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HEALTH | MEDICOLEGAL | EDUCATION



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# Fibromyalgia in the Medicolegal Setting - Diagnostics, treatment and establishing causation

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# What is Fibromyalgia?

- Fibromyalgia Syndrome (FMS) is a condition of chronic widespread pain accompanied by fatigue with sleep disturbance and a cognitive disorder, associated with varied additional syndromes.
- It occurs in 2-4% of the worldwide population.
- Female:Male ration of 9:1
- Normal physical findings with tender points.
- Laboratory results are normal.
- It can co-occur with other medical conditions.
- It constitutes a significant healthcare issue causing great disability, loss of employment and psychological hardship.

# What is Fibromyalgia?

- Aberrant perception of nociceptive stimuli through a process of central sensitization resulting in erroneous interpretation and amplification of pain.
- Autonomic dysfunction is common with hypo-reactivity of the autonomic nervous system.
- No evidence for a single event that causes FMS.

# Pathophysiology

- Both the sympathetic nervous system and hypothalamic-pituitary-adrenal axis are activated in FMS.
- These influence descending pain modulation.
- Emotional distress induces neuroinflammation.
- Connectivity between the default-mode network and pain-inhibitory centres is decreased whereas connectivity with the insula is increased.
- Higher levels of glutamate, cytokines (IL-8)
- Central sensitization is the common factor.

# Evolution

- Is it a disease or a syndrome? WHO and ICD-11 list it as a disease.
- Who should treat Fibromyalgia?  
Rheumatology/Neurology/Pain/Psychiatry??
- Does it lie on a continuum – do people have a degree of fibromyalgianess?
- Neurasthenia – Fibrositis – Fibromyalgia (70s/80s)
- ACR Criteria 1990
- ACR Criteria 2010

# ACR 1990



Criteria mainly focused on tender points.



11/18 tender points to meet criteria.

# ACR 2010

- Criteria is more multidimensional including:
  - Widespread Pain Index
  - Somatic Symptom Scale (Fatigue, Unrefreshed Sleep, Cognition)
  - Miscellaneous Complaints
- Co-occurs with IBS, Chronic Pelvic Pain, Interstitial cystitis, TMJ Disorders, Chronic tension-type headache, Chronic Migraines, Multiple chemical sensitivity, and Chronic Fatigue.

**WIDESPREAD PAIN INDEX (WPI)****A. Have you had pain in the following location(s) in the last week?**

Shoulder, right	Shoulder, left	Upper arm, right	Upper arm, left
Lower arm, right	Lower arm, left	Hip (buttock), right	Hip (buttock), left
Upper leg, right	Upper leg, left	Lower leg, right	Lower leg, left
Jaw, right	Jaw, left	Chest	Abdomen
Upper back	Lower back	Neck	

Part A Score = Total number of areas marked yes

**SYMPTOM SEVERITY (SS)****B. How much of a problem have the following been for you during the past week?**

	No problem	Slight/Mild problem, generally mild or intermittent	Moderate, Considerable problem, often present	Severe, pervasive, continuous, life- disturbing problem
Fatigue	0	1	2	3
Waking Still Feeling Tired	0	1	2	3
Concentration or Memory Problems	0	1	2	3

Part B Score: Total of all domains

**C. Have you had problems with any of the following during the past three months?**

Muscle pain	Headache	Sun sensitivity	Chest pain
Muscle weakness	Dizziness	Blurred vision	Hair loss
Numbness/tingling	Shortness of breath	Loss/changes in taste	Fever
IBS	Nervousness	Hearing difficulties	Thinking problem
Abdominal pain/cramps	Depression	Ringing in ears	Dry mouth
Diarrhea	Fatigue/tiredness	Easy bruising	Dry eyes
Constipation	Insomnia	Frequent urination	Itching
Heartburn	Loss of appetite	Bladder spasms	Wheezing
Vomiting	Rash	Painful urination	Oral ulcers
Nausea	Hives/welts	Seizures	Raynaud's

Part C Score: 0 = No symptoms, 1= Few symptoms, 2= Moderate number of symptoms, 3= A great deal of symptoms

WPI = A Score

SS = B Score + C Score

**Fibromyalgia if: WPI ≥ 7 and SS ≥ 5 OR WPI 3-6 and SS ≥ 9**



# Testing

FBC

U/E

LFT

TFT

B12

Magnesium

Folate

Iron Studies

ESR

CRP

RF

CCP  
Antibodies

ENA

ANA

ANCA

HCLA B27

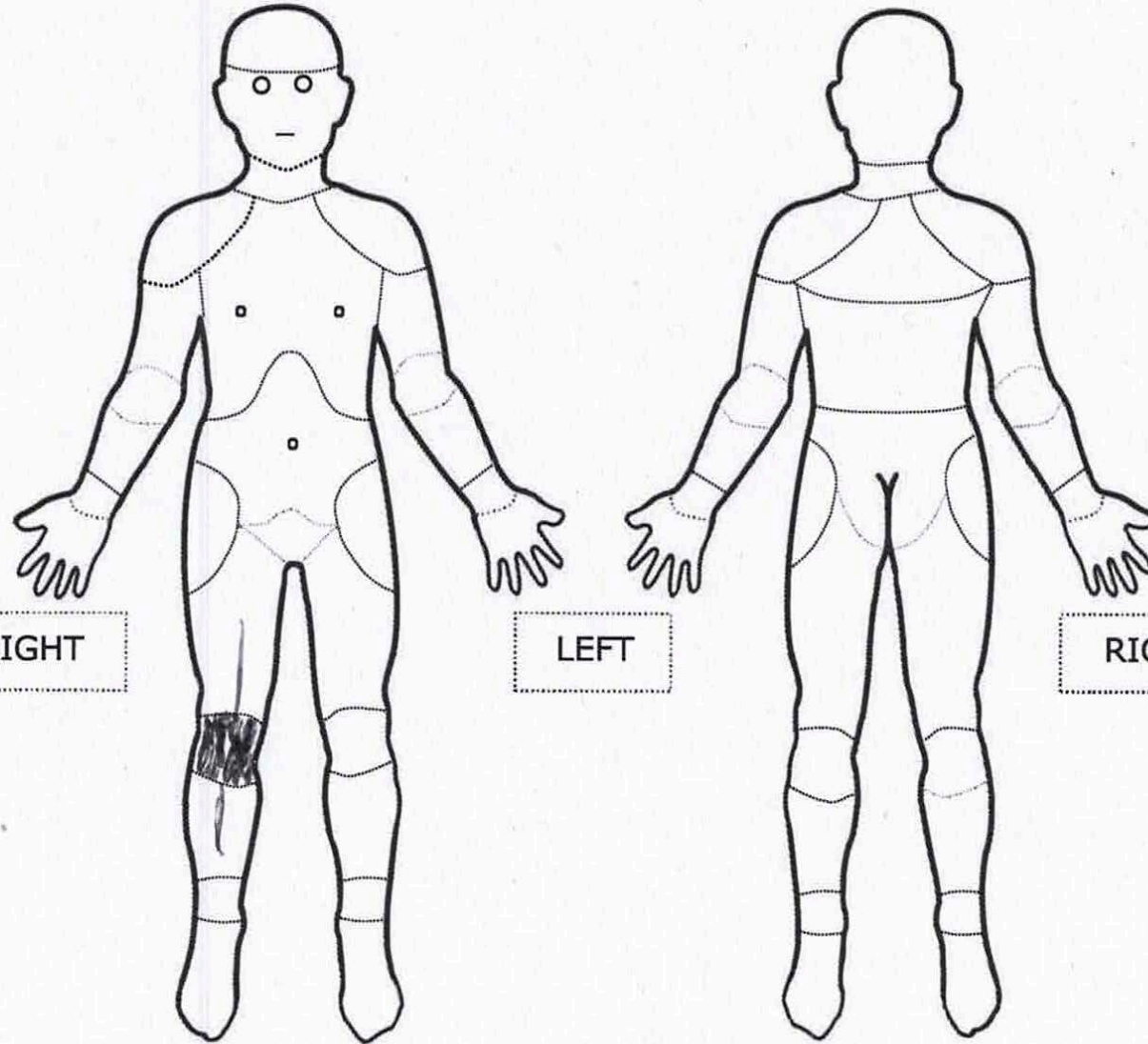
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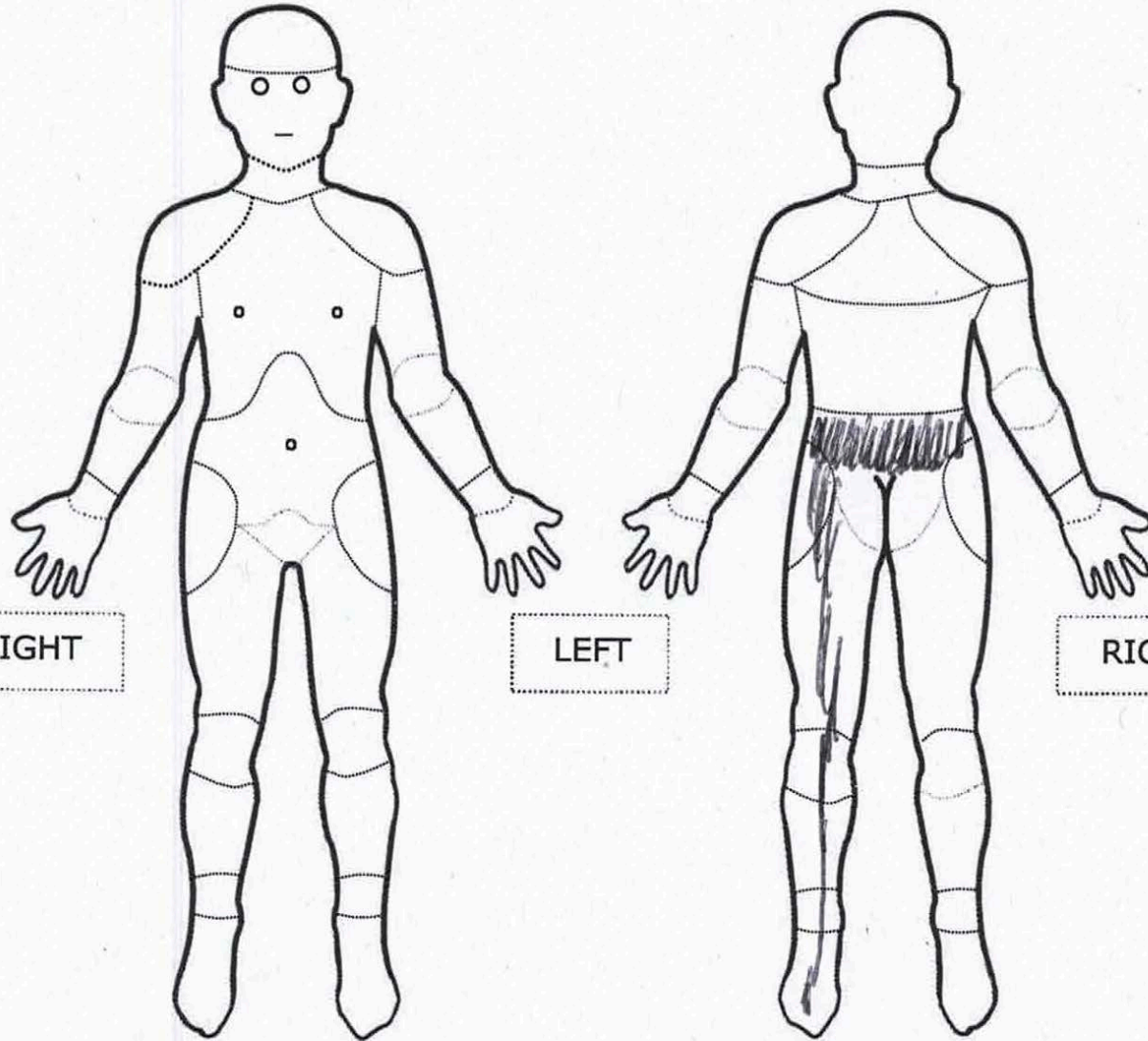
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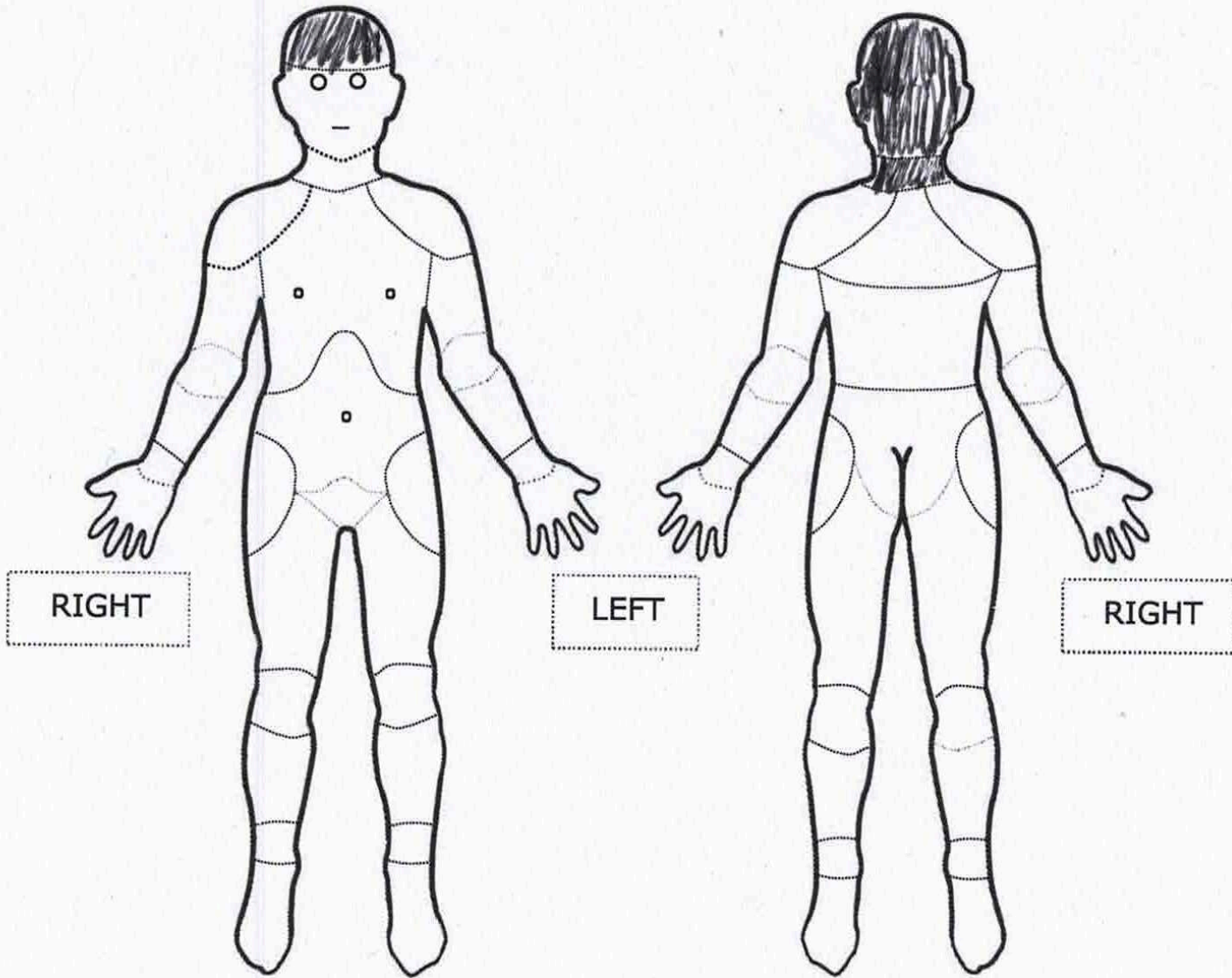
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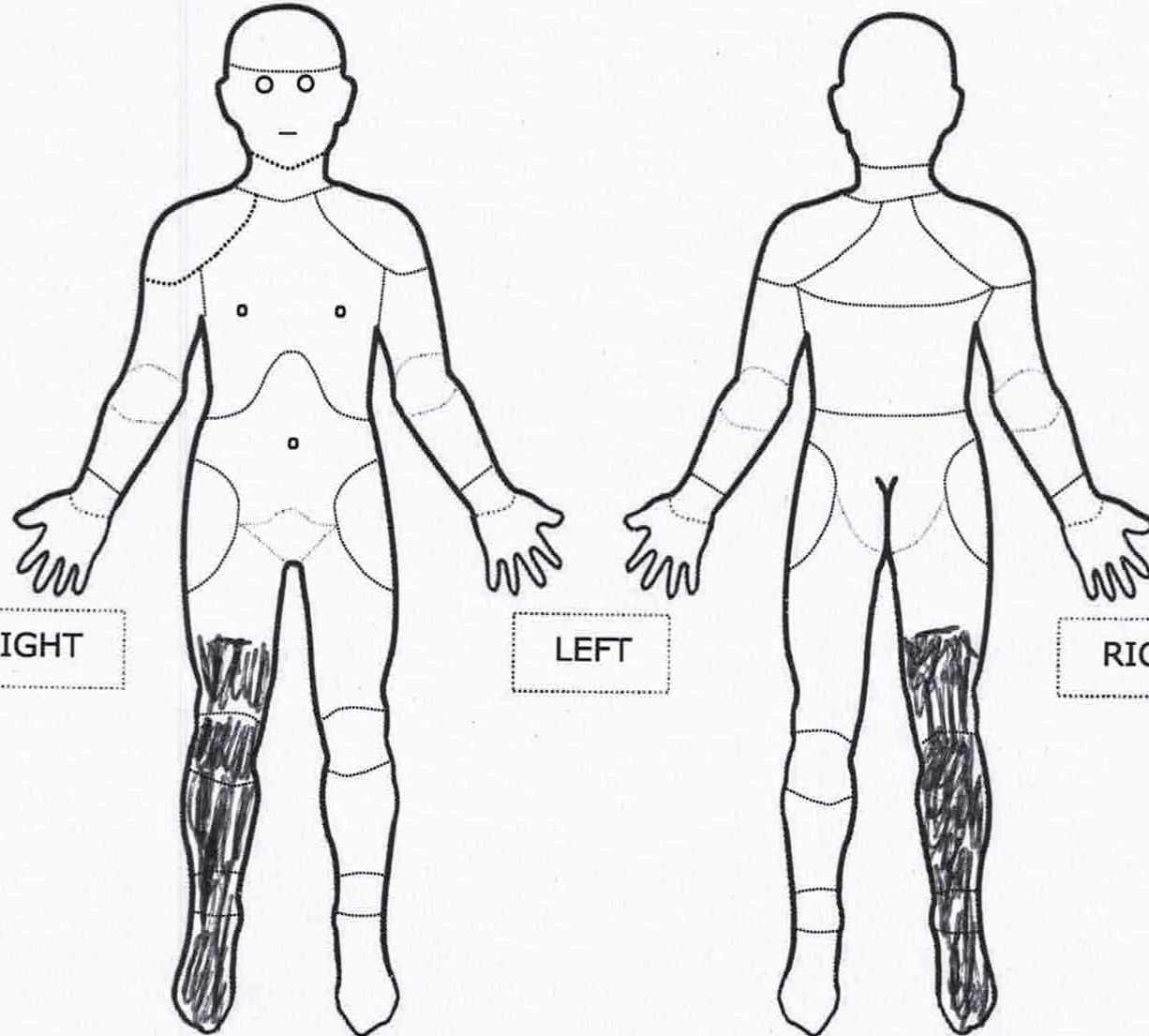
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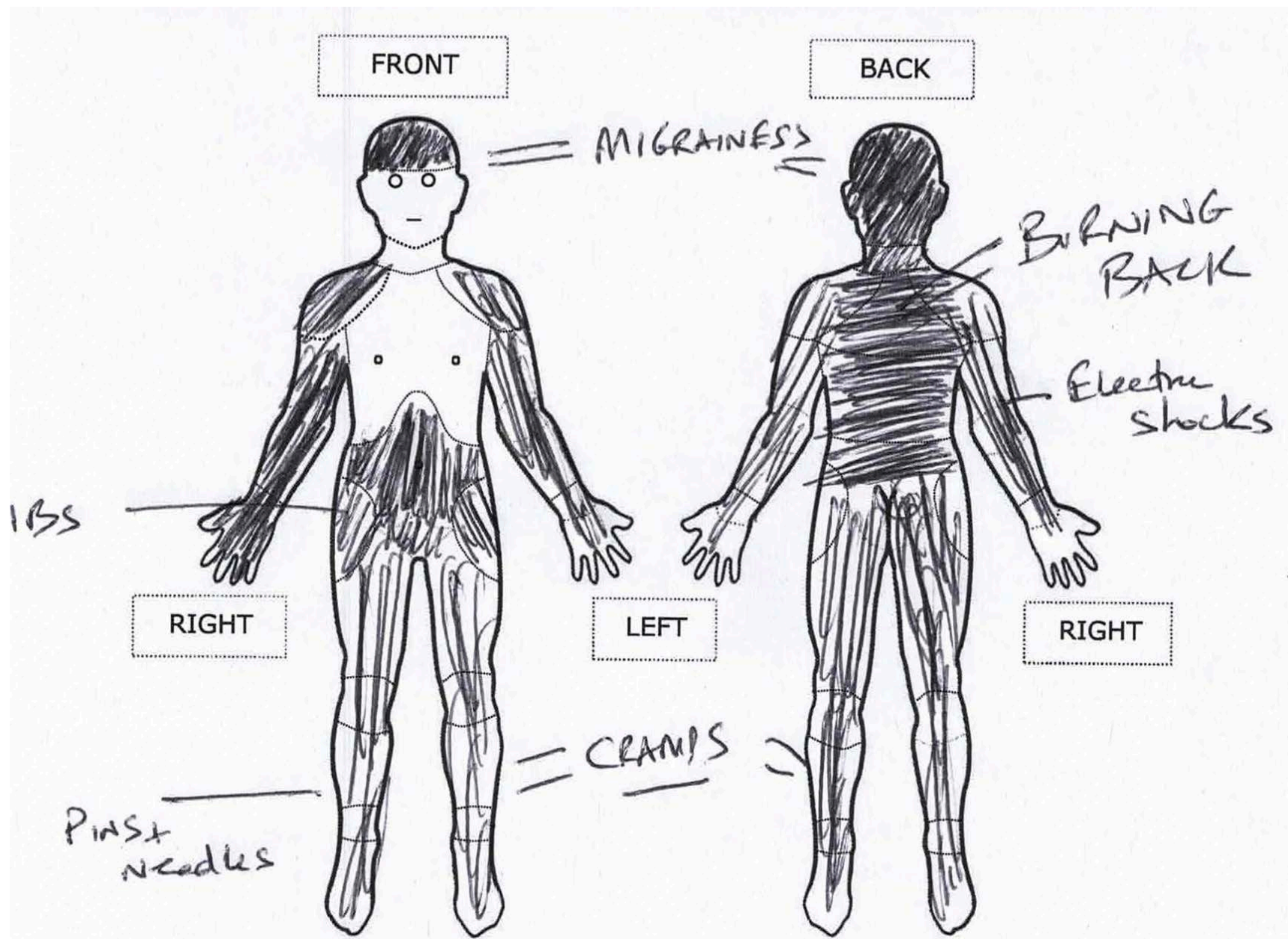
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# Treatments - Pharmacological

Pure opioids – not recommended

Tramadol & Tapentadol  
– Beneficial but unclear long term.

SNRIs – duloxetine and milnacipran (NNT of 8)

Tricyclic Antidepressants  
– amitriptyline and nortriptyline

SSRIs – unclear – some benefits over placebo

Gabapentinoids – pregabalin and gabapentin (dull down the excitatory pathway (glutamate/substance P))

NMDA Receptor antagonists – Ketamine and Memantine

Cannabinoids

Melatonin 10mg/day for 6 weeks.

Low Dose Naltrexone - opioid receptor antagonist. Glial Cell modulator.

# Treatments – Non-pharmacological

Education – central pain, prognosis, and rationale for treatment.

Exercise - low-impact aerobic activities (walking, biking, swimming, or water aerobics). Resistance Training. Flexibility Training?

Hydrotherapy

Tai Chi, Qigong, and Yoga

Cognitive Behavioural Therapy

Diet – Low animal protein, avoid MSG, and aspartame (artificial sweeteners). Improve intake of selenium, magnesium, zinc, vitamins (B6, B12, D, C, E), polyphenols, and folic acid



# Treatments - Neuromodulation

- Transcranial Magnetic Stimulation (TMS) and transcranial direct current stimulation (tDCS) – targeting the primary motor cortex (M1) or the left dorsolateral prefrontal cortex.
- Electroconvulsive Therapy (ECT) – probably not a great idea.
- Transcutaneous Electric Neurostimulation (TENS) – very low quality evidence.

# Causation/Aetiology

**Physical Trauma –  
Motor Vehicle  
Accidents/Whiplash**

**Psychological  
Trauma**

**Workplace**

Vaccinations -  
uncertain

Infections

Genetics

# Physical Trauma

Significant association between prior physical or psychological trauma in the development of FMS (Yavne et al – 2018)

High prevalence of FMS development after MVA - 11.3% (GT Jones et al. 2011)

FMS development after a neck injury was 13 times more frequent than following lower extremity injury with the same rate of insurance claims (Buskila et al 2009)

Physical & Emotional trauma are in many causes entwined.

# Psychological Trauma

Psychology vs Biology in  
FMS

Bidirectional relationship  
between Major  
Depression and FMS –  
Depression in up to 50-  
70%.

Negative childhood  
experiences common –  
neglect, abuse, traumatic  
adult experiences  
involving PTSD.

Meta-analysis showed  
2.52 fold likelihood of  
developing FMS following  
exposure to trauma (Afari  
et al - 2014)

High prevalence of PTSD  
up to 56%.

Uniquely traumatized  
individuals (missile attack  
residents/holocaust  
survivors were more  
likely to have FMS.

# Psychological Co-morbidity

High co-morbidity between Mood Disorders, Anxiety Disorders, PTSD, and FMS.

Higher risk of suicidal ideation, suicide attempts, and completed suicide.

Somatic Symptom Disorder overlap.

Not every patient with FMS has mental health concerns.

Some are highly resilient and successful: i.e. Frida Kahlo, Morgan Freeman, Lady Gaga, and JFK.

# Workplace & FMS

Majority of FM cases develop as a result of a peripheral insult and associated long-standing nociceptive input resulting in central sensitization.

Repetitive strain injuries can evolve into FMS.

Strong association between workplace stress and FMS.

# CASE 1 – 45 year old female - Bookkeeper

- Motor Vehicle Accident – rear-ended and struck car in front.
- Cervical Whiplash & Lumbar Musculoligamentous Injury.
- Started to develop widespread pain, fatigue, unrefreshed sleep, and “fibro-fog.”
- Adjustment Disorder with PTSD symptoms
- CTP Claim
- Various treatments – cervical and lumbar medial branch blocks/RFNs.
- Multidisciplinary Approach.
- Insurer sought an independent pain opinion.
- Plaintiff lawyer sought my opinion – both agreed Fibromyalgia was caused by the incident. 3% whole person impairment in addition to Cervical and Lumbar spine impairment.
- Case settled.

## Case 2 – 55 year old female - Photographer

- Established diagnosis of Fibromyalgia with no mental illness.
- Daughter was run over by a bus and killed.
- Significant Posttraumatic Stress Disorder developed resulting in a significant aggravation of FMS.
- Rheumatologists opined that there was no link and that disability remained unchanged.
- Plaintiff lawyer sought my opinion – clear link between PTSD and worsening FMS. Clear increase in need for care. Clear increase in disability and reduced employability.
- Case settled – defendant lawyers conceded.



## Case 3 – 43 year old female – Mental Health Nurse

- Significant pre-existing childhood abuse, neglect, and complex PTSD.
- PTSD in remission at the time of the index incident.
- Incident aggravated pre-existing PTSD.
- Developed Fibromyalgia.
- Clear history revealed evolving widespread pain and a rheumatological screen 2 years before the index incident.
- Defendant lawyer requested my opinion.
- Diagnosis of aggravation of Complex PTSD, and aggravation of FMS.
- Case settled.

# Case 4 – 23 year old female - Nurse


- Motor vehicle accident – Rear-ended.
- Clear whiplash injury with co-morbid Depression.
- Developed Fibromyalgia
- Reduced ability to work as a nurse – reverted to part-time and started a separate business.
- Independent opinions sought – suggested vulnerability with hypermobility.
- Awaiting settlement.

# Take Home Messages

We need more empathetic clinicians that understand this syndrome and its place in their specialty.

There remains still a lot of controversy when it comes to FMS in the medico-legal setting.

In many cases, although the impairment is negligible, the disability is quite high.



# **Trauma-induced Fibromyalgia - case study**



# ***Huseyin v Qantas Airways Ltd & Anor [2010] NSWSC 372***



# ***Cosgrove-Kaye and Comcare (Compensation) [2019] AATA 1238***





***Zivanovic v Kanina Banner Pty Ltd (ACN 082 617 187)***  
**[2020] VCC 1126**



## ***Maher v Russell* [2022] ACTSC 297**





# Practical tips



Expert  
evidence



Chronology



Supporting  
material



Alternate  
diagnoses

# Thanks!

Any questions?

