



La douleur emblématique du cheval

Gestion de la douleur sur les équidés : un échange permanent entre la théorie et la pratique

Olivier Levionnois

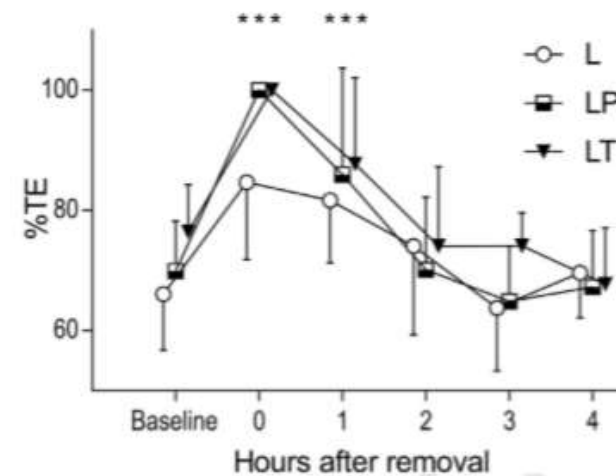
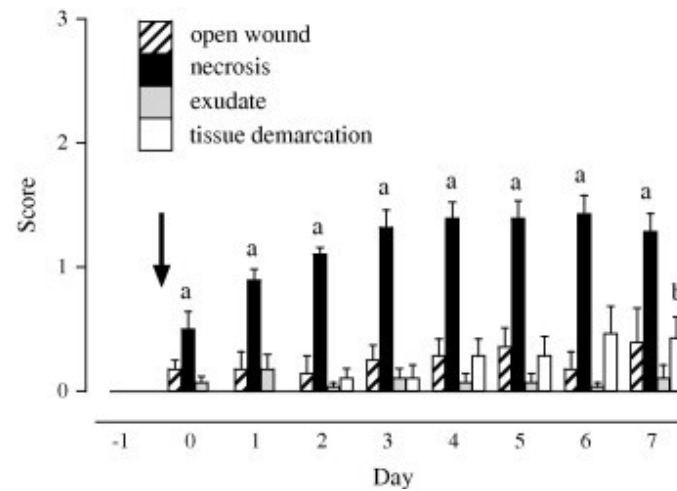
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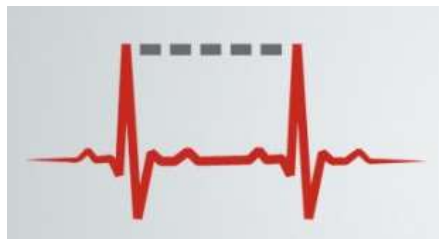
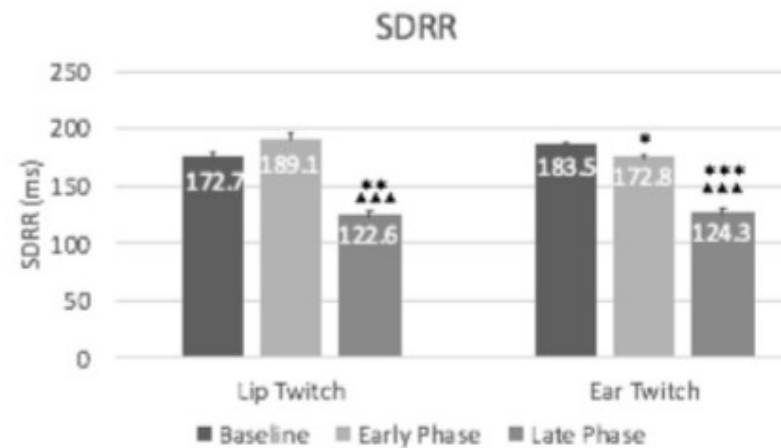
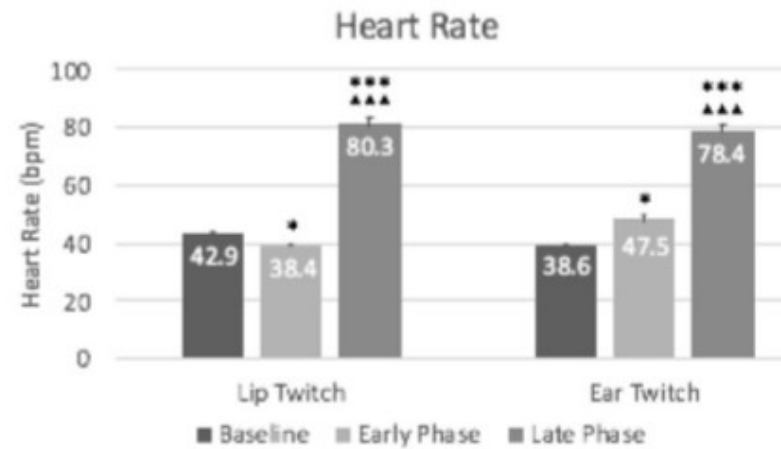
Le cheval, l'animal utile



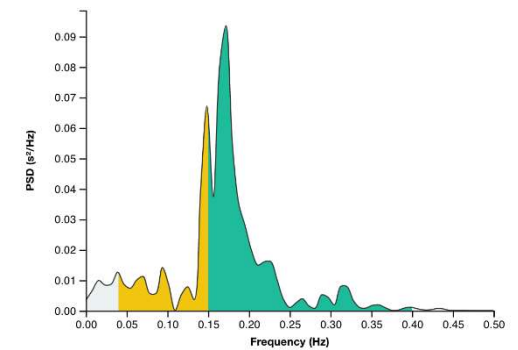
La douleur du cheval, une évidence?



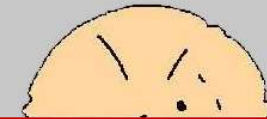
Paramètres de bien-être?



FFT Spectrum



Remèdes de campagne



Du bandage de plante à la neurophysiologie



Review

Capsaicin, Nociception and Pain

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Abstract: Capsaicin, the pungent ingredient of the hot chili pepper, is known to act on the transient



Le cheval aux petits soins



Modèle d'affection douloureuse chronique



■ Ostéoarthrite

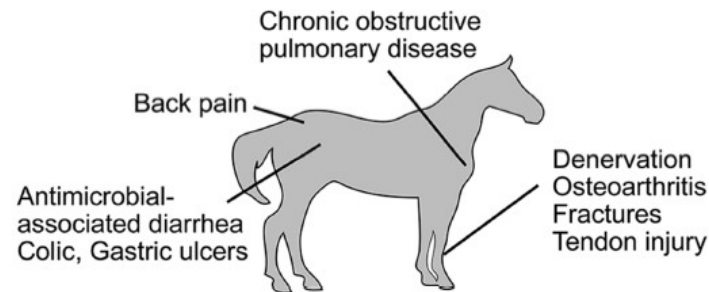
Comprehensive Review

PAIN



Translational pain assessment: could natural animal models be the missing link?

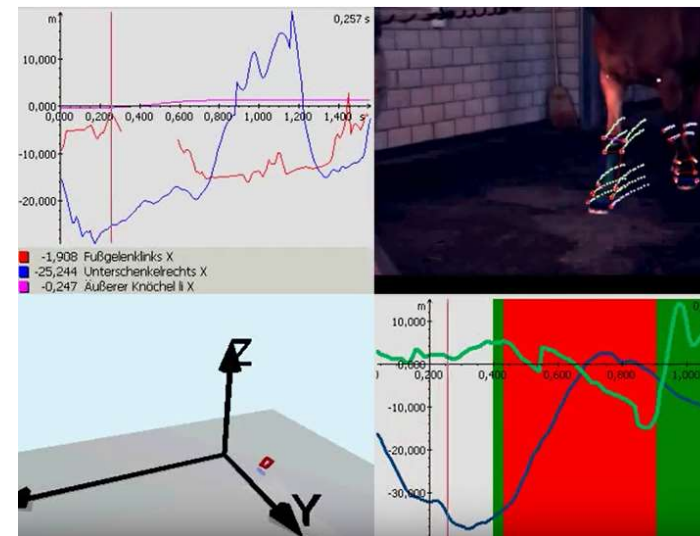
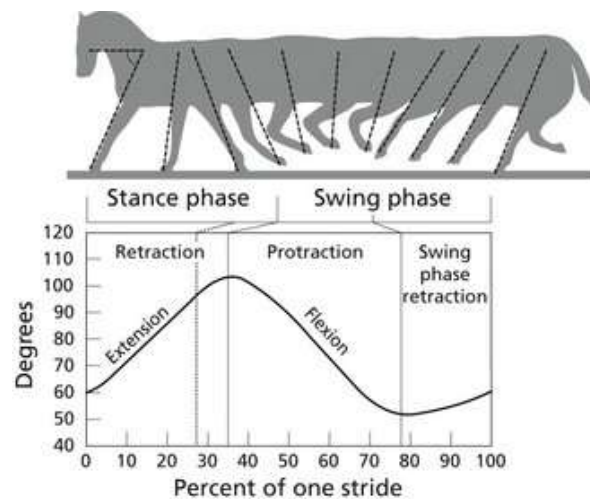
Mary P. Klinck^a, Jeffrey S. Mogil^b, Maxim Moreau^{a,c}, B. Duncan X. Lascelles^{d,e}, Paul A. Flecknell^f, Thierry Poitte^g, Eric Troncy^{a,c,*}



Sarkar, A., Carvalho, E., D'souza, A. A., & Banerjee, R. (2019). ***Liposome-encapsulated fish oil protein-tagged gold nanoparticles for intra-articular therapy in osteoarthritis.*** *Nanomedicine.*

Märki, N., Witte, S., Kuchen, S., Reichenbach, S., Ramseyer, A., Gerber, V., & Spadavecchia, C. (2017). ***Safety of Intra-Articular Gold Microimplants in Horses—A Randomized, Blinded, Controlled Experimental Study.*** *Journal of Equine Veterinary Science.*

Quantifier, diagnostiquer, caractériser





Evaluation qualitative – Feuilles de score

Bussièrès, G., Jacques, C., Lainay, O., & Coll (2008). **Development of a composite orthopaedic pain scale in horses. Res Vet Sci.**

Multifactorial numerical rating composite pain scale (CPS)		
Physiologic data	Criteria	Score/12
Heart rate	Normal compared to initial value (increase <10%)	0
	11-30% increase	1
	31-50% increase	2
	>50% increase	3
Respiratory rate	Normal compared to initial value (increase <10%)	0
	11-30% increase	1
	31-50% increase	2
	>50% increase	3
Digestive sounds (bowel movements)	Normal motility	0
	Decreased motility	1
	No motility	2
	Hypermotility	3
Rectal temperature	Normal compared to initial value (variation < 0.5 °C)	0
	Variation les 1 °C	1
	Variation les 1,5 °C	2
	Variation ges 2 °C	3
Response to treatment		
Criteria	Score/06	
Interactive behaviour	Pays attention to people	0
	Exaggerated response to auditory stimulus	1
	Excessive-to-aggressive response to auditory stimulus	2
	Stupor, prostration, no response to auditory stimulus	3
Response to palpation of the painful area	No reaction to palpation	0
	Mild reaction to palpation	1
	Resistance to palpation	2
	Violent reaction to palpation	3
Behaviour		
Criteria	Score/21	
Appearance (reluctance to move, restlessness, agitation and anxiety)	Bright, lowered head and ears, no reluctance to move	0
	Bright and alert, occasional head movements, no reluctance to move	1
	Restlessness, pricked up ears, abnormal facial expressions, dilated pupils	2
	Excited, continuous body movements, abnormal facial expression	3
Sweating	No obvious signs of sweat	0
	Damp to the touch	1
	Wet to the touch, beads of sweat are apparent over the horse's body	2
Excessive sweating, beads of water running off the animal		3
Behaviour		
Criteria	Score	
Kicking at abdomen	Quietly standing, no kicking	0
	Occasional kicking at abdomen (1-2 times/5 min)	1
	Frequent kicking at abdomen (3-4 times/5 min)	2
	Excessive kicking at abdomen (>5 times/5 min), intermittent attempts to lie down and roll	3
Pawing on the floor (pointing, hanging limbs)	Quietly standing, no pawing	0
	Occasional pawing (1-2 times/5 min)	1
	Frequent pawing (3-4 times/5 min)	2
	Excessive pawing (>5 times/5 min)	3
Posture (weight distribution, comfort)	Stands quietly, normal walk	0
	Occasional weight shift, slight muscle tremors	1
	Non-weight bearing, abnormal weight distribution	2
	Analgesic posture (attempts to urinate), prostration, muscle tremors	3
Head movement	No evidence of discomfort, head straight ahead for the most part	0
	Intermittent head movements laterally or vertically, occasional looking at flanks (1-2 times/5 min), lip curling (1-2 times/5 min)	1
	Intermittent and rapid head movements laterally or vertically, frequent looking at flank (3-4 times/5 min), lip curling (3-4 times/5 min)	2
	Continuous head movements, excessively looking at flank (>5 times/5 min), lip curling (>5 times/5 min)	3

Graubner, C., Gerber, V., Doherr, M., & Spadavecchia, C. (2011). **Clinical application and reliability of a post abdominal surgery pain assessment scale (PASPAS) in horses. Vet J**

Multidimensional scale including categories, sub-categories and assigned values.

Category	Sub-category	Manifestation	Assigned value/further description
Physiological	Heart rate (beats/min)	<40	0
		40-49	1
		50-59	2
	Respiratory rate (breaths/min)	>60	3
		<20	0
		20-30	2
	>30	4	
Behavioural	General subjective assessment	No signs of pain	0
			1
			2
			3
	Signs of severe pain	4	
Behavioural	Postural behaviour	Ears held back and/or head below height of the withers	1 Ears not alert on vocal stimuli, horse holds his head level to or below the withers
		Restless	Makes a depressed impression, no reaction to stimuli from environment, appears withdrawn
		No movements	1 Moving not interested in feed
		Arched back, tucked-up belly	1 Standing still 1 Groove between abdominal muscles is visible, back is arched
Interactive behaviour	Interested	Looks at observer	0 = Attentive
		Moves away	1 = Slight interest in environment
		Does not move	2 = Avoiding contact 3 = Not reacting, appears to be introverted
Response to food	Strong appetite	Appetite but wearing a muzzle	0 = Searches for feed, reacts immediately, when offered feed
		Little appetite	0 = Tries to get hold of straw through the muzzle
		No appetite at all	2 = Accepts offered feed, is not excited about it and does not try to get more 4 = Refuses to eat anything
Colic behaviour	No colic signs shown	Fews intermittently	0 = Behaves normally
		Fews and lies down	1 = Pawing is interrupted by short intervals
		Looks at the flank, paws frequently	2 = Repeated attempts to lie down, stall is messy
		Rolls, wags the tail, kicks against the abdomen	3 = Indicates the location of pain, increasingly getting nervous
		Keeps throwing himself down, rolling on the ground	5 = Gets restless and uncontrolled 6 = Out of control
Stimulation of muscles Th17-L1	No reaction	Hardened muscles, Reaction shown	0 = Does not react at all 1 = Palpable area or a strand of hardened muscles and/or lowers its back, tries to avoid palpation
		No reaction	0 = Does not react at all
Reaction to palpation of the incisional area	No reaction	Tenses abdomen/arches back/tries to evade to the side	1 = Groove between the abdominal muscles and/or arch of the back is clearly visible, shows flight reaction, ears are drawn back, might attempt to bite or kick
Total pain index		1-7 low pain	Summation of scores
		8-14 moderate pain	
		>14 severe pain	

Expression faciale



Stiffly backwards ears

Not present (0) Moderately present (1) Obviously present (2)

The ears are held stiffly and turned backwards. As a result, the space between the ears may appear wider relative to baseline.

Orbital tightening

Not present (0) Moderately present (1) Obviously present (2)

The eyelid is partially or completely closed. Any eyelid closure that reduces the eye size by more than half should be coded as "obviously present" or "2".

Tension above the eye area

Not present (0) Moderately present (1) Obviously present (2)

The contraction of the muscles in the area above the eye causes the increased visibility of the underlying bone surfaces. If temporal crest bone is clearly visible should be coded as "obviously present" or "2".

Prominent strained chewing muscles

Not present (0) Moderately present (1) Obviously present (2)

Straining chewing muscles are clearly visible as an increase tension above the mouth. If chewing muscles are clearly prominent and recognizable the score should be coded as "obviously present" or "2".

Mouth strained and pronounced chin

Not present (0) Moderately present (1) Obviously present (2)

Strained mouth is clearly visible when upper lip is drawn back and lower lip causes a pronounced "chin".

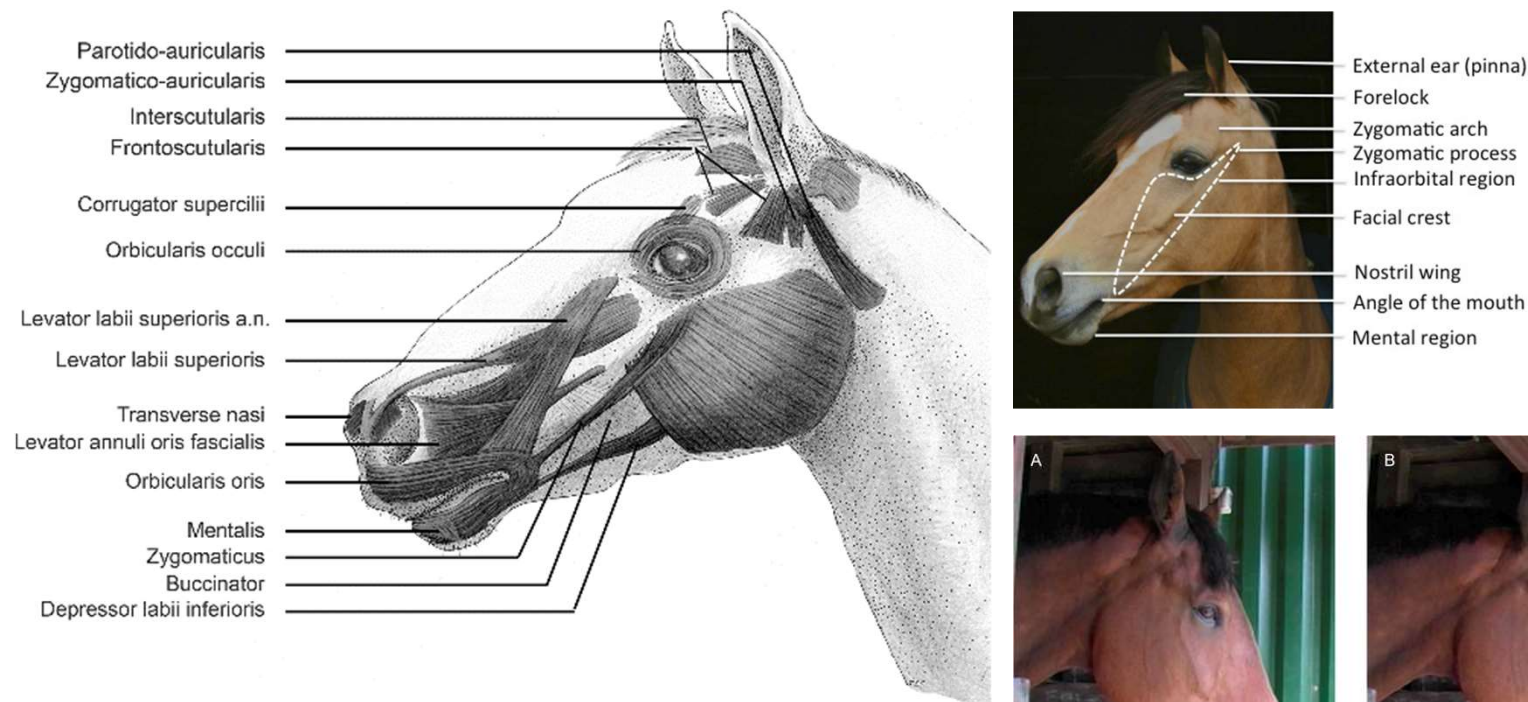
Strained nostrils and flattening of the profile

Not present (0) Moderately present (1) Obviously present (2)

Nostrils look strained and slightly dilated, the profile of the nose flattens and lips elongate.

Dalla Costa, E., Minero, M., Lebelt, D., & coll. (2014). *Development of the Horse Grimace Scale (HGS) as a Pain Assessment Tool in Horses Undergoing Routine Castration. Plos One*

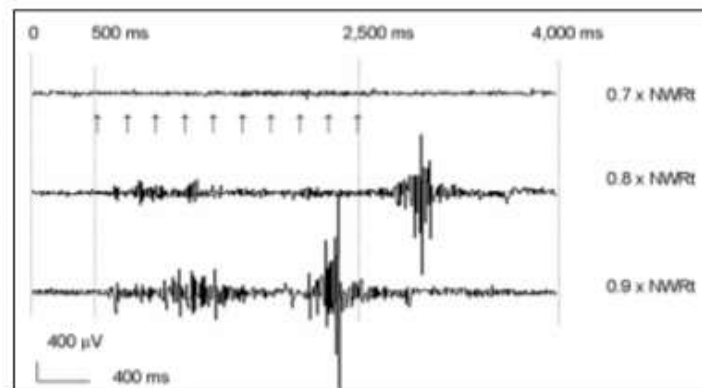
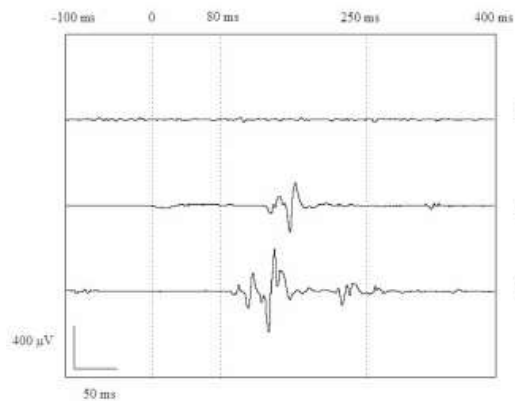
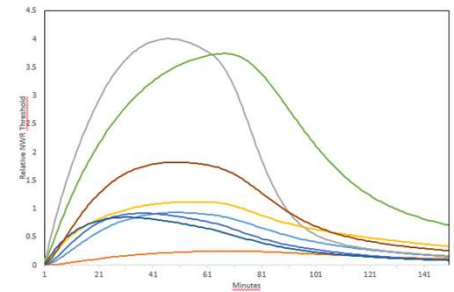
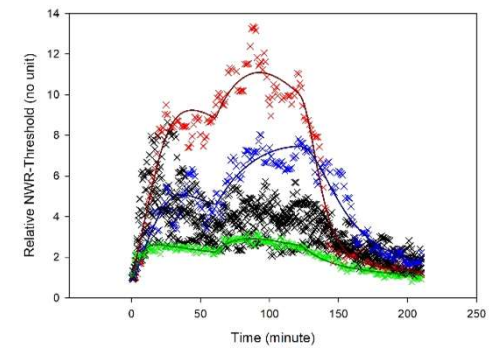
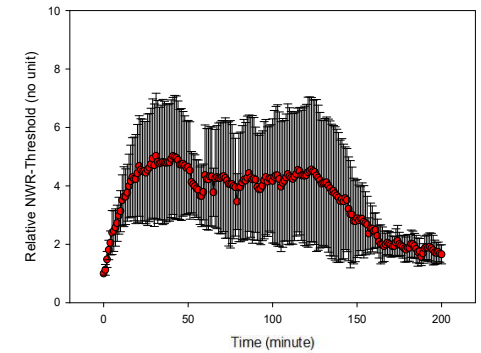
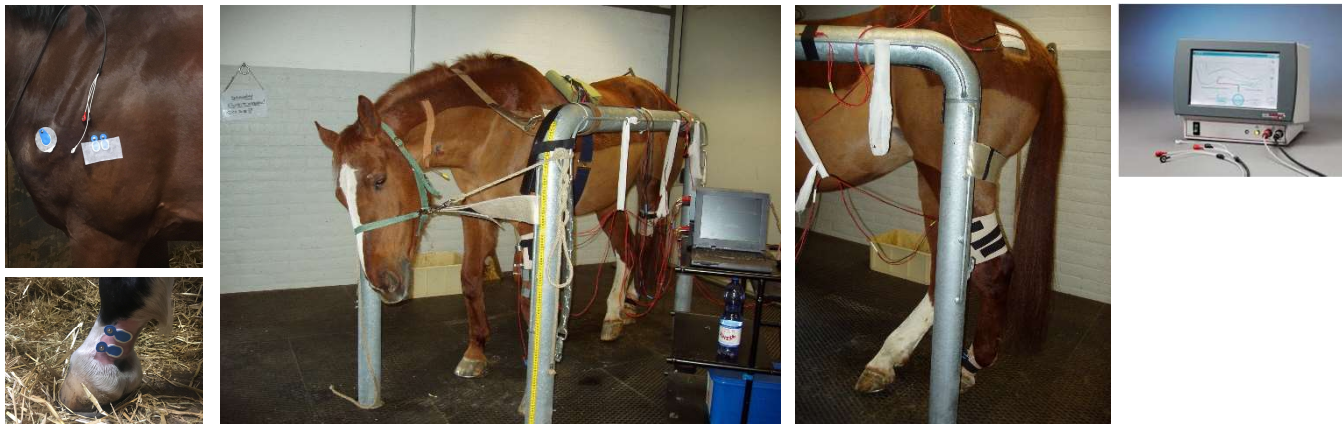
Système de codage systématique



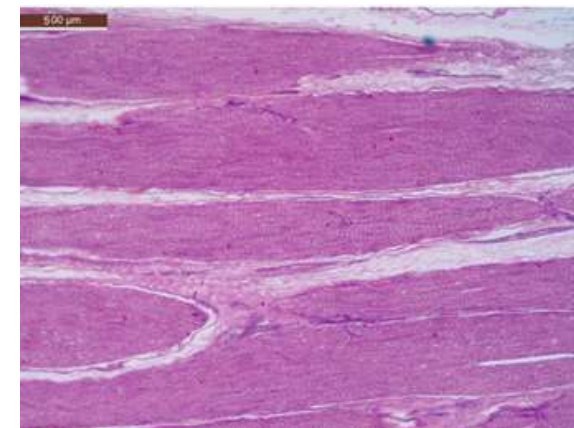
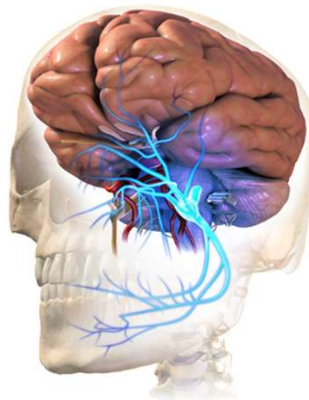
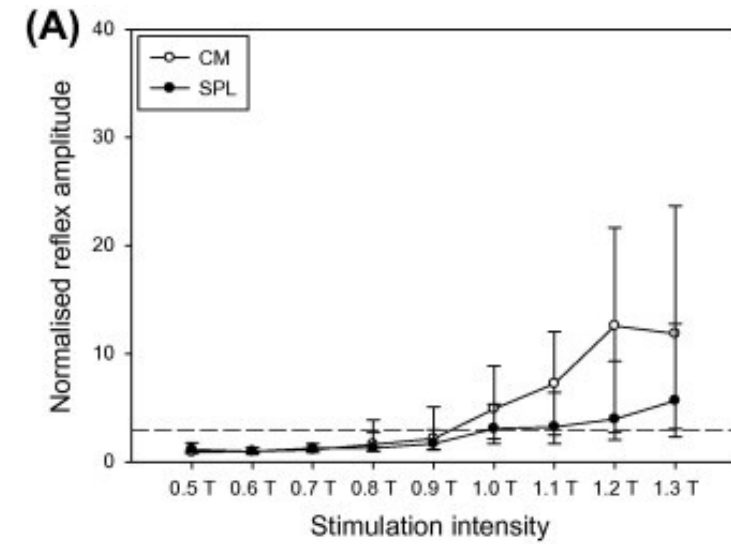
Wathan J, Burrows AM, Waller BM, & McComb K (2015). ***EquiFACS: The Equine Facial Action Coding System***. *Plos One*

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0131738>

Le réflexe nociceptif de retrait



Neuropathie trigéminale



Merci de votre attention





LYON
27 / 11
2019



CAPdouleur
CHANGE ANIMAL PAIN

1^{ère} JOURNÉE DOULEUR

Boehringer-Ingelheim Bat. Boréal

La Confluence des douleurs
de l'homme à l'animal :
l'intelligence des regards croisés
la rencontre scientifique
la volonté de l'échange



Musée des Confluences



ALCYON
vous êtes dans l'heure de nos actions



miVan
ANALGESIA FOR ANIMALS