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The Pain Pipeline: From MSDs to Opioid Use

Musculoskeletal disorders (MSDs) are among the **most common workplace injuries** and a key driver of opioid use across industries. Persistent musculoskeletal pain can lead to opioid prescriptions for pain management, even when these medications do not address the risk factors causing or worsening pain. Workers in physically demanding occupations — including construction, mining, entertainment, health care, recreation and food services — face higher risks of injury, musculoskeletal pain and substance use disorders.[1] Consistent with these patterns, about one-third of construction workers have experienced an MSD, and opioid prescription use is three times higher among construction workers with MSDs than among those without an MSD.[2]

Workers with prior occupational injuries experience substantially higher opioid-related harms than the general population, including higher rates of opioid-related poisonings and opioid-related mental and behavioral disorders.[3-4] Opioid initiation for musculoskeletal pain is also associated with higher risk of long-term use and opioid use disorder,[5] which can increase workers' compensation costs, slow recovery and delay or disrupt return to work.[6]

Addressing MSDs early and thoughtfully is critical to breaking this connection, supporting safer recovery and reducing opioid use disorder and preventable overdose deaths.

MSDs are common at work

Sprains, strains and soft tissue injuries can progress when workers delay reporting symptoms or when job hazards remain unchanged.

Work-related MSDs are a major risk factor for opioid misuse[1-5]

Workers with low back pain, neck and shoulder pain, wrist strain or tendinitis have significantly higher opioid prescription rates. Chronic pain, workplace stress and job demands can increase the risk of dependence.

Opioids can impair safety-critical abilities[6]

Reduced alertness, slower reaction time and impaired judgment on the job impact ability to perform work safely (e.g., working at heights, operating machinery and driving).

Opioids do not address the root cause[7-9]

Pain symptoms may be managed while the underlying MSD remains unresolved. Long-term supplies, higher doses or repeated prescriptions can increase the chance of long-term use, which can increase opioid use disorder risk.

Safer, more effective alternatives exist

These include evidence-based interventions, ergonomic support and non-opioid pain management options that can help workers recover more safely.

Alternatives to opioids for pain management[10-11]

- Ice, heat and elevation
- Physical therapy interventions, including exercise therapy and Kinesio taping techniques
- Acupuncture
- Massage
- Cognitive behavioral therapy (CBT)
- Nonsteroidal anti-inflammatory drugs (NSAIDs)
- Acetaminophen
- Other medications such as anticonvulsants and lidocaine patches
- Wellbeing practices, such as exercise, weight loss, smoking cessation and mindfulness

For more information on evidence-based, non-opioid pain management options, see **guidance from the Centers for Disease Control and Prevention**. Employers should cover a diverse set of pain management options through benefit plans. Employees should work with their physician to identify the best treatment option for their unique needs.

Operational Action

Employees

- Report pain and discomfort early.
- Share feedback on job, tool or task improvements, and join participatory ergonomics groups when available.
- Ask about non-opioid pain management options, such as NSAIDs, acupuncture and other treatments.
- Use employee assistance programs when needed.
- Seek opioid use disorder support if needed.

Employers

- Eliminate or reduce ergonomic hazards through job, task, workstation and tool redesign.
- Engage workers through **participatory ergonomics** to identify risk factors, prioritize concerns and develop practical solutions.
- Encourage early reporting so workers feel comfortable sharing pain, discomfort, fatigue and emerging MSD symptoms before they become serious injuries.
- Partner with ergonomists, physical therapists and occupational therapists to evaluate tasks, establish safe work practices and determine appropriate stretching, conditioning or strengthening programs when needed.
- Allow adequate recovery time and offer modified or alternate return-to-work duties when possible.
- Ensure insurance plans cover non-opioid pain management options, medications for opioid use disorder and comprehensive behavioral health benefits.
- Build a stigma-free workplace by encouraging early reporting and adopting **recovery-supportive policies**.

Goal:
Improve MSD risk detection, support safer recovery and build a healthier, more resilient workplace with reduced risk of opioid dependence.

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