02 | Posture

03 | Attention To Wound

04 | Facial Expression

05 | Interaction With People

06 | Response To Palpation

07 | Overall Demeanor

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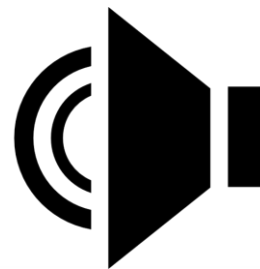# Vocalization

Is the cat:

Silent/purring/meowing	0
Crying/growling/groaning	1

Question 1

34

Posture

35

Posture

Is the cat:

Relaxed	0
Licking lips	1
Restless/cowering	2
Tense/crouched	3
Rigid/hunched	4

Question 2

36

Posture

Is the cat:

Relaxed	0
Licking lips	1
Restless/cowering	2
Tense/crouched	3
Rigid/hunched	4

Question 2

37

Posture

Is the cat:

Relaxed	0
Licking lips	1
Restless/cowering	2
Tense/crouched	3
Rigid/hunched	4

Question 2

38

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Posture

Is the cat:

Relaxed	0
Licking lips	1
Restless/cowering	2
Tense/crouched	**3**
Rigid/hunched	**4**

Question 2

39
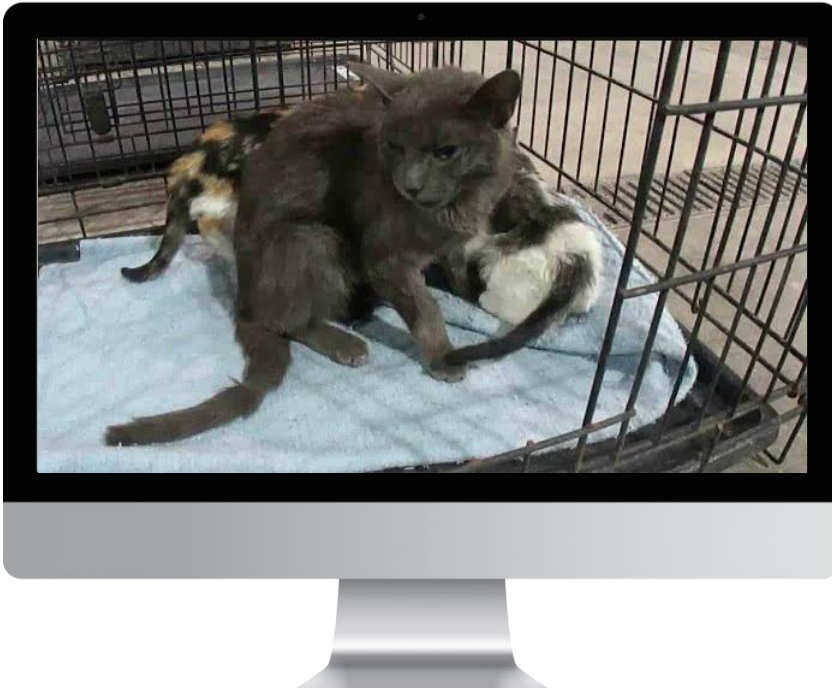
40

Attention to the wound

Is the cat:

Ignoring wound or painful area	0
Paying attention to the wound	1

Question 3

1872
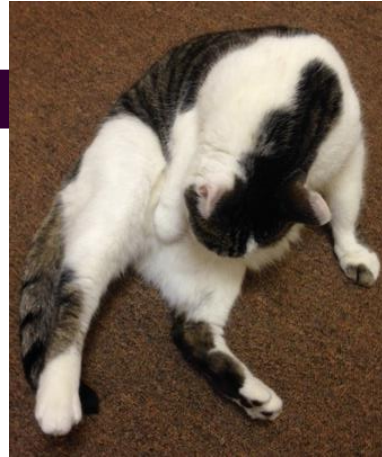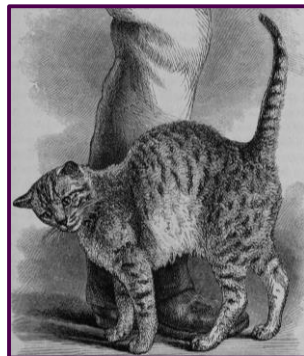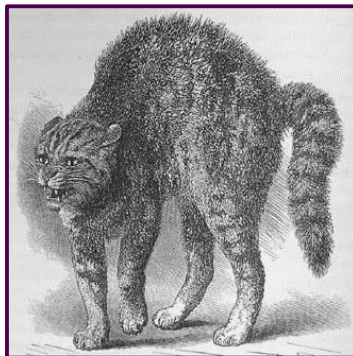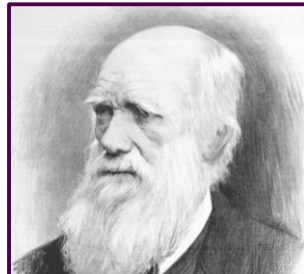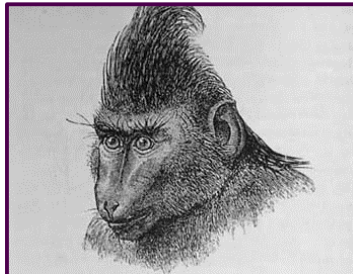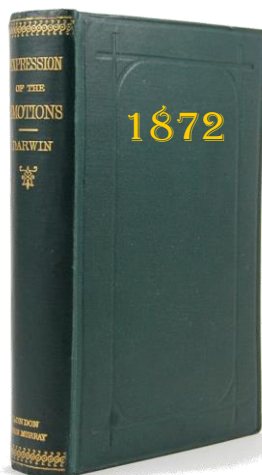
Facial expression: An under-utilized tool for the assessment of welfare in mammals

❑ Affective states, emotions
❑ Unlearned, hardwired
❑ Temporally relevant
❑ Measurable
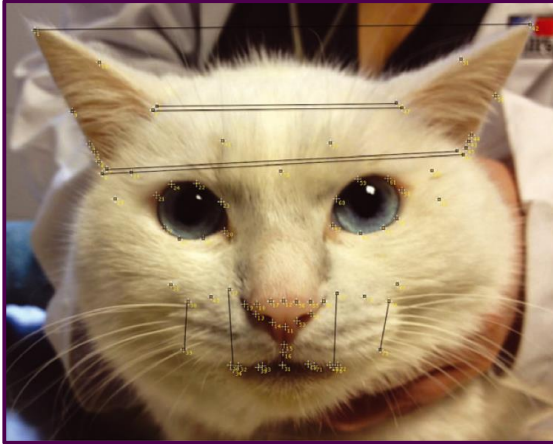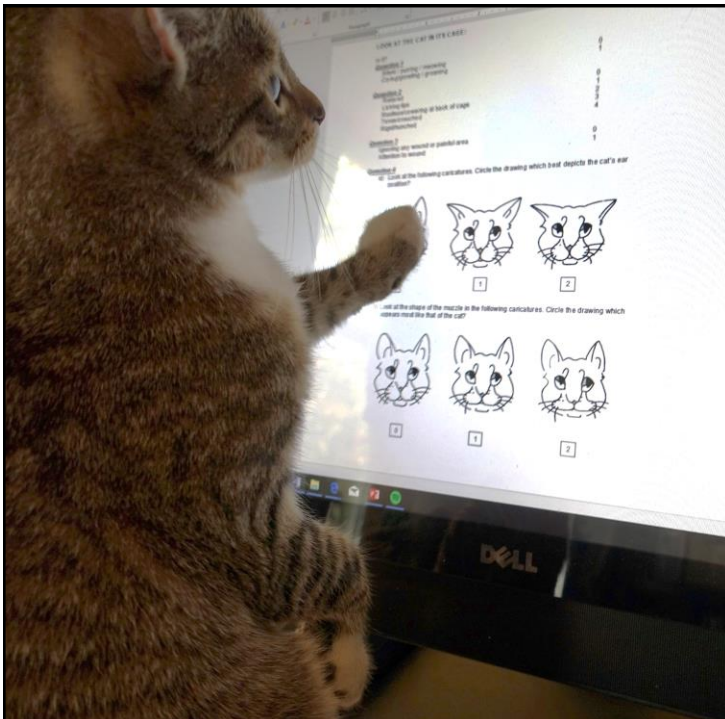❑ Not suppressed
❑ Sensitive

43
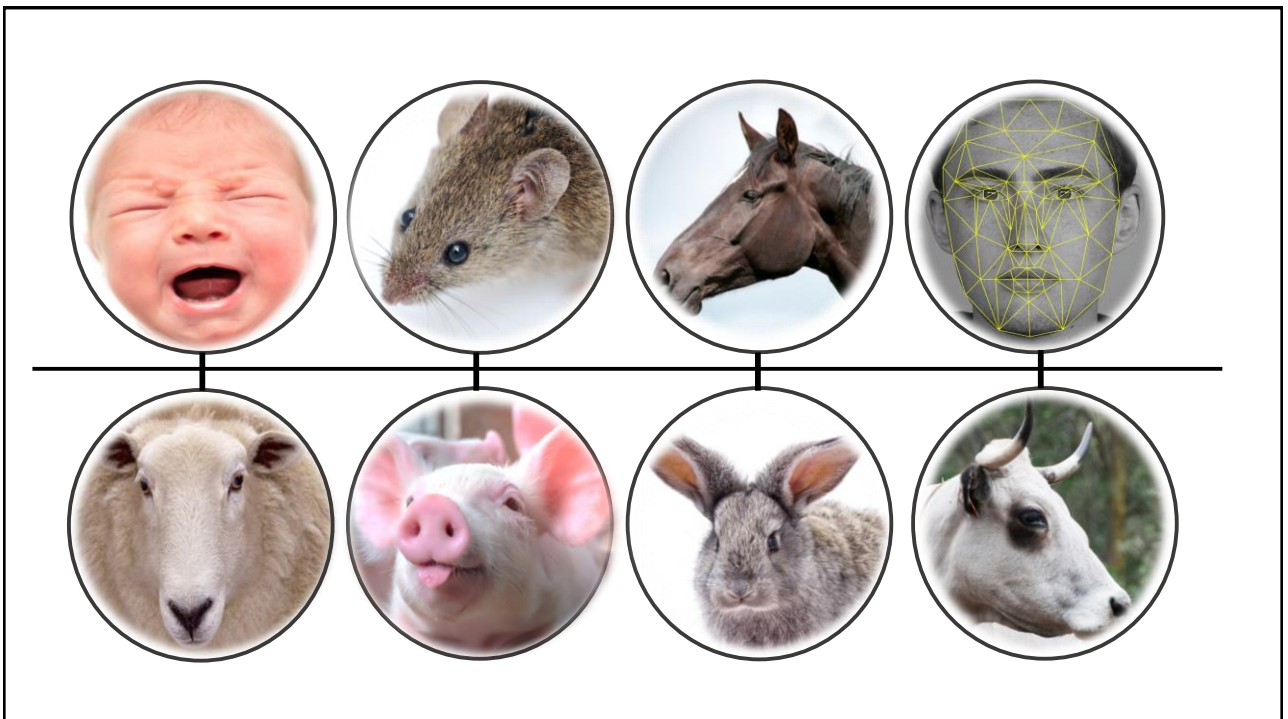
44

Evaluation of facial expression in acute pain in cats

Ear position and tension in the muzzle

Holden *et al* 2014 JSAP

45

Question 4

	0	1	2
EARS	0	1	2
MUZZLE	0	1	2

46

47

Before and After

48

Misclassification

Adding facial expression to assessment

| Original pain scale | 27% |
| Definitive scale | 18% |

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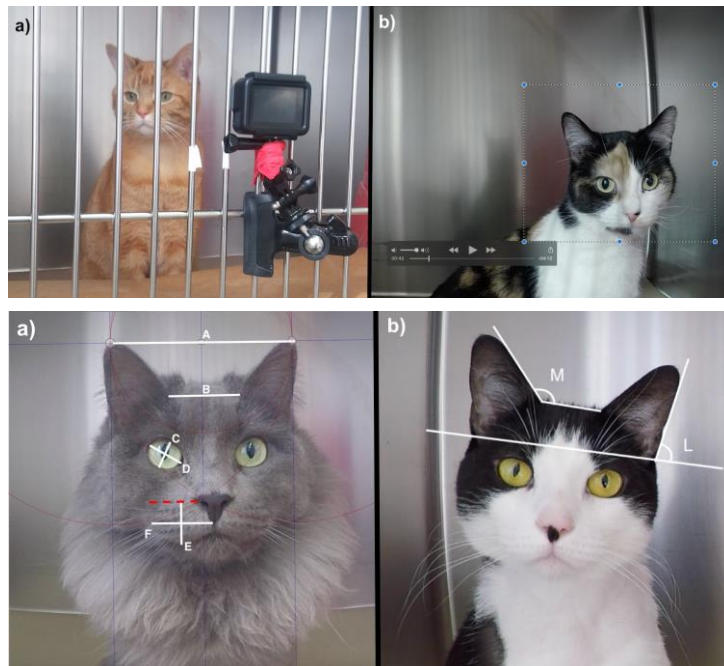# Feline Grimace Scale

50

Grimace Scales

"Scoring the face?"

Interventional level for rescue analgesia?

Practical, non-equipment, cost-effective tool for pain recognition to improve treatment standards

51

52

Slide 53

FELINE GRIMACE SCALE

FELINE GRIMACE SCALE

Action units
Scores 0-2 for each action unit (four raters)
Training manual

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Slide 54

Validity and Reliability of the Feline Grimace Scale

ACTION UNITS	0	1	2
Ears	Up	Apart	Flat
Eyes	Open	Partially open	Squinted
Muzzle	Relaxed	Mildly tense	Tense
Whiskers	Loose	Curved	Straight
Head position	Above	Level	Below

54

Results

Discriminated painful from non-painful cats

Correlated well with the rCMFS-Glasgow

Inter-observer reliability 0.89 (95 % CI = 0.85-0.92)
Intra-observer reliability 0.91 (95 % CI = 0.81-0.95)

55

56

Interaction with people

Approach the cage, call the cat by name and stroke along its back from head to tail.

Does it

Is it

Respond to stroking?	0
Unresponsive?	1
Aggressive?	2

57

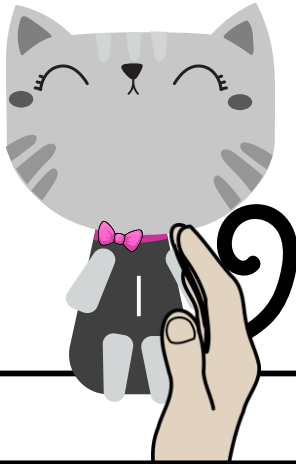# Real Life! Don't try with this cat!

58

Palpation

If the cat has a wound or painful area, gently apply pressure around the site

Does it:

Do nothing	0
Swish tail or flatten ears	1
Cry/hiss	2
Growl	3
Bite/lash out	4

Question 6

59

60

61

General Impression

Is the cat:

Happy and content	0
Disinterested / quiet	1
Anxious / fearful	2
Dull	3
Depressed / grumpy	4

Question 7

62

Which questions show most agreement?

BROAD AGREEMENT	DICHOTOMY	BROAD DISAGREEMENT
3 Attention to wound **4** Muzzle **5** Response to stroking	**1** Vocalization **2** Posture **6** Response to palpation	**7** General impression

63

Is it ever straightforward with cats?

01 Individual temperament and personality

02 Fear and stress

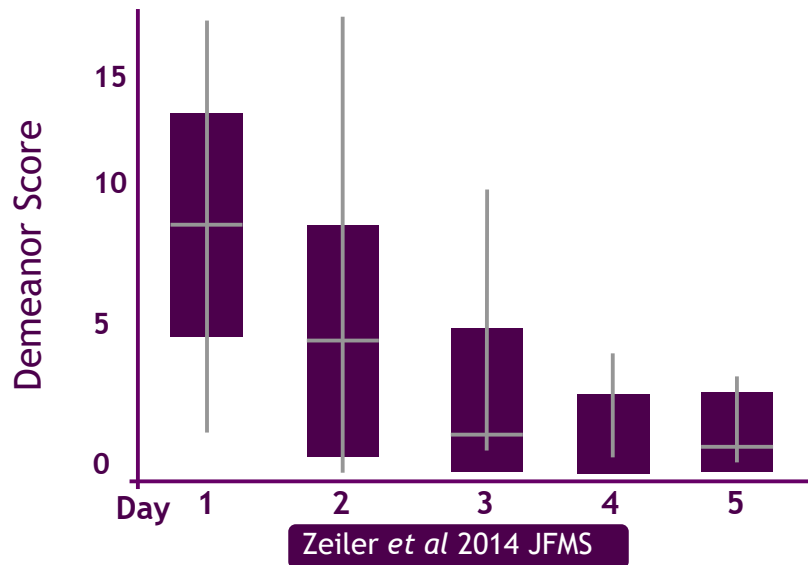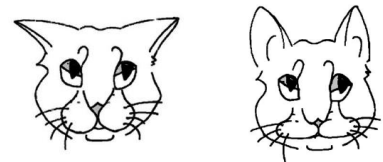03 Anesthetic drugs

64

Demeanor score

Zeiler *et al* 2014 JFMS

65

Fear and stress

Image courtesy of Ilona Rodan

Relaxed	0
Licking lips	1
Restless/cowering	2
Tense/crouched	3
Rigid/hunched	4

66

Anesthetic drugs

![Journal of Feline Medicine and Surgery logo — jfms]

**Effects of ketamine and alfaxalone
on application of a feline
pain assessment scale**

Buisman *et al* 2015 JFMS

67

Comparisons

Before	After

68

Clinical application

Not all cats have a score of 0 before surgery

Fear, anxiety and stress can look like pain

Trust yourself and not just the number

Look for changes

69

RESOURCES
www.newmetrica.com

70

http://www.animalpain.com.br/en-us/

http://www.animalpain.com.br/en-us/avaliacao-da-dor-em-gatos.php

71