



The role of Osteopathy in the treatment of musculoskeletal dysfunction in animals

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Debaerdemaecker, G (1985) *British Small Animal Veterinary Association conference, Brighton*

» Profile

» Clinical Presentation

» Treatment

Profile

– Labradors	15 %
– GSD	10 %
– Terriers	10 %
– Dachshunds	10 %
– Spaniel	6%
– Bernese	5%
– Doberman	4%
– Collie	4%
– Basset	4%
– Retriever	4%
– Other	28%

– 2 peaks in age
at presentation

• 5 to 7 years

• 12+ years

Clinical Presentation

- General stiffness
- Shifting lameness
- Spinal pain
- Problems secondary to orthopaedic / neurological conditions

Management of Referred Cases

Referral to Avonvale Veterinary Group

Veterinary Examination and Investigations

Referral to
Osteopathic Clinic

Osteopathic
Examination and Diagnosis

Osteopathic Treatment under sedation

Reassessment

Owner Report

Veterinary assessment

Osteopathic assessment

Post treatment follow up at 12+ months

Retrospective Study

127 horses at Avonvale Veterinary Centre

- Profile:
 - High performance gelding, 7 to 10 years of age
- Clinical Presentation
 - Longstanding stiffness, lameness and back pain
- Treatment
 - 1 to 3 treatments
 - 75% overall improvement, rising to 82% in high performance horses.

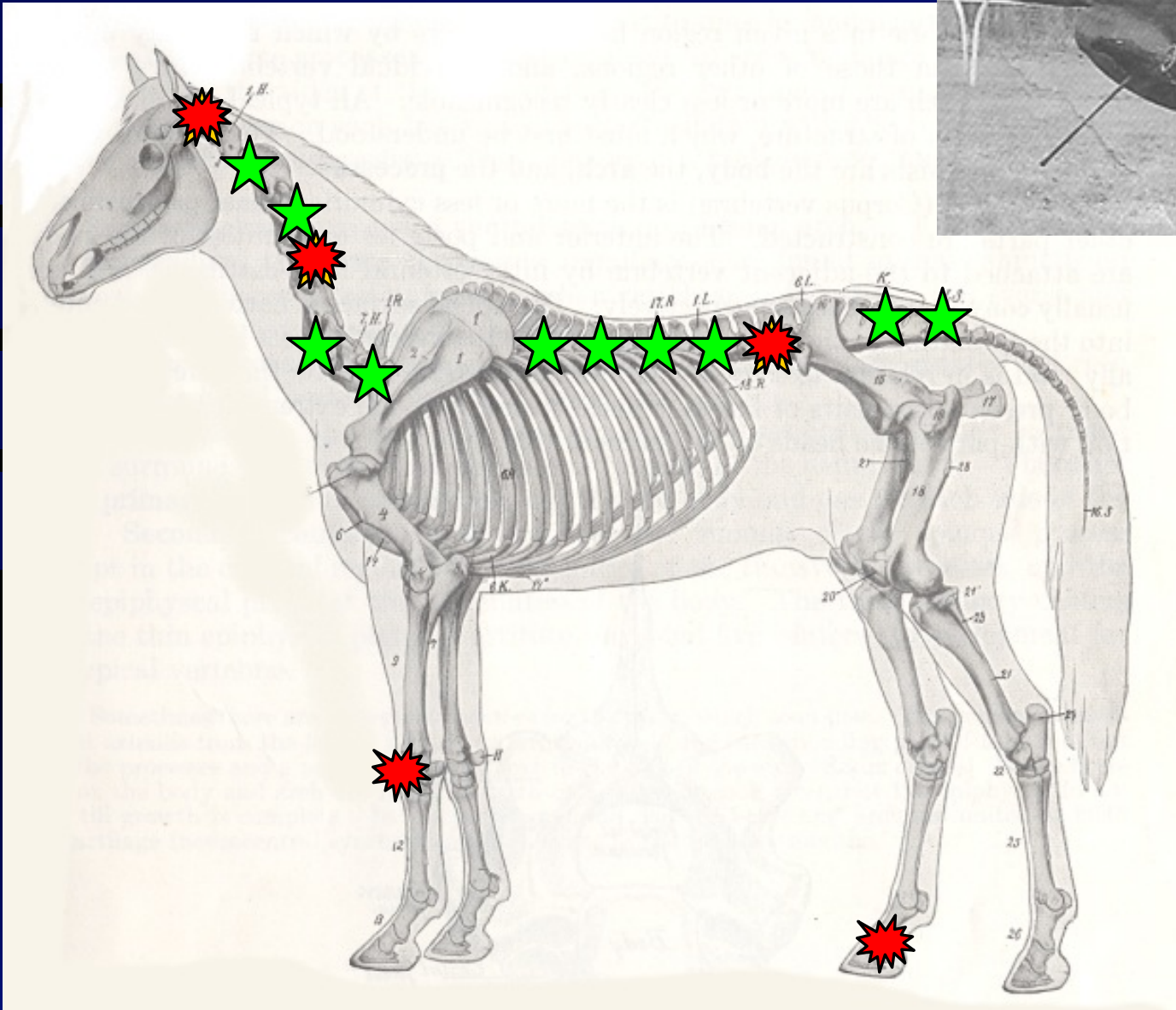
Conclusion

- Osteopathic treatment is associated with improvement in horses with non-pathological musculoskeletal dysfunction
- Future work using objective markers for neuromusculoskeletal dysfunction to :
 - aid diagnosis
 - facilitate prognosis
 - demonstrate change following treatment

Injury

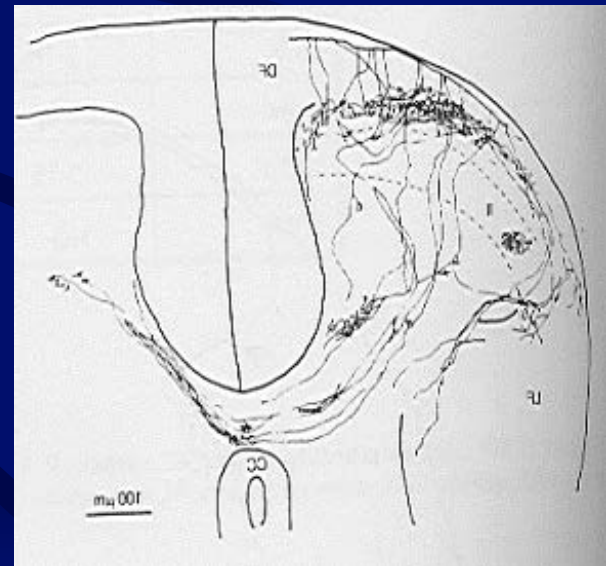
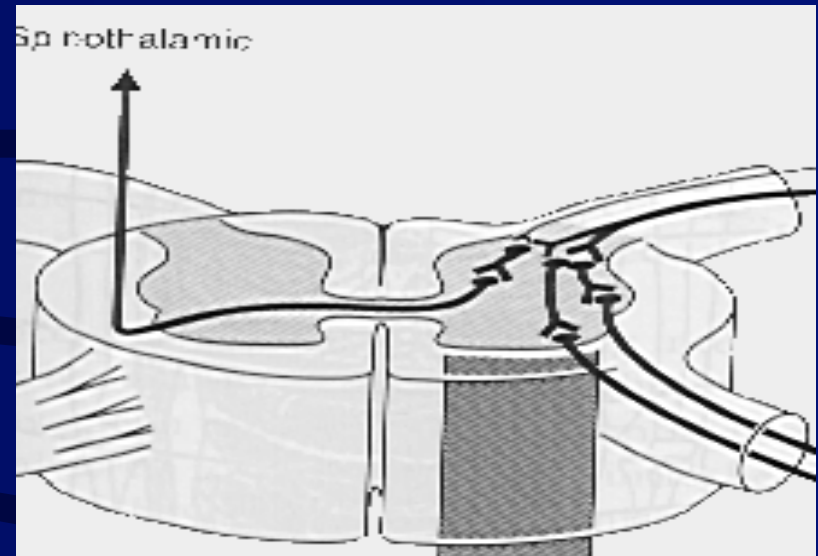


Injury

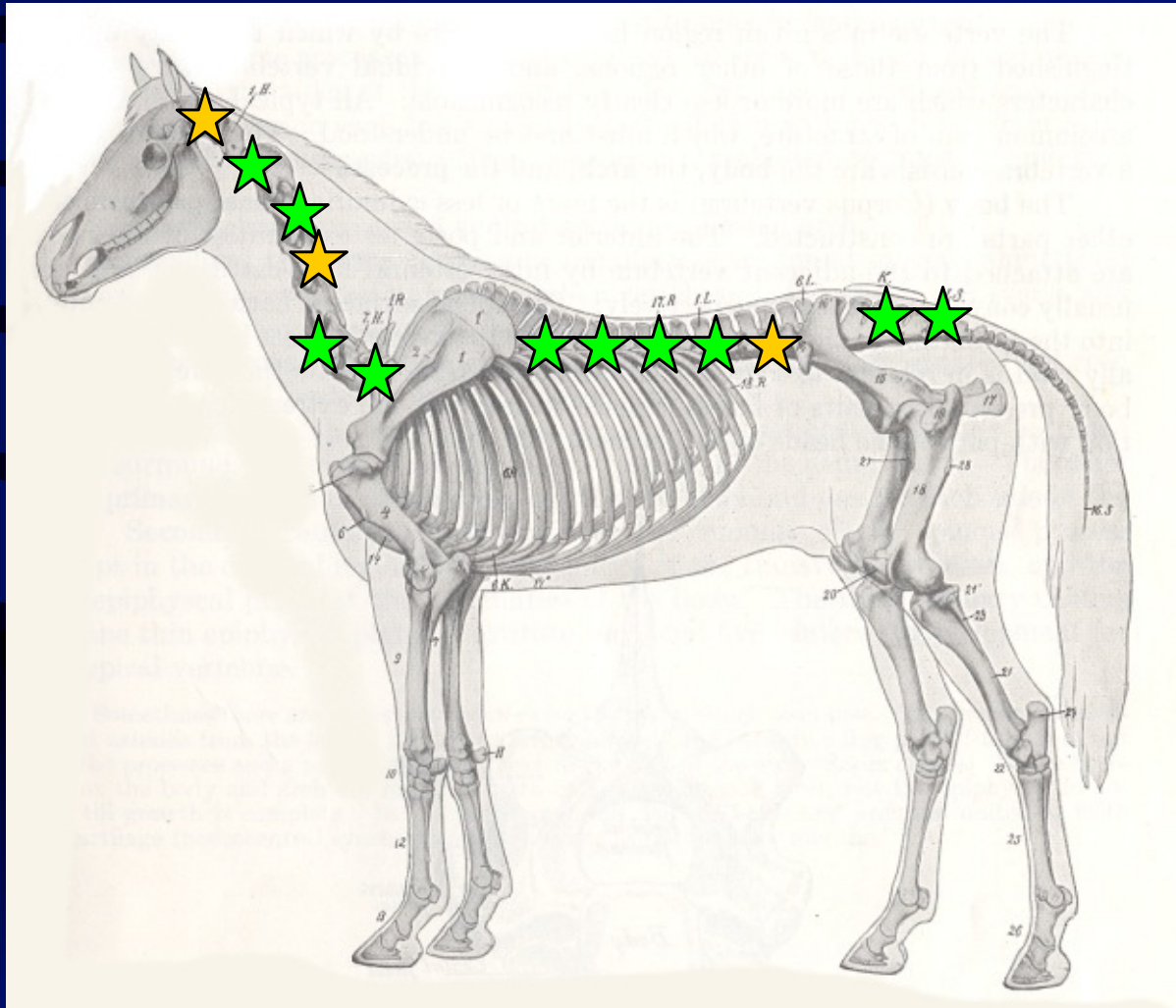


Long term effects of injury

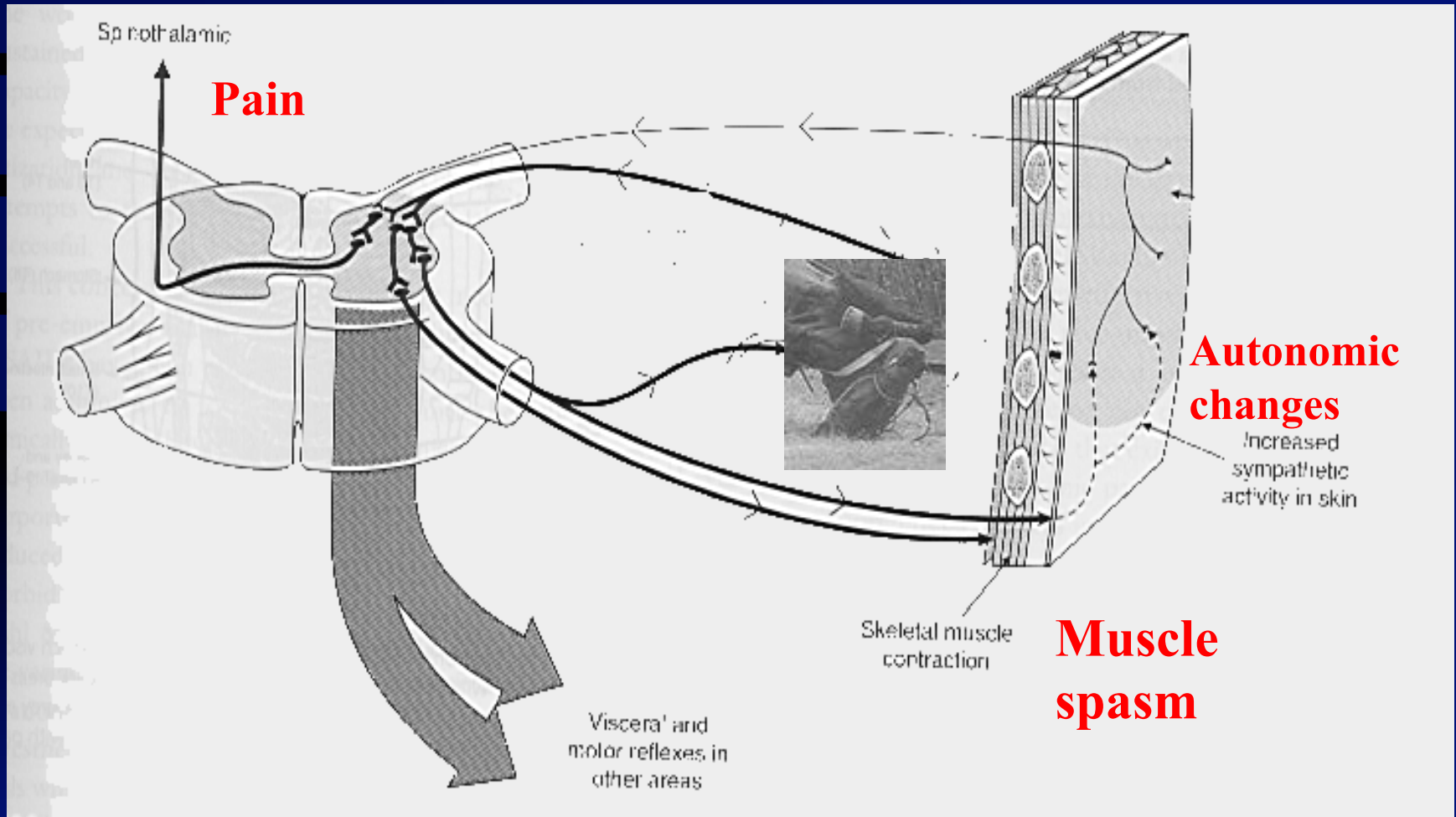
- Genetic changes in neurone after 45 minutes of stimulation
- Threshold changes
- Wind up



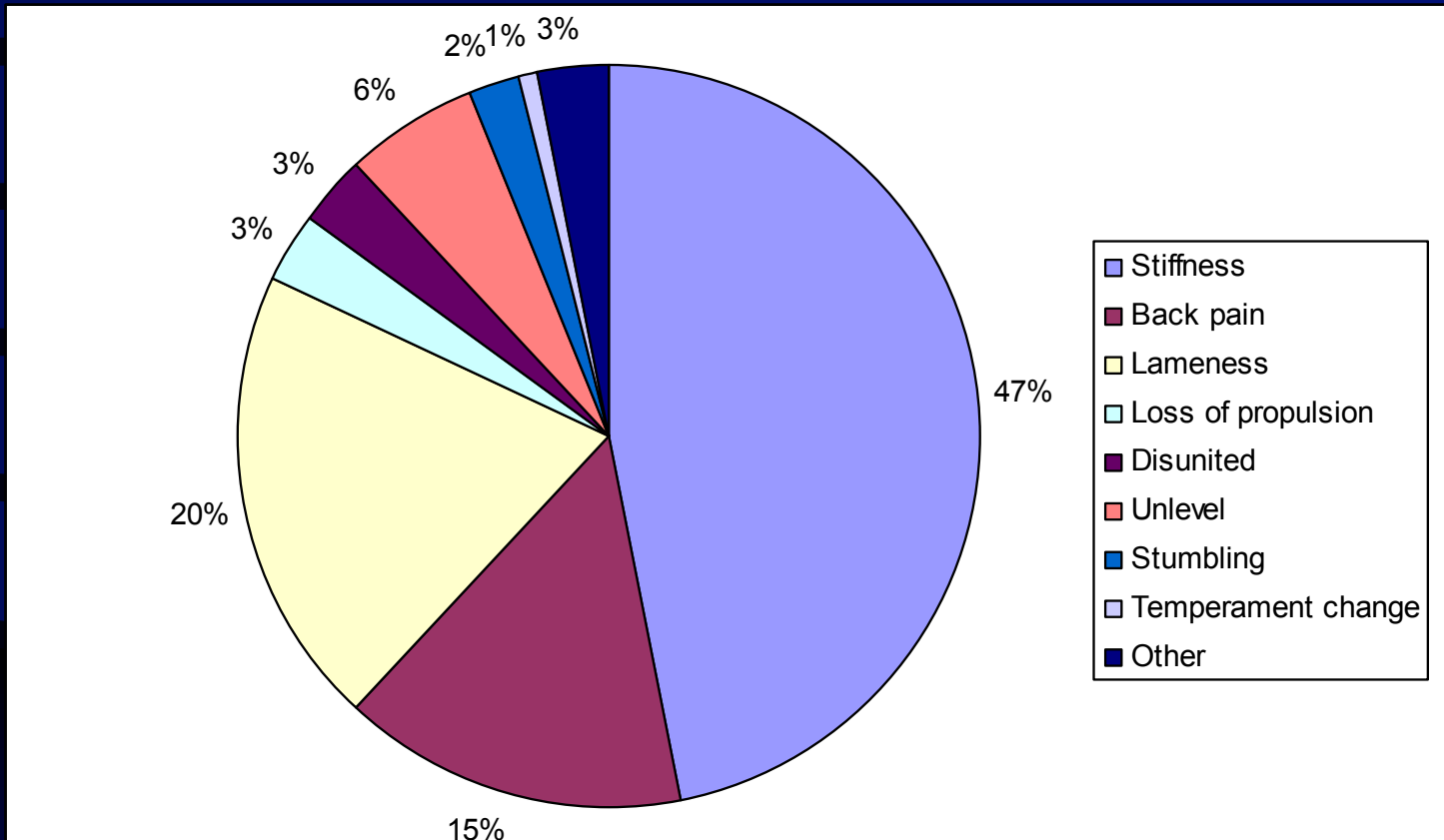
Old injuries



Response to injury



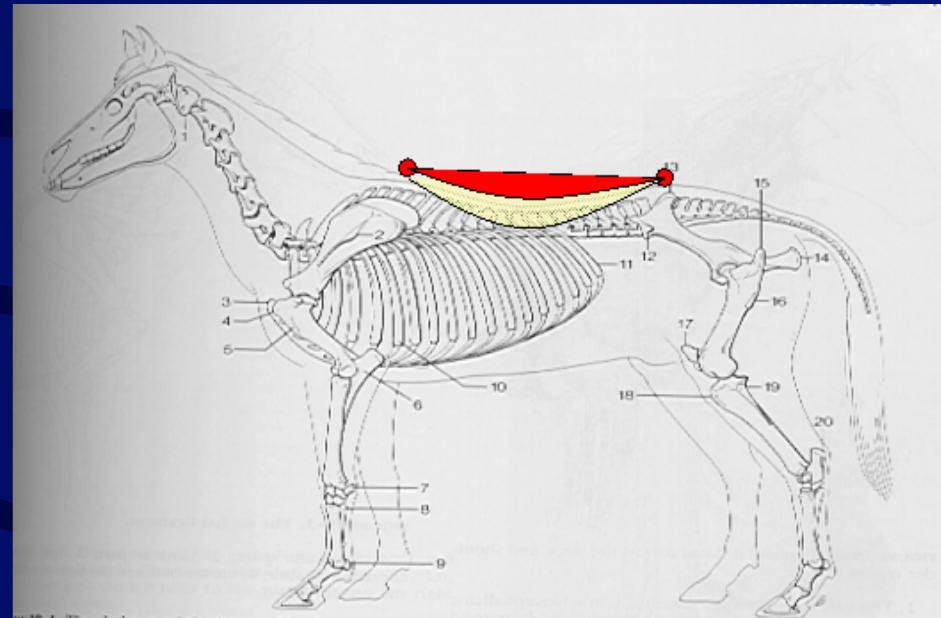
Alterations in muscle tone



Pusey, A., Colles, C., Brooks J. (1995) Osteopathic treatment of horses - A retrospective study
British Osteopathic Journal Vol XV1:30-32

Motor changes

- An assessment of equine spinal movement
 - Controls: 13% difference in area between ventroflexion and dorsiflexion
 - Clinical cases: No significant difference between ventroflexion and dorsiflexion



Dr Mark Bancroft Livingstone (2001)

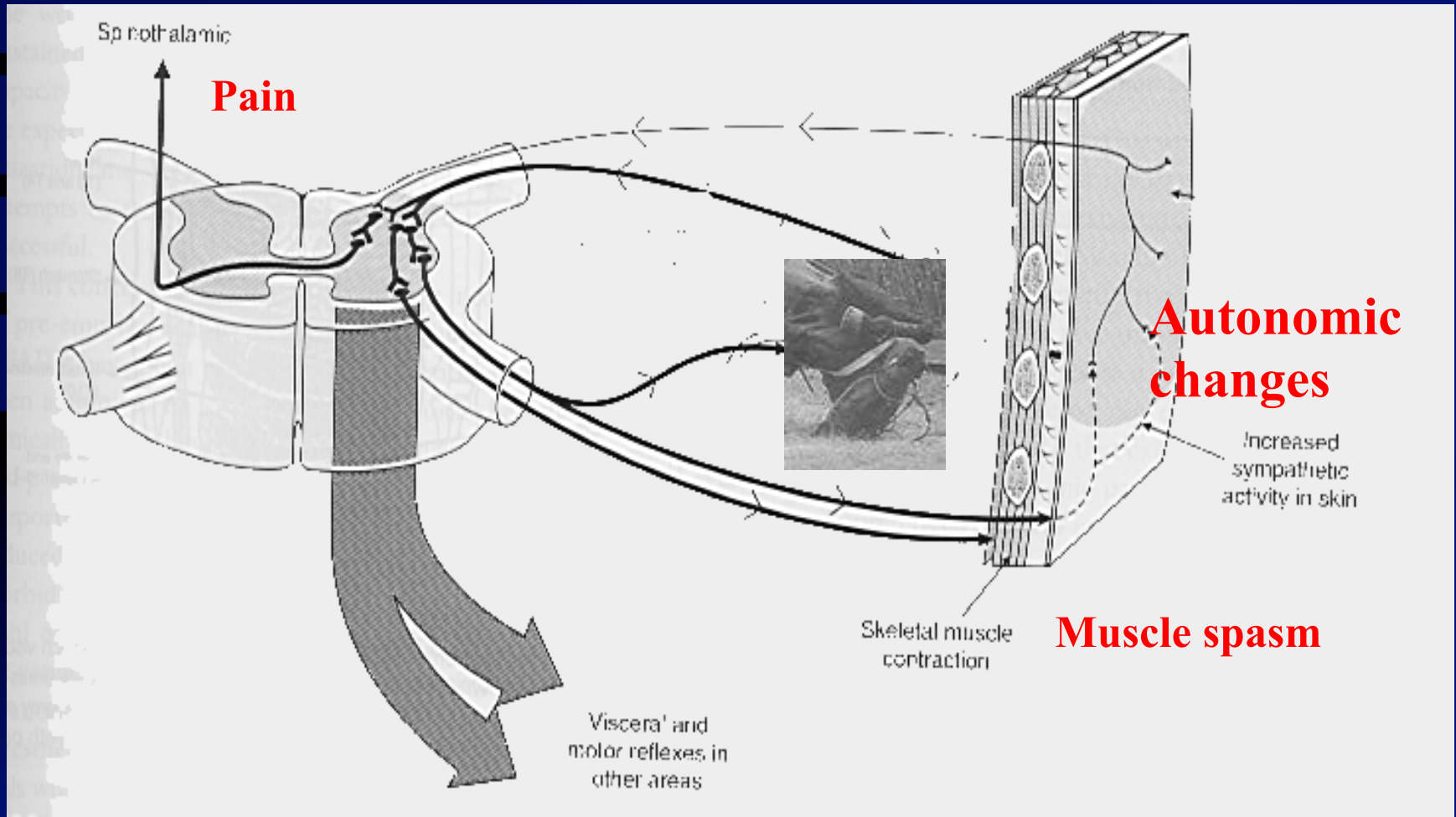
Motor changes

Pilot Study: Equine stride length study

- 6 clinical cases : 10 controls
- **At presentation**
- Clinical group showed 17% reduction in stride length (11cm) when compared with controls
- **Follow up**
- Control: no change in stride length
- Study group: Significant increase in stride length (12cm)



Response to injury



Autonomic changes

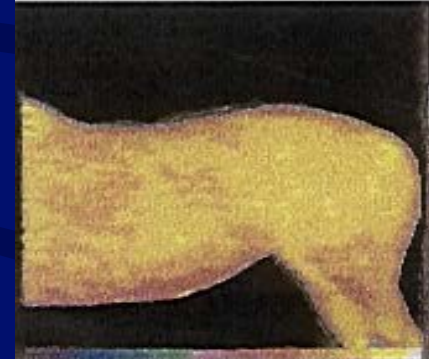
- **Infrared Thermography**

- Previous studies show
 - Established normal pattern
 - Individual patterns consistent



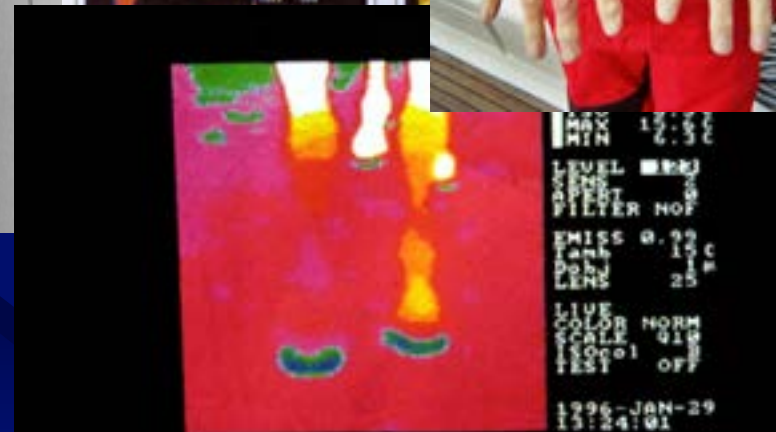
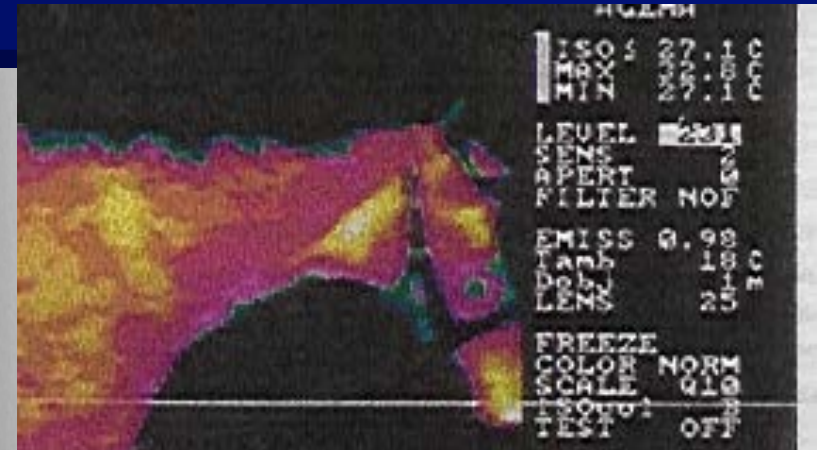
Normal Thermograph

- Regional variation $\pm 0.5^{\circ}\text{C}$
 - warm areas
 - shoulder (shoulder muscles)
 - hind quarters (gluteal muscles)
 - dorsal stripe(erector spinae)
- Dysfunction
 - regional variation of $>1^{\circ}\text{C}$



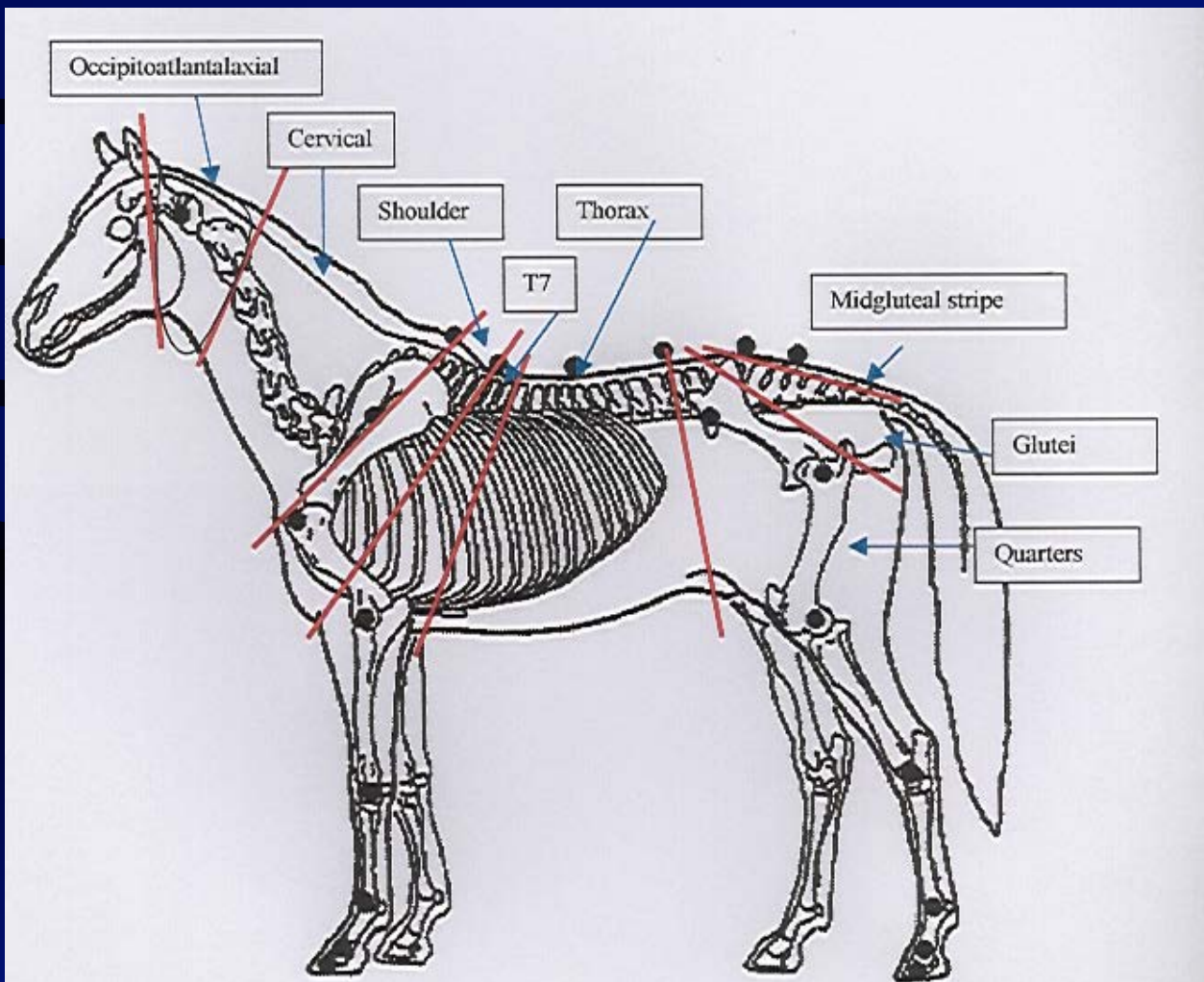
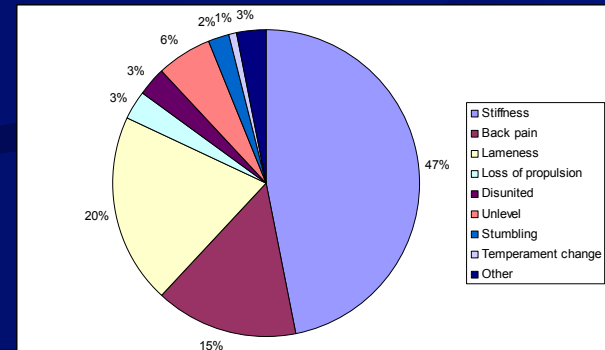
Effect of Nociception on Thermographic Patterns

- Sympathetic nervous system
 - a. Acute
 - Brain stem mediated
 - Generalised shut down (2 weeks)
 - Cooling (4°C)
 - b. Chronic
 - segmental (persistent)
 - decrease heat emission (segmental)

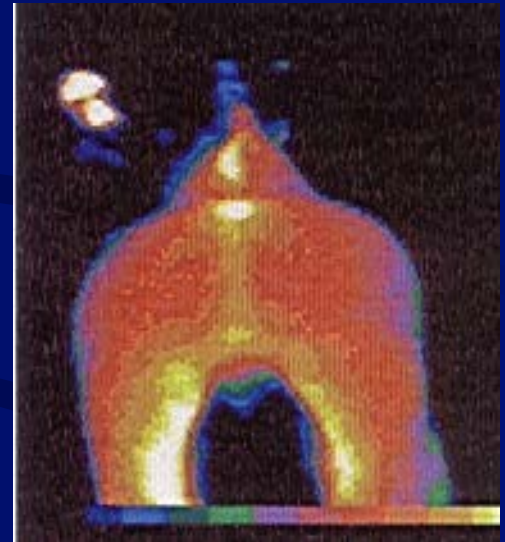
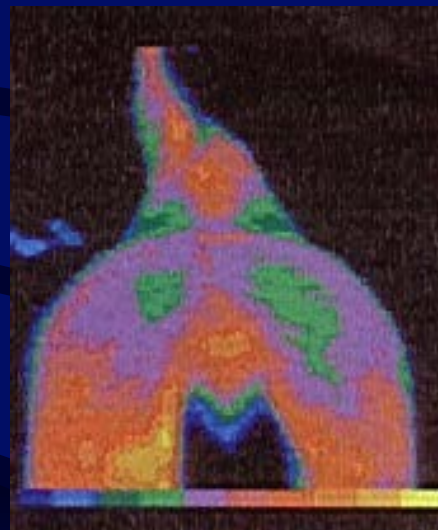
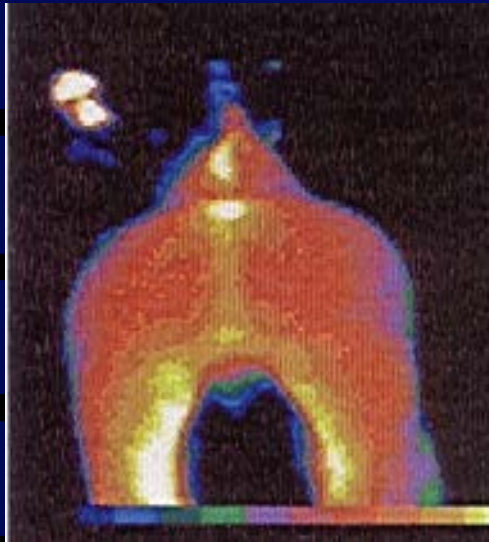




Anatomical Regions



Infrared Scans - gluteal region



Study Sequence

Referral to Avonvale Veterinary Group

Veterinary Examination and Investigations

Initial Infra red scan

Referral to
Osteopathic Clinic

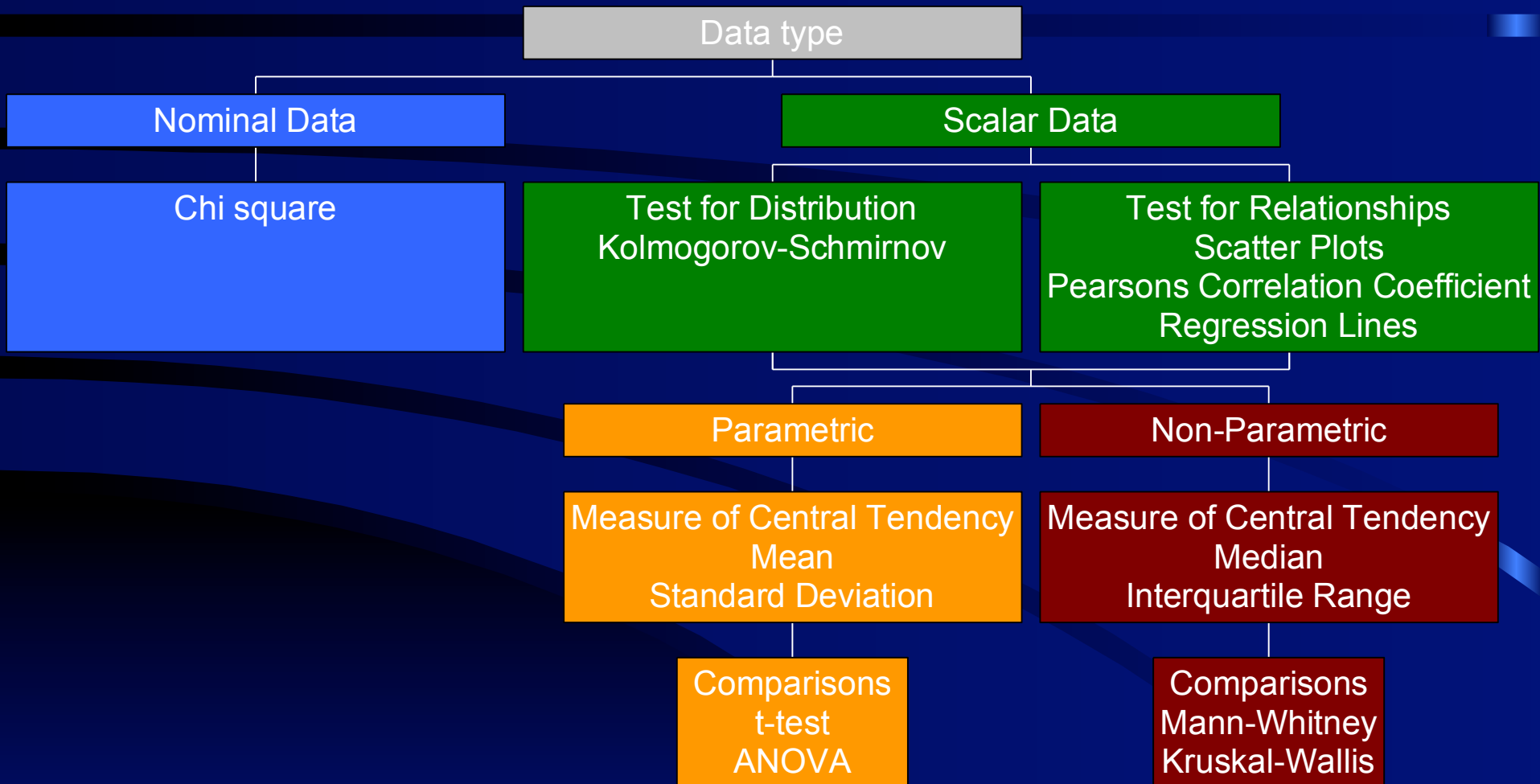
Osteopathic
Examination and Diagnosis

Osteopathic Treatment

Final Infra red scan

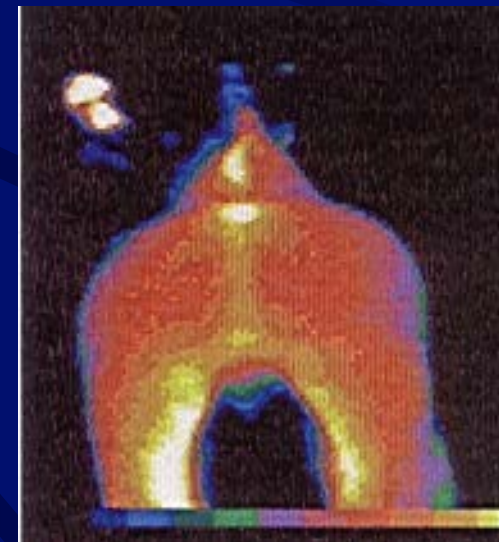
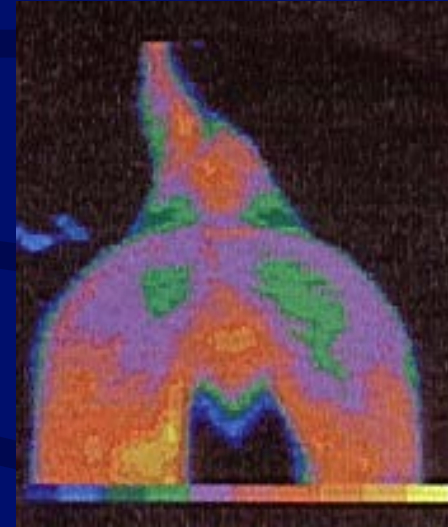
Data analysis

Statistical Analysis



Pre and post treatment comparisons

- Pre treatment scan
 - Loss of dorsal stripe (erector spinae)
 - Low temperatures over the gluteal muscles
- Post treatment scan
 - Dorsal stripe re-established
 - Significant increase in gluteal temperatures.



Summary

- Clinical cases
 - reduced temperature in gluteal region
 - reduced temperature in mid gluteal dorsal stripe
- Post treatment change
 - Significant increase in gluteal temperatures (0.9°C)($p < 0.001$)
 - Significant increase in midgluteal dorsal stripe (1°C) ($p < 0.001$)

Modification of pain pathways

