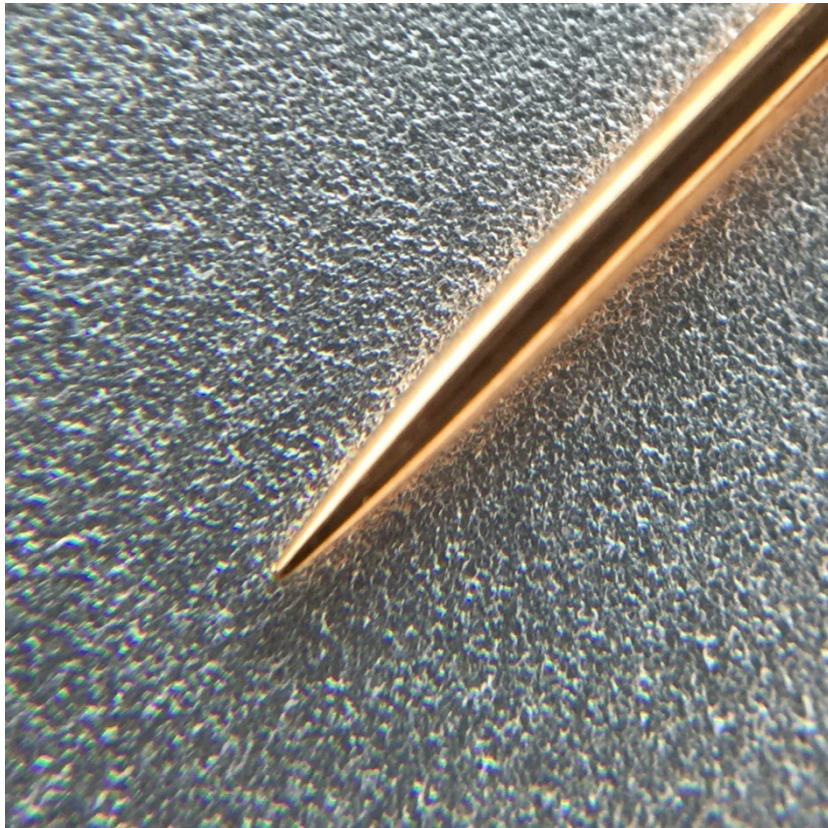


The acupuncture needle...



...as a diagnostic tool
in the assessment of musculoskeletal pain



Dr Mike Cummings MB ChB DipMedAc

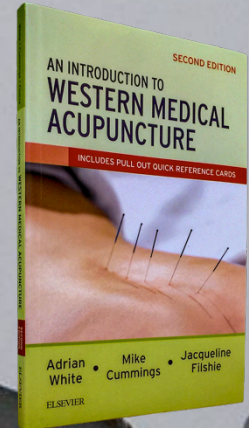
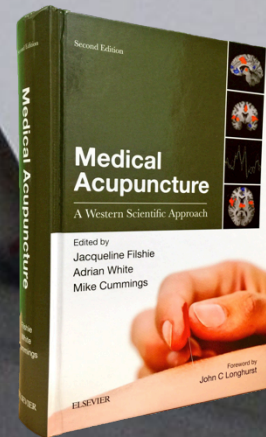
Musculoskeletal Physician
Medical Acupuncturist

Medical Director BMAS

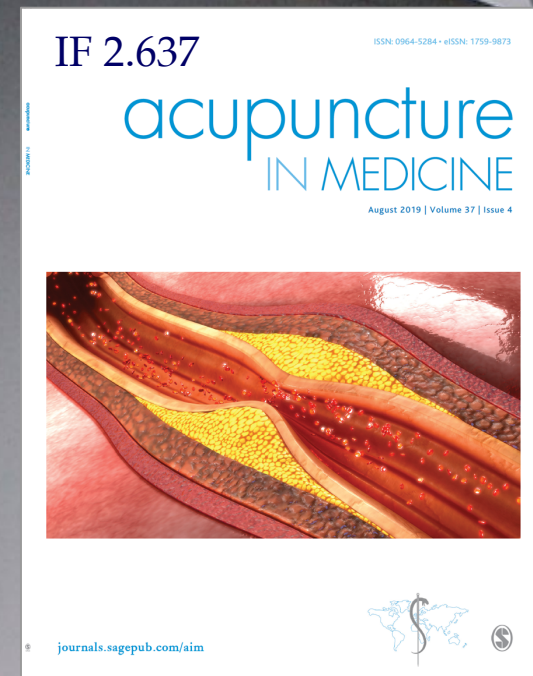
Associate Editor *Acupuncture in Medicine*
Honorary Clinical Specialist UCLH

www.medical-acupuncture.co.uk
<https://journals.sagepub.com/home/aim>

Disclosure – no conflict of interest
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Medicine (Leeds) 1987
Musculoskeletal Medicine
RAF Medical Officer 1989–96
Acupuncture 1993–
Director of Education BMAS 1997–
Editor *Acupuncture in Medicine* 1999–
Medical Director BMAS 2001–
Expert Adviser NICE CG88 2007–09





[Home](#)

[Mobile friendly site map](#)

[Who are the British Medical
Acupuncture Society?](#)

[Acupuncture in Back Pain](#)

[BMAS Points Resource](#)

[Members](#)

[Patient information](#)

[Find a Practitioner](#)

[Training & Education](#)

[Register For Courses](#)

[London Teaching Clinic](#)

[Northwich Training Centre &
Teaching Clinic](#)

[Shop](#)

Site Map

- Home
 - Latest News
- Mobile friendly site map
- Who are the British Medical Acupuncture Society?
 - Who are BMAS?
 - Council
 - Medical Director
 - London office
 - Northwich office
 - Annual Report
 - Code of Practice
 - Affiliation
 - Academic Associates
 - Make a donation or bequest
 - Donate Online
- Acupuncture in Back Pain
- BMAS Points Resource
- Members
 - Members Area
 - Request Password
 - User Registration
 - BMAS Awards/Accreditations



Home

Mobile friendly site map

Who are the British Medical
Acupuncture Society?

Acupuncture in Back Pain

BMAS Points Resource

Members

Patient information

Find a Practitioner

Training & Education

Register For Courses

London Teaching Clinic

Northwich Training Centre &
Teaching Clinic

Shop

Contact Us

Dr Mike Cummings

Mike is Medical Director of the British Medical Acupuncture Society (BMAS). This is a full time post that involves running the BMAS London Teaching Clinic (LTC), co-ordinating and lecturing on BMAS courses in Western medical acupuncture, acting as an associate editor for the Medline-listed journal *Acupuncture in Medicine*, and representing the BMAS at various academic and political meetings. Mike is an Honorary Clinical Specialist at the Royal London Hospital for Integrated Medicine, which is part of the University College London Hospitals NHS Foundation Trust, where he supports acupuncture services.

His principal academic and clinical interest is musculoskeletal pain, and in particular, needling therapies in the treatment of myofascial pain syndromes.

After completing his medical degree at Leeds, and several hospital jobs in the north of England, Mike joined the Royal Air Force for a six and a half year short service commission as a medical officer. A substantial portion of the workload for a general duties medical officer (GDMO) in the RAF is musculoskeletal medicine. Mike came across acupuncture by accident whilst working as a GDMO. He followed his interest in musculoskeletal medicine and acupuncture on retiring from military service, and finally found himself occupied full time in the field of acupuncture.

Read Mike's profile in the Leeds University Medical School Alumni magazine from 2003.

Read a description of how Mike unexpectedly got into acupuncture in Toby Murcott's book - *The Whole Story* from 2005.

Mike edits and writes on the [BMAS Blog](#).



Publications

1. Cummings TM. A computerised audit of acupuncture in two populations: civilian and forces. *Acupunct Med* 1996;14(1):37-39.
2. Filshie J, Cummings TM. Western medical acupuncture. In: Ernst E, White AR, editors. *Acupuncture - A Scientific Appraisal*. Oxford: Butterworth Heinemann, 1999:31-59.
3. Cummings M. Teasing Apart The Quality And Validity In Systematic Reviews Of Acupuncture. *Acupunct Med* 2000;18(2):104-7.
4. Cummings M. Piriformis Syndrome. *Acupunct Med* 2000;18(2):108-21.
5. Cummings M. More on BMA's approval of acupuncture. Acupuncture techniques should be tested logically and methodically. *BMJ* 2001;322(7277):46.
6. Cummings TM, White AR. Needling therapies in the management of myofascial trigger point pain: a systematic

79. Cummings M. Dry Needling from a Western Medical Acupuncture Perspective. In: Dommerholt J, Fernández-de-las-Peñas C eds. *Trigger point Dry Needling - An Evidence and Clinical-Based Approach*. 2nd ed. Elsevier 2018. 201-34.
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81. Oliveira E Lemos M, Cummings M. An alternative approach to pudendal nerve stimulation. *Acupunct Med* 2018. doi:10.1136/acupmed-2018-011751
82. Hughes JG, Lewith G, MacPherson H, Witt CM, Cummings M, & Fisher P. Assessment of the quality of reporting in studies of acupuncture for patients with cancer using the STRICTA guidelines. *Acupunct Med* 2019 <https://doi.org/10.1136/acupmed-2017-011592>

Downloads

Piriformis Syndrome - a paper from the archives (reference 4 on the list above).

XIII International Physical Medicine & Rehabilitation conference, Oporto, 19-20 October 2017
Acupuncture for Physical Medicine & Rehabilitation - notes to accompany lecture.

XV Congreso Sociedad Española del Dolor, Palma de Mallorca, 24-26 May 2018
Acupuncture for Chronic Pain - notes to accompany lecture.

Electroacupuncture summary on a single white board, Lanzhou 2018.

The problem with sham, Madrid 2019.

Gramado 2019 slides: the needle; the neck; the back.

www.medacu.co.uk
www.medical-acupuncture.co.uk



goo.gl/6XQeXv

Conferences

Nordic Medical Acupuncture Congress programme, Copenhagen 2019.

European Congress for Integrative Medicine programme, Barcelona 2019.
ECIM Workshops.

Social media

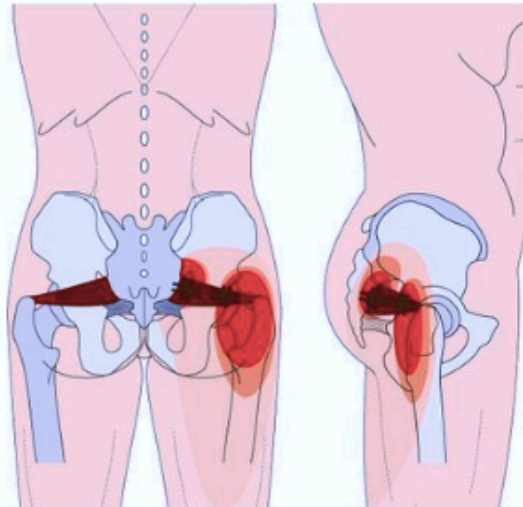
<p>Tweets by @drmike001</p>  <p>Mike Cummings @drmike001</p> <p>Atheroma 2019 bmas.blog/2019/06/19/ath...</p>	<p>Tweets by @Acupunct_Med</p>  <p>Acupunct Med @Acupunct_Med</p> <p>Effect of Mongolian warm acupuncture on the gene</p>
---	---



Mike Cummings

@drmike001

Piriformis revisited bmas.blog/2019/05/23/pir...



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June 2019 | Volume 37 | Issue 3



18 Jun 2019

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Quick Navigation

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[Acupuncture Training Courses](#)

[Useful BMAS Documents](#)

[Webcasts of BMAS Meetings](#)

[Academic Associates](#)

Members

[Members Area](#)

[Gift Aid Scheme](#)

[Meetings](#)

[Hot Topics in Acupuncture](#)

Patients

[Find a Practitioner](#)

London Teaching Clinic

[Map](#)

[Teaching Sessions](#)

About BMAS

[Admin Staff](#)

[Code of Practice](#)

[Feedback](#)

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Admin

Home

Forum

Mobile friendly site map

Who are the British Medical Acupuncture Society?

Acupuncture in Back Pain

BMAS Points Resource

Members

Trigger Points

Patient information

Find a Practitioner

Training & Education

Register For Courses

Academic Associates

As part of its mission to promote acupuncture within healthcare the British Medical Acupuncture Society has chosen to make some of its resources available to acupuncture practitioners who are already members of another national acupuncture organisation or in a full time academic post, and who are not eligible to be members of the BMAS. This will permit use of specified BMAS resources to facilitate academic pursuits such as education, research or continuing professional development.

Academic Associateship offers:

- Full online access to *Acupuncture in Medicine* (impact factor 2.637)
- BMAS Points Resource
- Access to webcasts & CPD modules related to the BMAS Spring & Autumn Meetings
- Members rates at meetings

The cost is £36.00 per year. Proof of membership of a recognised acupuncture organisation must be submitted to support a request for academic associateship, and at each renewal.

To apply to become an Academic Associate please contact the BMAS Head Office on 01606 786782 or by email admin@thebmas.com

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Admin
Home
Forum
Mobile friendly site map
Who are the British Medical Acupuncture Society?
Acupuncture in Back Pain
BMAS Points Resource
Members
Trigger Points
Patient information
Find a Practitioner
Training & Education
Register For Courses
London Teaching Clinic
Northwich Training Centre & Teaching Clinic
Shop
Staff
User Administration
Contact Us

Quadratus Lumborum

TrPs in quadratus lumborum

5E needling QL from BMAS

The right side of the diagram illustrates TrPs in quadratus lumborum. The lateral two symbols represent TrPs in the superficial fibres and typically refer pain to the lateral aspect of the hip over the iliac crest or over the greater trochanter. The medial two symbols represent TrPs in the deeper fibres and typically refer pain to the area of the sacroiliac joint or buttock.

CAUTION: the colon and kidney lie on the ventral aspect of quadratus lumborum; TrPs in this muscle should always be needled using a lateral approach of the body, needing towards the lumbar transverse processes



[Home](#)

[Mobile friendly site map](#)

[Who are the British Medical
Acupuncture Society?](#)

[Acupuncture in Back Pain](#)

[BMAS Points Resource](#)

[Members](#)

[Patient information](#)

[Find a Practitioner](#)

[Training & Education](#)

[Register For Courses](#)

[London Teaching Clinic](#)

[Northwich Training Centre &
Teaching Clinic](#)

[Shop](#)

Site Map

- Home
 - Latest News
- Mobile friendly site map
- Who are the British Medical Acupuncture Society?
 - Who are BMAS?
 - Council
 - Medical Director
 - London office
 - Northwich office
 - Annual Report
 - Code of Practice
 - Affiliation
 - Academic Associates
 - Make a donation or bequest
 - Donate Online
- Acupuncture in Back Pain
- BMAS Points Resource
- Members
 - Members Area
 - Request Password
 - User Registration
 - BMAS Awards/Accreditations

The acupuncture needle...

Definition

Evidence based medicine – evidence based medicine is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients.

Sackett DL, Rosenberg WM, Gray JA, et al. *BMJ* 1996; 312(7023):71-72.

Editorial

Evidence based medicine: what it is and what it isn't

Evidence based medicine is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients.

The practice of evidence based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research.

By best available external clinical evidence we mean clinically relevant research, often from the basic sciences of medicine...

Good doctors use both individual clinical expertise and the best available external evidence, and neither alone is enough.

Without clinical expertise, practice risks becoming tyrannised by evidence...

Evidence based medicine is not restricted to randomised trials and meta-analyses.

The acupuncture needle...

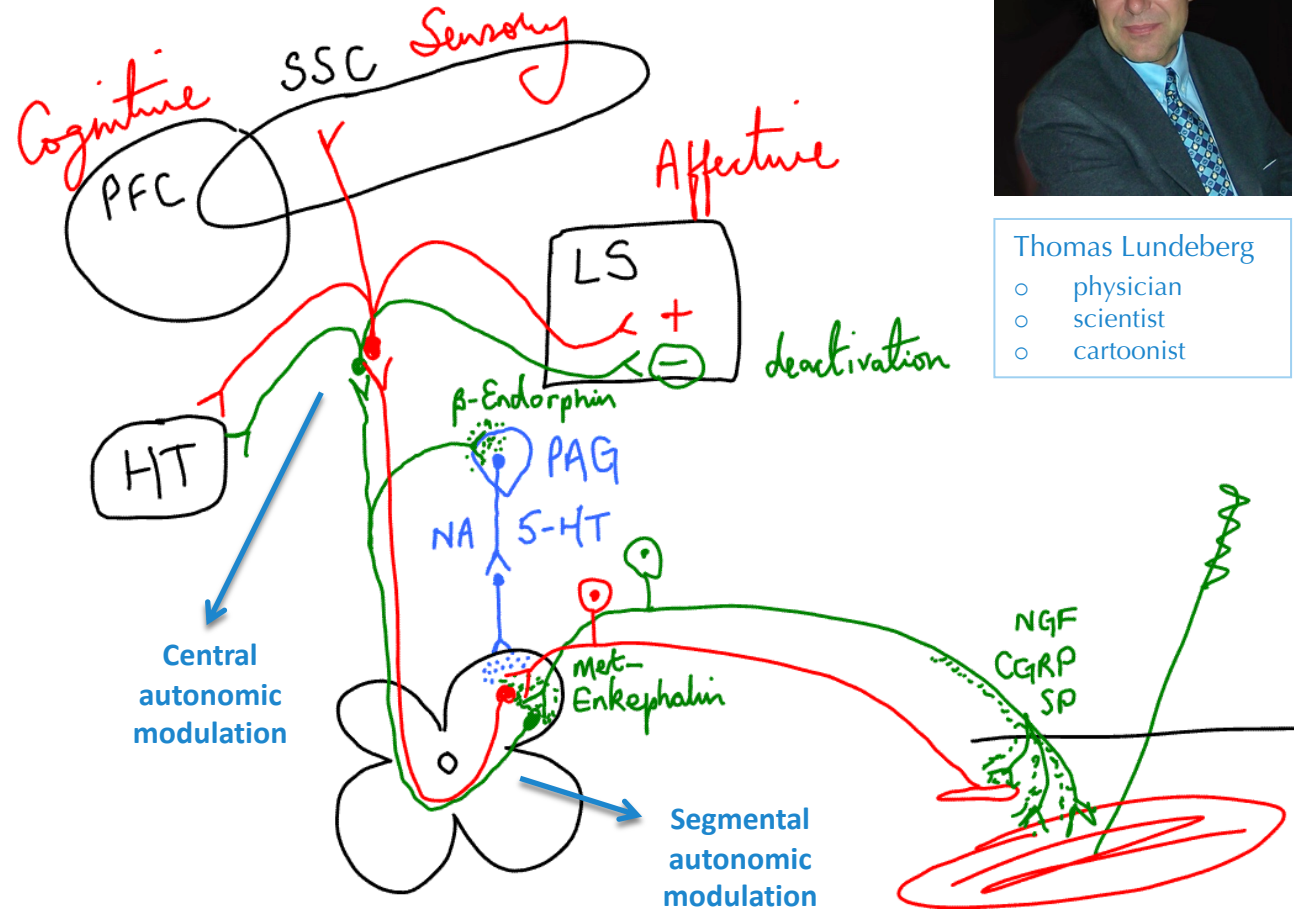
Physiology

- Local effects
- Segmental
- General



Thomas Lundeberg

- physician
- scientist
- cartoonist



The acupuncture needle...

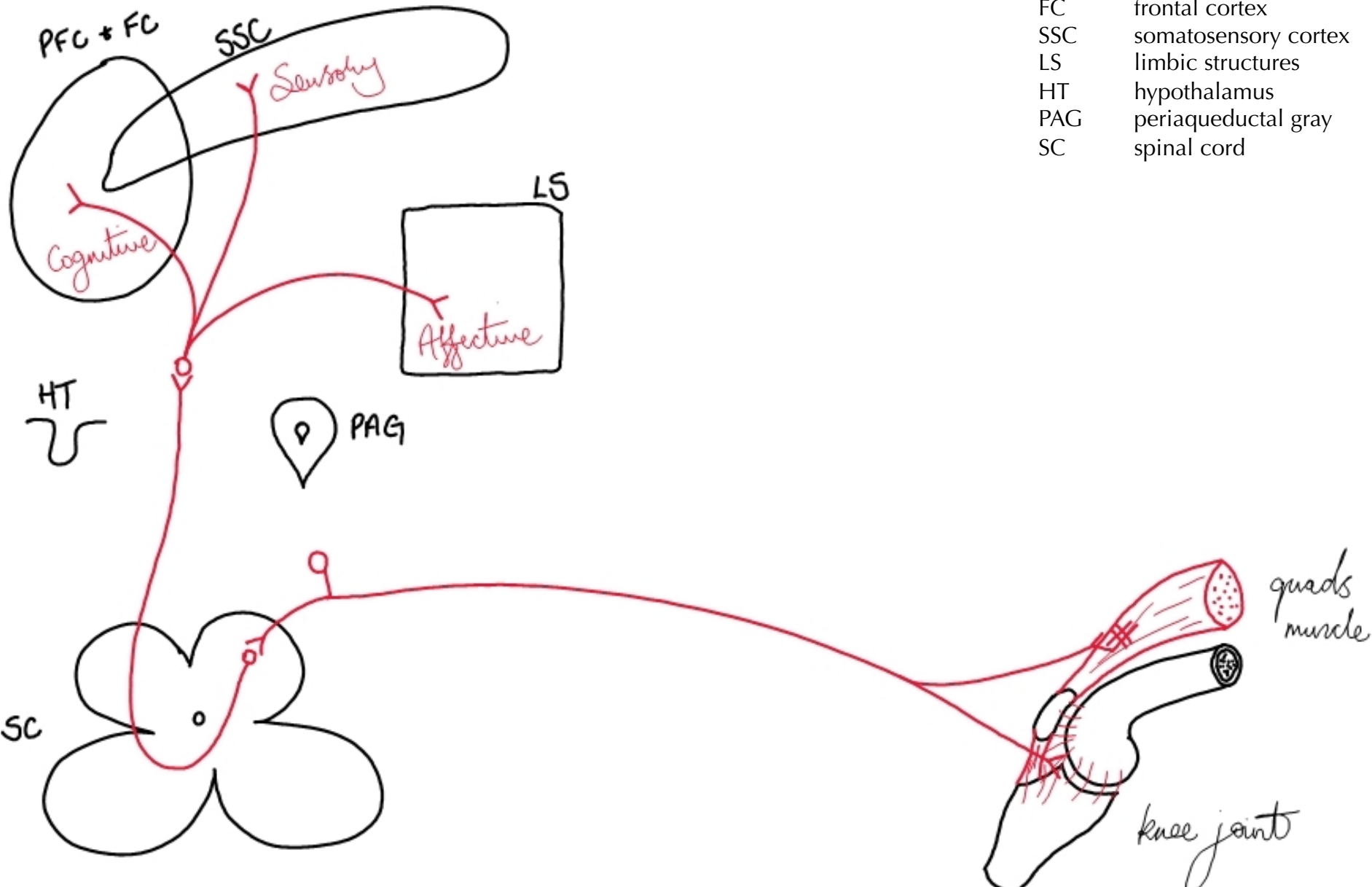
Assessment of (presumed) musculoskeletal pain

- History
 - ✧ said to contribute about 90% to the diagnosis
 - ✧ Red flags
- Examination (Look, Feel, Move)
 - ✧ focused on mechanical loading of tissues to provoke patient recognition of symptoms
 - the fine filiform needle provides the best tissue specific loading
- Special investigations (mostly imaging)
 - ✧ confirms clinical impression, but rarely reliable without a good clinical assessment
- Treatment response
 - ✧ may take up to 3 cycles of treatment and response to reach a conclusion in tricky cases

PAIN MECHANISMS

Drawings by Mike Cummings
copied in the style of Tom Lundberg

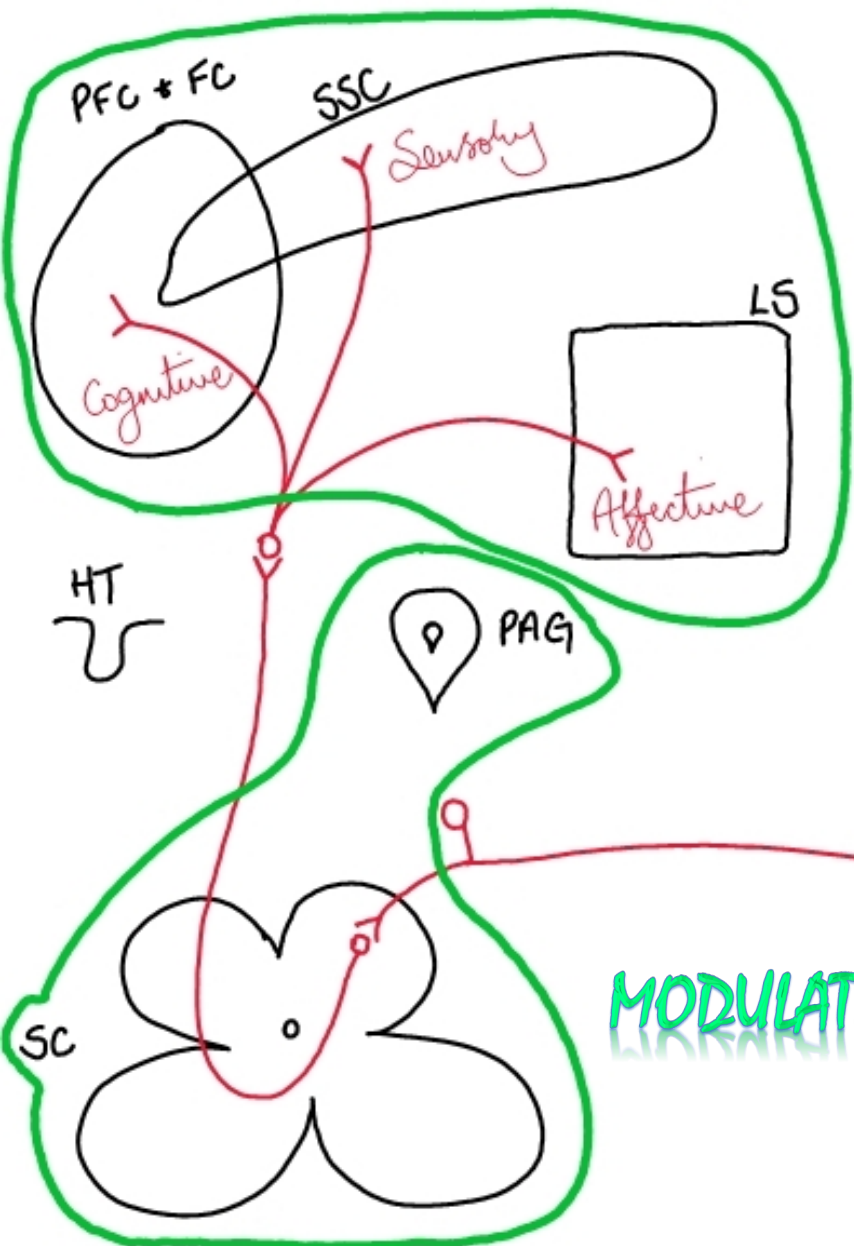
- PFC prefrontal cortex
- FC frontal cortex
- SSC somatosensory cortex
- LS limbic structures
- HT hypothalamus
- PAG periaqueductal gray
- SC spinal cord



PAIN MECHANISMS

Drawings by Mike Cummings
copied in the style of Tom Lundberg

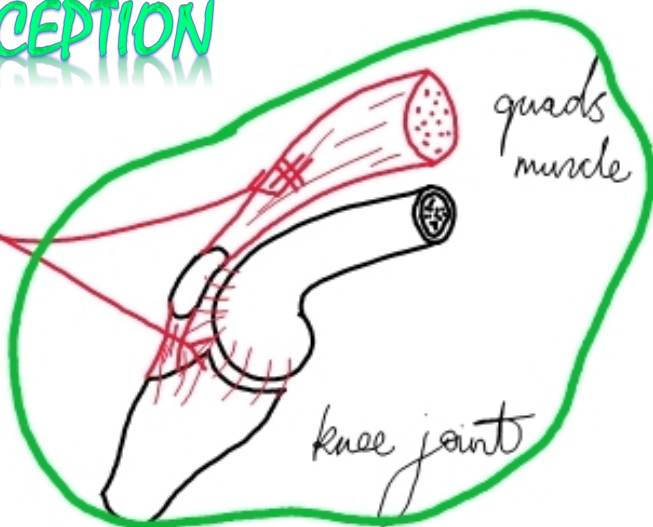
- PFC prefrontal cortex
- FC frontal cortex
- SSC somatosensory cortex
- LS limbic structures
- HT hypothalamus
- PAG periaqueductal gray
- SC spinal cord



PERCEPTION

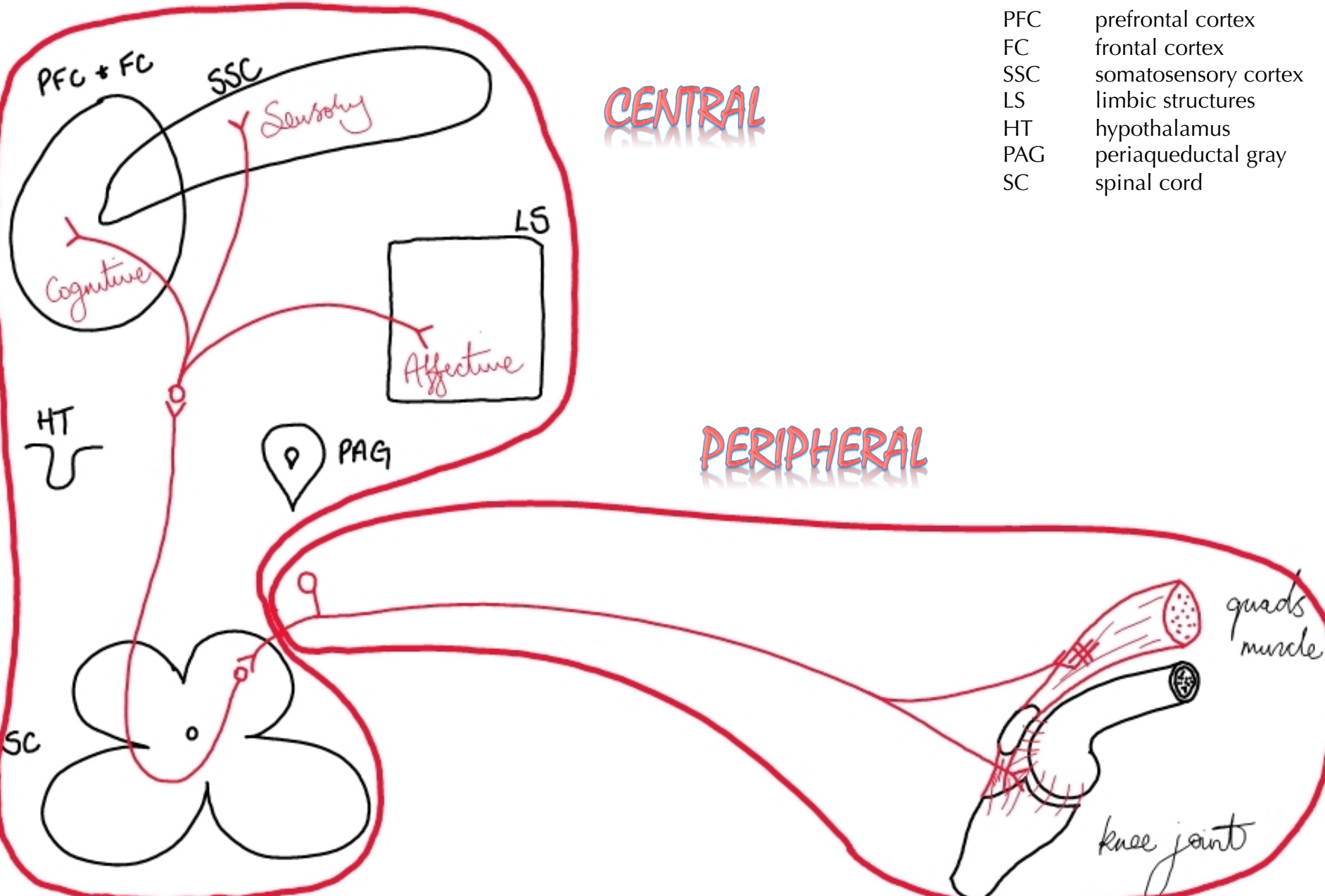
NOCICEPTION

MODULATION



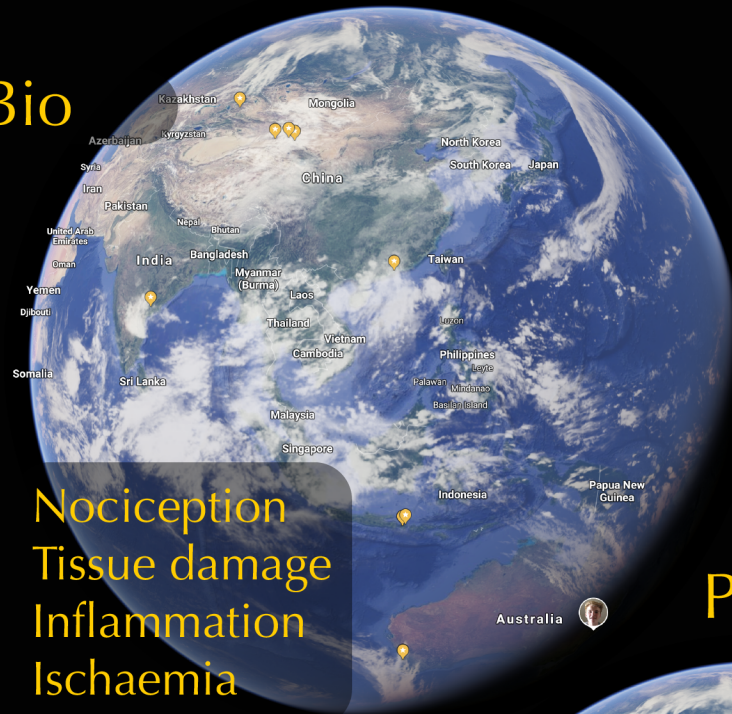
PAIN MECHANISMS

Drawings by Mike Cummings
copied in the style of Tom Lundberg



- PFC prefrontal cortex
- FC frontal cortex
- SSC somatosensory cortex
- LS limbic structures
- HT hypothalamus
- PAG periaqueductal gray
- SC spinal cord

Bio



Psycho



Pain



Social

The acupuncture needle...

Assessment of (presumed) musculoskeletal pain

- History
 - ✧ said to contribute about 90% to the diagnosis
 - ✧ Red flags
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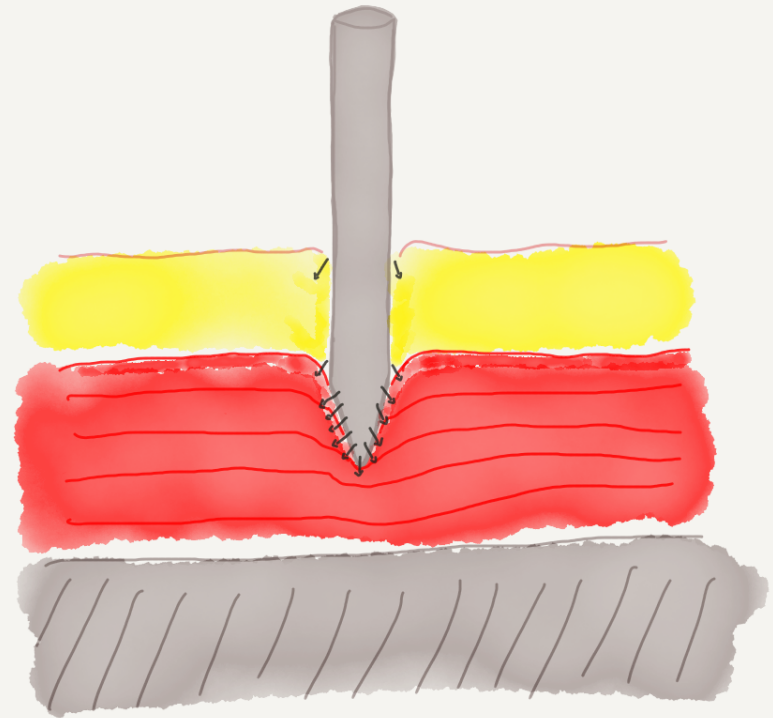
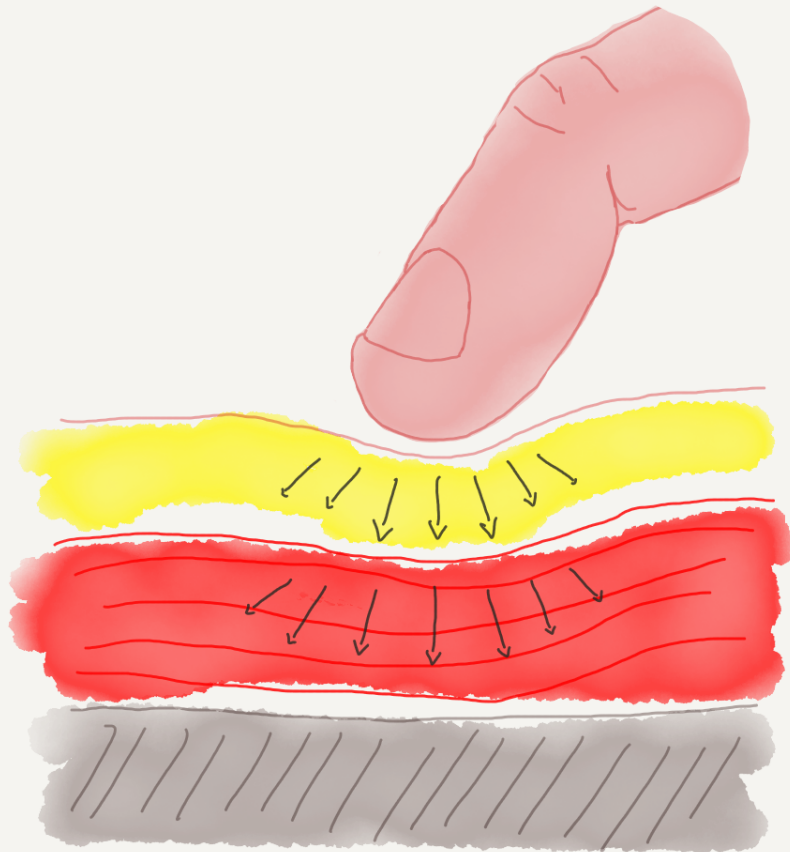
Mechanical loading of tissues

Examination

- Observation
 - ✧ Weight bearing activity may result in obvious pain
- Tissue loading
 - ✧ Stretch
 - ✧ Resisted contraction of muscle
 - ✧ Bony impingement
 - ✧ Palpation of tenderness
 - ✧ Needling with a filiform needle

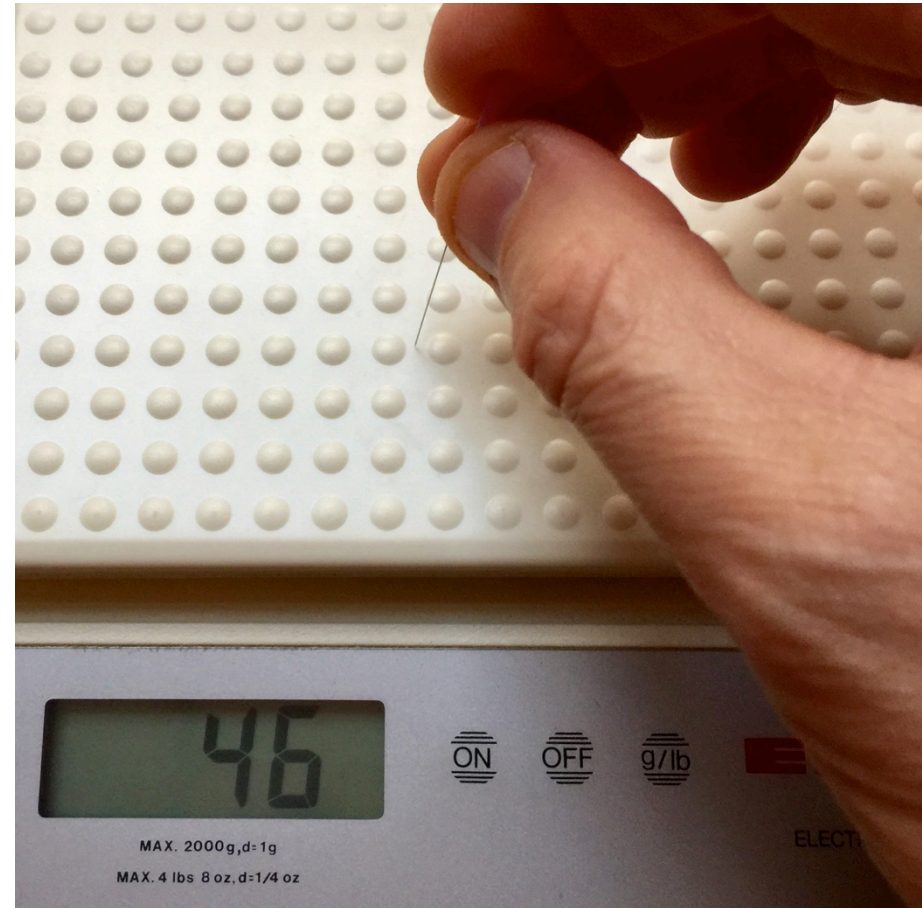
How do we apply loading

...with our fingers and with a needle



How much pressure do we apply

...with our fingers versus a needle



The acupuncture needle...

Typical weight applied to fingertips, and estimated pressure in tissues

Digit	Dimensions	Weight applied	Average pressure
Middle fingertip (gentle)	100mm ²	150g	0.15kg/cm ²
Middle fingertip (firm)	100mm ²	1-2kg	1-2kg/cm ²
Thumb pad (maximum)	200mm ²	5-10kg	2-5kg/cm ²
Thumb over thumb	200mm ²	20kg	10kg/cm ²
Fingers over fingers	200mm ²	20kg	10kg/cm ²



The acupuncture needle...

Typical weight applied to needle tips, and estimated pressure in tissues based on cone tip & flat tip

Needle	Dimensions	Surface area of cone tip	Weight before bending	Average pressure at tip
Red	0.16x30mm	0.1mm ²	5-10g	5-10kg/cm ²
Lilac	0.25x30mm	0.2mm ²	30-50g	15-25kg/cm ²
Brown	0.30x50mm	0.32mm ²	50-80g	15-25kg/cm ²

Needle	Dimensions	Surface area of flat tip	Weight before bending	Average pressure at tip
Red	0.16x30mm	0.02mm ²	5-10g	25-50kg/cm ²
Lilac	0.25x30mm	0.05mm ²	25-50g	50-100kg/cm ²
Brown	0.30x50mm	0.07mm ²	50-80g	70-114kg/cm ²



The acupuncture needle...

Average pressures compared...

Digit	Dimensions	Weight applied	Average pressure
Middle fingertip (gentle)	100mm ²	150g	0.15kg/cm ²
Middle fingertip (firm)	100mm ²	1-2kg	1-2kg/cm ²
Thumb pad (maximum)	200mm ²	5-10kg	2-5kg/cm ²

Needle	Dimensions	Surface area of cone tip	Weight before bending	Average pressure at tip
Lilac	0.25x30mm	0.2mm ²	30-50g	15-25kg/cm ²

Needle	Dimensions	Surface area of flat tip	Weight before bending	Average pressure at tip
Lilac	0.25x30mm	0.05mm ²	25-50g	50-100kg/cm ²

1/500 to 1/4000

1/50 to 1/400

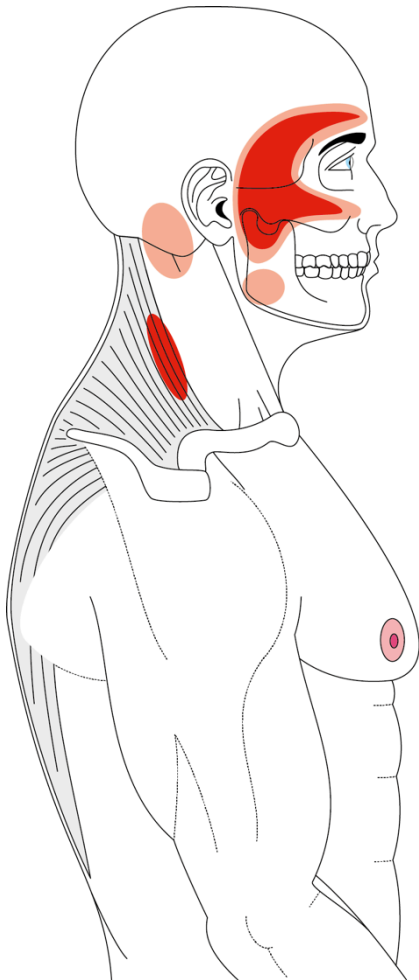
10x to 100x

low diffuse pressure
not tissue specific



high localised pressure
tissue specific

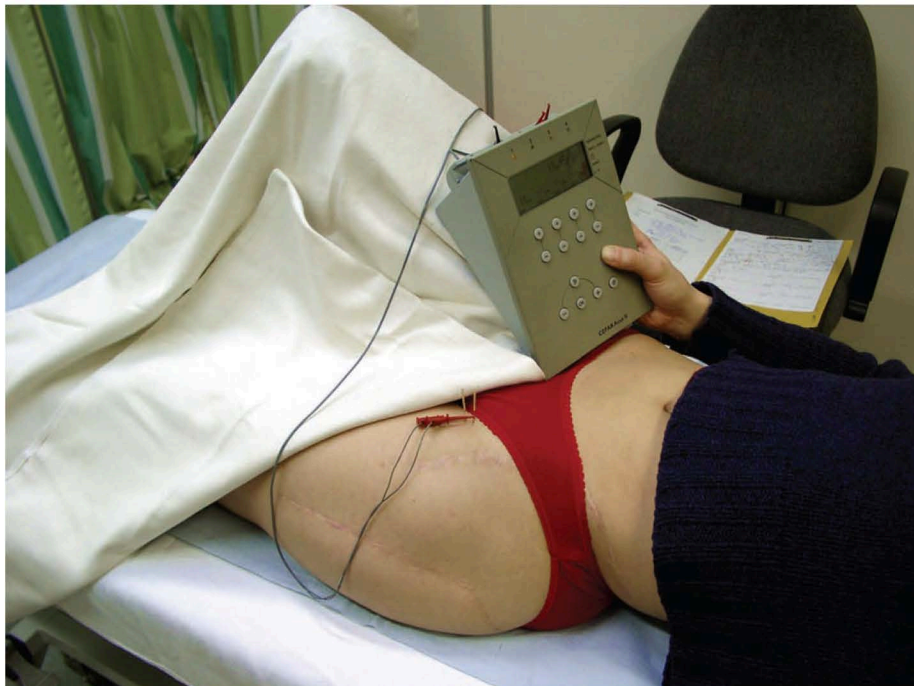
Clinical cases



Case 1

- 26 year old male
- 2 year history of right-sided facial pain, “headache”, TMJ pain, sinus pain...
 - ✧ Investigated by neurology including MR
 - ✧ Investigated by ENT including CT
- Myofascial pain from upper trapezius suspected
 - ✧ Cross-fibre palpation revealed TrP bands
 - ✧ Pincer palpation gave some referral
 - ✧ Needling of TrPs reproduced all symptoms dramatically and convincingly

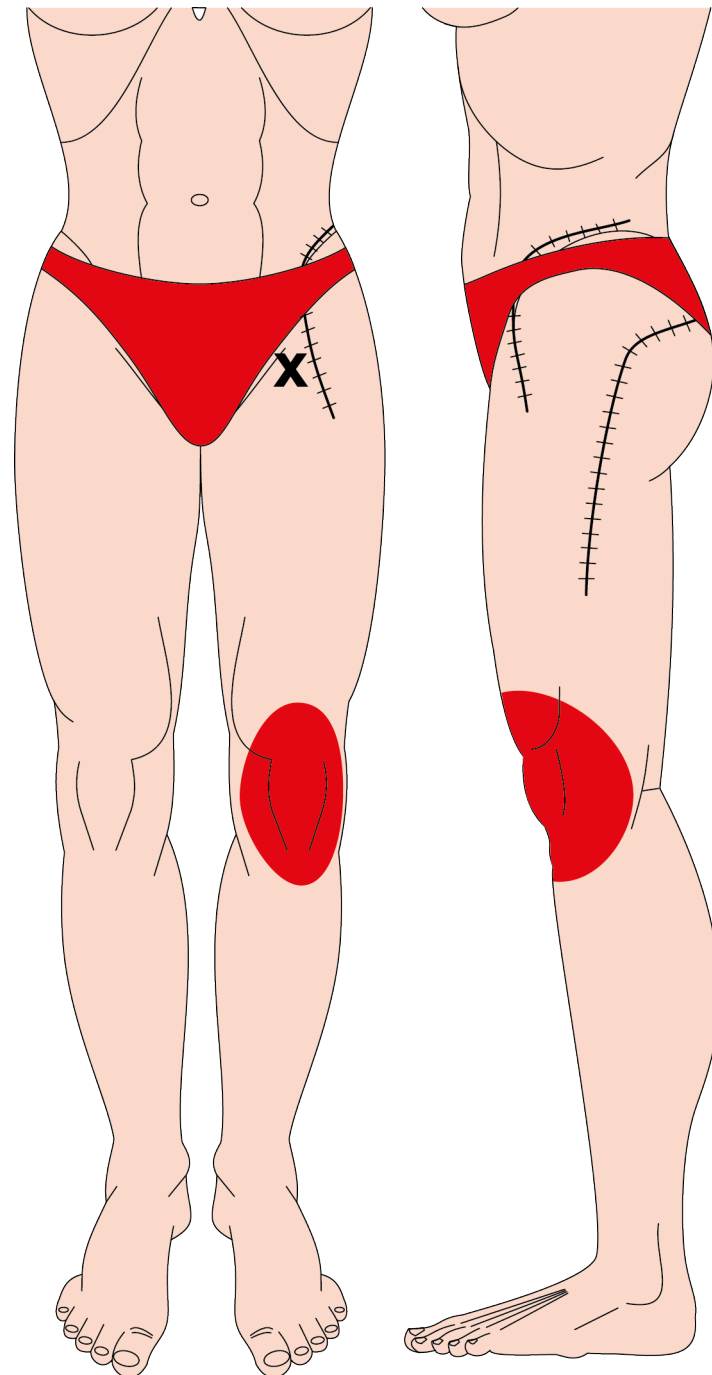
Electroacupuncture for secondary myofascial pain from iliopsoas



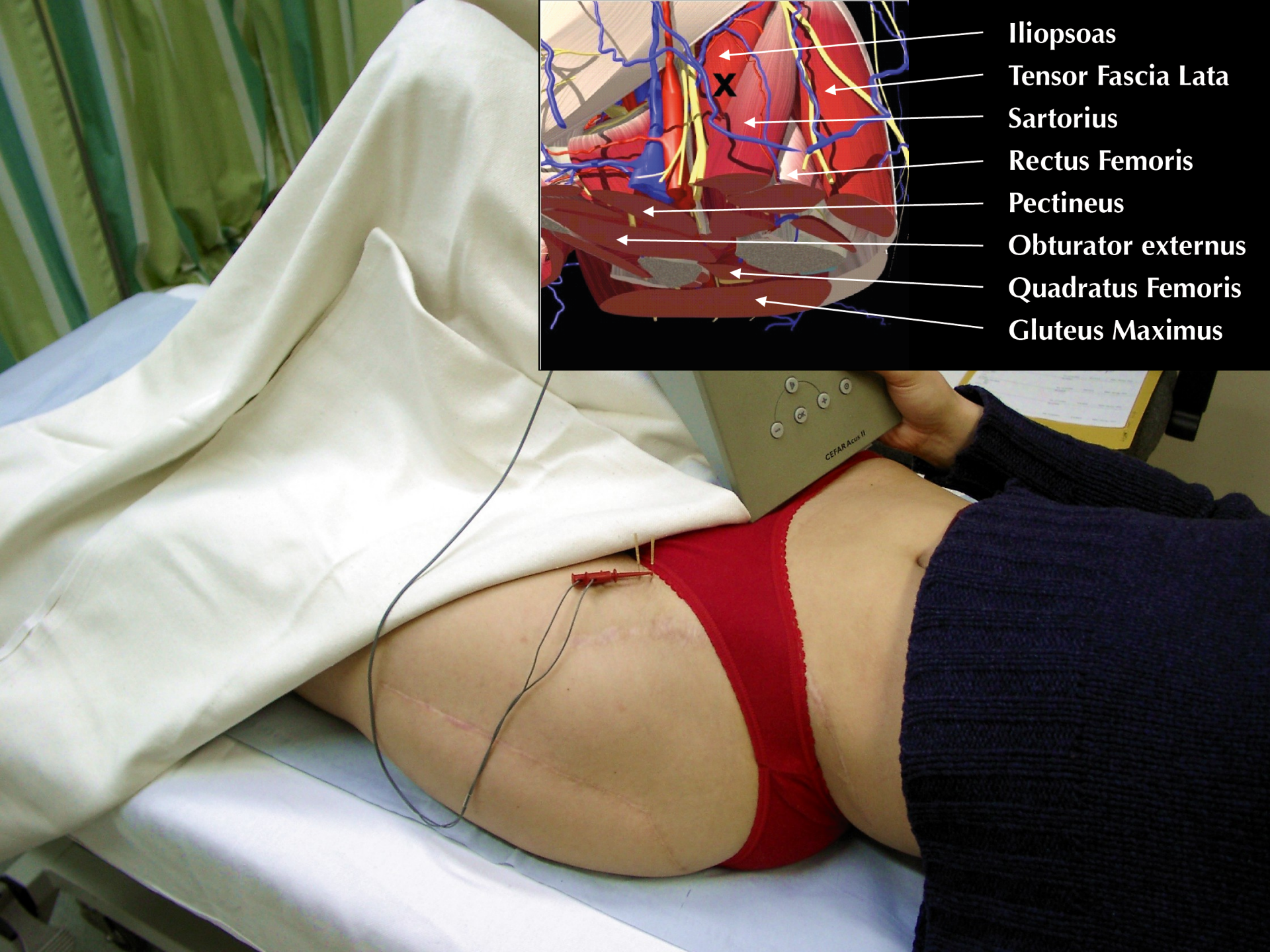
The image shows the application of electroacupuncture in the treatment of secondary myofascial pain from iliopsoas. This 33-year-old lady had recurrent knee pain diagnosed as hip dysplasia for which she had four hip operations culminating in a resurfacing procedure.

One year later, the knee pain recurred, and it was reproduced by pressure on a (secondary) myofascial trigger point in iliopsoas. It responded immediately to treatment. For a full description, see **Cummings M**. Referred knee pain treated with electroacupuncture to iliopsoas. *Acupunct Med* 2003; 21(1-2):32-35.

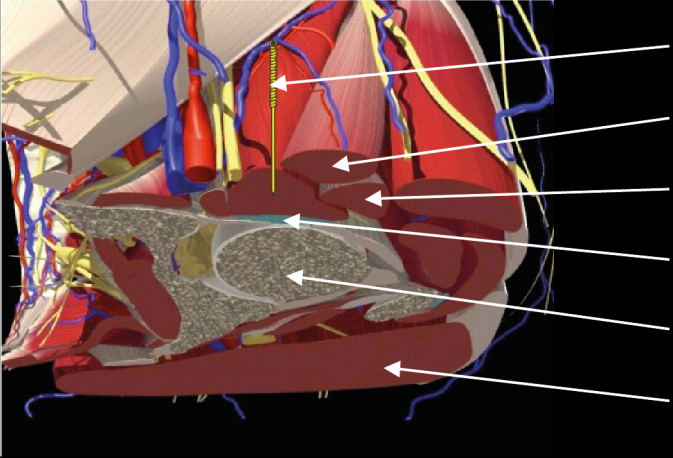
Image and text provided by Mike Cummings



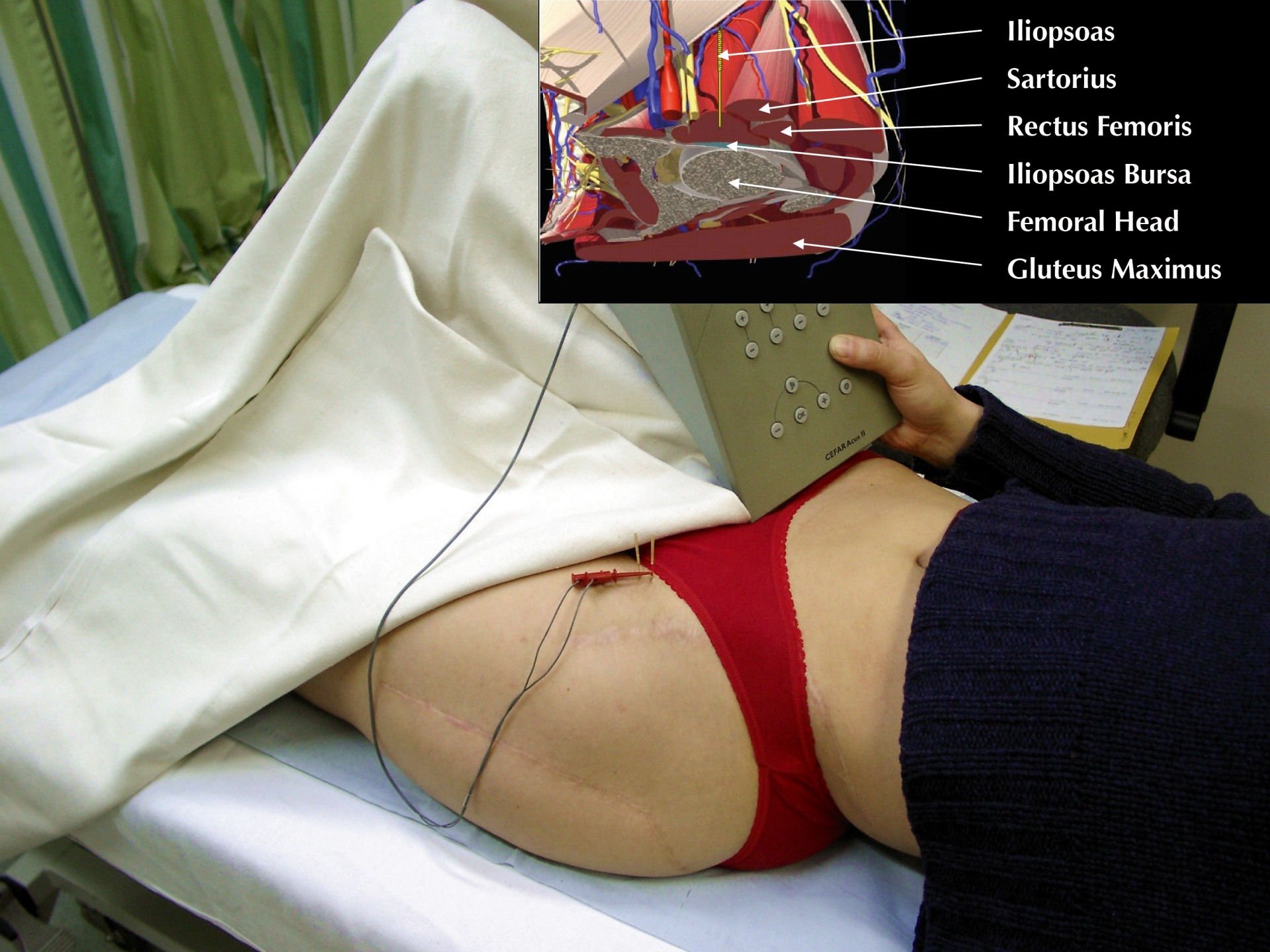




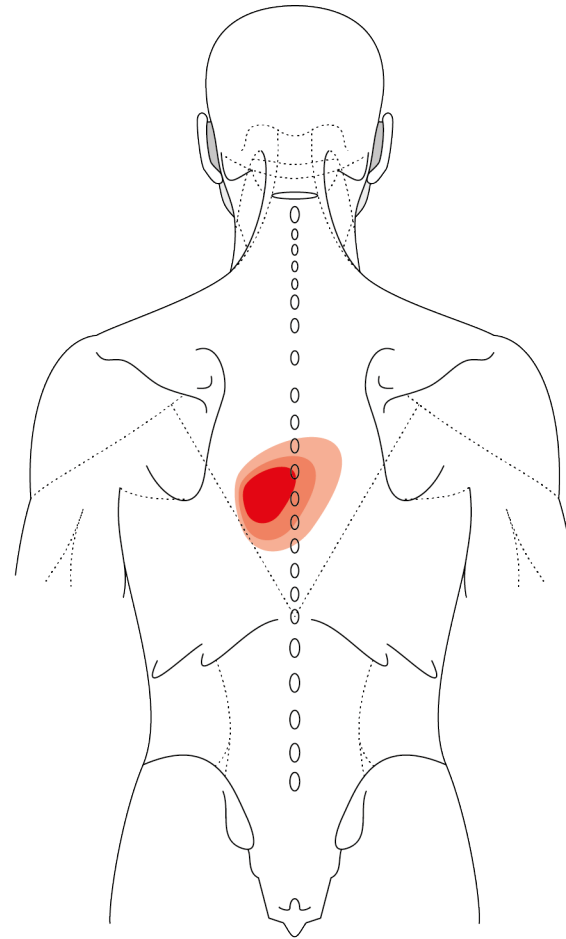
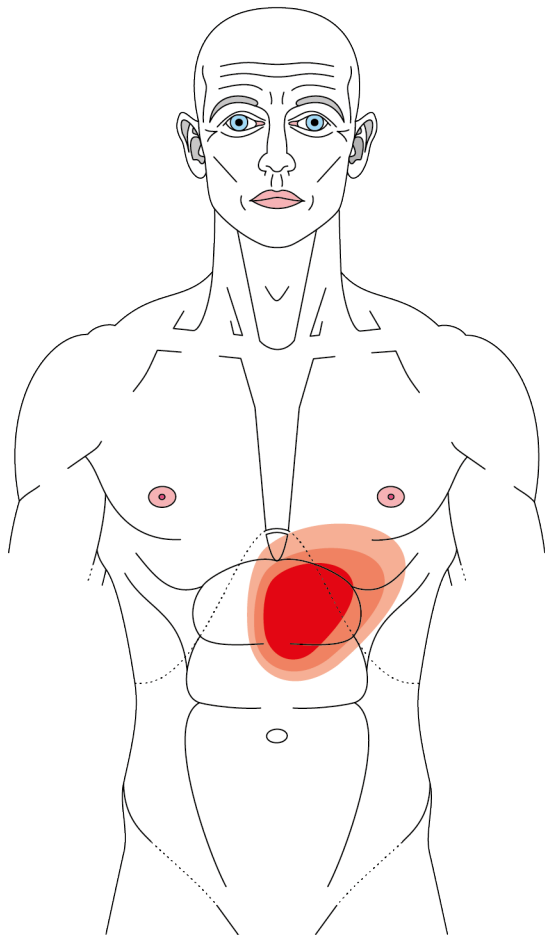
- Iliopsoas
- Tensor Fascia Lata
- Sartorius
- Rectus Femoris
- Pectineus
- Obturator externus
- Quadratus Femoris
- Gluteus Maximus

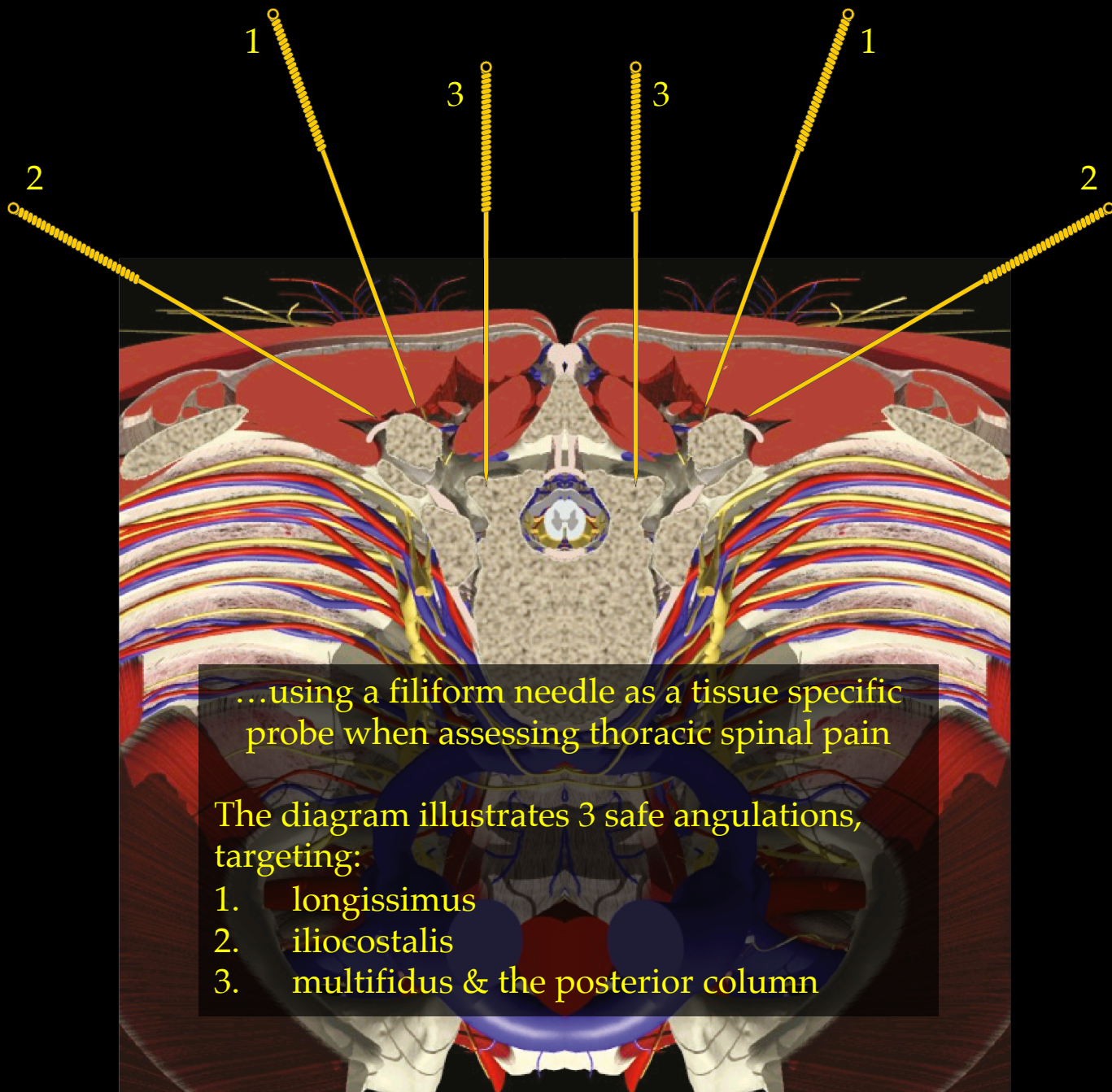


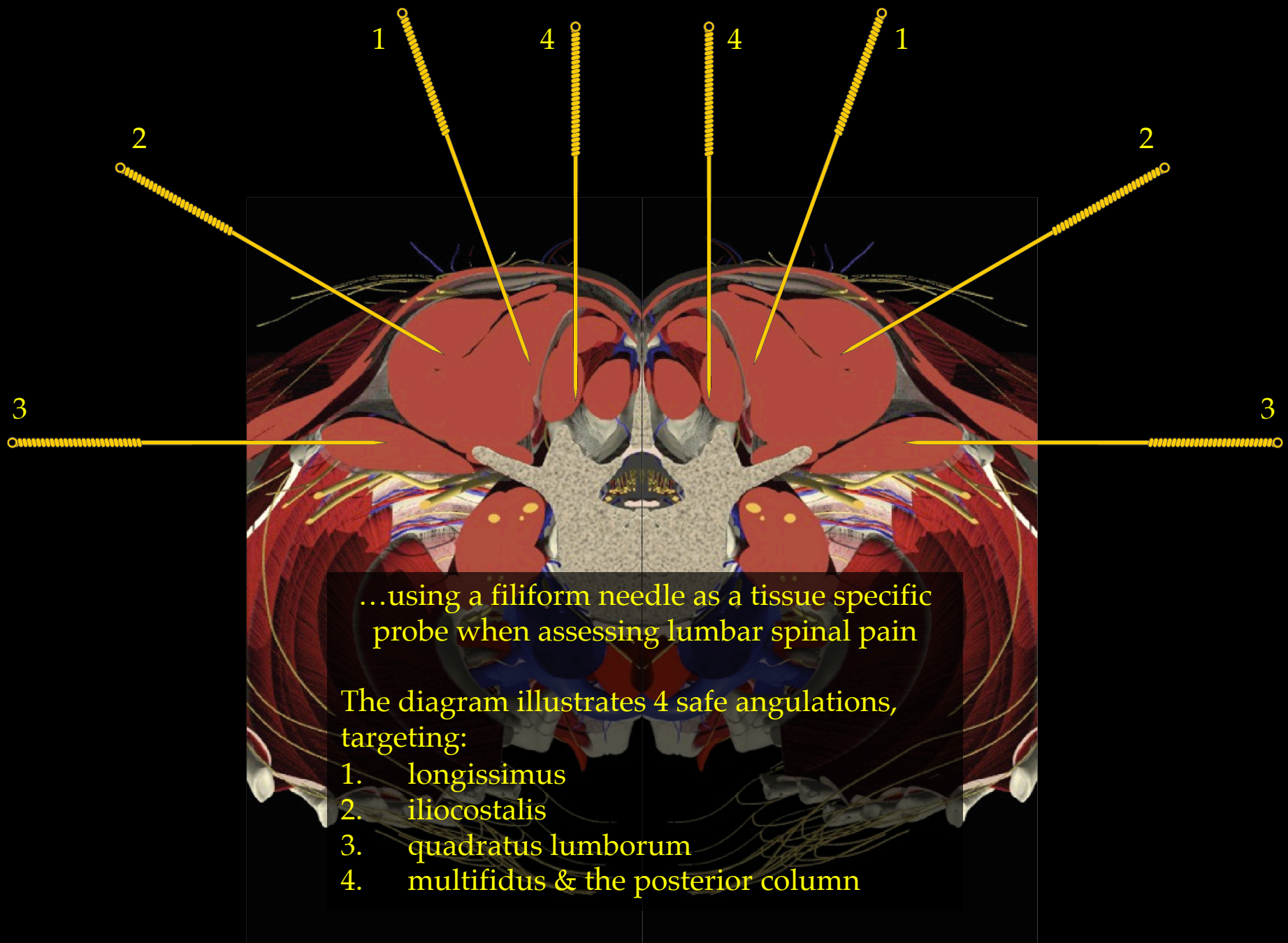
- Iliopsoas
- Sartorius
- Rectus Femoris
- Iliopsoas Bursa
- Femoral Head
- Gluteus Maximus



Clinical cases





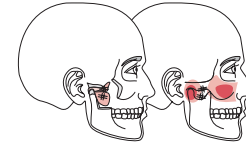
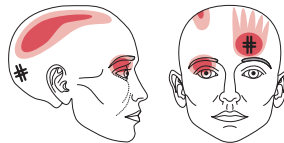
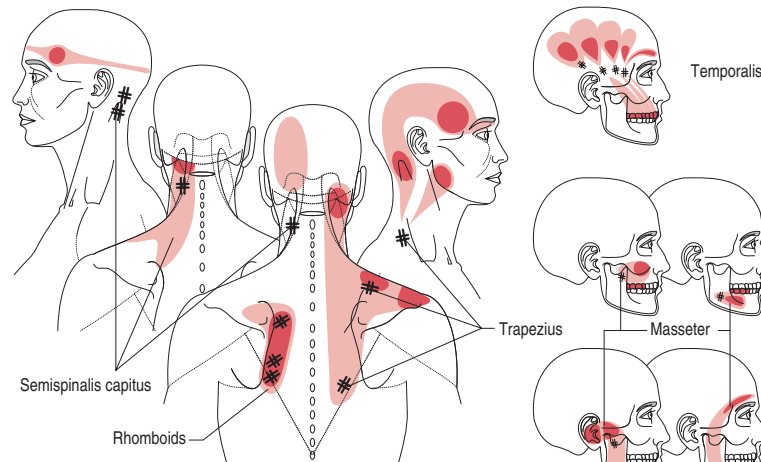


...using a filiform needle as a tissue specific probe when assessing lumbar spinal pain

The diagram illustrates 4 safe angulations, targeting:

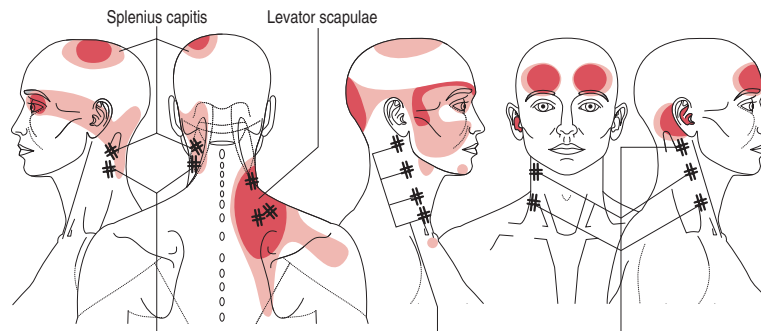
1. longissimus
2. iliocostalis
3. quadratus lumborum
4. multifidus & the posterior column

TrP pain referral patterns



Occipitalis and frontalis

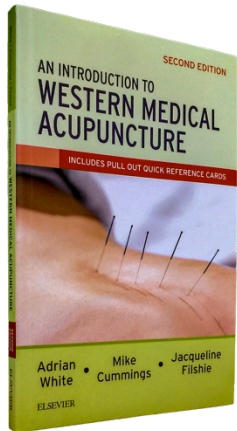
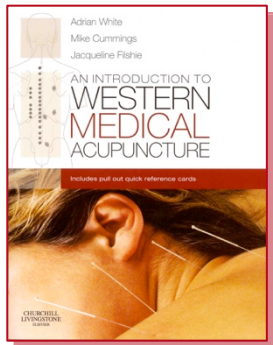
Lateral pterygoid



Splenius cervicis

Sternocleidomastoid (sternal head)

Sternocleidomastoid (clavicular head)



T3

Shoulder

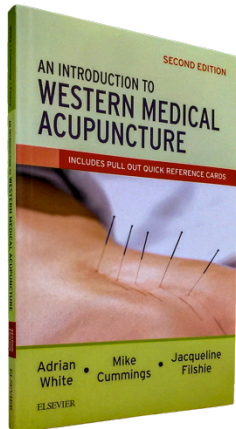
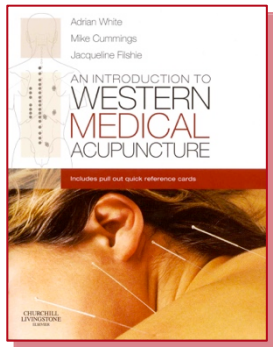
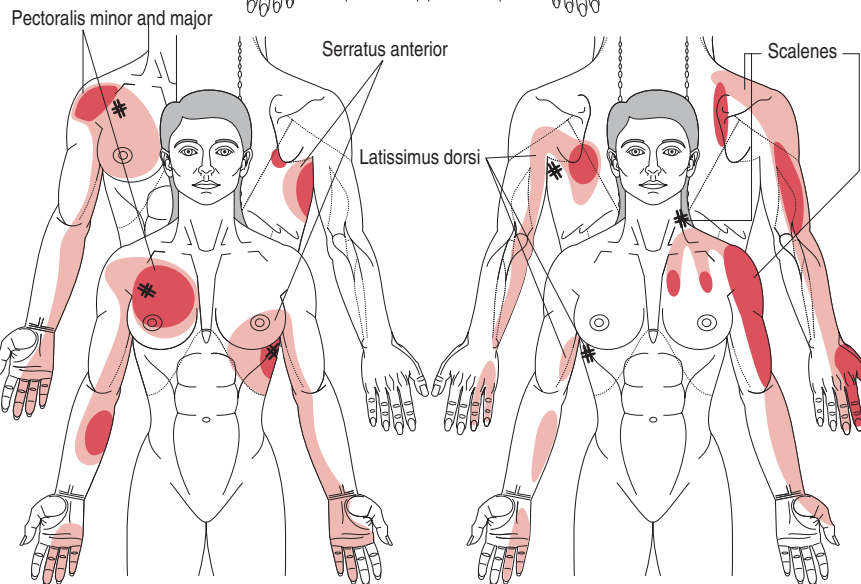
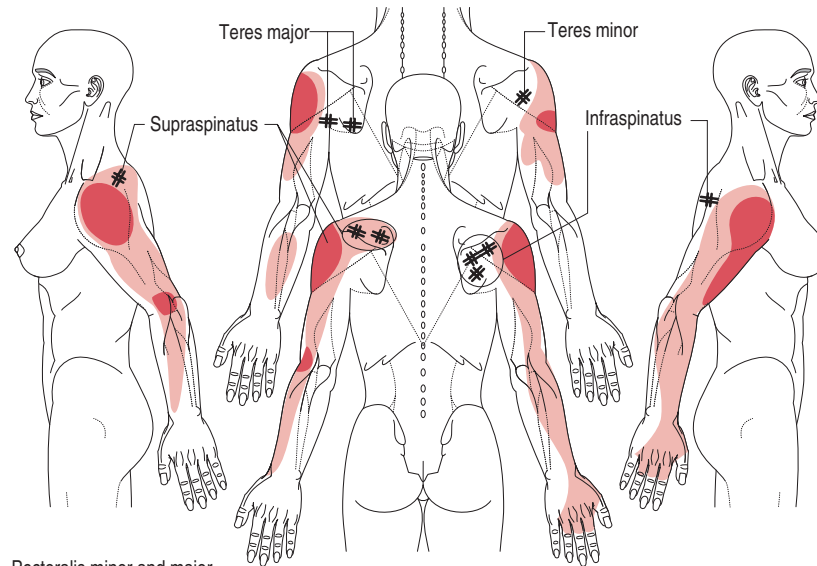
Upper trapezius

C7

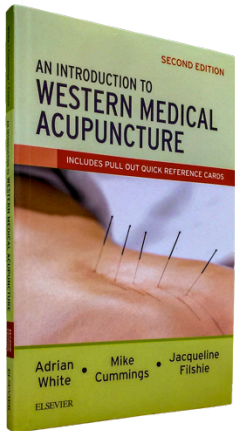
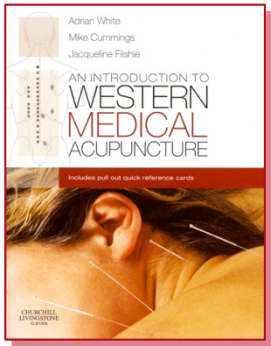
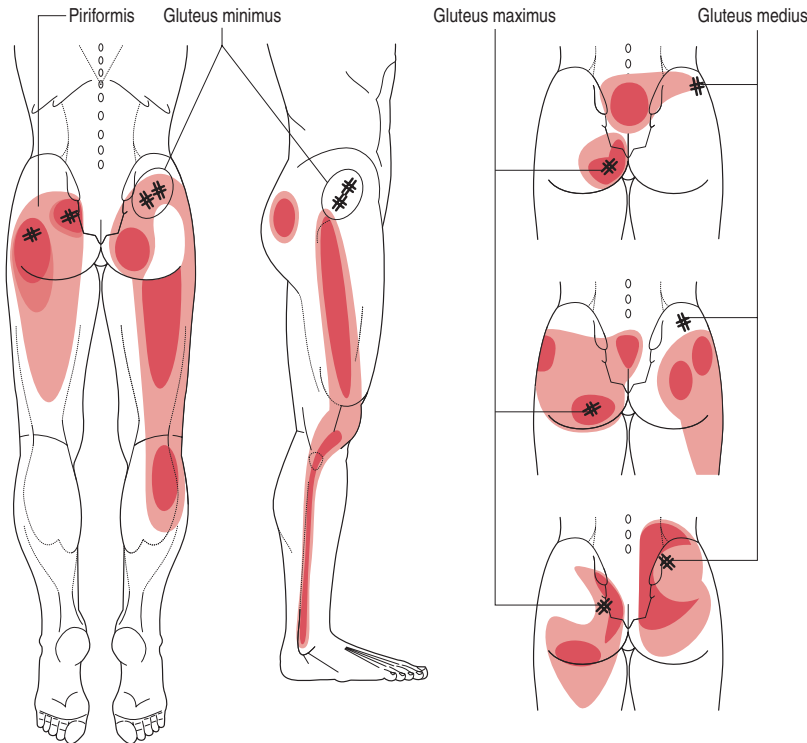
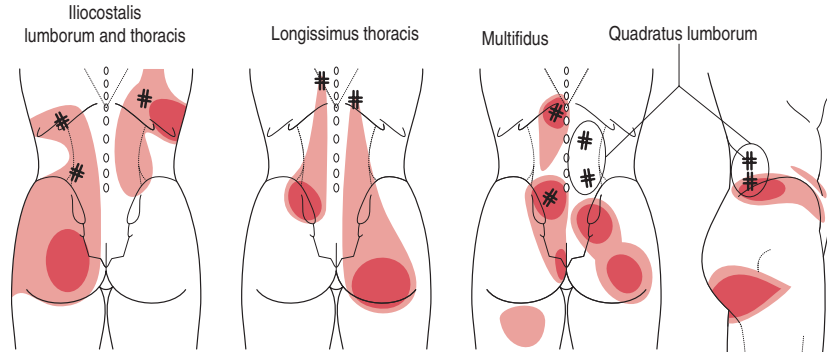
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<https://www.facebook.com/on.bmas.52/videos>

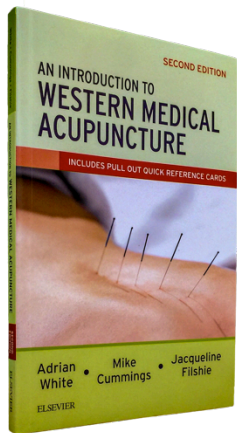
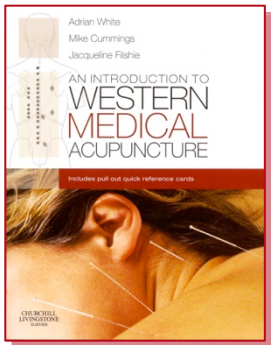
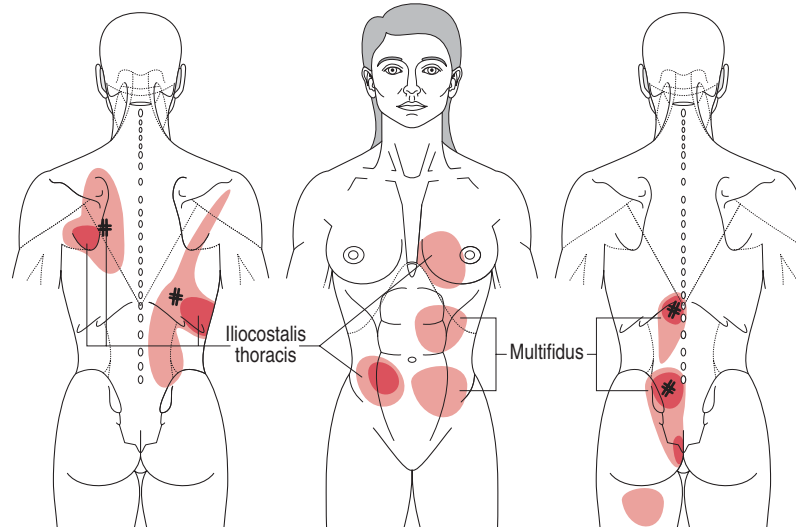
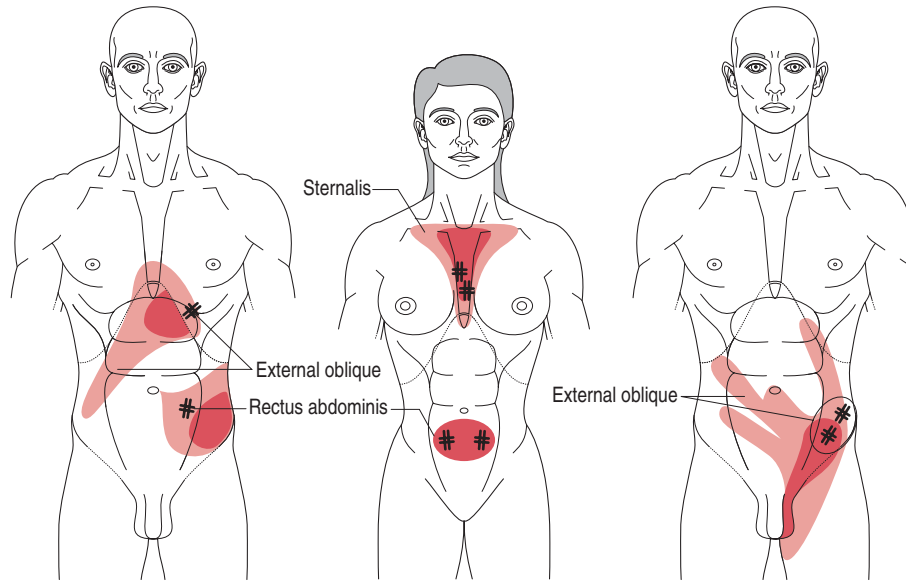
TrP pain referral patterns



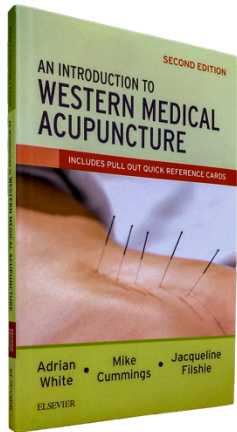
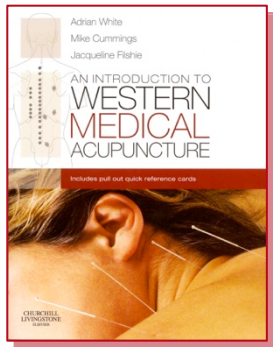
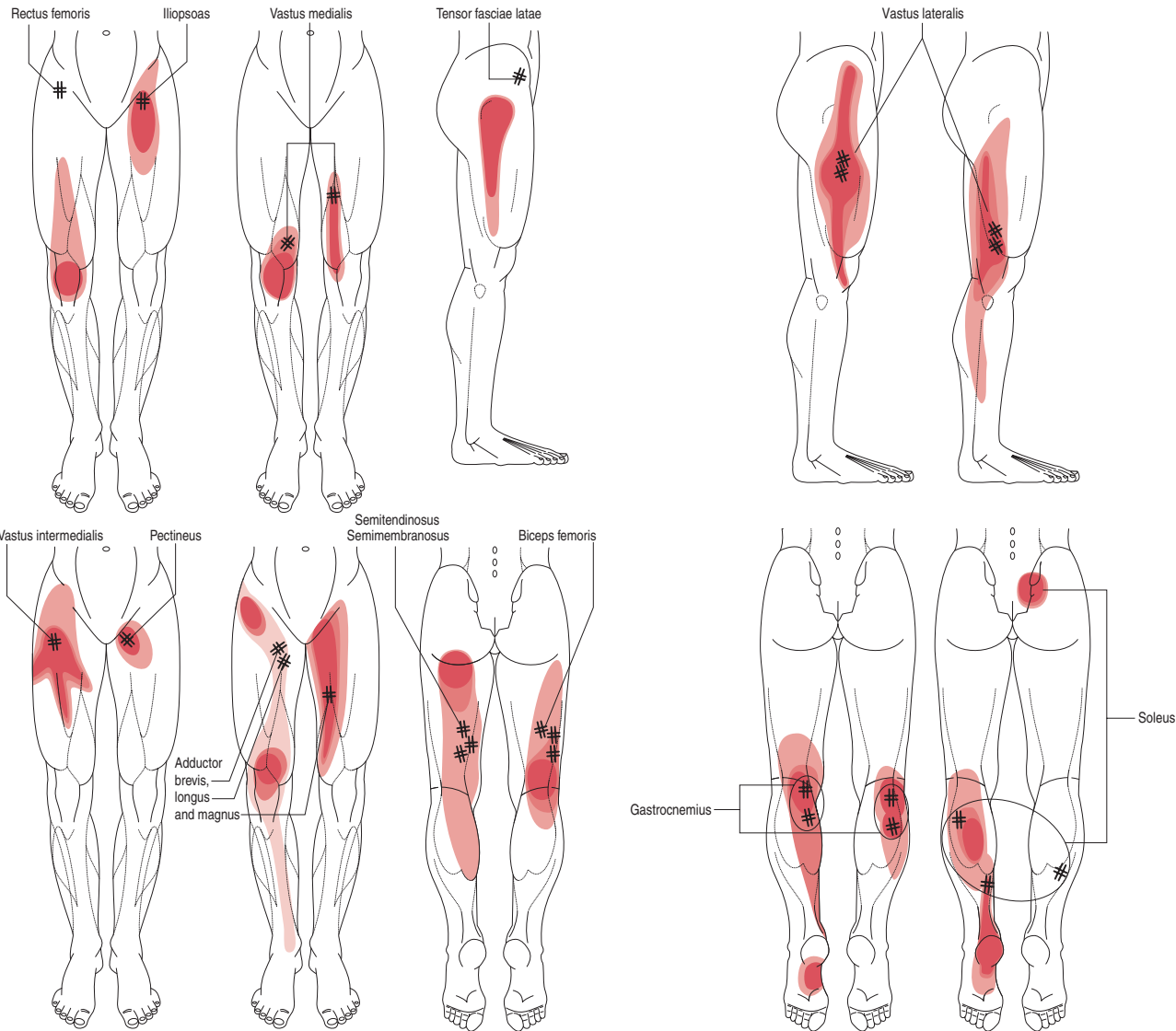
TrP pain referral patterns



TrP pain referral patterns



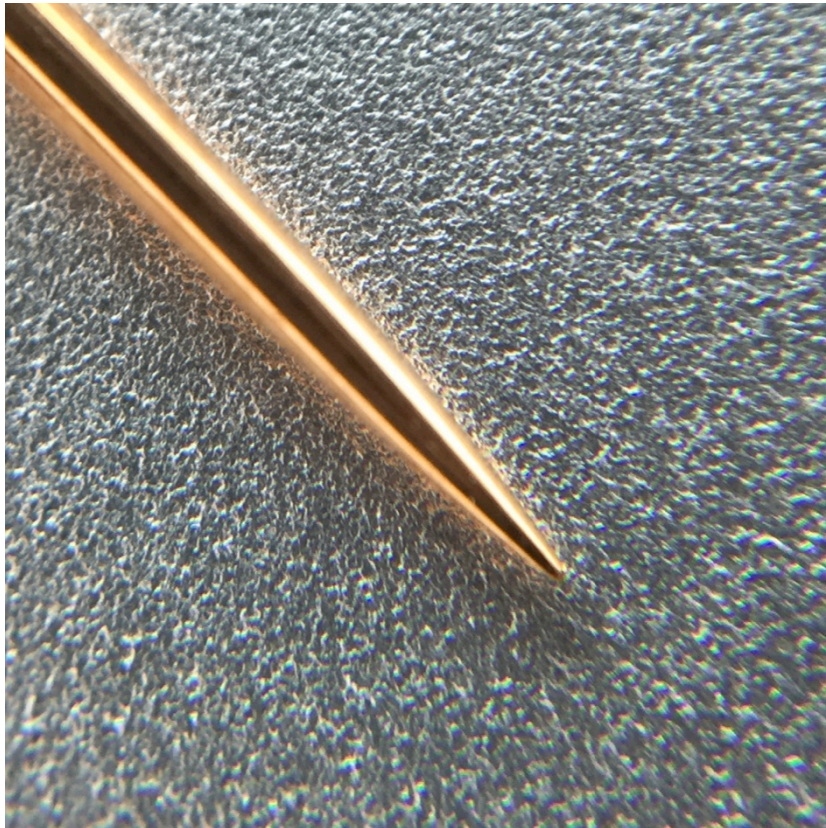
TrP pain referral patterns



The acupuncture needle...



...as a diagnostic tool
in the assessment of musculoskeletal pain



Thank you for listening

Dr Mike Cummings
Medical Director BMAS

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