An approach to neck pain...

...the WMA approach to the assessment and treatment of neck pain

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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
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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.

Mike edits and writes on the BMAS Blog.

Publications


### 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.

### Conferences

Nordic Medical Acupuncture Congress programme, Copenhagen 2019.

European Congress for Integrative Medicine programme, Barcelona 2019.

ECIM Workshops.

### Social media

**Tweets by @drmike001**

Mike Cummings
@drmike001

Atheroma 2019 bmas.blog/2019/06/19/ath...

**Tweets by @Acupunct_Med**

Acupunct Med
@Acupunct_Med

Effect of Mongolian warm acupuncture on the gene
goo.gl/6XQeXv
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.

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- BMAS Points Resource
- Access to webcasts & CPD modules related to the BMAS Spring & Autumn Meetings
- Members rates at meetings

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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.

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.
An approach to neck pain...

Physiology
- Local effects
- Segmental
- General
An approach to neck pain...

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

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

Drawings by Mike Cummings
copied in the style of Tom Lundeberg
PAIN MECHANISMS

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

PFC  prefrontal cortex
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An approach to neck pain...

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An approach to neck pain...

Assessment of (presumed) musculoskeletal pain

- History
  - Pain history
    - Site
      - central vs laterialized
      - deep vs skin level
    - Character
    - Radiation
    - Onset
    - Severity
    - Duration
    - Special times of occurrence
    - Aggravating factors
    - Relieving factors
    - Associated symptoms
P1 disc
spondylosis
vertebral body

P2 facet
muscle
lung or pleura

P3 facet / foraminal
nerve root
muscle (cardiac)
An approach to neck pain...

Assessment of (presumed) musculoskeletal pain

- History
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    - the fine filiform needle provides the best tissue specific loading
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Mechanical loading of tissues

Examination

- Observation
  - Weight bearing activity may result in obvious pain

- Tissue loading
  - Stretch
  - Loading via weight distribution or position
  - Loading via resisted contraction of muscle
  - Loading via bony impingement
  - Loading via palpation of tenderness
  - Loading with a filiform needle
Mechanical loading of tissues

Examination of the back

- Observation
  - Weight bearing activity may result in obvious pain
- Tissue loading
  - Stretch – provocation during assessment of RoM
  - Loading via weight distribution or position – RoM
  - Loading via resisted contraction of muscle
  - Loading via bony impingement – RoM
  - Loading via palpation of tenderness – TrPs, facets, ligaments
  - Loading with a filiform needle – TrPs, facets, ligaments
Mechanical loading of tissues

Examination of the back

- Observation
  - Weight bearing activity may result in obvious pain

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  - Loading with a filiform needle – TrPs, facets, ligaments
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...

### Average pressures compared...

<table>
<thead>
<tr>
<th>Needle</th>
<th>Dimensions</th>
<th>Surface area of cone tip</th>
<th>Weight before bending</th>
<th>Average pressure at tip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle fingertip (gentle)</td>
<td>100mm³</td>
<td>0.2mm²</td>
<td>150g</td>
<td>0.15kg/cm²</td>
</tr>
<tr>
<td>Middle fingertip (firm)</td>
<td>100mm³</td>
<td>0.2mm²</td>
<td>1-2kg</td>
<td>1-2kg/cm²</td>
</tr>
<tr>
<td>Thumb pad (maximum)</td>
<td>200mm³</td>
<td></td>
<td>5-10kg</td>
<td>2-5kg/cm²</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Needle</th>
<th>Dimensions</th>
<th>Surface area of flat tip</th>
<th>Weight before bending</th>
<th>Average pressure at tip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lilac</td>
<td>0.25x30mm</td>
<td>0.2mm²</td>
<td>30-50g</td>
<td>15-25kg/cm²</td>
</tr>
</tbody>
</table>

1/500 to 1/4000  1/50 to 1/400  10x to 100x

- **Low diffuse pressure** not tissue specific
- **High localised pressure** tissue specific
Mechanical loading of tissues

Examination of the back

- Observation
  - Weight bearing activity may result in obvious pain

- Tissue loading
  - Stretch – provocation during assessment of RoM
  - Loading via weight distribution or position – RoM
  - Loading via resisted contraction of muscle
  - Loading via bony impingement – RoM
  - Loading via palpation of tenderness – TrPs, facets, ligaments
  - Loading with a filiform needle – TrPs, facets, ligaments
    - Is this the pain you are complaining of?
    - Or is it a different pain in the same place?
TrP pain referral patterns
Upper trapezius

https://www.facebook.com/on.bmas.52/videos
TrP pain referral patterns
Mechanical loading of tissues

Examination of the back

- Observation
  - Weight bearing activity may result in obvious pain

- Tissue loading
  - Stretch – provocation during assessment of RoM
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  - Loading via resisted contraction of muscle
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  - Loading via palpation of tenderness – TrPs, facets, ligaments
  - Loading with a filiform needle – TrPs, facets, ligaments
RoM

90°

how many fingers fit in the gap

90°
RoM

90°

45°  45°

90°  90°
RoM
P1 disc spondylosis vertebral body

Needling assessment

- No
- Do not attempt direct needling of disc or vertebral body
O/E

P2 facet pattern

Needling assessment

- Recognised pain from needling onto facet joint margins

P2 no pain
Pi ipsilateral pain
Pc contralateral pain
P2 muscle pattern

Needling assessment

- Recognised pain from needling TrP

- O/E

- No pain
- Ipsilateral pain
- Contralateral pain
TrP dry needling
trapezius
rhomboids
levator scapulae

Periosteal acupuncture
C2-7 possible
C5-7 usually

Electroacupuncture
chronic TrPs trapezius
or pain referral zone
Needling assessment

- Recognised pain from needling onto facet joint margins

- **P3** facet / foraminal nerve root muscle (cardiac)

- **oP** no pain
- **P_i** ipsilateral pain
- **P_c** contralateral pain
Periosteal acupuncture
C2-7 possible
C5-7 usually

TrP dry needling
trapezius
rhomboïds
infraspinatus
teres major

Electroacupuncture
multifidus
overlying facet
or foramina
at the level affected
Summary

WMA approach to assessment and treatment of neck pain

- History
  - central vs lateral

- RoM and pain provocation
  - facet loading vs muscle stretching

- Needling for reproduction of recognised pain
  - muscle TrPs
  - facet margins
  - ligament (rarely)

- Treatment
  - dry needling of TrPs
  - local or regional MA
  - local or regional EA
  - periosteal needling on facet margins / articular column
An approach to neck pain…

…the WMA approach to the assessment and treatment of neck pain

Thank you for listening

Dr Mike Cummings
Medical Director BMAS

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