



Schmerzerkennung

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Ziele

- Verstehen, warum Schmerzerkennung eine Herausforderung ist
- Unterschiede in der Bewertung akuter und chronischer Schmerzen kennen
- Möglichkeiten der Schmerzbewertung kennen

Schmerz: Definition

Schmerz ist eine unangenehme sensorische und emotionelle Erfahrung, die durch eine tatsächliche oder potentielle Gewebeschädigung ausgelöst wird.

(International Association for the Study of Pain)

→ Schmerz ist eine subjektive Erfahrung

Schmerzerkennung: Warum? 1

§1 TSchG

Verantwortung des Menschen für das Tier als Mitgeschöpf dessen Leben und Wohlbefinden zu schützen. Niemand darf einem Tier ohne vernünftigen Grund **Schmerzen**, Leiden oder Schäden zufügen (1972)

Schmerzerkennung: Warum? 2

Quality of Life (QOL)

- subjektive, persönliche Empfindung eines Individuums
- Fokus auf die individuelle Perspektive
- Abwenden von Leid → Erreichen von guter bis exzellenter QOL

Fortschritt in der Schmerzphysiologie und Behandlung
Weiterentwicklung und Verfügbarkeit von Analgetika

→ kein Goldstandard in Schmerzerkennung und Therapie

Schmerztherapie: Allgemeines

Alter

- jüngere Tierärzte in UK und FIN gaben höhere Pain Scores (Price 2002; Raekallio 2003)

Ort der Ausbildung

- Einfluss auf Wahl der Analgetika (Price 2002)

Geschlecht

- Frauen in FIN: höhere Pain Scores und häufiger Analgesie (Raekallio 2003)

Wissenstand

- 84 % in Brasilien: eigenes Wissen nicht adäquat (Lorena et al. 2013)
- 96% in Frankreich: Sorge über adäquate Erkennung und Behandlung von Schmerz beim Tier (Hugonnard et al. 2004)

Standardisierte Schmerzerkennung

- Vergleichbare Ergebnisse bei unterschiedlichen Untersuchern
- Schmerz sicher erkennen
- Klare Richtlinien wann analgetische Therapie erforderlich ist
- Therapiekontrolle

Schmerzerkennung

Schwierigkeiten:

- Schmerz subjektive Wahrnehmung
- Nicht quantifizierbar
- Katze: versteckt sich oft
- Klinische Situation $\leftrightarrow$ experimentelle Studien

Ideales Instrument zur Schmerzerkennung:

- Direkt beim Patienten/ auf der Station einsetzbar
- Nicht invasiv
- Schnell durchzuführen
- Zuverlässig, nicht störanfällig
- Genau
- Kostengünstig
- Keine Beeinflussung durch Untersucher

Einfache Skalen

Einfache deskriptive Skala:

Nicht schmerzhaft
Geringgradig schmerzhaft
Mittelgradig schmerzhaft
Hochgradig schmerzhaft

Visuelle analoge Skala (VAS):



Numerische Skala (NRS):



Physiologische Parameter

- Herz-/ Pulsfrequenz
 - Blutdruck
 - Atemfrequenz

 - Kortisol + Metaboliten (Blut, Speichel,...)
 - Katecholamine
 - Zytokine
- Auch durch andere Dinge beeinflusst z.B. Stress, Erkrankungen
- Laborparameter:
- zeitlich versetztes Untersuchungsergebnis
 - Kosten

Zusammengesetzte Schmerzskalen

1. Verschiedene physiologische und Verhaltens-Parameter werden mit einer Punktzahl beurteilt
2. Am Ende werden alle Punkte zusammengezählt und ergeben den Schmerzscore
3. Anhand der Gesamtpunktzahl wird die analgetische Therapie angepasst

Ziel: Durch Kombination verschiedener Parameter objektive Beurteilung

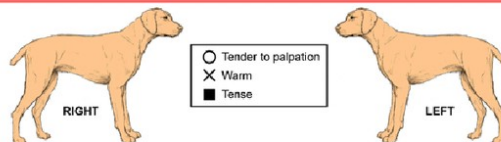
Colorado State University acute pain scale

Colorado State University

Colorado State University
Veterinary Medical Center
Canine Acute Pain Scale

Date _____
Time _____

Pain Score	Example	Psychological & Behavioral	Response to Palpation	Body Tension
0		☐ Animal is sleeping, but can be aroused - Not evaluated for pain ☐ Animal can't be aroused, check vital signs, assess therapy ☐ Comfortable when resting ☐ Happy, content ☐ Not bothering wound or surgery site ☐ Interested in or curious about surroundings	☐ Nontender to palpation of wound or surgery site, or to palpation elsewhere	Minimal
1		☐ Content to slightly unsettled or restless ☐ Distracted easily by surroundings	☐ Reacts to palpation of wound, surgery site, or other body part by looking around, flinching, or whimpering	Mild
2		☐ Looks uncomfortable when resting ☐ May whimper or cry and may lick or rub wound or surgery site when unattended ☐ Droopy ears, worried facial expression (arched eye brows, darting eyes) ☐ Reluctant to respond when beckoned ☐ Not eager to interact with people or surroundings but will look around to see what is going on	☐ Flinches, whimpers cries, or guards/pulls away	Mild to Moderate Reassess analgesic plan
3		☐ Unsettled, crying, groaning, biting or chewing wound when unattended ☐ Guards or protects wound or surgery site by altering weight distribution (i.e., limping, shifting body position) ☐ May be unwilling to move all or part of body	☐ May be subtle (shifting eyes or increased respiratory rate) if dog is too painful to move or is stoic ☐ May be dramatic, such as a sharp cry, growl, bite or bite threat, and/or pulling away	Moderate Reassess analgesic plan
4		☐ Constantly groaning or screaming when unattended ☐ May bite or chew at wound, but unlikely to move ☐ Potentially unresponsive to surroundings ☐ Difficult to distract from pain	☐ Cries at non-painful palpation (may be experiencing allodynia, wind-up, or fearful that pain could be made worse) ☐ May react aggressively to palpation	Moderate to Severe May be rigid to avoid painful movement Reassess analgesic plan



Comments _____

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Supported by an Unrestricted Educational Grant from Pfizer Animal Health,

20.09.2023

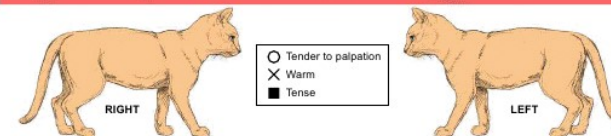
Stiftung Tierärztliche Hochschule Hannover
University of Veterinary Medicine Hannover, Foundation

Colorado State University

Colorado State University
Veterinary Medical Center
Feline Acute Pain Scale

Date _____
Time _____

Pain Score	Example	Psychological & Behavioral	Response to Palpation	Body Tension
0		☐ Animal is sleeping, but can be aroused - Not evaluated for pain ☐ Animal can't be aroused, check vital signs, assess therapy ☐ Content and quiet when unattended ☐ Comfortable when resting ☐ Interested in or curious about surroundings	☐ Not bothered by palpation of wound or surgery site, or to palpation elsewhere	Minimal
1		☐ Signs are often subtle and not easily detected in the hospital setting; more likely to be detected by the owner(s) at home ☐ Earliest signs at home may be withdrawal from surroundings or change in normal routine ☐ In the hospital, may be content or slightly unsettled ☐ Less interested in surroundings but will look around to see what is going on	☐ May or may not react to palpation of wound or surgery site	Mild
2		☐ Decreased responsiveness, seeks solitude ☐ Quiet, loss of brightness in eyes ☐ Lays curled up or sits tucked up (all four feet under body, shoulders hunched, head held slightly lower than shoulders, tail curled tightly around body) with eyes partially or mostly closed ☐ Hair coat appears rough or fluffed up ☐ May intensively groom an area that is painful or irritating ☐ Decreased appetite, not interested in food	☐ Responds aggressively or tries to escape if painful area is palpated or approached ☐ Tolerates attention, may even perk up when petted as long as painful area is avoided	Mild to Moderate Reassess analgesic plan
3		☐ Constantly yowling, growling, or hissing when unattended ☐ May bite or chew at wound, but unlikely to move if left alone	☐ Growls or hisses at non-painful palpation (may be experiencing allodynia, wind-up, or fearful that pain could be made worse) ☐ Reacts aggressively to palpation, adamantly pulls away to avoid any contact	Moderate Reassess analgesic plan
4		☐ Prostrate ☐ Potentially unresponsive to or unaware of surroundings, difficult to distract from pain ☐ Receptive to care (even mean or wild cats will be more tolerant of contact)	☐ May not respond to palpation ☐ May be rigid to avoid painful movement	Moderate to Severe May be rigid to avoid painful movement Reassess analgesic plan



Comments _____

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Glasgow Feline Composite Measure Pain Scale

Choose the most appropriate expression from each section and total the scores to calculate the pain score for the cat. If more than one expression applies choose the higher score

LOOK AT THE CAT IN ITS CAGE:

Is it?

Question 1

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

Question 2

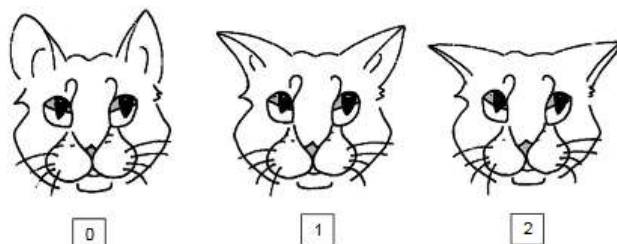
Relaxed	0
Licking lips	1
Restless/cowering at back of cage	2
Tense/crouched	3
Rigid/hunched	4

Question 3

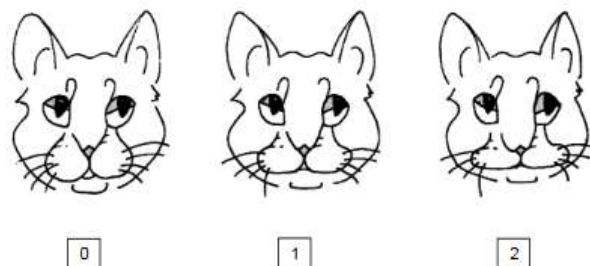
Ignoring any wound or painful area	0
Attention to wound	1

Question 4

a) Look at the following caricatures. Circle the drawing which best depicts the cat's ear position?



b) Look at the shape of the muzzle in the following caricatures. Circle the drawing which appears most like that of the cat?



APPROACH THE CAGE, CALL THE CAT BY NAME & STROKE ALONG ITS BACK FROM HEAD TO TAIL

Question 5

Does it?

Respond to stroking	0
---------------------	---

Is it?

Unresponsive	1
Aggressive	2

IF IT HAS A WOUND OR PAINFUL AREA, APPLY GENTLE PRESSURE 5 CM AROUND THE SITE. IN THE ABSENCE OF ANY PAINFUL AREA APPLY SIMILAR PRESSURE AROUND THE HIND LEG ABOVE THE KNEE

Question 6

Does it?

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

Question 7

General impression

Is the cat?

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

Pain Score ... /20

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UNESP-Botucatu Multidimensional Composite Pain Scale (Katze)

Subscale 1: PAIN EXPRESSION (0 – 12)				Subscale 2: PSYCHOMOTOR CHANGE (0 – 12)				Attitude				Subscale 3: PHYSIOLOGICAL VARIABLES (0 – 6)					
Miscellaneous behaviors	Observe and mark the presence of the behaviors listed below:			Posture	The cat is in a natural posture with relaxed muscles (it moves normally).	0		Attitude	Observe and mark the presence of the mental states listed below:			Arterial blood pressure	0% to 15% above pre-surgery value.	0			
	A - The cat is laying down and quiet, but moving its tail.	A			The cat is in a natural posture but is tense (it moves little or is reluctant to move).	1			A - Satisfied: The cat is alert and interested in its surroundings (explores its surroundings), friendly and interactive with the observer (plays and/or responds to stimuli).	A			16% to 29% above pre-surgery value.	1			
	B - The cat contracts and extends its pelvic limbs and/or contracts its abdominal muscles (flank).	B			The cat is sitting or in sternal recumbency with its back arched and head down, or The cat is in dorso-lateral recumbency with its pelvic limbs extended or contracted.	2			* The cat may initially interact with the observer through games to distract it from the pain. Carefully observe to distinguish between distraction and satisfaction games.	B			30% to 45% above pre-surgery value.	2			
	C - The cat's eyes are partially closed (eyes half closed).	C			The cat frequently alters its body position in an attempt to find a comfortable posture.	3			* In cats which don't like to play, evaluate interaction with the observer by its response to calls and strokes.	C			> 45% above pre-surgery value.	3			
	D - The cat licks and/or bites the surgical wound.	D			Comfort	The cat is comfortable, awake or asleep, and interacts when stimulated (it interacts with the observer and/or is interested in its surroundings).	0			B - Uninterested: The cat does not interact with the observer (not interested by toys or plays a little; does not respond to calls or strokes from the observer).	B			Appetite	The cat is eating normally.	0	
	All above behaviors are absent.	0				The cat is quiet and slightly receptive when stimulated (it interacts little with the observer and/or is not very interested in its surroundings).	1			* In cats which don't like to play, evaluate interaction with the observer by its response to calls and strokes.	C				The cat is eating more than normal.	1	
Presence of one of the above behaviors.	1		The cat is quiet and "dissociated from the environment" (even when stimulated it does not interact with the observer and/or has no interest in its surroundings). The cat may be facing the back of the cage.	2		C - Indifferent: The cat is not interested in its surroundings (it is not curious; it does not explore its surroundings).	C		The cat is eating less than normal.	2							
Presence of two of the above behaviors.	2		The cat is uncomfortable, restless (frequently changes its body position), and slightly receptive when stimulated or "dissociated from the environment". The cat may be facing the back of the cage.	3		* The cat can initially be afraid to explore its surroundings. The observer needs to handle the cat and encourage it to move itself (take it out of the cage and/or change its body position).	D		The cat is not interested in food.	3							
Presence of three or all of the above behaviors.	3		Activity	Reaction to palpation of the surgical wound	The cat does not react when the surgical wound is touched or pressed; or no change from pre-surgical response (if basal evaluation was made).	0		D - Anxious: The cat is frightened (it tries to hide or escape) or nervous (demonstrating impatience and growling, howling, or hissing when stroked and/or handled).	D		TOTAL SCORE (0 – 30)						
The cat does not react when the surgical wound is touched, but does react when it is pressed. It may vocalize and/or try to bite.	1				E - Aggressive: The cat is aggressive (tries to bite or scratch when stroked or handled).	E											
The cat reacts when the surgical wound is touched and when pressed. It may vocalize and/or try to bite.	2				Presence of the mental state A.	0											
The cat reacts when the observer approaches the surgical wound. It may vocalize and/or try to bite. The cat does not allow palpation of the surgical wound.	3				Presence of one of the mental states B, C, D, or E.	1											
Reaction to palpation of the abdomen/flank	The cat does not react when the abdomen/flank is touched or pressed; or no change from pre-surgical response (if basal evaluation was made). The abdomen/flank is not tense.	0				Presence of two of the mental states B, C, D, or E.	2										
	The cat does not react when the abdomen/flank is touched, but does react when it is pressed. The abdomen/flank is tense.	1				Presence of three or all of the mental states B, C, D, or E.	3										
	The cat reacts when the abdomen/flank is touched and when pressed. The abdomen/flank is tense.	2															
	The cat reacts when the observer approaches the abdomen/flank. It may vocalize and/or try to bite. The cat does not allow palpation of the abdomen/flank.	3															
Vocalization	The cat is quiet, purring when stimulated, or miaows interacting with the observer, but does not growl, groan, or hiss.	0															
	The cat purrs spontaneously (without being stimulated or handled by the observer).	1															
	The cat growls, howls, or hisses when handled by the observer (when its body position is changed by the observer).	2															
	The cat growls, howls, hisses spontaneously (without being stimulated or handled by the observer).	3															

<http://www.animalpain.com.br/en-us/escala-multidimensional.php>

Zusammengesetzte Schmerzskalen Pferd

BEZEICHNUNG	ANZAHL PARAMETER				ZEITAUFWAND (MIN)	VALIDIERT FÜR	REFERENZEN
	GESAMT	ETHOLOGISCH	MIMIK	PHYSIOLOGISCH			
Composite Pain Scale (CPS) (Bussiès)	11	7	0	4	7-8	experimenteller orthopädischer Schmerz (n = 18) klinische Anwendung bei verschiedene Schmerzarten (n = 94) post OP Kolik (n = 48)	Bussiès et al. (2008) Van Loon et al. (2010) Van Loon et al. (2014)
modifizierter CPS	14	10	1	4	7-8	post OP Kastration (n = 40 + 6 bzw. n = 51 + 6) akute Hufrehe (n = 9) Einfluss Vollnarkose (n = 6)	Stucke et al. (2013) Dalla Costa et al. (2014) Stucke et al. (2014) Dalla Costa et al. (2016)
EQUUS-COMPASS	14	10	0	4	7-8	akuter Kolikschmerz (n = 25 + 25)	Van Loon und Van Dierendonck (2015)
Composite Measure Pain Scale (CMPS)	7	7	0	0	1	experimentelle Synovitis (n = 8)	Lindegaard et al. (2010)
Numerical Rating Scale of Behaviour (NRS)	9	8	1	0	3-4	post OP Kolik (n = 7 + 10) Einfluss Vollnarkose (n = 10)	Pritchett et al. (2003)
Post Abdominal Surgery Pain Assessment Scale (PASPAS)	9	7	0	2	5	post OP Kolik (n = 34 + 8) Einfluss Vollnarkose (n = 8)	Graubner et al. (2011)
Equine Pain Scale	9	8	1	0	3-4	experimenteller Schmerz (Druckman-schette, Capsicin) (n = 6) valid, nur für Parameter „Equine Pain Face“	Gleerup und Lindegaard (2016) Gleerup et al. (2015)
Horse Grimace Scale (HGS)	6	–	6	–	1	post OP Kastration (n = 40 + 6) Einfluss Vollnarkose (n = 6) akute Hufrehe (n = 9 + 9) Angst + positive Emotionen (n = 7)	Dalla Costa et al. (2014) Dalla Costa et al. (2016) Dalla Costa et al. (2017) Lecchi et al. (2017)
EQUUS-FAP	9	3	6	0	1-2	akuter Kolikschmerz (n = 25 + 25) Schmerzen Kopfbereich (n = 23 + 23)	Van Loon und Van Dierendonck (2015) Van Loon und Van Dierendonck (2017)



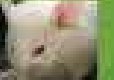
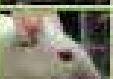
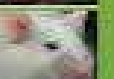
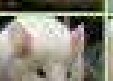
www.i-tis.de

Schmerzgesichter (Labortiere)

NC 3R National Centre for the Replacement, Refinement & Reduction of Animals in Research

The Mouse Grimace Scale

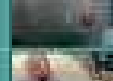
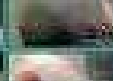
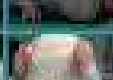
Research has demonstrated that changes in facial expression provide a means of assessing pain in mice. The specific facial action units shown below comprise the Mouse Grimace Scale. These action units increase in intensity in response to post-operative pain and can form part of a clinical assessment alongside other validated indices of pain.

	Not present "0"	Moderately present "1"	Obviously present "2"
Orbital tightening • Closing of the eyelid (narrowing of orbital area) • A wrinkle may be visible around the eye			
Cheek flattening • Flattening of the cheeks. When 'obviously present', cheeks have a sunken look. • The face becomes more angular and less rounded			
Nostril shape • Nostrils (nares) are drawn vertically forming a 'V' rather than 'U' shape • Nose tip is moved down towards the chin			
Whisker shape and position • Whiskers are pushed away from the face to 'stand on end' • Whiskers stiffen and lose their natural downward curve • Whiskers increasingly point in the same direction. When 'obviously present', whiskers move downwards			
Ear shape and position • Ears become more tightly folded / curled (more cylindrical in shape) • Ears rotate from facing towards the source of sound to facing towards the hindquarters • Ears may be held closer to the back or sides of the body			

NC 3R National Centre for the Replacement, Refinement & Reduction of Animals in Research

The Rat Grimace Scale

Research has demonstrated that changes in facial expression provide a means of assessing pain in rats. The specific facial action units shown below comprise the Rat Grimace Scale. These action units increase in intensity in response to post-operative pain and can form part of a clinical assessment alongside other validated indices of pain.

	Not present "0"	Moderately present "1"	Obviously present "2"
Orbital tightening • Closing of the eyelid (narrowing of orbital area) • A wrinkle may be visible around the eye			
Cheek flattening • Flattening of the cheeks. When 'obviously present', cheeks have a sunken look. • The face becomes more angular and less rounded			
Nostril shape • Nostrils (nares) are drawn vertically forming a 'V' rather than 'U' shape • Nose tip is moved down towards the chin			
Whisker shape and position • Whiskers are pushed away from the face to 'stand on end' • Whiskers stiffen and lose their natural downward curve • Whiskers increasingly point in the same direction. When 'obviously present', whiskers move downwards			
Ear shape and position • Ears become more tightly folded / curled (more cylindrical in shape) • Ears rotate from facing towards the source of sound to facing towards the hindquarters • Ears may be held closer to the back or sides of the body			

NC 3R National Centre for the Replacement, Refinement & Reduction of Animals in Research

Newcastle University

The Rabbit Grimace Scale

Research has demonstrated that changes in facial expression provide a means of assessing pain in rabbits. The specific facial action units shown below comprise the Rabbit Grimace Scale. These action units increase in intensity in response to post-operative pain and can form part of a clinical assessment alongside other validated indices of pain.

The action units should only be used in awake animals. Each animal should be observed for a short period of time to avoid scoring brief changes in facial expression that are unrelated to the animal's welfare.

	Not present "0"	Moderately present "1"	Obviously present "2"
Orbital tightening • Closing of the eyelid (narrowing of orbital area) • A wrinkle may be visible around the eye			
Cheek flattening • Flattening of the cheeks. When 'obviously present', cheeks have a sunken look. • The face becomes more angular and less rounded			
Nostril shape • Nostrils (nares) are drawn vertically forming a 'V' rather than 'U' shape • Nose tip is moved down towards the chin			
Whisker shape and position • Whiskers are pushed away from the face to 'stand on end' • Whiskers stiffen and lose their natural downward curve • Whiskers increasingly point in the same direction. When 'obviously present', whiskers move downwards			
Ear shape and position • Ears become more tightly folded / curled (more cylindrical in shape) • Ears rotate from facing towards the source of sound to facing towards the hindquarters • Ears may be held closer to the back or sides of the body			

Read the original paper: Keeling BJ, Turner AA, Rodwell JL, Leach MC (2013) Evaluation of BMA scores for assessing pain during laboratory of rabbits: changes in physiological, behavioural and facial expression responses. PLoS ONE 8(4):e61427. doi:10.1371/journal.pone.0061427

For advice on using the Mouse Grimace Scale, visit the images of each action unit, research papers that underpin this technique, and for grimace scales in other species, visit: www.nc3r.org.uk/grimacescales

To request copies of this poster please email: englab@ncl.ac.uk

The NC3R provides a range of life resources at www.nc3r.org.uk/liferesources

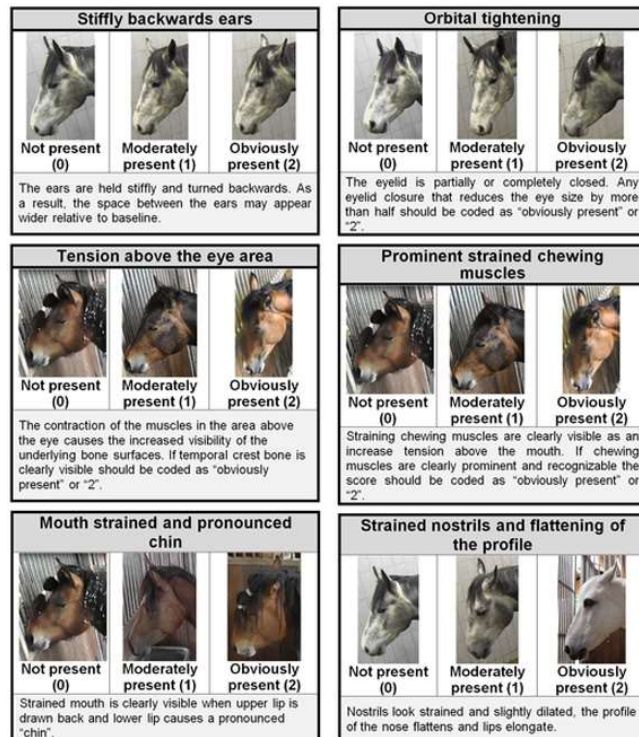
Images kindly provided by Dr Matthew Leach, Newcastle University, and Dr Patricia Heidegger, Swedish University of Agricultural Sciences

The Rabbit Grimace Scale would not have been developed without the contributing work of the Pain and Animal Welfare Sciences Group (PAWS) at Newcastle University

Schmerzgesicht Pferd

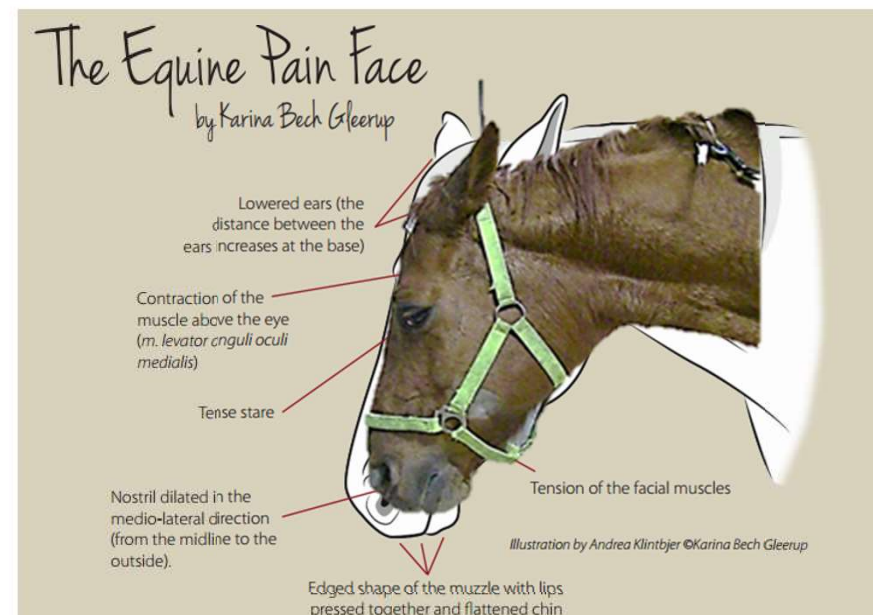
Horse Grimace Scale Dalla Costa et al. 2014

- 6 Facial Action Units (0-2 Punkte pro Parameter)
- EU AWIN („Animal Welfare Indicators“) → App
- Kastrationsschmerz (3 Gruppen)



An equine pain face Glerup et al. 2014

- 6 Facial action units
- Induzierter akuter somatischer Schmerz (BD- Manschette und Capsaicin)



Schmerzgesicht 1

Horse Grimace Scale – Erfassungsbogen

Pferd: _____ Datum/Uhrzeit: _____

Besitzer: _____ Erhoben von: _____

Steif rückwärts gerichtete Ohrstellung



Nicht ausgeprägt (0)

Die Ohrenstellung ist starr und nach hinten bzw. nach hinten-unten gerichtet. Deshalb erscheint der Abstand zwischen den Ohren im Vergleich zur Normalstellung weiter.



Moderat ausgeprägt (1)



Deutlich ausgeprägt (2)

☐ Punktzahl

Verengter Lidspalt



Nicht ausgeprägt (0)

Die Augen sind teilweise oder komplett geschlossen. Wenn die Augen um mehr als die Hälfte geschlossen sind, sollte dies als „deutlich ausgeprägt“ oder mit „2“ bewertet werden.



Moderat ausgeprägt (1)



Deutlich ausgeprägt (2)

☐ Punktzahl



www.i-tis.de

Schmerzgesicht: 2

Muskelanspannung oberhalb der Augen



Nicht ausgeprägt (0)

Die Muskelanspannung oberhalb der Augenpartie verursacht ein Sichtbarwerden der darunterliegenden Knochen. Wenn das Schläfenbein deutlich sichtbar ist, sollte dies als „deutlich ausgeprägt“ oder mit „2“ bewertet werden.



Moderat ausgeprägt (1)



Deutlich ausgeprägt (2)


☐
Punktzahl

Angespannte, hervortretende Kaumuskulatur



Nicht ausgeprägt (0)

Angespannte Kau-/Gesichtsmuskeln sind am deutlichsten im Bereich über dem Maul zu erkennen. Wenn die Kaumuskeln markant und erkennbar sind, sollte die Bewertung „deutlich ausgeprägt“ oder „2“ lauten.



Moderat ausgeprägt (1)



Deutlich ausgeprägt (2)

☐
Punktzahl

www.i-tis.de

Schmerzgesicht 3

Zusammengepresste Maulspalte, „Kinn“ hervortretend



Nicht ausgeprägt (0)

Eine angespannte Maulpartie ist am deutlichsten zu erkennen, wenn sich die Maulspalte verkürzt und die zurückgezogene Unterlippe ein verkrampftes „Kinn“ bildet.



Moderat ausgeprägt (1)



Deutlich ausgeprägt (2)

☐
Punktzahl



Angespannte Nüstern, Abflachung des Profils



Nicht ausgeprägt (0)

Die Nüstern sehen angespannt und leicht geweitet aus, das Nasenprofil ist abgeflacht und die Oberlippe erscheint im Profil verlängert.



Moderat ausgeprägt (1)



Deutlich ausgeprägt (2)

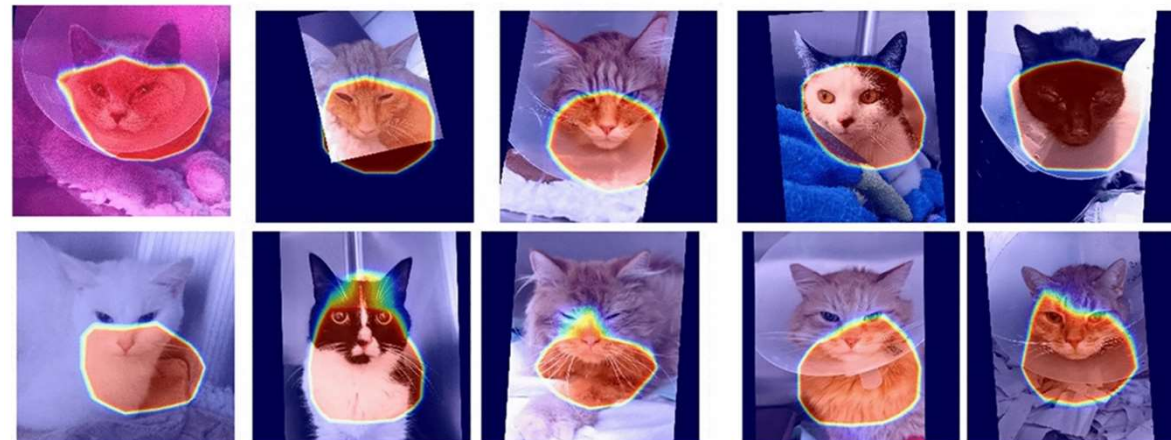
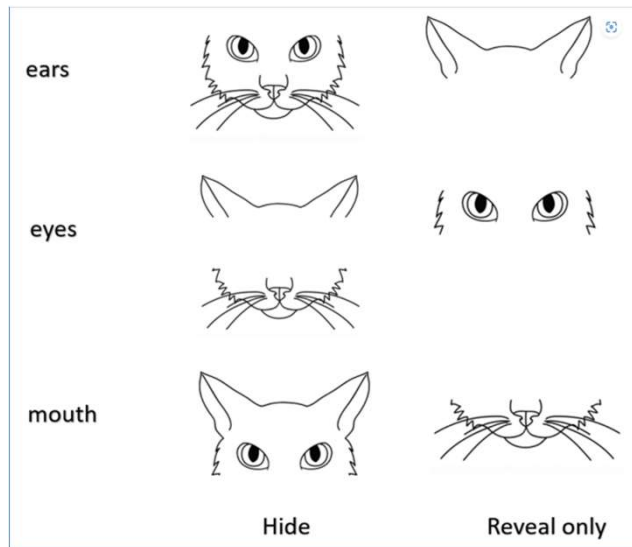
Fotos (2): Lebelt/Stucke

☐
Punktzahl

☐
Gesamtpunktzahl

Eine HGS-Gesamtpunktzahl ≥ 2 signalisiert einen vorliegenden Schmerzzustand. Bei einem HGS < 2 könnten auch andere emotionale Zustände für die Veränderungen der Mimik verantwortlich sein. Bei > 2 Punkten reflektiert die Höhe der Gesamtpunktzahl die Intensität des Schmerzzustandes.

Künstliche Intelligenz ?



Chronischer Schmerz

- Oft langsame Veränderung über längeren Zeitraum
- Meinung: Tier ist „alt“
- Symptome teils nicht als „Schmerz“ erkannt
- z.B.:
 - Unsauberkeit
 - Verändertes Fressverhalten
 - Veränderte Aktivität (spielen, springen, toben)
 - Meiden von Berührungen/ Bürsten

Helsinki Chronic Pain Index: Besitzerfragebogen

Helsinki Chronic Pain Index

Hielm-Bjorkman HK, Rita H, Tulamo R-M. Psychometric testing of the Helsinki chronic pain index by completion of a questionnaire in Finnish by owners of dogs with chronic signs of pain caused by osteoarthritis. Am J Vet Res. 70: 727 – 734, 2009.

(As translated from Finnish to English)

Circle the pain and function description that best represents your dog's behaviour:

Rate your dog's attitude and/or mood:

0	1	2	3	4
Very alert	Alert	Neither alert nor disinterested	Disinterested	Very disinterested/ lethargic

Rate your dog's willingness to participate in play or interact:

0	1	2	3	4
Very willing	Willing	Reluctant	Very reluctant	Does not participate or interact at all

Rate your dog's frequency in vocalization or discomfort behaviour (audible whining, grunting, yelping, or unusual licking):

0	1	2	3	4
Never	Hardly ever	Sometimes	Often	Very often

Rate your dog's eagerness to walk:

0	1	2	3	4
Very eager	Eager	Reluctant	Very reluctant	Does not want to walk at all

Rate your dog's ability and/or willingness to walk up and/or down stairs:

0	1	2	3	4
Very willing/able	Willing/able	Reluctant	Very reluctant	Does not do stairs at all

Rate your dog's ability and/or willingness to run:

0	1	2	3	4
Very willing/able	Willing/able	Reluctant	Very reluctant	Does not run at all

Rate your dog's ability and/or willingness to jump (onto bed, couch, vehicle, etc):

0	1	2	3	4
Very willing/able	Willing/able	Reluctant	Very reluctant	Does not jump at all

Rate your dog's ease in lying down:

0	1	2	3	4
Very easy	Easy	Neither easy nor difficult	Difficult	Very difficult

Rate your dog's rising from a down position:

0	1	2	3	4
Very easy	Easy	Neither easy nor difficult	Difficult	Very difficult

Rate your dog's ease of movement after a long rest:

0	1	2	3	4
Very easy	Easy	Neither easy nor difficult	Difficult	Very difficult

Rate your dog's ease of movement during and/or after exercise/walks (tired, dragging feet, scuffing nails, lying down):

0	1	2	3	4
Very easy	Easy	Neither easy nor difficult	Difficult	Very difficult

Liverpool Osteoarthritis in Dogs: Besitzerfragebogen

Background

1. How long has your pet been suffering with his/her mobility problem?
☐ Up to 6 months ☐ 6–12 months ☐ 12–24 months ☐ 24–36 months ☐ more than 36 months
2. Has your dog been diagnosed as suffering from any other problems in addition to his/her orthopaedic disease?
☐ No ☐ Yes Please list these if you can:
3. If you can, please list any medications that your pet is currently receiving, stating when he/she received the last dose of each:

Lifestyle

1. In the last week, on average, how far has your dog exercised each day?
☐ 0–1 km (0–0.6 miles) ☐ 1–2 km (0.6–1.2 miles) ☐ 2–3 km (1.2–1.9 miles) ☐ 3–4 km (1.9–2.5 miles) ☐ more than 4 km (more than 2.5 miles)
2. In the last week, on average, how many walks has your dog had each day?
☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ more than 4
3. What type of exercise is this?
☐ Always on lead ☐ Mostly on lead ☐ Mostly off lead ☐ Always off lead ☐ Working
4. Are there particular days of the week upon which your dog has significantly more exercise? (Tick more than one box if necessary.)
☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☐ Saturday ☐ Sunday
5. On what sort of terrain does your dog most often exercise?
☐ On level grass ☐ In woodland ☐ On street ☐ Over rough hill ground
6. At exercise, how is your dog handled?
☐ Walk on lead ☐ Walk off lead ☐ Trot ☐ Run freely
7. Who limits the extent to which your dog exercises?
☐ You ☐ Your dog

Mobility

Generally

1. How is your dog's mobility in general?
☐ Very good ☐ Good ☐ Fair ☐ Poor ☐ Very poor
2. How disabled is your dog by his/her lameness?
☐ Not at all disabled ☐ Slightly disabled ☐ Moderately disabled ☐ Severely disabled ☐ Extremely disabled
3. How active is your dog?
☐ Extremely active ☐ Very active ☐ Moderately active ☐ Slightly active ☐ Not at all active
4. What is the effect of cold, damp weather on your dog's lameness?
☐ No effect ☐ Mild effect ☐ Moderate effect ☐ Severe effect ☐ Extreme effect
5. To what degree does your dog show stiffness in the affected leg after a 'lie down' following exercise?
☐ No stiffness ☐ Mild stiffness ☐ Moderate stiffness ☐ Severe stiffness ☐ Extreme stiffness

At exercise

6. At exercise, how active is your dog?
☐ Extremely active ☐ Very active ☐ Fairly active ☐ Not very active ☐ Not at all active
7. How keen to exercise is your dog?
☐ Extremely keen ☐ Very keen ☐ Fairly keen ☐ Not very keen ☐ Not at all keen
8. How would you rate your dog's ability to exercise?
☐ Very good ☐ Good ☐ Fair ☐ Poor ☐ Very poor

9. What overall effect does exercise have on your dog's lameness?
☐ No effect ☐ Mild effect ☐ Moderate effect ☐ Severe effect ☐ Extreme effect
10. How often does your dog rest (stop/sit down) during exercise?
☐ Never ☐ Hardly ever ☐ Occasionally ☐ Frequently ☐ Very frequently
11. What is the effect of cold, damp weather on your pet's ability to exercise?
☐ No effect ☐ Mild effect ☐ Moderate effect ☐ Severe effect ☐ Extreme effect
12. To what degree does your dog show stiffness in the affected leg after a 'lie down' following exercise?
☐ No stiffness ☐ Mild stiffness ☐ Moderate stiffness ☐ Severe stiffness ☐ Extreme stiffness
13. What is the effect of your dog's lameness on his/her ability to exercise?
☐ No effect ☐ Mild effect ☐ Moderate effect ☐ Severe effect ☐ Extreme effect



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file:///C:/Users/131868/AppData/Local/Temp/liverpool%20OA%20in%20dogs%20-%20load.pdf

Was macht die Humanmedizin?

- QST: Quantitativ Sensorische Testung
 - Verschiedene standardisierte Test
 - Berührung
 - Wärme
 - Kälte
 - Vibration



- Patient teilt Empfindung mit → auf Tiere nicht 1:1 übertragbar

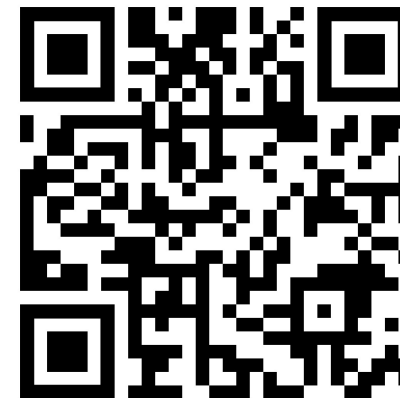


Studie zur Hautsensibilität

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Schmerzevaluation

- Dokumentation über zeitlichen Verlauf
- Vergleichbarkeit zwischen Untersuchern
- Reevaluation vor Therapieanpassung/ Therapieende
- Sollte in die klinische Untersuchung mit einbezogen werden
- Scores dauern bei geübten Anwendern i.d.R. < 5min



**Vielen Dank für Ihre
Aufmerksamkeit**

