

Fibromyalgia

Causes, Consequences
and Future Directions

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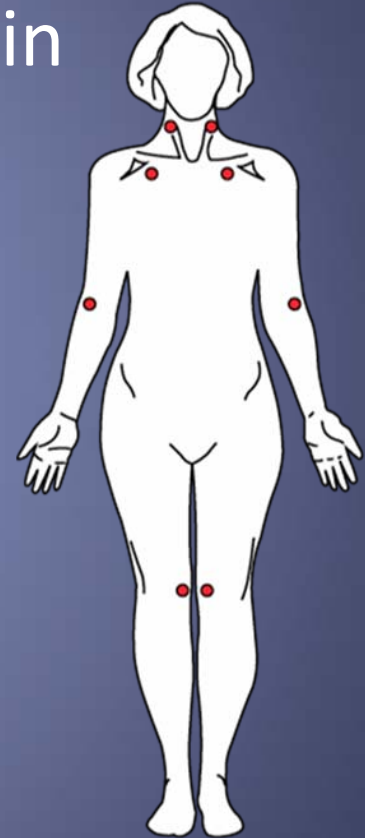
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Overview

- What is fibromyalgia?
- The impact of fibromyalgia (FM) on health and disability
- Future treatments

Definition

- Chronic (>3 months) widespread pain
 - All 4 quadrants
 - Can migrate
- Tender points (at least 11 of 18)



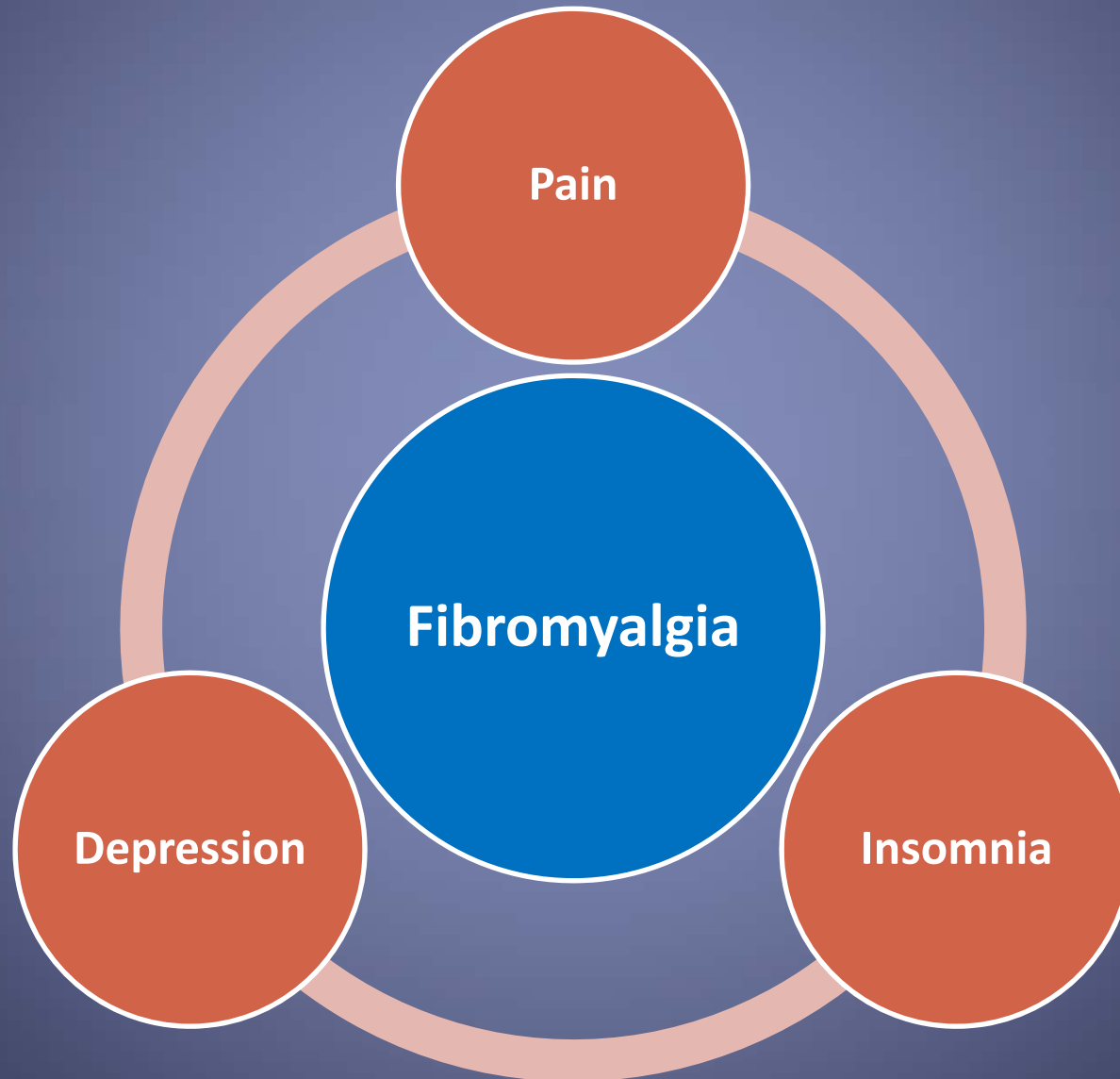
Somatic symptoms

- Somatic refers to physical symptoms
 - Distinguished from those that are mental or psychiatric
- Common use implies a lack of defined physical cause
 - Diffuse
 - Nonspecific
 - Ambiguous

Somatic symptoms

- Functional somatic syndromes
 - Irritable bowel syndrome
 - Chronic pelvic pain
 - Fibromyalgia
 - Atypical chest pain
 - (Post-viral) fatigue syndrome
 - Hyperventilation syndrome
 - Chronic lower back pain
 - Tension headache
 - Idiopathic environmental intolerance
- Over a one month period, 86 to 95% of normal healthy adults experience at least one somatic symptom

Somatic symptoms



Epidemiology

- Fibromyalgia is common
 - 2-5% of adults in the U.S.
- Women have fibromyalgia much more frequently than men
- Most affected are between the ages of 35 and 60

Fibromyalgia in the U.S.



Fibromyalgia is the most common chronic pain condition

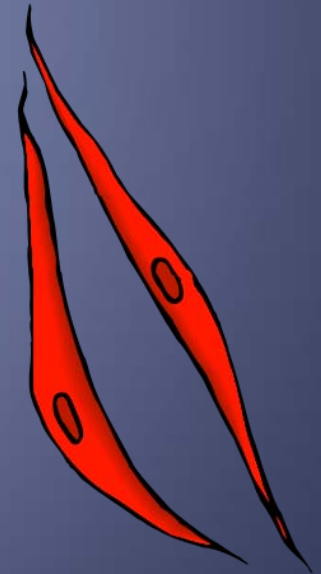
Pathophysiology



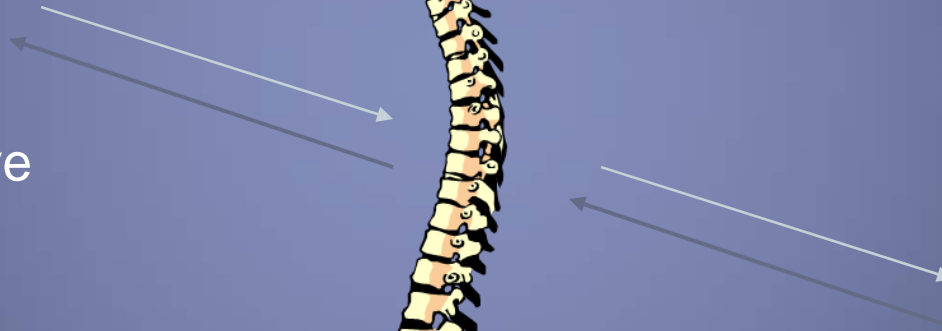
Higher cognitive functions



Dorsal horn neurons



Peripheral tissues



Peripheral tissues

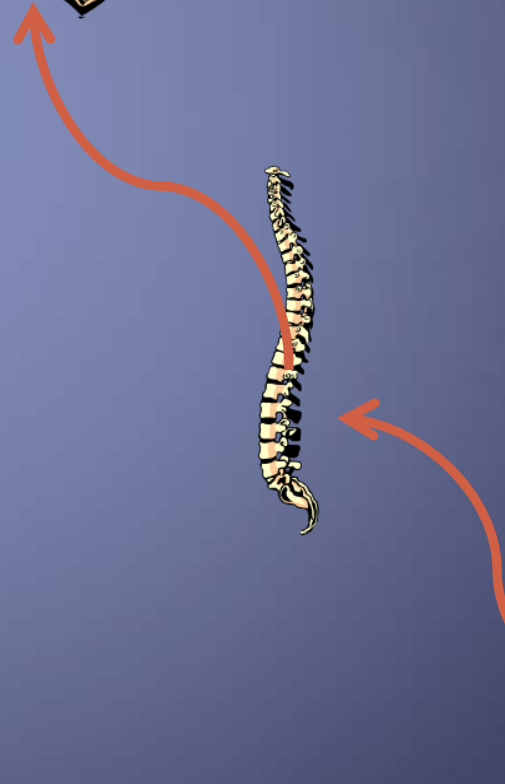
- Many articles detail peripheral abnormalities in patients with FM
- Skeletal muscle is the most studied tissue
- No consensus exists
 - Small studies
 - Poor design
 - Conflicting results

Peripheral tissues

- Still, maladaptive mechanisms likely contribute to pain
 - Deconditioning and muscle atrophy
 - Muscle spasm and triggering

Dorsal horn

- A δ - and C-fibers synapse with dorsal horn neurons
- Dorsal horn neurons then synapse with brain centers including the thalamus and the somatosensory cortex



Dorsal horn

- Fibromyalgia patients have exaggerated responses of the dorsal horn neurons
- In fact, these neurons remain active without input
- Why?

Higher cognitive functions

- Decreased ability to modulate pain in certain conditions
 - Mood disorder
 - Stress
 - ?Poor sleep
- This may be from alterations in inhibitory descending pain pathways

Higher cognitive functions

- Normally the brain can modulate pain effectively



Testing for Fibromyalgia

- There are several objective measures for FM
 - pain testing with measured pressure
 - the only measure that has been shown to change with treatment
 - substance P in cerebrospinal fluid
 - functional MRI
 - electroencephalogram
- But none of these is commonly used

Review

- Fibromyalgia is the most common chronic pain condition in the U.S.
- There is a long history of stigma and misunderstanding of somatic syndromes
- We now know what goes wrong to cause the pain
 - We are still working on why it happens
- FM remains a subjective, self-reported disease

Consequences of Fibromyalgia

- Medical costs
 - Approximately 10 outpatient clinic visits per year
 - One hospitalization every 3 years
 - Annual medical costs ~ \$6000
 - \$2500 for average patient
 - For each \$1 spent on medical claims, employers spend \$57 to \$143 on other expenses

Consequences of Fibromyalgia

- Disability
 - 30% of those with FM are disabled
 - pain severity does not by itself predict disability
 - 10% of patients with other chronic pain conditions are disabled
 - Remissions are rare
 - 24% in primary care
 - Even less in specialty clinics
 - Those with severe disease are unlikely to experience remission

Consequences of Fibromyalgia

- Factors associated with disability
 - Severity of pain
 - Self-assessed disability
 - Pending litigation
 - Education
 - Sense of helplessness
 - Coping ability
 - Psychological distress

Consequences of Fibromyalgia

- “The likelihood of receiving disability pensions for FM reflects the current diagnostic interest as well as the status of insurers approving claims for chronic pain in specific countries.”
 - Bombardier CH, Buchwald D. Chronic fatigue, chronic fatigue syndrome, and fibromyalgia: disability and health-care use. *Med Care*. 1996;34: 924-930.

Implications for Disability

- Disability is common in fibromyalgia patients
- “Negative reinforcement” of common somatic symptoms can contribute to the problem
- There are no valid instruments to determine disability in fibromyalgia

Implications for disability

- The availability of a disability option can increase the likelihood of disability
 - Insurance policies can require inability to perform two activities of daily living
 - getting out of a bed or chair, bathing, and dressing are commonly limited in fibromyalgia

Future directions

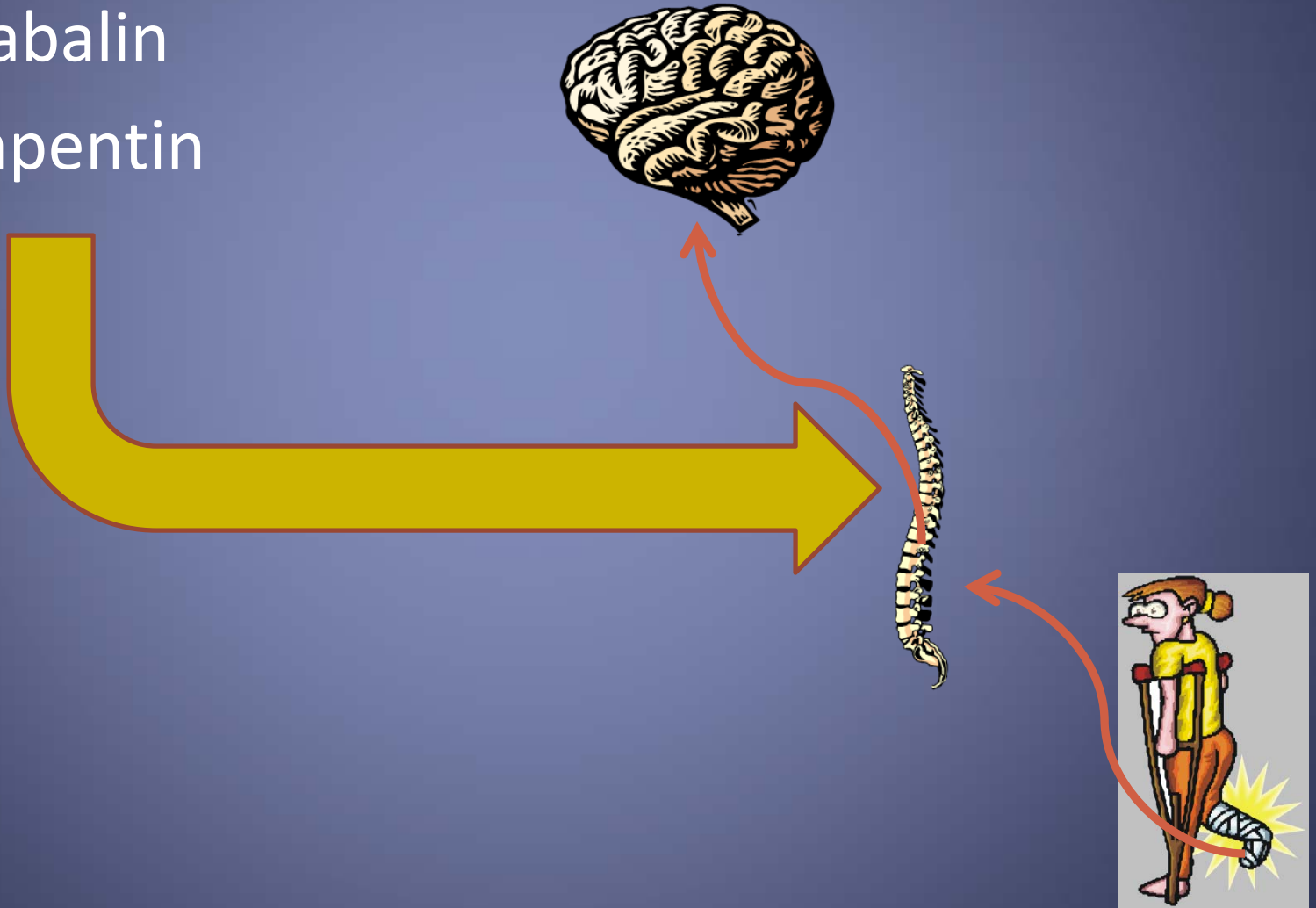
- Treatment
 - Physical therapy
 - Biofeedback
 - Medications
- Understanding the cause
 - Certain viruses
 - Changes in pain processing

Medications

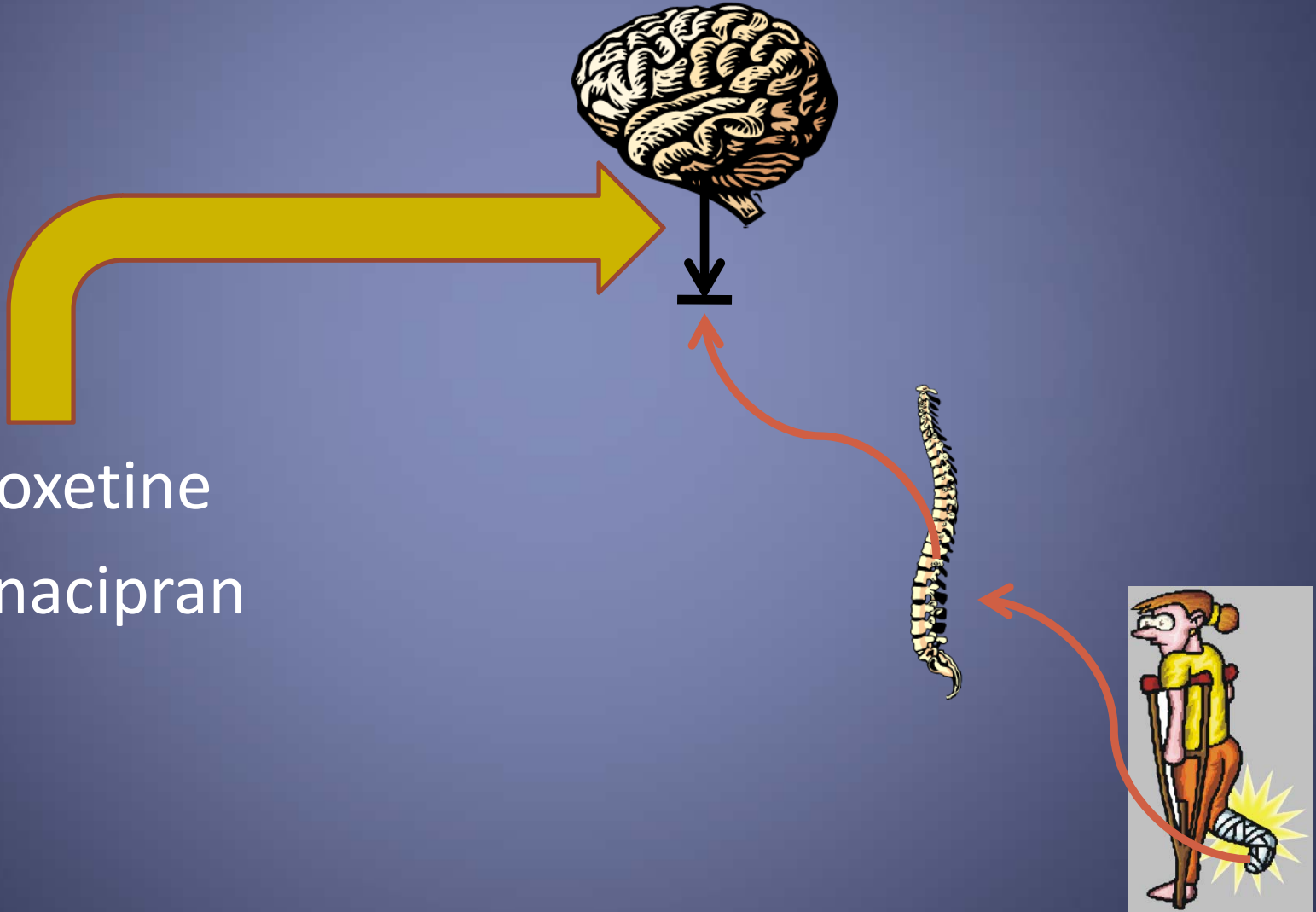
- Tricyclic antidepressants
 - At bedtime
 - Help with sleep initiation and quality
- Opioids
 - Can worsen pain over time

Medications

- Pregabalin
- Gabapentin



Medications



- Duloxetine
- Milnacipran

Summary

- Fibromyalgia is a common, debilitating condition
- Despite the long history of misunderstanding, this disease is now much better understood
 - Fibromyalgia is not a psychiatric disease
- Disability is a frequent result
- New treatments offer hope

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